

# Innovative solutions for recreational areas for children with disabilities on the example of the city of Gdynia

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## ABSTRACT

The article discusses the problem of innovative solutions in the field of recreational areas with particular emphasis on playgrounds for children with disabilities on the example of the city of Gdynia. The article identifies good practices in the area of social innovation in the field of designing and building integrated playgrounds without barriers, accessible to all users (full and disabled), based on the example of the city of Gdynia. It was indicated what benefits can be derived from innovative actions conducted to improve the quality of life of children with disabilities.

**Key words:** social innovation, people with disabilities, recreational areas, playground, city of Gdynia

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## Introduction

The topic of the article is innovative solutions in recreational areas with particular emphasis on playgrounds for children with disabilities. These areas constitute an urban space to which all children should have unrestricted access, regardless of their capabilities. Quoting Doctor Henry Jordan (1842–1907) ‘The need for fun is essential for mental and physical health. To be serious all the time and work constantly, no man can. A tired body needs rest. The tired mind seeks respite, and the soul desires cheerfulness’ [Jordan 1891, pp. 35-36]. For a child, the world revolves around play but does the urban public space provide such an opportunity for everyone?

About 160 years have passed since the founding of the first children’s playground in Europe, and 130 years since the establishment of the first such place in the USA. Since then, the understanding of children’s needs and the essence of play has changed dramatically [Czałczyńska-Podolska 2010]. The Convention on the Rights of Persons with Disabilities declares the necessity of respect for the developing capacities of disabled children and respect for the right of disabled children to preserve their identity. What’s more, children’s right to play is recognized at an international level, among others in the United Nations Convention on the Rights of the Child (UN 1989), [Woolley 2012].

Children with a disability who less often attend school have limited opportunities to create human capital and struggle with limited employment opportunities and reduced productivity in adulthood. That is why so much depends on the youngest years when

together with their peers they can build their dignity and sense of value. This can be achieved through accessible and adapted playgrounds. The purpose of this article is to identify innovative solutions for recreational areas with particular emphasis on playgrounds for children with disabilities. The city of Gdynia will serve as a case study because this city allows for identifying different types of urban innovations and solutions not found in other cities. An additional goal is to identify the factors that made Gdynia a leader in this scope of solutions. These were completed by using simple technological solutions on playgrounds and recreation areas accessible to people with disabilities. The article reviews the equipment of playgrounds and presents the available offers of suppliers and producers with devices for children with disabilities and universal ones that can be used by everyone. The most interesting and innovative solutions were selected and discussed.

Good practices and solutions applied by Gdynia in the scope of innovative solutions (including social ones) concerning children with disabilities were also presented.

### **People with disabilities – definition, socio-economic and legal issues**

'A person with a disability', 'a disabled person', 'a disability' are expressions that were created in the 20th century [read 29.04.2019].<sup>1</sup> The World Health Organization (WHO) defines disability as a broad term that includes disability, activity limitation and participation restrictions. It defines the negative aspects of the interaction between the individual (with a specific disease state) and factors arising from the context in which the individual is located (environmental and personal factors) [*International ...* 2001, p. 213]. A disability is a multidimensional phenomenon resulting from the interaction between people and their surroundings [*International ...* 1999, p. 195].

The catalogue of disability types is very wide. The most common examples are presented in Figure 1 below.

According to information provided by the United Nations, there are over one billion people with various disabilities (physical, mental or sensory) in the world [www.unic.un.org.pl, read 29.04.2019]. According to the 2012 European Health and Social Inclusion Survey (EHSIS), there were 70.0 million people with disabilities in the EU-27 aged 15 and older. It amounts to 17.6% of the population, ec.europa.eu, read 29. 04.2019]. In Poland, the latest data in this regard come from the 2011 National Census in which the number of people affected by disability was about 4.6 million, which was more than 12.2% of the total population [stat.gov.pl, read 29.04.2019].

Disability is not a problem that only starts when a person enters adulthood. This is a phenomenon and condition that often affects children. Thanks to medicine but also to social activities, children with disabilities have a real chance to participate in social life. They

<sup>1</sup> Historically, i.e. at earlier stages of the development of society and civilization, the term 'invalid' or "handicap" was used. In Latin translation, the word *invalidus* means weak, powerless, sick [https://pl.glosbe.com/la/pl/invalidus, read 29.04.2019].

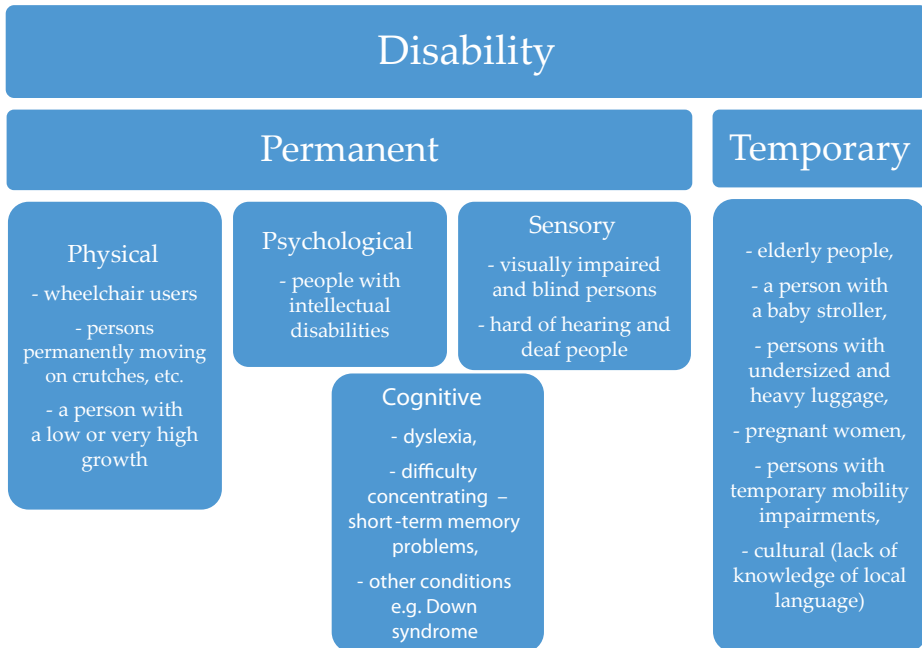


Fig. 1. Types of disability with exemplary characteristics  
Source: own elaboration based on [Accessibility... 2018, p. 18]

can properly develop on an equal footing with other children by playing with their peers. Children with disabilities are not just a marginal percentage of the general population, which is why their social inclusion is so important.

Children with physical disorders may have limited mobility, children with cognitive impairment may have difficulty understanding the complexity of play, and children with socio-emotional disorders may have difficulty initiating or maintaining social interactions. Children with autism have difficulties with social interaction and both verbal and non-verbal communication. This may result in their lower levels of social interaction when playing than of non-autistic children [Woolley 2012]. That is why it is so important to create urban spaces that are friendly to all children and that allow them to be included in society.

### Rights of persons with disabilities

Since the second half of the 20th century, a rich collection of international acts and documents of varying degrees of validity and character has been created for people with disabilities (UN, EU documents as well as national documents). The most important of these are: The Convention on the Rights of Persons with Disabilities from 2006, Charter of Fundamental Rights of the European Union, Constitution of the Republic of Poland of 2 April 1997, 'Accessibility +' programme and Accessibility Standards adopted by cities within the framework of local law.

At the local level in Poland, the level of awareness among city authorities is systematically increasing. This results in the adoption of documents introducing standards and guidelines on how to design within the city (so that the widest possible group of residents including those with disabilities can use public places).

Table 1 below compares the municipal accessibility standards adopted between 2013 (Gdynia) and 2019 (Wrocław). Except for Gdynia, they relate to Konin, Łódź, Warsaw, Poznań and Wrocław. The documents of these cities recognize the need to increase the accessibility of playgrounds for children with limited mobility and perception. The Warsaw and Wrocław accessibility standards emphasize that these solutions should be created for both the able-bodied and those with disabilities, i.e. they should play an integrating role for these two groups of children.

Table. 1. Comparison of Accessibility Standards for 6 Polish cities

City	Year of publication	Information on standards for playgrounds	Information on the location of the playground	Information on playground equipment	Information on greenery in the playground	Examples of visualization	Does the document mention people with disabilities?
Gdynia	2013	Includes	Includes	Includes	Includes	Includes	The availability of a playground for children with reduced mobility and perception was mentioned, as well as the possibility of using and playing together with disabled parents.
Komin	2017	Includes	Includes	Includes	Includes	Includes	As in the case of Gdynia
Łódź	2017	No information	No information	Includes	No information	Includes	It was noted that the study does not indicate the specific equipment to be used in playgrounds. This decision depends on the nature of the playground and the manufacturers have different types of equipment for people with disabilities. The document recommends, for example, the use of such a surface throughout the whole space so that a wheelchair can move on it.

Table 1. Comparison of Accessibility Standards for 6 Polish cities

Warszawa	2017	No information	Includes	Includes	No information	No information	It was mentioned that there is a playground available involving children with different levels of mobility. A public playground cannot be used only by children with disabilities.
Poznań	2018	Includes	Includes	Includes	Includes	Includes	As in the case of Gdynia
Wrocław	2019	Includes	Includes	Includes	No information	Includes	It was mentioned that there is a playground available involving children with different degrees of mobility. A public playground must serve all users with regard to their age and fitness. It cannot be used only by children with disabilities for the risk of stigmatization.

Source: own study based on *Accessibility Standards for the cities of Gdynia, Konin, Łódź, Warsaw, Poznań and Wrocław*

## **The universal design concept and reasonable accommodation in creating innovative solutions for playgrounds for people with disabilities**

In order to provide everyone (not only able-bodied people) with access to various types of services or cultural goods, it is necessary to anticipate what difficulties various people have in using a given object, reaching it or getting information on a place or an object. Equal access can be obtained by using:

- universal design,
- reasonable accommodation.

The concept of Universal Design is an important part the idea of accessibility and functionality for all potential members of society. Its task is to promote equal (fair) access to goods and services for all. Not without significance is this group of society with special needs [Accessibility standards... 2017, p. 5].

The concept of universal design was based on seven main principles [The Principles... 1997]:

- *Equitable Use,*
- *Flexibility in Use,*
- *Simple and Intuitive Use,*
- *Perceptible Information,*
- *Tolerance for Error,*
- *Low Physical Effort,*
- *Size and Space for Approach and Use.*

A mechanism of reasonable accommodation is another important issue related to the design or modernization of existing products. It should be used wherever there is no possibility to implement the principles of universal design. It is about introducing necessary and appropriate changes that do not impose a disproportionate or excessive (capital-time-consuming) burden.

Already after the end of World War II, which also resulted in mutilation of thousands of children, Western Europe, rising from the post-war destruction, turned its attention to properly designed playgrounds for children with disabilities. At first, such playgrounds were built at hospitals, sanatoriums and rehabilitation wards, and then at kindergartens and integration schools. Even then the issue of children's safety was raised. As it concerned mainly falls, attempts were made to install a shock-absorbing floor, which in the post-war period was difficult to reach (e.g. artificial grass bales made of nylon stacked on thick layers of foam mats or handles, handrails, ramps instead of stairs) [Pawlikowska-Piechotka 2010].

Every child likes to play and fun is one of the basic elements of proper development. A playground is an important element of the urban fabric and is a special kind of small architecture that integrates various social environments. Therefore, children with disabilities want and need to have fun with their peers as much as non-disabled children. This is why playgrounds should be designed so that they are also adapted for this group. It is important that parents with disabilities can also use them with their children. This does not mean that public playgrounds should be exclusively for children with disabilities. It would

create a stigmatizing and protective approach to only one social group. That is why it is so important that they are available to everyone (universal). The mechanism of reasonable accommodation is conducive to the integration of children regardless of their disability. It enables the children with disabilities to access these recreational areas, which have so far been used mainly by non-disabled persons. Moreover, one of the manifestations of the possibilities offered by universal design is social behaviour and needs in cities. Nowadays, the expectations of residents of various places (not only cities) regarding housing standards are constantly increasing. This includes the immediate surroundings of the buildings in which they live, as well as recreational, sports and green areas. People are becoming more aware of the importance of public space in housing estates and search for the potential ways of using this space in their free time. City residents are looking for opportunities to relax in a healthy, attractive environment close to home. It should be equipped with attractive outdoor facilities that will allow them to take up various forms of recreation, suited to their age, physical condition and interests. They express their needs more and more often by presenting projects of the participatory budget [Nałęcz, Ostrowska-Tryzno, Pawlikowska-Piechotka 2018].

In these communities, there are also people with various disabilities who would like to be able to use public and recreational areas. Their needs should also be taken into account in public space. Following the principles of universal design in design and construction of such infrastructure constitute a kind of 'gate' through which they will be able to enjoy a shared urban space. One of the main barriers preventing the creation of a friendly city is the fact that many designers, including some landscape architects, do not know how to design urban/recreational spaces for children with disabilities. Moreover, they do not know how to design them for children at all (for everyone, even those able-bodied). Therefore, the lack of specific knowledge and understanding of the needs of children with disabilities by planners and designers of outdoor playgrounds has been identified as an important barrier requiring improvement. It is a social or institutional barrier; it probably exists in the context of various types of service providers. These include local authorities, private practices, NGOs and charities. The fact that suppliers, planners and designers often do not have adequate knowledge or experience can create physical or environmental barriers in the form of poorly designed playgrounds for children with disabilities. This social institutional barrier has led to the physical barrier of inadequately designed outdoor play spaces [Woolley 2012].

### **Types and examples of innovative devices on an integration playground**

For centuries, children (except those born in aristocratic families) played unattended, essentially on city streets or fields and meadows, setting their own rules for play and their limits. A change in the way of thinking occurred at the beginning of the 19th century when more attention was paid to children and their needs. This resulted in the first attempts to create safe places for them to play [Czałczyńska-Podolska 2010].



In Poland, the playground is treated as a small architecture object. This is indirectly mentioned in the Polish Construction Law Act [Act... 1994]. Depending on the space, purpose, possibilities and available resources it is recommended to create:

- playgrounds for children with disabilities – this is a place that offers devices that will be designed to meet the requirements of children with mobility disabilities, perception and mobility limitations. Such a playground should be equipped with special devices that will be operated (or assisted) with the help of other people such as guardians or parents. They will often have therapeutic applications. It is also important for children whose parents are disabled to be able to use such playgrounds with them,
- integration playgrounds/Integrative playgrounds – they are a recreational space, which includes devices adapted for children with disabilities and such that will be available and reachable only to able-bodied people. Whether it is justified to design an integration playground should be determined based on the probable number of children who will be able to use such playground,
- playground without barriers/Barrier-free playground – it is a place intended for all children. There are devices equally adapted to the needs of children, which suffer from reduced mobility and for able-bodied children.

Noteworthy is also one of the newer trends in playground design, which is an inclusive playground. Its idea has a similar but slightly different message and purpose compared to integration or barrier-free playgrounds (it can also be called universal).

Inclusion is nothing but a complete destigmatization of children with disabilities, and their full acceptance and inclusion into society.

Recently, the term 'integration' has been replaced by the term 'inclusion'. As indicated above, both terms have different meanings. The document 'International consultation on the teaching of children with special educational needs' states that '(...) Integration is defined as an effort towards introducing children to a regular educational space. This means that integration programs aim to include children with different (specific) skills into the existing school system. Their goal is to (restore the child's normality) to help him adapt to the existing model of education [Kolupaëva, Savčuk 2010].

Inclusion is a process that allows all children to participate (including those with disabilities) in educational programs and in social life. All children are covered by the general education system. Just like you shouldn't talk about the so-called adaptation of the child to the school environment since it is an inseparable part [Kolupaëva, Savčuk 2010]. It has similar applications to other spheres of life, including the playing in recreational areas and playgrounds. The word inclusion, as translated from English, may mean 'inclusion, maintenance, possession'. Therefore, it is a term broadly reflecting a new view not only on education but more generally on the place of man in society and all phenomena associated with it [Husak, Bielkina-Kowalczyk 2014].

The idea of inclusive education of people with disabilities has become the subject of many theoretical considerations and discussions in recent years. Experience in this field has refuted


the popular belief that special schools can be the only place of education for disabled children [Maszczak 2008]. That is why playgrounds and recreational areas where the idea of inclusion can be spread are so important for them.

Returning to recreational facilities, when applying only the principles of integration in the design of playgrounds, two groups of children (those with disabilities and non-disabled) can be together, participate and use the equipment, but with the possibility of giving distinctive labels). With regard to universal planning, inclusiveness has been recommended in the last two decades by educators and specialists in social rehabilitation. Certainly, this approach also has an innovative value. However, due to their similarity and details differing inclusiveness and integrity, later in the work we will talk about integration playgrounds.

In studies and scientific works, the need to constantly monitor the practical and useful accessibility of public space or facilities (such as playgrounds) for people with disabilities (called functional accessibility) is emphasized. For the quality and comfort of living, it is important to prepare the infrastructure so that it is adapted to the needs of wheelchair users, the blind and visually impaired, and people with intellectual limitations [Pawlikowska-Piechotka 2016].

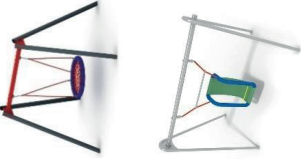
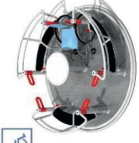
The term 'play space' is a figurative and loose concept that can be applied to any environment where a child decides to play. Long-term studies of various authors have shown that outdoor play areas for children provide them with more complex opportunities to play. It has been found that children have a fondness for the environment and like to play and use natural elements [Titman 1994]. There is growing international evidence that suggests that contact with 'nature' is not only desirable but may even be a human need. Research suggests that children playing in a natural environment develop self-confidence, independence and motor skills such as coordination, agility and balance. Also, susceptibility to stress or symptoms of hyperactivity syndrome is reduced. The availability of nature can also lead to an increased creativity in play, which is conducive to improving language skills and cooperation between children [Woolley, Lowe 2013]. To select the tested devices, a source analysis was performed consisting of searching in the Internet resources of producers and suppliers of devices and infrastructure for playgrounds. As a selection criterion, the principle was chosen that the manufacturer/supplier must have clear and easily accessible information about the availability of integrative devices in his catalogue or those that are aimed at children with disabilities. Tables 2 to 5 present examples of solutions and devices that can be implemented in playgrounds along with an analysis of innovation:

Table 2. Examples of playground equipment

<p>Purpose</p>	<p>Swing for children in wheelchairs</p>  <p>Source: <a href="http://placezabawbarcz.pl/index.php?page=huska&amp;integracyjnauk-kathi-01">http://placezabawbarcz.pl/index.php?page=huska&amp;integracyjnauk-kathi-01</a> [read 16.04.2019]</p>	<p>Playground for children with disabilities</p>	 <p>Integration swing Source: <a href="https://www.termaimed.pl/pl/integracyjnypiaczabaw/awkaintegracyjna">https://www.termaimed.pl/pl/integracyjnypiaczabaw/awkaintegracyjna</a> [read 16.04.2019].</p>	<p>Integration playgrounds, Playground for children with disabilities, Barrier-free playground</p>
<p>Level of integration with other children</p>	<p>Low – the device is intended only for children in wheelchairs. Requires someone (e.g. parents) assistance. Location on public playgrounds may cause segregation into children who can use them and them who cannot. It can cause only stigmatization and deepening of social distance. This leads to stigma and social dissonance.</p>	<p>Low – the device is intended only for children in wheelchairs. Requires someone (e.g. parents) assistance. Location on public playgrounds may cause segregation into children who can use them and them who cannot. It can cause only stigmatization and deepening of social distance. This leads to stigma and social dissonance.</p>	<p>High – possibility to play along with parents or other children.</p>	<p>High – possibility to play along with parents or other children.</p>
<p>Type of innovation</p>	<p>The design / visual (colour), technical (material and functional) innovation – the swing is set in motion by two ropes located at the opposite ends of the device frame. The swing is equipped with a blockade, which prevents uncontrolled use.</p>	<p>The design / visual (colour), technical (material and functional) innovation – the swing is set in motion by two ropes located at the opposite ends of the device frame. The swing is equipped with a blockade, which prevents uncontrolled use.</p>	<p>Social innovation (integration), technical (functional)</p>	<p>Social innovation (integration), technical (functional)</p>
<p>Evaluation of the level of innovation</p>	<p>Due to the fact that able-bodied children are excluded from playing together with children with disabilities, this device can be considered as moderately innovative from the social point of view.</p>	<p>Due to the fact that able-bodied children are excluded from playing together with children with disabilities, this device can be considered as moderately innovative from the social point of view.</p>	<p>High – swing additionally allows up to three able-bodied children if there is no child in a wheelchair. A child with a disability can possibly use the device on its own. Swing enables physical and social rehabilitation.</p>	<p>High – swing additionally allows up to three able-bodied children if there is no child in a wheelchair. A child with a disability can possibly use the device on its own. Swing enables physical and social rehabilitation.</p>



Source: own study

Table 3. Examples of playground equipment

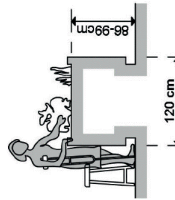
Purpose	Integration swings 'eagle nest' and 'stork nest' type 	Integration playgrounds, Playground for children with disabilities, Barrier-free playground	Integration carousel 	Integration playgrounds, Barrier-free playground
Level of integration with other children		High – the ability to play with other children in the case of an eagle nest device	Source: <a href="http://www.interfun.pl/plac-zabaw/zabawki-dla-niepełnosprawnych-na-dworze/yugo-58/">http://www.interfun.pl/plac-zabaw/zabawki-dla-niepełnosprawnych-na-dworze/yugo-58/</a> [read 16.04.2019]	High – the possibility of playing with other children (three positions for wheelchairs and five / six for able-bodied children).
Type of innovation Evaluation of the level of innovation	Source: <a href="http://www.atut-placezabaw.pl/hustawki/hustawka_bocianie_gniazdo_metal.html#hustawki">http://www.atut-placezabaw.pl/hustawki/hustawka_bocianie_gniazdo_metal.html#hustawki</a> oraz <a href="https://www.sapekor.com/pl/hustawka13126">https://www.sapekor.com/pl/hustawka13126</a> [read 16.04.2019]	Social innovation (integration), technical (functional) Medium – an additional advantage in the case of an eagle nest swing is the possibility for several children to play together at once so that people with disabilities and able-bodied can integrate.		Social innovation (integration), technical (functional) High – thanks to the drive plate, people inside can set the carousel in motion. Inside there is a brake that prevents it from spinning too quickly.

Source: own study

Table 4. Examples of playground equipment

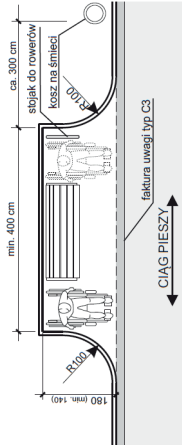
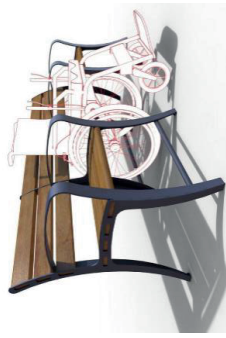
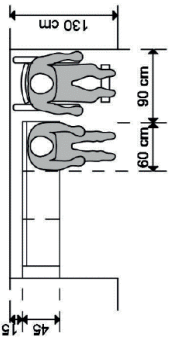
Purpose	Sensory garden	Integration playgrounds, Barrier-free playground	Integration sandbox	Integration playgrounds, Barrier-free playground
Level of integration with other children	 <p>Source: <a href="http://joannapraccka.com/project">http://joannapraccka.com/project</a> [read 28.04.2019]</p>	<p>Low – sets of elements are used for pro-health space, which is intended mainly for individual use.</p>	<p>Source: <a href="https://playtime.pl/produkt/2070/piaskownica-integracyjna/263">https://playtime.pl/produkt/2070/piaskownica-integracyjna/263</a> [read 28.04.2019]</p>  <p>Source: [Pawlikowska-Piechocka 2016]</p>	<p>High – it is a device designed not only for children in wheelchairs but for everyone. Both groups can play together, which significantly enhances the integration possibilities.</p>
Type of innovation	Social innovation (sensory), design innovation (visual)	Social innovation (sensory), design innovation (visual)	Social integration, technical innovation	Social integration, technical innovation (functional), design (visual) innovation
Evaluation of the level of innovation	High – the possibility of using horticultural therapy (garden therapy). Adapted to various groups such as people in wheelchairs (they can come close to the composition and touch it), small children, adults, the elderly, the blind (thanks to braille or pictograms).	High – the possibility of using horticultural therapy (garden therapy). Adapted to various groups such as people in wheelchairs (they can come close to the composition and touch it), small children, adults, the elderly, the blind (thanks to braille or pictograms).	Medium – due to its simplicity (raising the sand pot with the possibility of wheelchair access) the solution is not a significant technical innovation. Due to the different sizes of wheelchairs, sand pots can be positioned at different heights. It will be more complicated in the manufacturing process. Its main value in this respect is the integration of various groups of children (we are dealing with high social innovation).	Medium – due to its simplicity (raising the sand pot with the possibility of wheelchair access) the solution is not a significant technical innovation. Due to the different sizes of wheelchairs, sand pots can be positioned at different heights. It will be more complicated in the manufacturing process. Its main value in this respect is the integration of various groups of children (we are dealing with high social innovation).

Source: own study



Source: [Pawlikowska-Piechocka 2016]

Table 5. Examples of playground equipment

<p>Purpose</p>	<p>Rest areas located by the pedestrian area and in playgrounds/recreation areas</p> 	<p>Recreational areas Playgrounds Barrier-free playground</p>
<p>Level of integration with other children</p>	<p>Source: Accessibility Standards for the City of Gdynia, p. 9</p> 	<p>High – the bench (urban furniture) thanks to universal design integrates both healthy people and wheelchairs users. Also, it is designed to serve the elderly (intergenerational integration) or pregnant women, people with weaker upper limbs as thanks to the use of supports (armrests) it is easier for them to get up. Comfortable use without effort.</p>
<p>Type of innovation Evaluation of the level of innovation</p>	<p>Technical innovation (functional), social innovation (integration)</p> <p>Medium – due to its simplicity (the use of armrests and a separate space for a wheelchair) the solution is not a significant technical innovation. Its main value in this respect is the integration of various social groups (elderly, wheelchairs users, pregnant women). We are dealing with high social innovation.</p>  <p><a href="https://www.puczynski.pl/pdt/1891/21-08-04">https://www.puczynski.pl/pdt/1891/21-08-04</a>          [read 28.04.2019]</p> <p>Source: [Pawlikowska-Piechotka 2016]</p>	<p>Technical innovation (functional), social innovation (integration)</p> <p>Medium – due to its simplicity (the use of armrests and a separate space for a wheelchair) the solution is not a significant technical innovation. Its main value in this respect is the integration of various social groups (elderly, wheelchairs users, pregnant women). We are dealing with high social innovation.</p>

Source: own study

To sum up, we should ask ourselves whether the above devices and solutions are truly innovative enough for the 21st century? If we look at this question from a technical and technological point of view, the answer will be negative. It is due to their lack of structural complexity and the use of well-known technical solutions commonly used in other fields.

Social innovation is the key element for their uniqueness. It is the possibility of including children, and more generally people with disabilities in social life and activity through joint play. This will lead to the creation and then implementation of such changes, which will solve social problems and above all to improve the quality of life. Functionality does not always have to mean complicated solutions. Often simple, handy devices and solutions are pulling people towards each other the most. And having fun together is the best example.

Already in the 1960s in the USA, attempts were made to merge playgrounds with the space surrounding them. By using materials and elements typical for urban spaces, they acquired a different meaning and became an integral part of the urban fabric. The playground became a functional place that gave the possibility of neighbourly integration, fun and recreation of people of different ages. This makes it, alongside a place, a square or a park, an attractive place. It also creates an area becoming a living centre of social activity [Czałczyńska-Podolska 2010].

The visual aspect should also be highlighted as an important element. A playground or, more broadly, a recreational area constituting a public space, should, in addition to functional qualities, also meet the aesthetic ones. Design is also an important tool for the development of the innovation process. A unique and innovative-looking place or device will attract the interest of residents.

To better illustrate the main idea in terms of design innovation, Figures 2 and 3 show an example of a 'pre-era' playground. An example of a modern, well-designed place for children that attracts attention with its extraordinary appearance and functionality was presented as a contrast.





Fig. 2. An example of two contrasting children's playgrounds in terms of design and aesthetics  
First so-called 'pre-era'

Source: own study



Fig. 3. An example of two contrasting children's playgrounds in terms of design and aesthetics  
The second is representative of a modern playground

Source: own study



## Good practices and solutions for children with disabilities on the example of playgrounds in the city of Gdynia

The city of Gdynia, when creating integration playgrounds and exercise places, complies with the recommendations of the UN Convention on the Rights of Persons with Disabilities. The newly created facilities meet the needs of people with disabilities. Places are created that foster intergenerational integration between healthy people and those with limitations. The Accessibility Standards [Regulation No. 10740/13 / VI / U, 2013] are the applicable document in the scope of design. Gdynia is the first city in Poland that have prepared and adopted a document of this kind.

One of the innovative solutions used in Gdynia is an interactive search engine on the website. It allows searching for a suitable playground. Thanks to this tool, a parent or guardian can easily locate the nearest playground or one that will contain the most interesting attractions. It is thanks to the possibility of filtering and selecting appropriate devices adapted to the current age and capabilities of the child (Figs. 4–8).

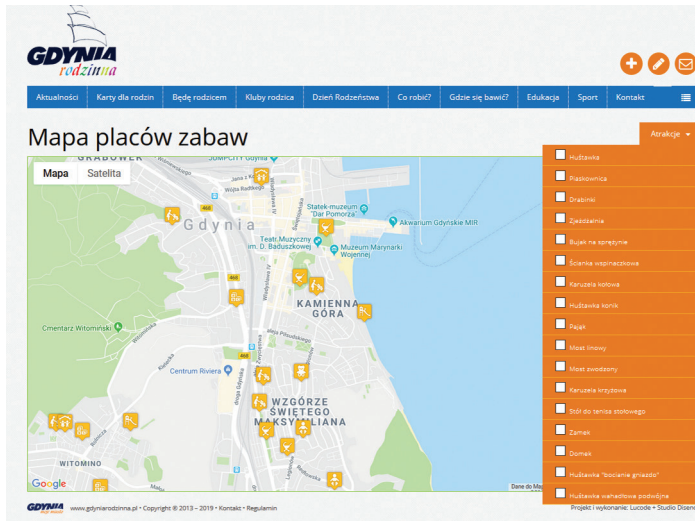


Fig. 4. Interactive map of playgrounds in the city of Gdynia

Source: <http://gdyniczestina.pl/place-zabaw/> [read 09.05.2019]

The city of Gdynia created the Road and Greenery Board for more efficient coordination of management of, among others, urban green areas or recreational areas [www.zdzd.gdynia.pl, read 29.04.2019]. As part of the structure of the Road and Green Board, an Independent Accessibility Position has been established. The goal is to prevent and eliminate architectural barriers [www.zdzd.gdynia.pl, read 29.04.2019].

Since the introduction of the Accessibility Standards, the city has been gradually implementing its policy in this area. Below are some playgrounds that were indicated after previous contacts with city representatives as the best examples. In addition, the assumptions

adopted by the city were verified during the study visit. It was to verify the practical and actual application of the guidelines contained in the Accessibility Standards. Photographic documentation was prepared from the visit.

The playground at 201 Chyłońska Street or Śląska Street are examples of universal design and are also in compliance with Accessibility Standards. The presented areas are examples of barrier-free integrated playgrounds. The most important elements that distinguish this area include:

- A large area with many attractions and devices,
- Easy access for children in wheelchairs (no uneven surface, sufficiently wide entrance gate with easy opening, no steps and height difference to overcome),
- Parking place for bicycles,
- Numerous benches close to devices with appropriate supports for easy standing up and footrests,
- Sandpit enabling access for children in wheelchairs,
- Suitable equipment and attractions for children with disabilities (including rockers with a backrest, swing type 'stork nest', sensory, touch and hearing devices, large integration kit).
- The playground is combined with recreational devices such as an open-air outdoor gym and fields.



Fig. 5. Integrative big set on the playground at 201 Chyłońska Street

Source: own study



Fig. 6. A sandbox with access for children in wheelchairs and benches with armrests for easy getting up

Source: own study



Fig. 7. A playground without barriers at Śląska Street. 'Stork/eagle nest' swings and open and full / closed' type

Source: own study





Fig. 8. A playground without barriers at Śląska Street  
'Stork/eagle nest' swings and open and 'full / closed' type  
Source: own study

Following modern trends, complying with Accessibility Standards and the awareness of city authorities enable the creation of entire areas of rest and recreation. In addition to meeting the need for fun or physical activity of people from different age groups, their purpose is also intergenerational integration. That is why fitness equipment is becoming more and more popular. They are installed and form a functional complement to the playground and thus are an excellent proposition for adults and teenagers. We are dealing here with another example of social innovation (integration). What's more, it shows the great awareness and possibilities that the city has to offer. Rehabilitation devices are another solution, often used by seniors. Figures 9 and 10 present examples of such solutions in the city of Gdynia.



Fig. 9. Examples of recreational areas combining the needs of different social groups  
Source: own study



Fig. 10. Examples of recreational areas combining the needs of different social groups  
Source: own study



Fig. 11. Example of the wide application of various forms of activity in a recreational area in Gdynia – Cisowa PlayGround at Wolności Street 201

Source: own study

The main idea behind the examples above is based on the involvement of various social and age groups in the area of joint fun and recreation. The investment project assumed separate space for the playground, team games fields, green areas and an outdoor gym adapted to all needs (Fig. 11).

The presented playgrounds together with recreational areas are an example of a well and consistently pursued city policy aimed at unifying and making public areas accessible to residents. Well-thought-out activities in this area supported by consultations, also with people with various types of dysfunctions, lead to increased accessibility and thus also to social inclusion and integration.

A recurring topic that appeared during the field research carried out by [Nałęcz, Ostrowska-Tryzno, Pawlikowska-Piechotka 2018] in interviews with gym users in the open air was the need to establish universal sports and recreation areas with facilities that would be attractive for different age groups: parents and their children, grandparents and grandchildren – so that families can exercise together at the same time side by side [Nałęcz, Ostrowska-Tryzno, Pawlikowska-Piechotka 2018]. A study visit carried out by the author in Gdynia confirms that the city's policy is directed that way. Public areas in the broad sense of the word are a coherent combination of all types of recreation and sports infrastructure required by residents of different ages, preferences and different mobility. The combination of sports and recreation areas (outdoor fields and gyms) and playgrounds for children should take place wherever the space allows (suitable size), e.g. Cisowa PlayGround at Chyłońska Street, Witomiński Square, Śląska Street. When there is no suitable space, such as at Reja Street or Wolności Street, the city is trying to fit in even a few exercise equipment on the playground. While children are playing on the playground, their caretakers can also use the infrastructure dedicated to recreation and other activities.

## Conclusion

At the beginning of the 20th century, Joseph Schumpeter [Schumpeter 1912] drew attention to the concept of innovation as a factor of development and the process of creative destruction. Over the years, this concept has evolved. Although in the beginning



understood more in terms of production, currently this definition covers a much broader spectrum, including the social innovation presented in the article. As demonstrated in the article on the example of the city of Gdynia, the social aspect is not the only one. We can see its various dimensions (design, technical, integration). In the past, child's play was considered to be a sign of energy and good humour – just an entertainment. Activities for children were not considered important (the child should be seen and not heard). However, playing is part of education that prepares young people to participate in the adult world, during which children will learn their capabilities and limitations. An outdoor playground allows children to develop new skills, confidence, self-esteem, muscle strength and to develop healthy in general. By playing, children learn to interact with others. By engaging in role-playing games, they develop both communication and other social skills. By studying the environment through play, they learn the values of nature and 'wildlife'. A good playground equals safety, fun, delight and emotions [Pawlikowska-Piechotka 2010]. The fully implemented idea of a city that is friendly to all its inhabitants, including children with disabilities, is a time-consuming process. It is necessary to intensify activities in various fields, starting with education and changing human consciousness through appropriate law and ending with proper design and construction process. It is where one can see the development of social innovation.

The term 'home range' is interesting for the development of children's cognitive and social skills and from the point of view of consequences of its change at the turn of generations. The child's home range has been described as a transformation mechanism through which children interact with and learn about the local environment. The consequences of limiting children's home range are different and can affect a range of physical and social skills. This includes natural child mapping skills, free movement of the child without restrictions in the external environment, or reduced freedom to expand social networks, especially neighbourhood relationships outside the family. Autonomy is the key to acquiring spatial skills; therefore, the development of these skills can be disturbed if children cannot move independently in the external environment [Woolley, Griffin 2015]. Thanks to the implementation of universal design, both able-bodied and disabled children gain a common space in the city that they can use together. An integration will be an added value here. This increases the awareness and level of social empathy in the youngest age groups. They will see a disabled person as a full-fledged person, not just an 'invalid'. Such people will avoid stigmatization and attributing them with features only from the perspective of 'otherness – disability'. Their discomfort and discrimination concerning pejoratively understood physical or psycho-somatic difference will decrease.

The implementation process of these social innovations is associated with the involvement of several social groups and human capital. It can be described as the accumulated value occurring in human beings but also in government or self-government institutions, values, norms and behaviours. It will be the foundation for building social relations based on trust, creativity and cooperation. It will allow achieving goals impossible for a single person. Based on the above considerations, one more question should be asked – whether people

with disabilities, including children, actually use recreational areas and does the city keep such statistics at all? The answer to this question would certainly help in further shaping the appropriate spatial and social policy of the city. Examining the needs of people with disabilities and adapting solutions to such needs could result in a higher degree of social integration of people with disabilities. At the same time, it could be an additional stimulus for the development of innovative solutions.

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## Innowacyjne rozwiązania dotyczące obszarów rekreacyjnych dla dzieci z niepełnosprawnością na przykładzie miasta Gdynia

### STRESZCZENIE

Artykuł podejmuje problematykę innowacyjnych rozwiązań w zakresie terenów rekreacyjnych ze szczególnym naciskiem położonym na place zabaw dla dzieci z niepełnosprawnością na przykładzie miasta Gdynia. W artykule zidentyfikowano dobre praktyki w obszarze innowacji społecznych w dziedzinie projektowania i budowy integracyjnych placów zabaw bez barier, dostępnych dla wszystkich użytkowników (tych pełno i niepełnosprawnych), na przykładzie Gdyni. Wskazane zostało jakie korzyści mogą płynąć z działań innowacyjnych w zakresie poprawy jakości życia dzieci z niepełnosprawnościami.

**Słowa kluczowe:** innowacyjność społeczna, osoby z niepełnosprawnością, obszary rekreacyjne, plac zabaw, Gdynia

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