ASD (PUBLICS) FRIENDLY DESIGN HANDBOOK

Designing public spaces with children with autism and their families

ASD Publics

Activating Spaces with neuroDiverse Publics

Project Partners

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DESIGN HANDBOOK

Summary

This document shows a series of guidelines for the design of outdoor play areas for children with autism and their families. This design guidelines have been developed through the learnings from ASD Publics, a New European Bauhaus project that aims to improve public spaces with and for autistic children and their families.

The document is conceived as a handbook made out of design guidelines and recommendations. It outlines the characteristics of a play area and its play elements as well as management considerations to be inclusive for children with Autism.

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Contents

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ABOUT ASD PUBLICS

PLAYABLE SPACES FOR ALL

Activating Spaces with neuroDiverse Publics (ASD-Publics) is a New European Bauhaus project that aims to improve public space, and particularly public playgrounds, with and for children with autism and their families and caregivers. To do so, the project has developed knowledge methods and tools, namely Design Guidelines and a Co-Creation Methodology, to inform urban practitioners and government officials about the difficulties that this community faces in these spaces as well as how to mitigate these issues. These tools have been created from the findings of several research activities, including four participatory co-creation workshops that explored new ways of engaging children with autism through play and creative ways of exploring multi-sensoriality and connectivity with space.

Learn more about the project

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INTRODUCTION

Despite enormous progress in making public spaces inclusive and accessible for all, some collectives, such as neurodivergent people and particularly children with Autism Spectrum Disorder (ASD), still face difficulties to use and enjoy urban public spaces. ASD is a neurodevelopmental condition characterised by alterations in social communication, repetitive behaviours and restricted interest patterns (APA, 2013) that affects a growing number of people throughout their life, turning into social isolation, anxiety, depression and ADHD among adults with ASD. Challenges to access public spaces aggravates their risk of social exclusion and prevents them from playing and exercising outdoors, especially in green public spaces where there is evidence of multiple sensory-motor, emotional, and social benefits of nature for children and youth with ASD ranging from anxiety reduction to improvement of sensory skills. The exclusion from these spaces also affects their families, particularly when the person with autism is still a child and needs to be accompanied by an adult.

The design of public spaces rarely takes into account the needs of children with autism and their families. This community faces serious difficulties to find spaces that are appropriate to their children's needs. The invisibility of this community in the city's urban planning strategies and policies exposes gaps in both social awareness and urban practitioners' knowledge about this collective's specific needs - gaps containing broader social costs if left unattended. While there is a large body of knowledge on autism, there is almost no collaboration between urban practitioners and the experts that have this knowledge nor with the affected community. In order to bridge this gap, there is a need for new tools to design sustainable playable spaces for and with the children with autism and their families to promote public spaces that are truly inclusive for all.

ASD Publics emerges from this need. More specifically, the project has developed knowledge methods and tools to inform urban practitioners and government officials about the difficulties that this community faces in these spaces as well as how to mitigate these issues. The project has culminated in three interrelated documents that can be read independently: The ASD Publics Design Handbook with design guidelines to design inclusive public playground (the present document), the ASD Publics Co-Creation Guide that outlines a methodology to include children with autism and their families to the design of public playground, and the ASD Publics Process, a publication documenting the process of the project and the key findings that informed the other two documents. The first two documents are crafted as practical manuals and addressed to groups of residents, neighbours associations, architecture and urban design studios, policymakers and any entity or individual willing to create an inclusive playground or to transform an existing one to make it more inclusive for and/or with this community. The third one provides background to the two manuals and it is mostly addressed to people who want to better understand where the recommendations in these come from or want to do further research on the topic.

This document is structured in four sections: 1) general characteristics of the play area, 2) play elements, 3) management of the space, and 4) other measures. In addition, the cross cutting topics of a) security and b) social issues cut across the four sections

As a general principle, the design guidelines in this document focus on improving autistic children's play experience, with the objective to make it a joyful and relaxed time. They also seek to guarantee security, one of the most important concerns for the families, and aim to minimise stressful situations and frustration, both for children in the spectrum and their families, as past experiences have a huge impact on their desire to return to a particular space or play a game again.

Terminology Note

There is much debate on the correct terminology to refer to those who have received an autism diagnosis. Based on research on accepted terminology and after consulting the websites of several European organisations dealing with autism as well as our partner autism associations, ASD Publics combines the expressions 'autistic person/people', 'people/person on the autism spectrum' and 'people/person with autism'.

GENERAL CHARACTERISTICS OF THE PLAY AREA

DESIGN TO CREATE A PLAY SPACE TO BE SAFE, WELCOMING AND EASILY NAVIGABLE WITH THE AIM THAT FAMILIES FEEL COMFORTABLE AND SAFE AND CHILDREN CAN OPEN UP TO DIFFERENT PLAY PROPOSALS

This section describes the general characteristics that should be taken into consideration when designing a new autism-friendly play area or transforming an existing one with this purpose. This includes reducing external stimuli, mitigating escapism, making spaces that are easy to navigate, making it easy for adults to survey and help their child, and bringing together play elements for different ages in the same space.

External stimuli reduction

Many children in the autism spectrum feel overwhelmed by external stimuli. In cities, traffic noise, lights, crowds and other loud and stimulating elements can stress them, sometimes leading to emotional dysregulation. Therefore, it is important to look for solutions to reduce external stimuli when designing spaces for them to fully enjoy their playing time. This will not only reduce anxiety but also possible distractions during play time.

Design guidelines:

- Identifying locations for new parks: Distancing them from vehicular traffic.
- Designing a new park in an existing space: Distancing the children's playground from vehicular traffic and protecting these from disturbing activities such as ball games or the presence of dogs.
- Park adaptation or complementary design tools: Visual & acoustic barriers

Specific design solutions:

- Vegetal barriers
- Dunes
- Topography

Escapism mitigation

A common characteristic of autistic children is that they tend to run away unexpectedly. This may happen when something nearby calls their attention, or when the activity they are doing is not as attractive as something else happening nearby. In the park, children with autism often run away with no sense of danger, putting their personal safety at risk. For parents, it can be a stressful situation that ultimately discourages them from going to the park with their children.

Design guidelines:

- Fenced-off spaces with a gate in small parks and/or when nearby a road or other dangerous elements
- Larger parks or parks that are further away from dangerous elements (if possible)
- Make it intelligible what the play/security area is
- Topography or separate by levels the play area

Specific design solutions:

- (Inter) active perimeters - Fences as an opportunity of interacting, playing and resting.
- Seating / resting spaces within the perimeter - exploring innovative design of multifunctional benches (for instance get inspired by the Möbius strip concept).

Intuitive and easy-to-navigate spaces

One of the characteristics of autism is the need for structure. Easy to navigate spaces make the experience of autistic children in the park easier and more enjoyable, making it easier for them to choose where and what to play with and minimising stressful situations.

Design guidelines:

- Grouping play elements per type of play
- Using pavement texture and colour as a structuring element
- Safe space approach (being able to look from outside before intervening to play)
- Wayfinding and universal accessibility in signaging

Cross-cutting:

Easy to navigate spaces also improve safety as they help to minimise crashes with swings and ziplines by clearly indicating the areas of movement and the areas for these elements.

Specific design solutions:

- Sensory park natural pavements
- Colourful pavements

Surveillance spaces and easy access for parents

Safety in public play areas is one of the most common and urgent concerns for families of children with autism, who would like their experience at the park to be safer and more relaxed for both their children and themselves. Not being able to see and to reach their children while they play is a cause of stress for adult family members. Some parks have large psychomotor circuits where children with autism may feel the need to get out or stop half-way, often blocking the circuit for other children and causing distress and confusion. In these situations, adults struggle to help their children as sections of these large circuits are off the ground and are often too narrow for an adult to fit in. In addition, when their children go inside these circuits they lose sight of them, making it stressful for them as they anticipate these situations but also making it impossible for them to know if and where their child may suddenly run out from the circuit towards a random direction. For these reasons, play spaces sensitive to autistic children and their families should include full-visibility areas for adults and ensure that all play elements are reachable for them.

Design guidelines:

- Ensuring visibility by minimising visual obstructions from adults' sitting / surveying areas
  Distributing play elements and adults' sitting / surveying spaces in a way that minimises visual obstruction.
- Ensuring that adults can reach their child in elevated spaces, where children can fall from, and enclosed spaces, where children may "get stuck"

Cross-cutting:

- Safety: adults have a clear view of their children
- Social: Minimising potential distressful situations if a crisis starts inside a play element

Specific design solutions:

- Stepped sitting / play areas were parents can sit and survey their children from high above
- Openings to enclosed play elements

Not separating play elements based on age

Some children with autism prefer to play with playground elements that are designed for younger children. That could be the case for children with slow development of motor abilities or play skills. Also, some autistic children with restricted interests prefer to use elements of the playground that they already know how to use, and for them learning to use new elements can be challenging. Therefore, we recommend that play spaces are structured by type of playing activity rather than by age, always keeping in mind security as a priority.

CHARACTERISTICS OF PLAY ELEMENTS

Increasing sensory play opportunities

Some children in the autistic spectrum with a different sensory processing are more attracted by manipulative or sensory play with objects rather than functional or pretend play. They have a greater interest in games that provide intense sensory feedback and in repetitive and cause-effect actions. Thus, increasing sensory play in public play areas would better meet their play interests and increase their motivation to play outdoors.

Design guidelines:

- Auditory Stimuli
- Tactile Stimuli
- Visual Stimuli

Specific design solutions:

- Auditory Stimuli: introduce elements that sound when moved or stepped on. Natural sounds. Introduce auditory stimuli far from other play areas as some autistic children are hypersensitive to noise and this may be a nuisance for them.
- Tactile Stimuli: introduce a large variety of textures and touch temperature elements with different shapes and consistency, elements to be manipulated (leaves, stones, bark pieces, sand, water ...)
- Visual Stimuli: introduce elements where children can look through, may include colours and meshes, and different visual textures or patterns
- Design permanent elements so that non-permanent elements for sensory stimulation can be attached to, hang onto or incorporated somehow. For example, hooks or rods where to hang a fabric swing from, structures where to build a spider-webs ot to attach elastic fabrics to lean or.

Adapting motor stimulation play opportunities

Some autistic children with restricted interests prefer to use elements of the playground that they already know how to use, and for them learning to use new elements can be challenging. This hughley limits their play options, reducing their opportunities for psychomotor stimulation, and the benefits derived from this, and causing them to get easily bored. To mitigate this issue, it is important to provide a variety of options for psychomotor stimuli to meet the interest of all children and to make them as easy-to-use as possible, adding information about how to use the different play elements (see section 4).

Design guidelines:

- Multifunctional play elements (see below for examples) that allow children to choose how to use it, offering a wider variety of play options .
- Psychomotor directional circuits and multi-entry open structures .
- Mobile elements for children to create their own playground, allowing the child to decide how to play and encouraging autonomy and creativity.

Specific design solutions:

- Swinging: Swings, zip line, balance, spring
- Jumping: Trampolines, “milestones” for jumping
- Sliding: Slide, slopes, elements to crawl by pulling
- Climbing: Rope nets (not climbing walls)
- Spinning: Rotating platforms
- Balancing: pivoting elements (lentil type), narrow elements to walk on
- Running: Open spaces without obstacles
- Other: Pendulums to dodge or to pass to each other
- Multifunctional play elements such as sloping surfaces, flat surfaces placed at different heights, holes to go through or get into, and little hills or bumps, or a combination of these or other elements.
- Linear circuits and paths where there is a sequence of consecutive play elements
- Non-linear circuits, where several play elements are simultaneously offered at each point, allowing children to choose their own path.

PROVIDING SPACES THAT ALLOW WITHDRAWAL IS EXTREMELY USEFUL FOR CHILDREN WITH ASD TO PREVENT OR DEAL WITH SENSORY OVERLOAD

Including calm/haven spaces

Autistic children tend to get overwhelmed by stimuli, as previously mentioned. Playgrounds are therefore spaces that can cause a lot of stress, both because of the external stimuli from outside the playing area but, mainly, because of the chaotic, unpredictable and loud atmosphere typical of children playing areas. This can discourage autistic children from playing in public play areas or, in the worst scenario, lead to dysregulation. In these situations, autistic children tend to run away or seek refuge in quieter spaces and by their adult family members. It is therefore necessary to incorporate spaces that provide a calm and safe environment to improve their experience in public play areas.

Design guidelines:

- Create quieter spaces within the playground but at a certain distance from active play areas where children can rest or hold quieter play activities by themselves or with their family members.
- Incorporate small enclosed spaces where children can isolate themselves into. These solutions should be designed according to security and sanitary requirements and facilitating their maintenance.

Specific design solutions:

- Prioritising natural and comfortable materials to care sensorial stimulation
- Small enclosures (tipi, small house, tube), where to hide into or to hold relaxed activities
- Holes or baskets, like a nest, where feeling embraced

Managing the waiting time

Learning how to follow social rules requires a complex set of abilities that neurotypical children easily learn overtime. Without the help of direct teaching or visual supports explaining some of the social rules, the experience of children on the autism spectrum at the park can be stressful. In that sense, waiting for a play element to be free when another child is using it can be a stressful experience and lead to dysregulation. Incorporating solutions that mitigate this problem will help them to function more independently and develop social skills and will minimise stress for them and their families.

Design guidelines:

- Incorporating solutions that help autistic children understand they have to wait for play elements to be available
- Incorporate active wait solutions, particularly by those playing elements that tend to have a higher demand, to make the waiting time more enjoyable.

Specific design solutions:

- Including a big sand timer that can be turned around by the children waiting to use the specific play element
- Including visual supports that explain “waiting rules”
- Incorporate small games that make the waiting time more enjoyable by playing elements, particularly those that have a higher demand.

Easing transitions

Changes and transitions are a challenge for children with autism. They need time and support to move through transitions in a relaxed manner. Leaving the park can be a difficult moment for them and their families, often resulting in tantrums. The design of autism-friendly playing areas should make it easy for them to understand transitions from one playing element to another one and from the playing area to the outside of it.

Design guidelines:

- Introducing clear paths guiding to the entrance/ exit of the play area
- Introducing games that lead to the point of entry / exit of the play area or incorporating sensory games nearby it to ritualise the moment of entering and leaving the play area.
- Adequate transition spaces between play areas in which children with ASD are exposed to different sensory experiences

MANAGEMENT OF THE SPACE

Supervised spaces or time slots

In addition to the aforementioned challenges that children with autism and their families face at public play areas, and largely because of these, they also face numerous social issues related to stigma and other families not understanding the situation. A possible solution that could help families better enjoy public playing areas while simultaneously raising public awareness is incorporating the presence of a "person for play support" at public play areas.

Design guidelines:

"Mediators" would help the families of children with ASD, act as a mediator to avoid conflicts with other children and families and raise awareness about the needs of children with neurodiversity. They would also explain how to play with the different playing elements and how to use new elements that may require a certain explanation such as timers for waiting management. These "mediators" could be allocated specific times slots in different play areas, covering several ones at different times of the day or stay at some particular play areas.

Specific design solutions:

Create a new public programme, or adapt an existing one, in which a person supports families in different parks of the city. Specific parks at specific times could introduce the "mediator" or support figure so that helps to avoid conlicts and support play for ASD children.

Management of non-permanent elements

Some play elements that children with autism like, such as fabric swings, cushions, stretching balls, weighted blankets, sensory bags, and teepee tents, cannot permanently stay in the public space because they are not "robust" enough. Other elements, such as wooden pieces to build circuits with or balance boards, with which play opportunities could be created for them, as well as for other children, can also not stay in the public space as they could easily get stolen. Some of these materials could be incorporated as non-permanent elements by attaching them to robust permanent structures (see section 2). There is, therefore, a need to manage these non-permanent elements to ensure that they are available for use but last long. To do so, we put forward three options that require different levels of local government involvement:

Incorporate containers or trunks provided and managed by the local government in which to store these non-permanent elements. "Mediators" could manage these containers and trunks, ensuring that all materials are returned and in good condition.

Incorporate trunks provided by the local government but managed by autism or neighbourhood associations. Regular inspections should be conducted to ensure that all materials are in good conditions and that no inappropriate or unsafe materials are added.

Each family brings their materials from home.

OTHER MEASURES

Awareness campaign

The vast majority of the challenges faced by and demands from families of autistic children in relation to public play areas are actually social issues. This aspect actually falls outside the scope of this project, but it is important to take it into account in future research.

Awareness campaigns (advertisements, social media..)

Signs in parks (Park Inclusion for children with neurodiversity)

Creation of an App

The following subsections collect a series of challenges that children in the autism spectrum and their families face during play time in public playgrounds for which the creation of an app could be an appropriate and helpful solution. This app would collect all the information about public play areas in a particular city. For each of these, it would incorporate pictures and list play elements. It would also include visual supports showing how to use all the playing elements in the city as well as a comments section where families of children with autism could share their reviews for the play areas with other families. This resource would also be a great source of information for the public administration.

Information on the use of play elements

Following play instructions in a playing area can be a multi-stepped ability that requires a different set of skills, including cognitive skills (paying attention, understanding and remembering them) and a set of motor skills that allow the individual to achieve the final result. Most of those abilities are related to language and communication development. As children with autism may have difficulties with one or more of these skills, they may face security issues and impediments to have fun. Several cities around the world use visual supports and images that explain how play elements work.

The app would contain explanatory images of how to use the different game elements. To make it more efficient, a QR code could be placed in the game elements, so when in the park families can scan the code that redirects them to the app

Anticipation

Anticipation is very important for children in the autism spectrum. They tend to get frustrated when they think of a specific park but are taken to another one. To avoid these situations, families and experts in ASD use visual supports.

The app would incorporate photographs of the different parks in the city to help the child with ASD anticipate which park they will go to.

Give a voice to the families of children with ASD

Families of children with autism feel that their concerns related to public play areas are not taken into account by the public administration. While autism associations are doing a great job to raise public awareness and bringing their demands to the forefront, giving a voice to these families would help to bridge the gap between public administrations and them. In addition, it would also create a community, giving them a platform to share concerns and to advise each other.

The app would have a section for reviews and comments where families of children with ASD can share experiences about play spaces both with each other, to advise each other, and with the institutions in charge of the parks.

ASD Publics

Activating Spaces with neuroDiverse Publics