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Community Parks and Playgrounds

Intergenerational Participation through Universal Design

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Community Parks and Playgrounds: Intergenerational Participation through Universal Design

Final Report

For

The Centre for Excellence in Universal Design at the National Disability Authority

By

Dr. Helen Lynch
Alice Moore
Dr. Claire Edwards
Linda Horgan

Department of Occupational Science and Occupational Therapy
and
Institute for Social Sciences in the Twenty First Century (ISS21)
University College Cork

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And for inspiration:

'The need for more complex spaces for play has also been suggested by Stine as being an issue of providing for a series of dichotomous relationships: including being accessible and inaccessible, active and passive, challenge/risk and repetition/security, hard and soft, natural and people built, open and closed, permanence and change, private and public, simple and complex'

Stine, S. (1997) Landscapes for learning, Canada: John Wiley and Sons.

as cited in Woolley, 2008, p. 12

List of abbreviations and acronyms

ADA	Americans with Disability Act
ASD	Autism Spectrum Disorder
CEUD	Centre for Excellence in Universal Design
CRC	Committee on the Rights of the Child
CSO	Central Statistics Office
DCYA	Department of Children and Youth Affairs
DFI	Disability Federation of Ireland
GC17	General Comment 17
ISS21	Institute for Social Sciences in the 21st century
MUGA	Multi Use Games Area
NCHPAD	National Center on Health, Physical Activity and Disability
NCO	National Children's Office
NDA	National Disability Authority
PI	Principal Investigator
PlayAUDIT	Play Assessment of Universal Design and Inclusion Tool
TGD M	Technical Guidance Document M
UCC	University College Cork
UNCRC	United Nations Convention on the Rights of the Child
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
UD	Universal Design

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Terminology

Accessibility refers to the usability of a product, service, environment or facility by individuals with the widest range of capabilities (ISO 9241-171 part 171, ISO/IEC 25062 and ISO/IEC 29136).

Accessible playspace can be defined as a playspace designed to ensure there are no environmental/physical barriers to participation including entrance to the space, movement around the space and ease of access to features or opportunities within the space. Types of surfaces used, width of gates and paths, steepness of inclines, ease of access to play equipment, location, and access to and from the site may be considered to respond to a wide range of access needs (Playright, 2016).

Adults are defined as persons aged 18 years and over.

Affordances refer to the opportunities perceived for action in the environment - usually the affordance matches the child's level of ability and it changes as the child develops (Lynch and Hayes, 2015). The concept of affordances has been used repeatedly in researching children's outdoor environments, as it enables researchers to identify characteristics of the environment that enhance play (for example, Hart, 1979, Heft, 1988, Fjortoft and Sageie, 2000, Kytta, 2003).

Amenities refer to the supporting infrastructure found within playspaces that helps to promote a comfortable and accessible environment, for example: lighting, toilets, parking, seating, shade structures, drinking water fountains etc. (Playright, 2016).

Child is used to describe persons aged 0 – 18 years.

Disability: The International Classification of Functioning, Disability and Health (ICF) defines disability as an umbrella term for impairments, activity limitations and participation restrictions (World Health Organisation [WHO], 2002). See definition of impairment below, to see what range of conditions are included.

Disability is the interaction between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others (UNCRPD, 2007, p. 1).

With regards to playspaces, disability is often mistakenly understood as a person's inability to experience the play environment because of limitations caused by their disability. Rather, disability is the limitation of opportunities to participate on an equal level with others due to physical and social barriers in the environment. Disability is not a condition a person has; disability is an experience one may have (PlayCore and Utah State University, 2016).

Diverse users is used to describe individuals with differing abilities and characteristics or accessibility needs.

Diversity is about recognising people as individuals. Each person has characteristics that shape their unique identity and needs, but some of these characteristics are also shared with others (Kenawy and Elkadi, 2011).

Impairment is used to describe problems in body function or structure (World Health Organisation [WHO], 2001). From a social model of disability, the concept of impairment is used to communicate functional limitation in the person. In contrast disability is a social construct that refers to barriers that reduce participation of persons with impairments. In this report, impairments include the broad range of functional limitations a person may experience due to physical, social, cognitive, emotional or behavioural factors. Traditionally, people give these impairments diagnostic names such as autism, intellectual disability, cerebral palsy, and so on.

Inclusion can be defined as the act of supporting all groups of people within society, recognising their full value and importance, and helping them achieve their full potential (PlayCore and Utah State University, 2016).

Inclusive design implies that attention has been paid both to accessibility and social factors so that both environmental and social barriers to inclusion are actively addressed (Playright, 2016).

Inclusive playspaces aim to enable satisfying play opportunities for all children while accepting that it may not be possible for every child to access every feature or opportunity of the space (Playright, 2016).

Intergenerational playspaces are designed for users of all age groups, including adults- facilities and accommodations for adults will encourage family use (Moore, Goltsman, and Iaofano, 1992).

Municipalities are organisations that typically provide local government by establishing local or city councils.

Older adults/ seniors are defined as persons aged 65 years and over.

Parks are urban green spaces that can be categorised based on size, catchment area and resources and facilities provided (Dunnett, Swanwick, and Woolley, 2002). These include:

- Principal/City/Metropolitan park – more than 8.0 hectares, with a Town/City wide catchment, a varied physical resource, and a wide range of facilities, which would generally be recognised as a visitor attraction in its own right.
- District park – up to 8.0 hectares in extent with a catchment area from 1500 to 2000 metres, with a mixture of landscape features and a variety of facilities such as sports field/playing fields and play areas.
- Neighbourhood park – up to 4.0 hectares in extent serving a catchment area of between 1000 to1500 metres with both landscape features and a variety of facilities.
- Local park – up to 1.2 hectares in extent serving a catchment area of between 500 and 1000 metres, usually consisting of a play area and informal green area and landscape features but lacking other facilities (Dunnett, Swanwick, and Woolley, 2002, p. 25).

Play is defined as child-initiated or child-organised, free-play. Free-play is spontaneous, voluntary, and takes place outside of school or structured, adult-directed activities. For a review of evidence related to parks and playgrounds, outdoor play is the primary focus, also known as physical activity play, rough-and-tumble play, risky play. However, play takes many forms and can also be solitary or social, can involve objects and loose parts, can be imaginative or exploratory.

Playgrounds are purpose-built designated playspaces for children primarily to socialise and play. Playgrounds typically fall into three main types: traditional, contemporary and adventure (National Children's Office [NCO], 2004).

Play component(s) refer to equipment found in playgrounds such as swings, slides, climbing structures, etc., specifically designed for play (Playright, 2016).

Playspace is a general term that refers to any space where a child plays, such as a back garden, yard, street, or green area, and includes purpose-built playgrounds.

Play value is used to describe the value of an environment, object or piece of equipment for play. Something may be described as having high play value if children are able to play with it in many different ways, integrate it into their own play or use it to expand or elaborate on their own ideas and actions. Simple play things (for example, sticks, balls, sand) and 'classic' toys or games (for example Lego™or playing chasing) often have higher play value than complex or expensive toys or equipment (Playright, 2016).

Spica is used to describe a playground component typically consisting of a rotating pole.

Universal Design is defined as the design and composition of an Environment so that it may be accessed, understood and used:

- To the greatest possible extent,
- In the most independent and natural manner possible,
- In the widest possible range of situations, and
- Without the need for adaptation, modification, assistive devices or specialised solutions, by any persons of any age or size or having any particular physical, sensory, mental health or intellectual ability or disability, and means, in relation to electronic systems, any electronics-based process of creating products, services or systems so that they may be used by any person (Disability Act, 2005).

Urban green spaces can be defined as: "land that consists predominantly of unsealed, permeable, 'soft' surfaces such as soil, grass, shrubs and trees (the emphasis is on 'predominant' character because of course green spaces may include buildings and hard surfaced areas); it is the umbrella term for all such areas whether or not they are publicly accessible or publicly managed. It includes all areas of parks, play areas and other green spaces specifically intended for recreational use, as well as other green spaces with other origins" (Dunnett, Swanwick, and Woolley, 2002, p.8)

User is an individual who accesses or interacts with a park/playground.

Usability the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.

About the authors

Dr Helen Lynch is Senior Lecturer in the Department of Occupational Science and Occupational Therapy, UCC, and a Research Associate of the Institute for Social Sciences in the Twenty First Century. She has been engaged for many years in a research programme concerning early childhood play environments, and the rights of children to play, in particular play for children with disabilities. She has been involved in several projects exploring these issues, with the Heritage Council, and Area Based Childhood programme in Ireland, and in the EU, through the Ludi COST Action. She is a member of Eurochild and the Children's Rights Alliance, Ireland, and has been chairperson of the Research Committee, of the Irish Occupational Therapy Association.

Alice Moore is Research Assistant in the Department of Occupational Science and Occupational Therapy, UCC. She researches in the areas of children's play, disability rights and the provision of accessible, usable, and inclusive outdoor playspaces. She has been involved in several projects exploring these issues, with The Heritage Council, and in the EU through the Ludi COST Action "Play for children with disabilities".

Dr Claire Edwards is Lecturer in Social Policy in the School of Applied Social Studies, UCC, and Director of the Institute for Social Sciences in the Twenty First Century (ISS21). Her research interests focus around disability policy and rights agendas, sociological and geographical theories of health and disability, disability policy, and social research methods and she has been involved in several research projects exploring these issues. Claire was Principal Investigator on a study for the National Disability Authority exploring disabled people's access to the criminal justice system as victims of crime. Prior to joining UCC, she worked in the UK for the Disability Rights Commission and as a social researcher within the Department for Work and Pensions.

Linda Horgan is Lecturer in the Department of Occupational Science and Occupational Therapy, UCC, and an Occupational Therapist in private practice/ consultant. Her research interests focus around Universal Design and in particular design of public spaces. Linda has expertise in co-educational collaborative research projects embedding the universal approach in the process of designing for the needs of diverse populations.

Executive Summary

Introduction

Accessible and inclusive community environments are fundamental for enabling social inclusion. As a set of design principles, Universal Design (UD) offers the potential to create inclusive environments that are accessible to as many people as possible. Yet to date, community environments such as parks and playgrounds have received little attention in relation to UD, to designing for diverse groups of users, including children with and without disabilities, and intergenerational users. This report contains an analysis of play value, UD and usability of parks and playgrounds in one local council area (Cork City Council). The aims of the research were:

- To explore what is known from an international perspective on UD as a method which delivers inclusivity, in relation to parks and playgrounds, play and participation.
- To gain diverse users' perspectives of children with and without disabilities and their families/carers, of their experiences of accessing and engaging in play in public parks and playgrounds.
- To identify recommendations for best practice in providing for families in public parks and playgrounds, as a means of progressing lifetime communities from a UD approach.

Methodology

The research developed a phased, mixed methods approach:

i. **Literature/policy review**: a review of literature and policy relating to parks and playground, UD, intergenerational use and play was conducted;

ii. **A review of guidelines:** a review of guidelines relating to UD, play affordances and playground design was conducted;

iii. **Developing a PlayAUDIT tool:** the review of literature, policy and guidelines was used to develop a practical audit tool for parks and playgrounds (PlayAUDIT);

iv. **Auditing parks and playgrounds**: the PlayAUDIT tool was used to conduct an assessment of 5 park-playground units in the Cork City Council municipal area. This involved undertaking audits of play value, combined with physical observational audits based on a checklist of criteria, alongside walk-and-talk qualitative interviews with children and families to gain an understanding of the usability of the different playgrounds; and

v. **Interviews** were also conducted with those involved in the provision and maintenance of parks and playgrounds within the city council.

Universal Design for parks and playgrounds: what literature and policy tells us

A significant body of work has developed describing how intergenerational users, particularly adults and older adults, value, utilise, and benefit from parks. International literature recognises that outdoor spaces such as parks and playgrounds are important sites for community integration, belonging, and health and wellbeing. With increasing life expectancies, the need to provide intergenerational spaces is gaining momentum as a means to cater for older adults/ seniors. Indeed, research has shown that neighbourhood parks offer benefits which contribute to seniors' quality of life (Gardner, 2008; Sugiyama, Thompson, and Alves, 2009), self-reported health (Rappe, Kivela, and Rita, 2006), and even longevity (Takano, Nakamura, and Watanabe, 2002).

Parks combined with playgrounds provide specific opportunities for intergenerational experiences between adults and children. Here, children can benefit from outdoor play which is fundamental to the health and wellbeing of children. Importantly, accessing local play opportunities goes beyond fun – it is fundamental to enhancing children quality of life, enabling development, learning, flexibility, and resilience. However, particular groups such as children and adults with diverse abilities and impairments face challenges in accessing local parks and playgrounds. When playgrounds are not designed with inclusion in mind, children and families as a consequence are excluded.

As an emerging concept, Universal Design is promoted as a means of ensuring accessible and inclusive environments are provided for children and adults with disabilities. However, from the review of research, core evidence and gaps in knowledge were identified:

- No studies were found that explored the application of Universal Design to the design of playgrounds, or of intergenerational use of parks and playgrounds. There is no research from Irish children with disabilities on their experiences of community inclusion in parks and playgrounds.
- International and national guideline documents relating to inclusive playgrounds make little reference to Universal Design.
- There is a gap between the promotion of Universal Design, and guidelines on how to operationalise it in parks and playgrounds, and a gap in knowledge on how to include users in a process of community consultation in the design and provision of parks and playgrounds, especially children.

Findings from the PlayAUDIT

The five parks and playgrounds were audited for play value, universal design, and usability. The playgrounds were of different sizes, locations, and built at different times (see Table 2.1).

Physical design issues

Overall, these five playgrounds presented with many varied physical play opportunities. However, sensory and cognitive play were under-represented in the design features. The parks in general had accessible routes to the playground and around the park. However, not all playgrounds had level, firm surfaces to each playground component, resulting in poor accessibility for users with mobility impairments. The playgrounds were identified as having few design features that support equitable or intuitive use.

Users' perspectives

Adult users' perspectives

Adults all used these parks and playgrounds because they were local, easy to get to, and well maintained. Adults used parks for walking dogs, exercise, and family time primarily. Sometimes, especially in the city park, they used it as a place to gather with friends or family, primarily because of the presence of valued amenities such as toilets, comfortable seats, and refreshments. Usability was negatively impacted however when the parks were poorly maintained, or when they were overly crowded, particularly with groups of teenagers. No adult spoke of avoiding playgrounds because of the worry that their children would fall from heights or have accidents from play. Instead, safety issues were raised in reference to broken glass, needles, or excrement.

Child users' perspectives

The main reasons children used their local playground was associated with wanting to play and have fun, and were dependant on an adult who brought them there. The favourite play activity reported was climbing on climbing walls and slides. For children with mobility or sensory impairments, most playgrounds were not places of fun. For these children, and consequently their families, playgrounds were not designed to be welcoming, inclusive accessible spaces. In this way, playgrounds can sometimes perpetuate exclusion.

Parks and playground providers' perspectives

Providers confirmed that parks and playgrounds are provided for local communities to use and are designed to meet local play and leisure needs, especially in communities of social disadvantage. Universal Design approach to design was generally viewed as a new idea and not something that had been thought about before. In general, providers agreed that design for inclusion was an area of expertise that required external, specialist involvement. Some providers were however aware of the need to integrate natural and built elements in designing parks.

Overall Play Value and Universal Design

Although the playgrounds appeared to provide stimulation and challenge from the initial play value assessment, the children and adults who used these spaces told us a

different story. They spoke of the components not providing enough height, speed, or challenge overall, that would maximise fun experiences for older children in particular. This finding speaks to the issue of needing to have accessible-inaccessible elements of play. Good design includes areas of play that are inaccessible due to the challenge involved. Instead, the inaccessible features were associated with poor accessibility to the play **opportunities** (for example, no ramp or steps to the highest point)**,** rather than inaccessibility due to play **challenge** (for example, the slide is too high). While, it is neither possible nor desirable to make every piece of a playspace 100% accessible and usable when we consider people's different ages, abilities and the need for play challenge, general access should be a fundamental concern in providing for play.

Recommendations

The research identified a number of important recommendations relating to policy, providers, participation, research and evaluation, and implications for design that are presented in Chapters 10 and 11. Key recommendations overall include:

Developing and implementing policy and guidelines

There needs to be greater recognition of Universal Design in national policy on play, and the provision of inclusive parks and playspaces. This is arguably a cross-departmental government issue. Universal Design is an approach that should be embedded in national policy for outdoor play and leisure activity in particular. Specifically:

- There is a need to establish standards and guidelines for the design of Universal Design community parks and playgrounds. Chapter 10 identifies a number of sample recommendations for consideration in applying Universal Design approach to playground design, and could be considered a starting point for developing design guidance.
- The actions and objectives set out in the Irish National Play Policy (2004), relating to social inclusion and playground design need to be implemented.
- There is a need to apply existing regulations (i.e. Technical Guidance Document M, 2010) to community parks playgrounds as it addresses the access and use of a space, its facilities and its environs (M1), the sanitary facilities that may be provided (M3). Technical Guidance Document M is a legal guidance in relation to the design of the built environment. Applying this will meet many of the issues in relation to addressing inclusion in the physical and built environment from a design standpoint.
- There is a need to develop a high-level, preliminary audit in the future. For the purpose of this research project, the PlayAUDIT that was developed and used is detailed and lengthy. A shorter, more user-friendly audit taking in the main points might be useful for designers and playground providers in the future.

Building capacity and expertise amongst public park and playground providers

Knowledge, awareness and expertise regarding Universal Design and play design needs to be developed amongst those stakeholders and providers who fund, develop and design public park and playgrounds in communities. Close collaboration with local councils in relation to play policy, planning and local provision would support this development. There appears to be a misconception that a playground can be fully accessible; but it is not possible nor desirable to make every piece of a playspace 100% accessible and usable when we consider people's different ages, abilities and play preferences. However, this does not mean that separate or segregated design solutions be chosen, as this results in exclusion.

Creating participatory mechanisms in inclusive playground development

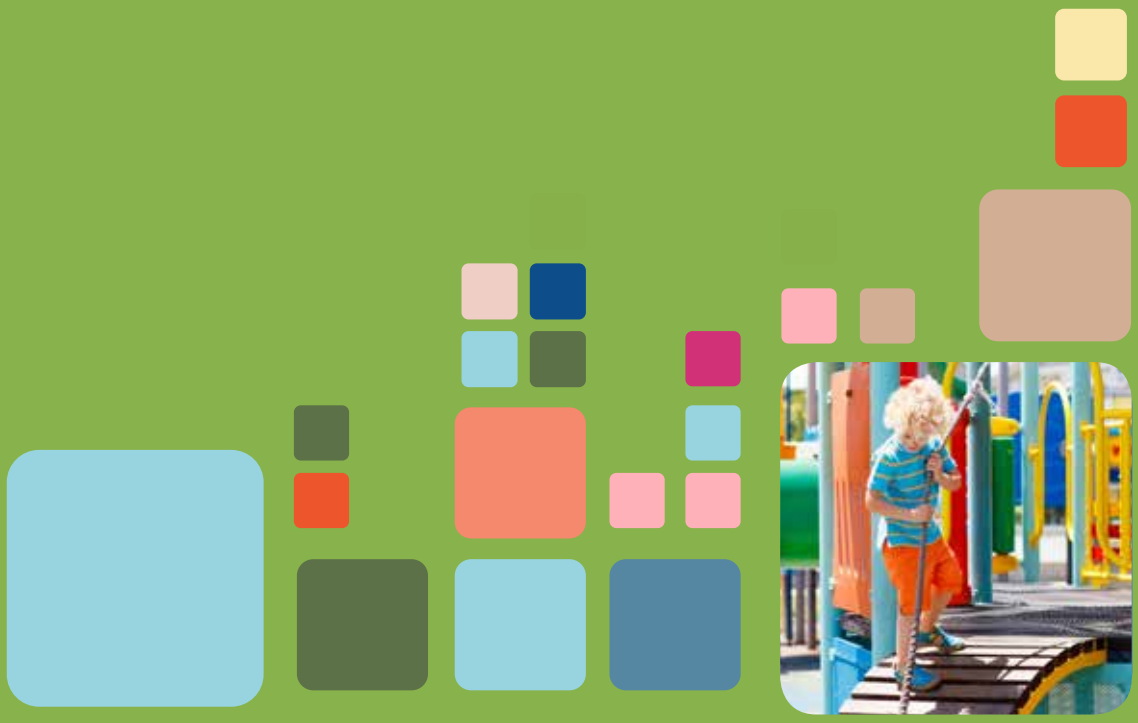
There is a need to develop more effective participatory mechanisms which engage children and adults with diverse abilities in the development of Universal Design parks and playgrounds. A guideline document, setting out how community participation might work in relation to park and playground design and development, would be of significant value, in line with the national Children and Young People's Participation hub, run by DCYA. Pilot research should be considered in this respect to explore methods for enhancing and maximising community participation in design and resulting sustainability, and usability of community parks and playgrounds. This includes engagement with younger children, but also teenagers, who are not typically provided for in community parks and playgrounds.

A research strategy

There is a need to establish a research strategy to extend knowledge on Universal Design and its application to playgrounds, in particular as it relates to play and play value. This combination is essential if playground design is to be informed by evidence. In particular, the integration of playground safety standards with playground design to maximise challenge and stimulation is essential. Risk-rich play environments need to be considered as central to good design. In addition, there is a need to extend research to persons that do not access or use community parks and playgrounds (non-users) to ascertain reasons for non-use.

Evaluating progress

Consideration should be given to establishing an audit and monitoring programme of Universal Design parks and playgrounds on a national level. An assessment of playground provision is warranted to assess the level and quality of provision of accessible, usable playspaces for diverse users. Initiatives such as the play sufficiency programme in Wales serve as a guide to inform the application of a systematic review of provision, and evaluation of progress.



Introduction

1. Introduction

1.1 Introduction

- There has been limited research on the design and provision of outdoor parks and playgrounds from a Universal Design perspective. In particular, little is known about how users such as children with different abilities and disabilities, and their families, experience these social contexts. The aims of the research were:
- To explore what is known from an international perspective on Universal Design as a method which delivers inclusivity in relation to parks and playgrounds, play and participation.
- To gain a diverse user's perspective of children with and without disabilities and their families, of their experiences of accessing and engaging in play in public parks and playgrounds.

To identify recommendations for best practice in providing for communities in public parks and playgrounds, as a means of progressing lifetime communities through Universal Design.

The overall goal of such work in the long-term is to support the increase in the capacity of children and young people to access play opportunities in their local communities. From a lifetime community perspective, parks and playgrounds are intergenerational sites, where children, young people, adults, and older adults gather and socialise in different ways. Focusing on family use of parks and playgrounds is one way to extend social inclusion across the generations.

1.2 Background to research

Public parks and playgrounds are special places where communities can gather, socialise, rest and play. They provide opportunities for play and leisure for diverse users, such as children, teenagers, adults and older adults. As a result, they provide important opportunities for social connections, neighbourhood satisfaction and community attachment in many urban settings. This means that community parks are intergenerational places, where social participation takes place.

In recent years, there has been a growing concern about children's limited access to outdoor spaces for play (Kilkelly et al., 2016). In modern life, many families have more restricted access to gardens, green areas and places to play due to increased urbanisation and busy home and working lives. This has become such a significant problem that the United Nations (UN) has established the right to play and leisure as a rights-based issue. In the Convention on the Rights of the Child, it is stated that all children (i.e. people under 18 years), including children with a disability, have the right to play, rest and leisure (Article 31, UN Convention on the Rights of the Child [UNCRC], 1989). This includes having spaces and places to play together on an equal basis with others.

However, a particular barrier to the use of community parks and playgrounds has been attributed to poor design, resulting in inaccessible or unusable spaces for many families. For example, in research studies with children with impairments, researchers have found that children are often excluded from participating in play, especially in community playgrounds (Prellwitz and Skar, 2007; Stanton-Chapman and Schmidt, 2016). In another example from a study in the USA, Olsen and Dieser reviewed play provision in communities and found that only 5% had accessible routes, while only 11% had accessible parking (2012). Researchers in Sweden tried to find out why this might be happening by interviewing playground designers. They identified that designers of playgrounds often have insufficient knowledge about diverse users (Prellwitz and Tamm, 1999). From our review of research evidence, we found that a significant barrier overall is the lack of guidelines and knowledge about how to provide accessible and usable playgrounds for all children, including those with impairments (Moore and Lynch, 2015).

In summary, outdoors and green spaces have become important sites for children and families. Consequently, the provision of universally designed outdoor playspaces is an important political and societal objective, and a priority that needs to be addressed. For this study the focus was on urban green spaces: public parks, and playgrounds. Typically, municipalities develop urban green spaces to provide for local communities, especially in urban areas where public spaces are under threat. These forms of social spaces are known to be important for residents to develop social identities, a sense of community and belonging. There is a strong relationship between physical spaces and the social fabric of society.

1.3 Research aims and objectives

In recognition that outdoor playspaces are not only for children and young people but adults and caregivers alike, the need to provide universally designed spaces that support the physical and social needs of intergenerational users is fundamental. The aim of this research is to conduct a mixed methods study to explore how Universal Design principles relate to outdoor parks and playgrounds. The specific objectives of this research are:

- To explore international literature and guidelines on Universal Design, play, parks and playgrounds, and intergenerational use.
- To investigate the experiences of accessing and engaging in play in public parks and playgrounds from child and adult perspectives.
- To explore the experiences of local council parks and playground providers in relation to the design and provision of public parks and playgrounds.
- To examine local parks and playgrounds for play value/usability and Universal Design.
- To identify recommendations for best practice in providing for diverse users in public parks and playgrounds, as a means of progressing lifetime communities through Universal Design.

The overall objective of this work therefore is to increase the capacity of children and adults to access, use and be included in play and leisure opportunities in their local communities.

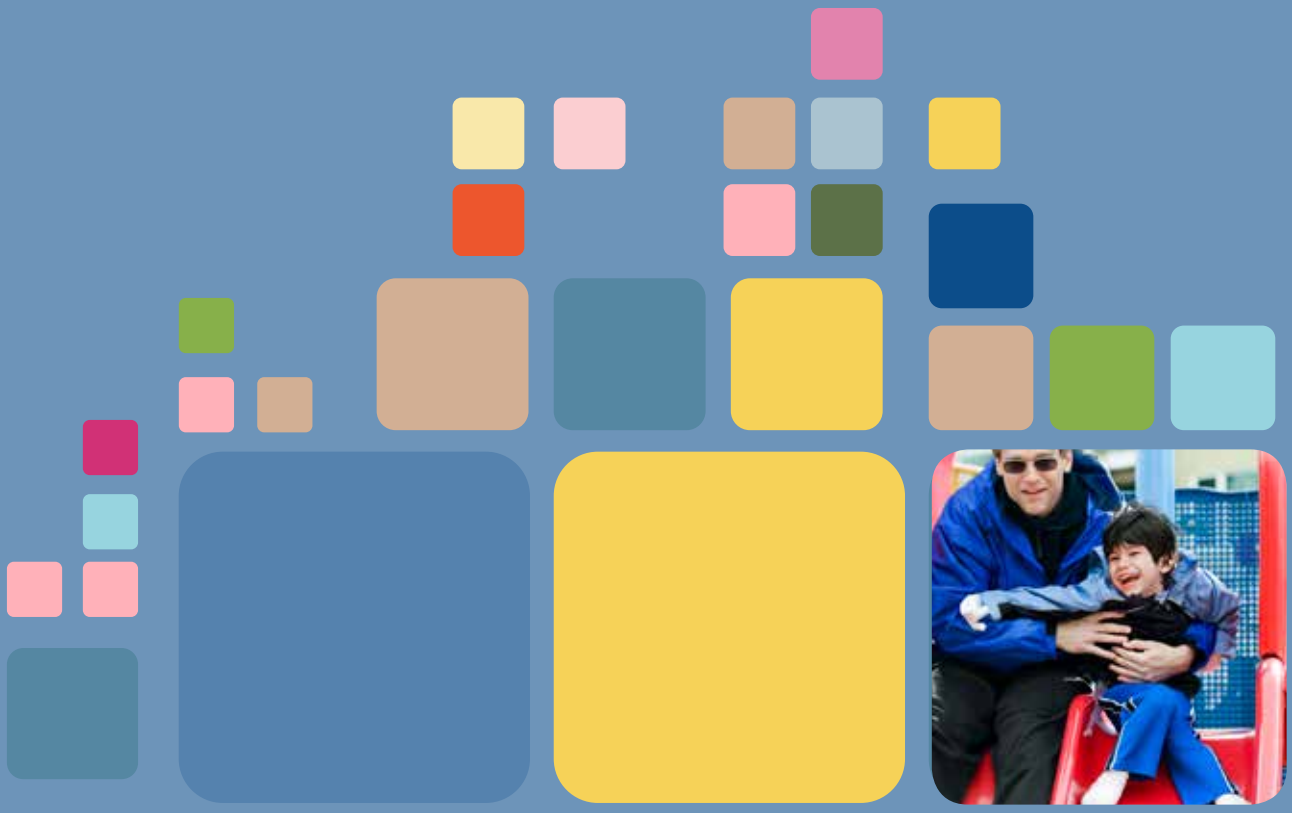
1.4 Research governance

An advisory group was established to augment the quality of the study. The advisory group played a vital role in the research process. Our Research Advisory Group included: Liam Casey, Cork City Council; Julie Helen, Inclusion Ireland; Áine O' Sullivan, Disability Federation of Ireland; Jim Harrison, Cork School of Architectural Education, UCC/ Cork Institute of Technology; Ron de Bruin, Silva Build (playground provider); Aoife O' Sullivan, Murphy's Farm playground development parent committee (Bishopstown, Co. Cork); and, members of the UCC research team, namely Dr. Helen Lynch (PI), Alice Moore, Dr. Claire Edwards and Linda Horgan. The Research Advisory Group contributed to all stages of the research process including establishment of the project, identification of parks and playgrounds for analysis, facilitation of recruitment, advice on report content and dissemination plan.

1.5 Structure of the report

This report is structured into ten chapters:

- Chapter 2 outlines the methodology underpinning the research.
- Chapter 3 outlines the findings from the review of literature and policy.
- Chapter 4 outlines the findings from the analysis of guidelines for inclusive playgrounds.
- Chapter 5 outlines the findings from step 1 of the PlayAUDIT: play value.
- Chapter 6 outlines the findings from step 2 of the PlayAUDIT: Universal Design.
- Chapter 7 outlines findings from step 3 of the PlayAUDIT: Usability.
- Chapter 8 presents a summary of the findings from the PlayAUDIT.
- Chapter 9 outlines the findings from interviews with Cork City Council providers.
- Chapter 10 provides sample recommendations for consideration in applying a Universal Design approach to playground design.
- Chapter 11 draws conclusions and makes recommendations for future practice in providing for diverse users in public parks and playgrounds, as a means of progressing lifetime communities through Universal Design.



Methodology

2

2. Methodology

2.1 Research design

The overarching aim of this research was to conduct a qualitative study to explore how Universal Design principles relate to outdoor parks and playgrounds. The study adopted a mixed methods approach, combining five distinct, yet interrelated phases. These included:

1. **Phase 1: Review of literature and policy**

   The first phase of this research included desk-based research. This included a review of international research literature on progressing lifetime communities in parks and playgrounds through Universal Design. The review also included an analysis of international and national rights, policy, and standards as they related to parks, playgrounds, and Universal Design.

2. **Phase 2: Analysis of guidelines for inclusive playgrounds**

   The second phase of this research included a review of national and international guidelines for the design and provision of playgrounds from a Universal Design approach.

3. **Phase 3: Developing the PlayAUDIT**

   The third phase of this research involved the development of a PlayAUDIT (Play Assessment of Universal Design and Inclusion Tool). The PlayAUDIT consists of three tools to assess the Play Value, Universal Design, and Usability of parks and playgrounds. This was developed in the absence of an existing tool to support the research objective of conducting Universal Design audits for playgrounds.

4. **Phase 4: Conducting the PlayAUDITs**

   The study was designed as a case study of one local council area (Cork City Council), which served as the location for park and playground identification. The fourth phase of this research involved auditing parks and playgrounds using the PlayAUDIT tool. This included auditing the parks and playgrounds for play value and Universal Design. In addition, qualitative research with children and their adult caregivers was conducted to audit the usability of the parks and playgrounds..

5. **Phase 5: Exploring the perspectives of park and playground providers**

   The fifth phase of this research involved qualitative research with those involved in the provision of parks and playgrounds in the selected location (Cork City Council).

2.2 Ethics

Ethical approval for this research study was granted by the Social Research Ethics Committee (SREC), University College Cork, in October 2017.

2.3 Methods

2.3.1 Phase 1: Method for identifying relevant literature for review

The literature review process began by identifying a keyword search strategy, as a means of adopting a systematic approach for searching the literature. The search strategy was based on the research focus: to identify evidence on intergenerational perspectives and Universal Design regarding accessing and using public parks and playgrounds. A total of 8 searches were completed before the identification of the final keyword search strategy. Keyword search strategy Version 9 (see Appendix A) was applied to several social sciences, health, and education databases, including: PubMed, EBSCO host and Scopus. A team of two researchers reviewed the article titles and abstracts independently, to assess the eligibility of individual articles. Articles that did not relate to community parks and playgrounds, or focused on specific aspects such as homelessness or toxicology were excluded (see Appendix B).

2.3.2 Phase 2: Method for identifying relevant guidelines for review

As a means to identify guideline documents for analysis an electronic web-based search was completed. Search terms included playground; play space; community; accessible; inclusive; universal design. In addition, a hand search of grey literature was completed to identify further guidelines that may not have shown up in the electronic search. Guidelines that focused on the design of accessible, inclusive, and universally designed community playspaces were selected for inclusion in the review phase (Refer to Appendix C for further details on inclusion and exclusion criteria).

2.3.3 Phase 3: Method for developing the PlayAUDIT

Due to a lack of pre-existing Universal Design audits for playgrounds, the third phase of this research project involved the development of the PlayAUDIT (**Play**ground **A**ssessment of **U**niversal **D**esign and **I**nclusion **T**ool). This PlayAUDIT development originally began in 2016 when the authors of the original Audit tool (Lynch, Moore and Prellwitz) worked to integrate items from many tried and tested checklists that aim to audit playgrounds and playspaces. The final draft tool (Version 5) was distributed to other sites for validation: Iceland, Netherlands, Switzerland and Sweden, and feedback integrated and utilised alongside findings from the review of guidelines to amend the final audit tool items. The PlayAUDIT is now comprised of three Audit tools that assess: Play Value, Universal Design and Usability.

Note: This development of the PlayAUDIT tool is outlined fully in Appendix D. A brief summary is provided below.

2.3.3.1 Play value audit tool

- This Play Value Audit tool was devised in recognition that Universal Design audits commonly capture elements of the physical built environment without capturing the experiences of the space: namely the fun and play value. The purpose of this tool, therefore, was to capture the play affordances within the play space. The development of this tool was an iterative process, and a pilot was completed to assess the usability of the tool. The finalised version of the Play Value audit tool (Version 6) was used for this study.

2.3.3.2 Universal Design audit tool

- The aim in developing the Universal Design audit tool was to move beyond minimum standards, and incorporate best practice guidelines as proposed by the CEUD/NDA. Specific questions were listed as "items" to reflect the current approach adopted by the CEUD/ NDA. The development of this tool was an iterative process, and a pilot was completed to assess the usability of the tool. The tool was further amended with the expertise of an occupational therapist experienced in environmental audits. The finalised version of the Universal Design audit tool (Version 11) was used for this study.

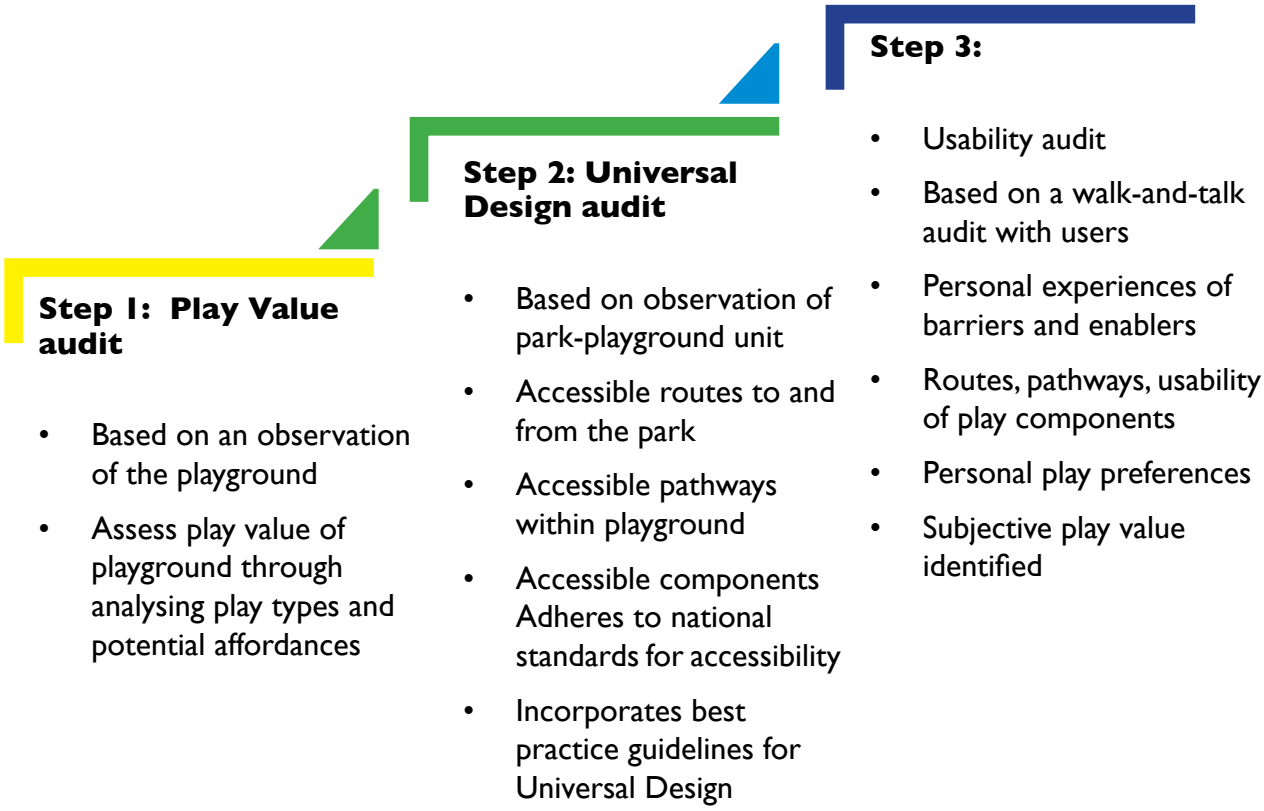
2.3.3.3 Usability audit tools

- The Usability audit tools (child and adult versions) were developed to assess the usability of the playground based on knowledge that while a playground may meet accessibility criteria, it may not be functional/usable. Thus, the purpose of this tool is to include the user's voice in auditing a space. The finalised version of the Universal Design audit tool (Version 3) was used for this study.

2.3.4 Phase 4: Method for conducting the PlayAUDITs

The approach taken for auditing playspaces is guided by the NDA Guidelines for Access Auditing of the Built Environment (O'Herlihy, 2005). This document outlines a clear structural approach to conducting audits in a systematic way. In all cases, it is essential that the access auditor has received access audit training. Typically, an access audit is concerned with ensuring the environment is compliant with national accessibility legislation and standards. In addition, accessibility audits commonly deal with safety standards. However, in the context of playgrounds, current EU Standards apply and are used to assess and ensure safety standards are applied., So, for this study, a Universal Design audit was designed (PlayAUDIT) that supports the identification of design features that are playable, accessible and usable for the greatest possible range of users. For this research project, the PlayAUDIT involved a three-step process outlined in Figure 2.1.

Figure 2.1: Three-step approach for conducting the PlayAUDIT



2.3.5 Phase 5: Method for exploring the perspectives of park and playground providers

As a means to explore the perspectives of park and playground providers, a series of questions were determined from consensus among the research team. These questions formed the basis of the semi-structure interview guide (See Appendix E).

Note: Further guidance on using the PlayAUDIT tool is offered in Appendix D.

2.4 Recruitment

2.4.1 Identification of playgrounds

Five park-playground units provided by Cork City Council were selected for inclusion in this project, based on their different characteristics, including locations within the city, size, and amenities. With the exception of Fitzgerald's park, all other parks are located in socially disadvantaged areas. Table 2.1 introduces the 5 park-playground units in more detail.

Table 2.1: Introducing the park-playground units

Park-playground unit 1: Fitzgerald's park.

Fitzgerald's Park at Western Road is an 18-acre city park located on the banks of the River Lee. The park is close to the city centre and can be accessed by public transport, by car and/or on foot. The park comprises walkways, benches, lawns, seasonal bedding areas, walkways, pond, fountain, sculptures, bandstand, café, and a public museum. The park also comprises a large playground which aims to be all-inclusive. This was installed in 2015 to replace the previous playground. The playground consists largely of wooden structures that cater for children of different ages. The main structure in the playground resembles a ship to acknowledge Cork's Viking heritage.

Figure 2.2: Ariel photograph of Fitzgerald's park

Park-playground unit 2: Lough Mahon park.

Lough Mahon Park at Ringmahon Road is a local park located in Mahon on the south-eastern side of Cork. The park is located in a housing estate and is within close proximity to the local primary school, shops and bus routes. The park comprises walkways, a multi-user games area (basketball and soccer) and a playground. The playground consists of traditional metal play structures that cater for children of different ages. The formal section consists of walkways, benches, and large green open spaces.

Figure 2.3: Ariel photograph of Lough Mahon park

Park-playground unit 3: Tory Top park.

Tory Top Park at Tory Top Road is a 7.5-acre neighbourhood park located in Ballyphehane, a suburb in the south of Cork. The park is located along a busy roadway linking local schools, shops, and community amenities. The local community centre is located within the park. The park comprises walkways, a playing pitch, a multi-user games area (soccer and basketball), a small skate park and a playground. The playground consists of traditional metal play structures that cater for children of different ages. The formal section consists of lawns, seasonal bedding areas, walkways, benches, and a bandstand.

Figure 2.4: Ariel photograph of Tory Top park

Park-playground unit 4: Gerry O Sullivan park.

Gerry O Sullivan Park at Colmcille Road is a 6-acre neighbourhood park located on the borders of by Knocknaheeny, Gurranabraher and Churchfield in the north-side of Cork City. The park is located on a large open site, between main roads, and is located within close proximity to local schools and an allotment area. The park is enclosed by perimeter railing, and comprises walkways, a playing pitch, a multi-user games area (soccer and basketball), and a playground. The playground consists of traditional metal play structures that cater for children of different ages.

Figure 2.5: Ariel photograph of Gerry O'Sullivan park

Park-playground unit 5: Glenamoy Lawn park.

Glenamoy Lawn off the Old Youghal Road is a local park located in the north-side of Cork City. The park is located in a housing estate and is within close proximity to the local primary school, shops and bus routes. The park is enclosed by perimeter railing and contains park furniture, soft and hard landscape elements, with a children's playground. The playground consists of traditional metal play structures that cater for children of different ages.

Figure 2.6: Ariel photograph of Glenamoy Lawn park

2.4.2 Recruiting child-adult units

Child-adult units were recruited through contact with local schools, community groups, and disability organisations. The following inclusion criteria applied:

1. Each child-adult unit consisted of a minimum of one child and one adult who typically accompanied the child/young person to the park-playground unit (for example, parent, grandparent, caregiver).
2. The child-adult unit were users of a minimum of one of the five park-playground units included in this project.

Universal Design places human diversity at the centre of the design process, and as such the aim of this study was to recruit a diverse range of users. Diverse users included people of different ages, sizes, sexes, and abilities.

Recruitment of child-adult units was a slow process in order to capture as much diversity as possible considering our small sample size. Recruitment took place between November 2017

and April 2018. A total of 8 child-adult units (8 adults and 11 children) took part in the walk-and-talk usability audits. Moreover, one adult and one child took part in a usability audit in their home due to unfavourable weather conditions. In addition, one adult took part in an interview (usability audit) as she and her children no longer use the park and playground. The decision to include this participant was based on the knowledge that this non-user was unable to use the local park and playground due to inaccessibility. It was deemed important to include this participants perspective to add depth of perspectives to the study. In total, 22 user participants consented to engage in the usability audits (see Appendix F for further details on participants). Appendices G and H provide the participant information letters and consent and assent forms.

In addition, two focus groups were also conducted. The first focus group consisted of five adults and took place at a school (3 of whom agreed to take part in the usability audits). The second focus group consisted of five children (2 of whom were included in the usability audits) and took place at one of the five parks and playgrounds. The focus group offered an additional means of engaging with local users and community groups. Appendix I provides further details on the focus group participants.

2.4.3 Recruiting park and playground providers

A staff member of Cork City Council was selected as a point of contact for the project. An email was distributed via this contact, inviting providers to participate in an interview. In total, four providers agreed to take part. Providers included persons involved in varied aspects of parks and playground provision, including management, design and development, supervision, and maintenance. Appendices J and K provide the participant information letter, consent form and sample interview guide (Appendix E).

2.5 Data collection

2.5.1 Data collection for literature and policy review and guideline analysis

The data collection process for the literature, policy and guidelines involved implementing the search methods (outlined above in 2.3.1 and 2.3.2), to identify and screen relevant research papers and documents for analysis.

2.5.2 Data collection for the PlayAUDITs

Each park-playground unit was audited in a systematic way, to determine the three elements required for PlayAUDIT (see Figure 2.1). This included the three-step approach:

- **Step 1:** Play Value audits of the five playgrounds were completed between February and March 2018, by occupational therapists that have specialist knowledge of play. The length of the audits varied between 1 and 1.5 hours, depending on the size of the park and playground.

- **Step 2:** Universal Design audits of the five selected park-playground units were completed between December and February 2018 by an occupational therapist experienced in environmental auditing. The length of the audits varied between 1 and 2 hours, depending on the size of the park and playground.
- **Step 3:** The walk-and-talk usability audits were conducted with 8 child-adult units in the five park-playground units between November 2017 and April 2018. While the goal was to conduct walk-and-talk audits in the park and playground, this was not possible for one child-adult unit due to poor weather conditions, which made the park unusable during this phase of the study. Therefore, one usability audit was completed in a user's home.. One adult that no longer used the park and playground was interviewed (usability audit) in a school. Two focus groups were conducted with 10 other child and adult users. Two researchers worked with the child-adult units. One researcher asked the child(ren) questions and one researcher asked the adult questions. Children and adults were asked a series of questions. Field notes were taken. The average length of the walk-and-talk audits was 1 hour.

2.5.3 Data collection for exploring the perspectives of park and playground providers

- In addition, semi-structured interviews were conducted with providers responsible for the design and provision of park-playground units in the Cork City region between December 2017 and February 2018. Each provider was interviewed at a time and location of their choice. Providers were asked a series of questions (see Appendix E). Providers were asked specifically about designing for intergenerational use and the relevance of Universal Design in park and playground provision. Interviews were voice recorded and transcribed verbatim. The average length of the interviews was 40 minutes.

2.6 Data analysis

Due to the mixed method design of this research, various methods of analysis were required. For the literature, each abstract was reviewed and categorised until nine core categories were identified. These categories formed the literature analysis phase. For the document analysis, content analysis was applied based on the 7 principles of Universal Design, play value and play forms (types) as a unit of analysis. Using the PlayAUDIT data, each park and playground was analysed using methods such as the play value rating scale, charting, listing and counting of components and design features. Interviews were transcribed and a qualitative thematic analysis approach was used to identify key categories and themes, informed by Braun and Clarke (2006).

2.7 Conclusion

This chapter has outlined the research methodology adopted in this study. The research design, sample recruitment, data collection and data analysis methods were discussed. The remaining chapters will present and discuss the findings generated by this research.

Findings: Review of literature and policy

3

3. Findings: Review of literature and policy

Note: This research project was informed by a detailed review of literature and policy which is outlined fully in Appendix L. A brief summary is provided below.

3.1 Policy for parks, play and playgrounds

All children (i.e. people under 18 years) have a right to play, rest and leisure and persons with disabilities should have full enjoyment of this right on an equal basis to others (UNCRC, 1989; United Nations Convention on the Rights of Persons with Disabilities [UNCRPD], 2006). According to international frameworks for human rights, children should have both space and opportunity to play outdoors unaccompanied in diverse and challenging physical environments, along with opportunities to experience, interact with and play in natural environments and the animal world (CRC, 2013). The CRC (2013) specifically states that accessible and inclusive environments must be made available for all children for their rights to be met and argue for the need to put in extra efforts to help children with disabilities realise their rights. Specifically, Universal Design is presented as the means for addressing environmental barriers, to promote inclusion for all, including persons with disabilities (CRC, 2013; UNCRPD, 2006). This commitment to Universal Design is evident in our Irish National Policy for play provision (NCO, 2004).

3.2 Barriers to inclusion in community environments

Despite this consensus on inclusion in international policy, outdoor playspaces have been identified as places of exclusion, with numerous studies showing that children with disabilities do not have equal access to community play areas (Tamm and Skar, 2000; Prellwitz and Skar, 2006; Prellwitz et al., 2001; Burke, 2013). Children with impairments are often excluded from participating in play, especially in community playgrounds (Prellwitz et al., 2001; Stanton-Chapman and Schmidt, 2016). In a scoping review of 14 studies of playground usability and accessibility, Moore and Lynch (2015) identified specific social, physical, and political barriers for children in using playgrounds. Examples of barriers included: the use of sand for ground surface cover; the need for adults to help, rather being left to play freely; and, poor design features (such as the size or shape of equipment resulting in a lack of opportunity to socialise, and feeling unwelcome or stigmatised (Ripat and Becker, 2012; Talay et al., 2010) (Prellwitz and Skar, 2007; Prellwitz et al., 2001). In particular, a lack of a user's perspective was noted, as well as few guidelines for playground providers on designing for inclusion (Moore and Lynch, 2015).

3.3 Benefits of parks and playgrounds

Aside from being a human right, why is access to outdoor parks and playgrounds so important? Green spaces facilitate social connections, community attachment and neighbourhood satisfaction in many urban settings (Arneberger and Eder, 2012; Cloutier et al., 2014; Kazmierczak, 2013; Zelenski et al., 2015). The neighbourhood green space is a key setting for outdoor play. Successive reviews of evidence in the UK and other studies have detailed the value

of outdoor play in terms of

- Increasing children's physical/cardiovascular fitness
- Improving mental health and self-esteem, and reducing stress
- Improving cognitive/communicative development
- Improving socialisation and citizenship
- Environmental education and sense of place
- Skills development and
- Wider, multigenerational social bonds and community conviviality

(Sallis et al., 2000; Children's Play Council, 2001; Cole-Hamilton, Harrop, and Street, 2002; Well and Evans, 2003; Department for Culture Media and Sport, 2004; British Heart Foundation, 2005; Brussoni et al., 2015).

Typically, municipalities develop urban green spaces to provide for local communities, especially in urban areas where public spaces are under threat. These forms of social spaces are known to be important for residents to develop social identities, a sense of community and belonging. Urban green spaces provide opportunities for: tourism, recreation, exercise, relaxation, education, encountering nature, spirituality, self-expression, socialising, being with companion animals, escaping the city, and for solitude, personal development, and to earn a living (Hayward, 1989; McIntyre et al., 1991; Loukaitou-Sideris, 1995; Manning and More, 2002). Park activities are diverse, spanning both active recreation(for example, walking, riding bicycles, running, jogging, playing and playing sports) and passive recreation (for example, sunbathing, picnicking, painting, fishing, photography, reading, studying nature, and people-watching) (Hayward, 1989). Although rites of passage occur in parks also (for example, weddings, birthday parties) they are infrequently mentioned in the literature. So, access to outdoor community parks and opportunities to engage in regular outdoor play practices are of paramount, wide-ranging importance for children, young people, and families. Wherever they live, all children and families should have easy access to spaces and facilities where they can play freely, and free of charge.

3.4 Evidence-informed Universal Design for parks

The following studies represent examples of the kinds of research that have been conducted in municipalities that can inform design for intergenerational use of parks, from a Universal Design perspective:

- Cunha de Oliveira, Costa, and da Costa Ireland (2012) completed a systematic analysis of two public parks in Brazil used by older adults. They used structured observations and surveys of older adults to identify ergonomic design features. They suggest the use of contrasting colours on flooring and benches, graphics in addition to words on signs, shorter paths, benches designed for wheelchair accessibility and social interaction, part-shade/part-sun settings to allow choice, and intermediate or low lighting levels to avoid glare.

- Researchers have focused on observing the play and recreational patterns of seniors, adults, teenagers, and children in parks. For intergenerational spaces, researchers found that there is a need to include amenities such as shelter, water, toilet, and more frequent rest areas (Besenyi et al., 2013; Orsega-Smith et al., 2004). Parents in particular have emphasised the need for bike paths, picnic facilities, clean toilets, shade and open spaces, and variety in play equipment (Veitch et al., 2006). In addition, the presence of vendors increases a sense of safety, while park users report feeling unsafe when parks contain elements such as construction work, or threatening groups of people (Cohen et al., 2016).

3.5 Evidence-informed accessible design for playgrounds

Research has been conducted on accessibility of playgrounds also. For example, in the USA, municipalities typically approach accessibility through application of the ADA Standards for Accessible Design (ADA, 2010): organised around accessible routes, accessible surfaces, and play components (both ground-level and elevated). The ADA Standards for Accessible Design provide recommendations on a range of provisions such as transfer systems (which are design features that enable a wheelchair user to move from the chair to the play component), surfacing, and the ratio of elevated to ground-level components that are required to be on an accessible route. In one study of 57 parks with playgrounds, researchers found that only 5% had accessible routes and surfaces, while 45% had adequate ramps and transfer systems (Olsen and Dieser, 2012). These results identify further barriers in overall provision, as children could not access the transfer systems provided due to the poor accessibility of the routes and surfacing. They identify the crucial need to have clear policy on inclusive playgrounds in place.

3.6 Traditional approaches for playground design and provision

For the most part, two approaches have been commonly applied in the design and provision of public playgrounds (Burke, 2013). These include: (a) conventional design, and (b) compensatory approaches. Conventional design uses normative guidelines (for size and ability) that fail to consider that the needs or requirements of some people may not fall within these narrow guidelines. Compensatory approaches involve retrofitting an existing playground, or adding a segregated section to solve inaccessibility (Centre for Universal Design, 2008; Connell and Sandford, 1999). Although both types of compensatory approaches recognise that persons with impairments need to be accommodated in order to use objects and environments, both approaches are inappropriate ways to design for inclusion. Neither takes into account the need to design for varied users from the outset. This has been attributed to a lack of knowledge in how to design for inclusion. Indeed, a number of researchers have proposed that this lack of knowledge and understanding among playground providers, planners and designers is perpetuating exclusionary practices (Hudson et al., 2000; Prellwitz et al., 2001; Talay et al., 2010; Olsen and Dieser, 2012; Woolley, 2013).

3.7 Playground standards and safety

Playground standards exist in many countries and are an established way to ensure good practice in playground provision (see Appendix L for detailed overview). However, they are primarily focused on safety. For example, public playground equipment and environments in Ireland must meet European safety standards (I.S EN1176 and I.S. EN1177) and are independently inspected annually for insurance purposes under Royal Society for the Prevention of Accident regulations (RoSPA) (Kerrins et al., 2011). These international standards are informed by research evidence. Overall, studies show that injuries from playgrounds were high in comparison to sports for example, but when the time spent in each activity is compared, injuries from playgrounds are lower in incidence than for sports (Brussoni et al., 2015).

From this review of policy and standards, there are no specific standards for Ireland. There are no technical guidance documents in relation to design of amenity spaces apart from those published by the CEUD/NDA[1]. There are also housing and building regulations that provide some guidance for accessibility[2][3]. However, these do not specifically address public parks and playgrounds.

While safety standards play an important role in ensuring playspaces are safe environments, there are also many arguments against risk-aversion. Kerrins et al. (2011) note that risk-averseness displayed by local authorities can result in playgrounds providing insufficient stimulation or challenge. In such cases, the outcomes of over regulation of safety can result in the production of KFC playgrounds – (Kit, Fence, Carpet) which was the term coined to denote playspaces that have limited creativity or variation across countries (Woolley, 2007; Woolley and Lowe, 2013). The challenge in playground design is to ensure play value is the central goal, alongside best practice in safety standards and Universal Design.

3.8 Involving users in the design process

This review also identified that limited research exists on playgrounds from the perspective of children and young people, with and without impairments, and their families (Barron et al, 2017). International studies have primarily reported on the opinions of adults (Prellwitz et al., 2001), while children have rarely been asked about their experiences. In Ireland, in the last review of play provision for children with impairments, no Irish data on play from a children's perspective were identified (Webb, 2003). Despite the promotion of play for children with diverse needs through the National Play Policy (NCO, 2004), for children with diverse needs, a range of barriers to play remain. In Ireland, there are still few playgrounds that are universally designed, no national guidelines on best practice for including children and their families in designing for

[1] Building for Everyone - A Universal Design Approach, Booklet 7 Building Types http://universaldesign.ie/Built-Environment/Building-for-Everyone/)

[2] For example, Quality Housing for Sustainable Communities (Department of the Environment, Heritage and Local Government, 2007)

[3] Building Regulations: Technical Guidance Document M, (TGD M, 2010)

play, nor are there specific guidelines for play designers and providers, on how to operationalize a Universal Design approach when planning public playgrounds for communities.

3.9 Moving from exclusion to inclusion

So how do we move beyond providing playgrounds that reinforce exclusionary practices to providing playgrounds from a Universal Design approach? Researchers have identified that the way forward is three-fold:

3.9.1 Increasing the knowledge base of playground providers, planners and designers

Researchers have identified that there is a need for playground providers to increase their knowledge and understanding of person with disabilities. Specifically, Stafford highlights the importance of recognising human diversity and breaking down spatial barriers through responsive planning and design (Stafford, 2017). Moreover, with the adoption of the UNCRPD (2006), Stafford (2017) notes that an increased demand for universal design, and user-friendly planning, should raise understanding and fundamental commitment to inclusion amongst built environment professionals.

3.9.2 Involving children in the design process of playgrounds

In recognition that playgrounds are often designed *for*, but not *with* children (Gallagher, 2004; Thomson and Philo, 2004; Walsh, 2006), researchers have called for the inclusion of children's views in designing playgrounds (Moore and Lynch, 2015; Woolley, 2013). While researchers have advocated the importance of listening to children's views, they tend to stop there and it is not clear whether children's views have been used to facilitate change (Pearson and Howe, 2017).

3.9.3 Planning and designing playgrounds that embrace Universal Design principles

There is an emerging consensus on the need to embrace Universal Design principles in the planning and design of playgrounds (Burke, 2013; CRC, 2013; Moore and Cosco, 2007; Moore and Lynch, 2015; Prellwitz and Skar, 2007; Stout, 1988; Woolley, 2012). In addition, General Comment 17 of the Convention on the Rights of the Child specifically states that accessible and inclusive environments must be made available for all children, in order for their play rights to be met (CRC, 2013). Yet despite this recognition, few studies have explored how to apply Universal Design in playground design, and few guidelines exist on integrating play value with a Universal Design approach.

3.10 Conclusion

To conclude, international literature recognises that outdoor spaces such as parks and playgrounds are important sites for community integration, belonging, social cohesion, health and wellbeing. However, from the review of research, core evidence and gaps in knowledge were identified:

- No studies were found that explored the application of Universal Design to the design of playgrounds, for effectiveness or impact on use;
- Few studies have explored intergenerational use of parks and playgrounds from a diverse-users' perspectives. The majority of studies consisted of adult-users, or child-users, yet children commonly use parks and playgrounds in the company of adults; and,
- There is no research to date from Irish children with disabilities, on their experiences of community inclusion in parks and playgrounds.

Researchers have advocated universally designed playspaces as an ideal measure to tackle accessibility inequalities (Burke, 2013, Woolley, 2013), therefore offering greater opportunities to participate in outdoor playspaces. Thus, the provision of universally-designed outdoor playspaces is an important political and societal objective, and a priority that needs to be addressed (Burke, 2013) by provision of design guidance from a Universal Design approach, to maximise opportunities for all children to participate in outdoor playspaces.

Findings: Analysis of guidelines for inclusive playgrounds

4

4. Findings: Analysis of guidelines for inclusive playgrounds

4.1 Introduction

The second phase of the research consisted of an analysis of existing national and international guidelines for the design and provision of playgrounds that incorporate the principles of Universal Design. The aim of this phase was to identify general core principles for the successful design of playspaces. Specific objectives included:

- Identifying core principles of Universal Design for parks and playgrounds;
- Establishing an integrative model that is informed by evidence; and,
- Informing the development of evaluation tools for auditing playgrounds for play value, accessibility and usability.

4.2 Review and analysis of guideline documents

A combined total of 21 guideline documents were identified and considered eligible for review. These included guideline documents originating from the United Kingdom (10), United States of America (5), Australia (3), Ireland (2) and Hong Kong (1) (See Table 4.1). These guidelines come from a number of sources, including: non-governmental and not-for-profit organisations; commercial manufacturers of playground equipment; and, from implications of research studies, both formal and informal. There is a consistent aim in these guidelines to focus attention on planning and design considerations for 'accessible' and 'inclusive' playspaces. All offer ideas for planning new playgrounds or modifying existing playgrounds. Using content analysis, these inclusive playground guidelines were analysed from a Universal Design perspective, to explore how UD is evidenced in guidelines, and how a UD approach has been developed internationally. In addition, the representation of play value and play forms within these guidelines was analysed. The aim was to identify general core principles for successful design of playspaces.

Table 4.1: International recognised guidelines for the design of 'accessible' and 'inclusive' playspaces

Country of origin	Guide
Ireland	1. Access inside out: A guide to making community facilities accessible (DESSA, 2005)
	2. Play for all: Providing play facilities for disabled children (DESSA, 2007)
Europe (UK)	3. Developing accessible play space: a good practice guide (Dunn, Moore, and Murray, 2003)
	4. Can play, will play: disabled children and access to outdoor playgrounds (John and Wheway, 2004)
	5. Design of play areas (RoSPA, 2004)
	6. Inclusive play (The Sensory Trust, n.d.)
	7. Design guidance for play spaces (Houston, Worthington, and Harrop, 2006)
	8. Design for play: A guide to creating successful play spaces (Shackell, Butler, Doyle, and Ball, 2008)
	9. Inclusive design for play: Mainstreaming inclusive play good practice briefings (Play England and KIDS, 2009)
	10. Playspaces: planning and design (Play Wales, 2012)
	11. Developing and managing play spaces (Play Wales, 2016)
	12. Creating accessible play spaces: a toolkit (Play Wales, 2017)
Australia	13. The good play space guide: "I can play too" (State of Victoria, 2007)
	14. Inclusive playspace guidelines: The principles for inclusive play (Touched by Olivia, 2012)
	15. Space for active play: Developing child-inspired play space for older children (Jennings and Carlisle, 2013)

USA	16. EveryBODY plays! (PlayCore, GameTime, and Utah State University, 2008) 17. Playground accessibility – ADA compliance (Assistive Technology Partners, n.d.) 18. Me2: 7 principles of inclusive playground design (PlayCore and Utah State University, 2010, 2016) 19. Play for All Guidelines: Planning, design and management of outdoor play settings for all children (Moore, Goltsman, and Iacofano, 2nd ed. 1992) 20. Inclusive Play Design Guide (Inclusive Play Design Guide Work Group, Playworld systems, 2012)
Hong Kong	21. Inclusive Play Space Guide (Playright, 2016)

The review identified a number of findings. These included:

- The inconsistent and interchangeable use of the terms accessibility, inclusion and universal design;
- The varied application of the principles of Universal Design, if considered at all. Even when a Universal Design approach was mentioned, the 7 principles were not typically outlined; and
- The prioritisation of play for child development rather than play for play's sake.

More specifically, from a design perspective, a number of core themes were frequently cited across the guideline documents, and identified as emerging trends in more recent publications. These included:

a) A shift in focus to play as a social experience as much as a physical one highlights the need to design and develop playspaces that are welcoming and inclusive;

b) A shift away from designing for children with specific needs to providing Universal Design playspaces that cater for intergenerational use;

c) The assertion that there is no one way to provide Universal Design playspaces suggests the need to develop playspaces that are specifically designed for their location and to meet the needs of the community it serves;

d) The 'cookie cutter' playgrounds as sets of fixed people-built kit equipment is being challenged by proponents of more natural, challenging and diverse spaces;

e) A shift in focus from risk aversion to a more positive approach to risk and challenge highlights the need to develop national and local policy on this issue;

f) A commitment to including users in the design process but with little detail on best practice in how to do this authentically;

g) The principles of Universal Design are frequently cited; however, few guidance documents address their application in playspaces; and

h) The provision of Universal Design playspaces is a concern that requires capacity building through inter-professional learning and working

The analysis reflected the difficulties in establishing good practice in playground design and development from a guideline analysis. This is due to the fact that the information provided is disparate and a range of different professionals were involved in the guideline development. Further analysis therefore was warranted of the origins of Universal Design as it has evolved in relation to playgrounds.

4.3 Critical analysis of the application of Universal Design to playgrounds

In this guideline review of playgrounds, the term ***Inclusive Design*** was often used interchangeably with ***Universal Design***. However, Universal Design is underpinned by seven foundation principles that serve as a guide for ensuring products or environments can be used by all potential users without segregating or stigmatising anyone. These principles are defined and explained in Appendix M.

While the principles are useful, they offer only a starting point for the Universal Design process. By its nature, any design challenge can be successfully addressed through multiple solutions. Choosing the most appropriate design solution requires an understanding of, and negotiation among, inevitable trade-offs in accessibility and usability. In the UK, the Commission for Architecture and the Built Environment (CABE) published a document that identified five core principles of inclusive design. These included: placing people at the heart of the process; diversity and difference; offering choice and exceeding minimum technical specifications; flexibility of use; and, convenient and enjoyable users experience. The goal of these principles is to ensure good design that results in inclusive, responsive, flexible, convenient, accommodating, welcoming and realistic design solutions (CABE, 2006). The CABE approach is presented here, as reported by a leading consultant and researcher on inclusive play:

> '*Universal Design is a bit of a dilemma as (it seems to me) the principles can feel quite obscure compared say to CABE's Universal Design principles which uses more user-friendly language*' (Theresa Casey, personal communication, January 2018).

This comment reflects the complexity of applying Universal Design to public playgrounds. This is due to the nature of play and the need to provide for risk and challenge. The challenge is how to apply Universal Design while not diminishing the play value. For example, there is a tension between providing challenging play opportunities, and low physical effort; or having challenging play opportunities while also being simple and intuitive to use. So, although Universal Design is internationally recognised as the way forward in providing equal opportunities for all children in community play contexts (as outlined in 3.1), it is perhaps not surprising that few guidelines provide solutions to how to operationalise a Universal Design approach.

From our analysis, one organisation has progressed most to date in the development of a strong knowledge-base around Universal Design and playgrounds: PlayCore and Utah State University in the USA. Playcore and Utah State University have collaborated over many years to develop their ideas and formulate their Me2® 7 principles of inclusive playground design. The Me2® 7 principles of inclusive playground design are guided by the 7 principles of Universal Design but tailored more specifically to incorporate a focus on play as a central concern (see Appendix N).

In our analysis of PlayCore and Utah State University's work, some of the Universal Design principles are less apparent, and do not seem to equate with the underpinning principle so clearly. For example, principle 3 (simple and intuitive use) is translated into being smart, while principle 5 (perceptible information) is translated to being independent. The result is a proposed application that remains obscure to some extent. While organisations such as National Center on Health, Physical Activity and Disability (NCHPAD) have presented an online application of UD to playground design also (see Appendix O), no other guidelines were identified that had attempted to outline a UD approach.

4.4 Findings

4.4.1 Adapting the 7 principles of Universal Design for playspaces

The first aim of this project was to review evidence and guidelines for Universal Design as it applies to parks and playgrounds. An outcome of this review, was an analysis of the 7 principles of Universal Design as they can apply to playspaces, with a concurrent focus on a play value perspective. The term 'play value' is used to describe the value that an environment, object or piece of equipment brings to children's experience of play (Woolley and Lowe, 2013). Something may be described as having high play value if children are able to play with it in many different ways, integrate it into their own play or use it to expand or elaborate on their own ideas and actions (Playright, 2016, p. 12).

The final synthesis of this part of the review of guidelines results in the following proposal (Table 4.2). Following detailed analysis of the 7 principles of Universal Design across these guidelines, the research team extrapolated parallel play value principles. The 7 principles of Universal Design are tailored in relation to playspaces; play value principles are equally outlined

that need to be considered in tandem. These play value principles were derived from a detailed analysis and synthesis of content, and group consensus among the research team.

Table 4.2: Tailoring the 7 principles of Universal Design for playspaces

Principle 1: Equitable use It is neither possible nor desirable to make every piece of a playspace 100% accessible and usable when we consider people's different ages and abilities. However, this does not mean that separate design solutions should be provided (especially for persons with disabilities) as this results in segregation and exclusion. Playspaces need to be designed so that all users can access, use, and be included in a non-stigmatising way. Play value principle: There is a need to design for challenge and complexity that caters for people of different ages and abilities, resulting in equality of experience.
Principle 2: Flexibility in use Community playspaces are accessed and used by diverse user groups (people of different ages, abilities, sizes, gender, socioeconomic background, race, ethnicity, culture). As such, playspaces need to be flexible in order to cater for diverse user groups. Playspaces need to be designed so that all users can access and use the space according to their individual preferences and abilities. Play value principle: There is a need to design for variety in order to cater for people's individual play preferences and play styles.
Principle 3: Simple and intuitive use While there is a requirement to provide obvious pathways and directional cues to avoid unnecessary hazards in the play space, playspaces should not be too easy to use as this would result in dull and boring playspaces. However, playspaces that are too complex result in children requiring personal assistance by a caregiver which may result in their play being hijacked by adults. Playspaces need to be designed to provide graduated challenge, while facilitating independent use. Play value principle: Challenge is an integral part of children's play. As such, there is a need to design stimulating playspaces that offer opportunities for adventure and excitement.
Principle 4: Perceptible information While playspaces should be a place for discovery and imagination, playspaces need to communicate necessary information so that users can access and use the playspace without assistance. Playspaces need to communicate necessary information to diverse user groups. Play value principle: Discovery and imagination is an essential part of children's play. As such there is a need to design playspaces that encourage user's natural curiosity.

Principle 5: Tolerance for error

Playspaces are required to be compliant with specific safety standards. This does not mean that risk needs to be eliminated from a playspace as this will result in the playspace either not being used or being used inappropriately by people seeking to engage in challenging and risky play. Playspaces need to be designed to provide for risk and challenge, but should not expose users to overly dangerous hazards that result in adverse consequences.

Play value principle: Risk is an integral part of children's play. As such, there is a need to design risk-rich playspaces that afford users the opportunity to participate in challenging and risky behaviour without being exposed to overly dangerous activities or risks.

Principle 6: Low physical effort

Poor design can result in users expending unnecessary effort accessing and using playspaces with little energy left for playing. Playspaces need to be designed so that they can be used efficiently and comfortably while minimising unnecessary fatigue.

Play value principle: Physical effort is integral for children's active play. There is a need to design playspaces to provide for active play, while minimising unnecessary fatigue.

Principle 7: Size and space for approach and use

Community playspaces are accessed and used by people of different ages, abilities, sizes. Playspaces need to be designed to offer appropriate space for approach, reach, manipulation and use regardless of the user's body size, posture or mobility.

Play value principle: People of different ages, abilities and sizes participate in play. Thus there is a need to design playspaces that offer appropriate size and space to accommodate everyone and facilitate participation in the play space.

4.4.2 Identification of core overarching principles

The second outcome of this review is the identification of core principles that underpin this research and inform future studies of community parks and playspaces in Ireland.

From the analysis of guidelines, it became apparent that the design and development of playspaces is underpinned by core principles related to rights and social policy. Eight principles were identified that were commonly represented across the guidelines (see Box 4.1). These fit into three themes concerning protection and promotion of rights, and designing for inclusion.

Box 4.1: Community playspaces should be designed with the following 8 principles in mind

- **Principle 1:** A rights-based perspective, underpinned by inclusive social policy
- **Principle 2:** Respect for diversity of age, gender, size, ability, socioeconomic, ethnicity and cultural differences
- **Principle 3:** Intergenerational spaces: Incorporating amenities as well as play opportunities
- **Principle 4:** Play value
- **Principle 5:** Positive approach to risk and challenge in policy and provision
- **Principle 6:** Design by inclusion: Involving users in the design process
- **Principle 7:** Inclusion by design: Universal Design
- **Principle 8:** Designed for inclusion but 100% accessibility and usability is not the goal

4.4.3 Identification of core considerations

The third outcome of this review is the identification of core considerations that underpin play provision and planning, from a municipality perspective.

Equally across the guidelines, core considerations were identified, that related to pragmatic planning and design factors at local policy, planning, provision levels. There are numerous competing factors and/or priorities in the design and development of Universal Design playspaces that offer significant play value. These included factors such as: location, size, storage, free access, maintenance, vandalism, fencing, surfacing, play sufficiency, capacity building of parks and playground staff.

Box 4.2: Community parks and playspaces should be designed with the following considerations in mind

- **Free access/ Entrance fee**: If an entrance fee is applied, this may exclude low income families. Yet a small fee can help towards maintenance costs.
- **Maintenance/ Vandalism**: Maintenance costs can include a considerable commitment to repairing vandalism in some areas. Strategies to address vandalism are important considerations to help reduce maintenance costs.
- **Fencing**: While open spaces contribute to maximum access, the lack of fencing can reduce usability for children who have a poor sense of danger.
- **Surfacing:** Protective surfacing in playspaces can reduce the play value, whereas natural surfacing (such as grass or sand) can increase it. A variety of surfacing should be considered to maximise accessibility and play value.
- **Play sufficiency**: In each geographical region, it is important to assess play sufficiency, to ensure adequate local provision of parks and playspaces. The Irish Play Policy (2004) establishes the need for local authorities to conduct national play sufficiency assessment.

- **Cost-effective design:** Designs that maximise universal design do not need to be costly – consider low costs solutions, including the use of natural terrain, planting and play value.
- **Capacity building**: Consider providing guidance and education (Universal Design, play and play value) to all stakeholders who are involved in designing and providing parks and playgrounds.
- **Inter-professional working**: Professionals who work in parks and playground design and provision come from varied sectors including design, landscape architecture, engineering, horticulture, play-workers and occupational therapy.
- **Flow/ Layout:** Layout within a park and playspace contributes to usability – consider contrasting surfaces and pathways through a playspace.
- **Segregation/ No segregation**: Intergenerational use can be maximised by removing segregated areas in playspaces. However, some children (for example, toddlers) like to stay close to adult carers, so having play components for younger users positioned in one area can help maximise play value.
- **Local policy for inclusion**: Establish an overall policy for inclusion that incorporates parks and playgrounds in addition to other public amenities; this should include a process of engagement with users.
- **Play component selection**: Selection should be based on play preferences of users, including those with diverse abilities, ages, size and gender.
- **Ground level/ Elevated**: A mix of ground level and elevated components is important, alongside play value and Universal Design considerations for accessibility and usability.
- **Making the 'cool' piece most accessible**: Although not all components can be designed using a Universal Design approach, it is important to prioritise access for the most valued play components in the playspace.
- **Location**: This may be predetermined or chosen. Either way, maximise design features based on location.
- **Character**: Include assessment of character of the local terrain, community context and location as part of the design process.
- **Meeting the needs of the community:** Involve varied community representatives to determine community needs and inform the design process.
- **Funding**: Establish a source of funding for immediate design and for long term development and maintenance.
- **Sustainability:** Plan for long-term maintenance and development.
- **Size:** Consider whether the size is adequate for current or future needs. Expansion plans to increase size may be required.
- **Storage**: Play value is maximised when there are loose parts such as spades, buckets and ropes are available. Such items will need to be stored when not in use.

4.4.4 Identification of characteristics related to play value

The fourth outcome of this review is the identification of characteristics related to play value that underpin successful playspace design.

The most complex aspect of the guideline review was to adequately capture designing for play, for example, guidelines frequently recommend designing for challenge or variety of play opportunities. Yet, they did not specify how to do so. Consequently, by applying the principle of evidence-based design, other literature was explored to solve this dilemma. This resulted in the identification of dichotomies in relation to play value. In 2008, Woolley cited Stine's (1997) ideas on play value:

> 'The need for more complex spaces for play has also been suggested by Stine as being an issue of providing for a series of dichotomous relationships: including being accessible and inaccessible, active and passive, challenge/risk and repetition/security, hard and soft, natural and people built, open and closed, permanence and change, private and public, simple and complex' (Stine, as cited in Woolley, 2008, p. 12).

This identification of dichotomies as a way to capture play value was applied in this research and Stine's dichotomies were expanded upon, to include other characteristics that arose in the guideline review, such as, fast and slow, space and components, solitary and social, predictable and unpredictable, quiet spaces and noisy spaces, light and shade, predictable and unpredictable, loose material and fixed material, texture and smoothness, ground level and elevated (see Playability Model, Figure 4.1).

4.5 An integrated model of play provision

As an overall outcome of the guideline review process, a model can be proposed that attempts to capture the key principles, considerations, and play value factors in the design and development of Universal Design playspaces (see Playability Model, Figure 4.1). The model is derived from a synthesis of the review and analysis of literature, policy and guidelines.

The Playability model is composed of three tiers that interact and compete with one another in the design and development of quality playspaces. Modifying playgrounds to meet accessibility requirements, or only providing adult-led 'play' opportunities, does not promote play value and is not what we are aiming for. The Committee on the Rights of the Child (CRC, 2013) highlights play as a 'fundamental and vital dimension of the pleasure of childhood'. As such, play value takes precedence in this model. It is identified as an essential consideration in the design and development of quality playspaces.

This model informed the development of the PlayAUDIT process, and was used to analyse the findings from the next part of the project: The PlayAUDIT.

Figure 4.1: Playability Model: Integrating principles, considerations and play value for good practice in Universal Design play provision

4.6 Conclusion

From the review of policy and guidelines, evidence and gaps in knowledge were identified:

- Universal Design as a design approach for playspaces is under-represented in the 21 international and national guideline documents that were analysed.
- There is a gap between the promotion of Universal Design, and guidelines on how to operationalise it in playspaces.
- There is also a gap in knowledge on how to include users in a process of community consultation in the design and provision of parks and playgrounds, especially children.

The challenge for many who create public recreation spaces is that designing effectively to include a diverse range of people in play means doing things differently. Positive action is required to involve the right people in planning and execution; creativity and innovation are needed to ensure the development of Universal Design playspaces; and most importantly, expertise is compulsory to ensure that the direction, design, and execution result in the desired outcomes.

Findings: PlayAUDIT step 1 – Play value audits

5

5. Findings: PlayAUDIT step 1 – Play value audits

5.1 Introduction

This section presents findings from step one of the PlayAUDIT: play value audits. The play value audit consisted of assessing two dimensions. These included:

a) Assessing the physical characteristics of the design and play value; and

b) Assessing the physical characteristics of the design that offer opportunities for different play types namely, physical play, social play, sensory play and cognitive play. In addition, this section includes a focus on play styles, i.e. whether a person participates alone, with others or in groups.

Combined, these two dimensions served to capture the play affordances within the play space.

Note: The location of the park-playground units discussed in this chapter is detailed in Chapter 2, Table 2.1

5.2 General descriptive analysis of park-playground units

Before proceeding to the findings of the play value audit, it is important to provide a general description of play and leisure opportunities available in each of the 5 park-playground units. Each park-playground unit is designed to provide core community play and leisure opportunities (Table 5.1).

Table 5.1: Description of play and leisure provision in each park-playground unit

Description of provision	Fitzgerald's park	Gerry O Sullivan park	Lough Mahon park	Tory Top park	Glenamoy Lawn park
Regular maintenance	✓	✓	✓	✓	✓
Park benches	✓	✓	✓	✓	✓
Toilets	✓	x	x	✓	x
Shelters	✓	x	x	x	x
Refreshment facilities	✓	x	x	x	x
Dog park	x	x	x	x	x
Community centre	x	x	x	✓	x
Men's Shed	x	x	x	✓	x
Open green space	✓	✓	✓	✓	✓

Multi Use Games Area (MUGA)	x	✓	✓	✓	✓
Skateboarding park	✓	x	x	✓	x
Playground	✓	✓	✓	✓	✓
Total number of playground components	24	10	9	4	5
Number of ground-level components	11	6	7	3	3
Number of elevated components	13	4	2	1	2
Total number of types of playground components for physical activity play	**8**	**8**	**7**	**4**	**5**

From this initial profile, it can be determined that the larger park-playground units such as Fitzgerald's Park, contain more amenities for a family day out, such as having a place to go for refreshments (e.g. café), or toileting facilities nearby. However, local parks such as Tory Top park include more varied leisure opportunities for intergenerational use, such as the Men's Shed and skateboarding park.

Note that the total number of playground components differs from the number of **types** of playground components. In such cases, there were more than one swing or slide for example, so rather than counting each as a separate play experience, they are grouped by type. The importance of determining type of playground component is to capture the true variety of potential play experiences available. It is interesting to note that Gerry O'Sullivan park had a similar range of types of playground components as the large city park, even though the city park had more than twice as many playground components in total.

5.3 Findings from the Play Value audit

5.3.1 Findings from the assessment of the physical characteristics of the design and play value

Each of the five playgrounds were assessed for play value. Using Woolley and Lowe's (2013) assessment tool, we adopted their play value scoring system for the five playgrounds. Each of the five playgrounds were scored out of a total score of 60 (see Table 5.2). Higher scores are associated with higher play value.

Table 5.2: Play value scores for opportunities for different types of play (Woolley and Lowe, 2013)

Opportunities for different types of play	Fitzgerald's park	Gerry O Sullivan park	Lough Mahon park	Tory Top park	Glenamoy Lawn park
Range of fixed play equipment (according to type)	5	5	4	3	3
Moveable equipment	5	4	3	1	2
Open space	5	4	5	5	4
Different sizes and types of spaces	5	3	1	1	3
Vegetation/ trees	5	2	1	1	2
Landform	5	2	0	1	2
Loose materials	3	0	0	0	0
Natural materials	4	2	1	2	2
Water and sand	2	0	0	0	0
Obvious physical boundaries such as fencing	5	5	0	3	3
Seating opportunities	5	2	2	2	2
Range of surfacing materials	5	1	1	1	2
Total score out of 60	**54**	**30**	**18**	**20**	**25**

Of the five playgrounds, two playgrounds scored between 0 and 20, two playgrounds scored between 21 and 30, and one scored between 51 and 60. The playground in Fitzgerald's Park scored the highest. It is of note that this playground is the largest and most recently developed of the five playgrounds. In addition, the playground is characterised by different types of play affordances, different types of wooden play components, with varied topographical slopes and levels, and some limited access to natural, interactive materials.

In contrast, the other four playgrounds were more traditional in design and scored significantly lower than Fitzgerald's Park. The low play value scores were due to the lack of natural materials found in each site, with little variety in surfacing materials, landform, and moveable equipment. The landform in these more traditional playspaces is predominantly flat and the playgrounds are typically built in designated surfaced areas, with no vegetation or natural elements within the play area.

In addition, an overall assessment of environmental characteristics was conducted (see Table 5.3). This assessment was based on Woolley and Lowe (2013) assessment tool. Overall, it appears that playgrounds with the highest range of physically varied characteristics provide more overall play value.

Table 5.3: Play value and environmental characteristics assessment (Woolley and Lowe, 2013)

	Fitzgerald's Park	Gerry O' Sullivan	Lough Mahon	Tory Top	Glenamoy
1. Enticing	3	3	3	3	3
2. Stimulating	4	1	1	1	2
3. Challenging	5	5	4	4	4
4. Opportunities for learning	3	1	1	1	1
5. Catering for all age groups	4	4	4	4	4
Total score out of 25	**19**	**14**	**13**	**13**	**14**

5.3.2 Assessing parks and playgrounds for different play types and play styles

Play affordances were then assessed to identify which types of play were provided for, based on an analysis of the playground components (see Table 5.4).

Table 5.4: Affordances for play types in the five playgrounds

	Fitzgerald's park	Gerry O' Sullivan park	Lough Mahon park	Tory Top park	Glenamoy Lawn park
Affordances for physical play					
Running	✓	✓	✓	✓	✓
Crawling	✓	✓	✓	✓	✓
Jumping/ bouncing	✓	✓	x	✓	✓
Rocking	✓	✓	✓	x	x
Swinging	✓	✓	✓	✓	✓
Sliding	✓	✓	✓	✓	✓
Hanging	✓	✓	✓	✓	✓
Climbing	✓	✓	✓	✓	✓
Spinning	✓	✓	✓	x	✓
Balancing	✓	✓	To some extent	✓	✓

Rolling	✓	✓	x	✓	✓
Whole body movements	✓	✓	✓	✓	✓
Movement and balance	✓	✓	✓	✓	✓
Heights	✓	✓	To some extent	✓	✓
Affordances for social play					
Socialise with peers	✓	✓	✓	✓	✓
Socialise with adults	✓	✓	✓	✓	✓
Space for group games/ sports activities	To some extent	✓	✓	✓	✓
Play components that require two or more people to operate it	✓	✓	✓	✓	✓
Play alone	✓	✓	✓	✓	✓
Affordances for sensory play					
Loose materials that are natural	✓	x	x	x	✓
Sand	✓	x	x	x	x
Water	x	x	x	x	x
Earth	x	x	x	x	x
Fire	x	x	x	x	x
Tactile experiences	✓	x	x	x	x
Make noises	✓	x	x	x	x
Visual stimulation/ to explore light experiences	✓	x	x	x	x
Nice things to smell	✓	x	x	x	x
Accessible places to play around natural areas	x	x	x	x	x
Affordances for cognitive play					
To learn/ practice skills	✓	✓	✓	✓	✓
For imaginative games	✓	x	x	x	x
Open space for imaginative games	✓	✓	x	x	x
Incorporate a variety of shapes	x	✓	✓	✓	✓
Incorporate a variety of colours	x	x	x	✓	✓
Choice of activities	✓	x	x	x	x
Spatial awareness and planning skills	✓	✓	✓	✓	✓

5.3.2.1 Affordances for physical play

From this analysis it is apparent that each playground provides a varied range of potential physical play opportunities or affordances. The source of the opportunities was primarily from the provision of built equipment rather than stimulating use of landform. The variety of physical play opportunities does not capture incremental challenge however, and it was noted that although all playgrounds have affordances for sliding, swinging, and climbing, these were more suitable for young children in relation to the fun and challenge (swings and slides that are set low for example).

5.3.2.2 Affordances for social play

While social play can take place anywhere, it is important to consider whether a playground encourages social play specifically. For this analysis, it was noted that the arrangement of play components can encourage or support more social play, for example, the swings in Fitzgerald's Park are organised in a circle so children can face each other, while swings in the other four playgrounds are typically 2 swings alongside each other, so friends can swing together. Some play components are particularly designed for social play, for example a see-saw needs two people to operate it successfully. Increasing these kinds of play components can help increase social interactions in a playground. Note that many children also need a quiet space in a social setting so playing alone also needs to be factored in. For example, having a small private area such as an enclosed 'house' for pretend play can also support the need for more quiet play. Small, private spaces were not factored into the design of the majority of these playgrounds.

5.3.2.3 Affordances for sensory play

Sensory play was analysed in order to determine variety of potential experiences; overall there were limited opportunities for children to participate in sensory play types. Fitzgerald Park was the only playground designed to include visual, auditory, and tactile materials for play, for example sand and manipulative wheels.

5.3.2.4 Affordances for cognitive play

There were some limited opportunities for children to participate in cognitive play (which includes imaginative play). The playgrounds did not typically include play features such as play houses or cars or ships for example or include vegetation or loose materials in the design. These types of play affordances are known to encourage cognitive, imaginative play.

5.4 Conclusion

Each playground was assessed using the Play Value audit to analyse the physical characteristics of the play environment and the play affordances in the play environment. The playground with the highest play value was Fitzgerald's Park. This playground has the most varied integration of natural and built elements such as landform, vegetation, natural materials, combined with different types of fixed play components and sizes of spaces. It also has the most variety of play affordances for physical, sensory, social, and cognitive play.

In contrast, the other four local and neighbourhood playgrounds had significantly lower play value scores and were less stimulating and challenging overall. This was in part due to the lack of integrated natural features such as loose materials, and lack of variety in surfacing, moveable equipment, sizes of spaces and limited seating. The result was that the play affordances were also reduced. These four playgrounds lacked opportunities for sensory, social, and cognitive play.

Overall, these playgrounds presented with many varied physical play opportunities, from the perspective of fixed play equipment primarily. However, sensory and cognitive play were under-represented in the design features of the five playgrounds. While it is more difficult to analyse social affordances without observing how children use the space, it is also known from research evidence that when a play area has more varied play affordances (such as loose parts and vegetation) social play is naturally enhanced.

In addition, the extent to which existing play affordances provide adequate stimulation and challenge for children of diverse abilities is not clear without incorporating the perspectives of users. The findings reported here are based on analysis of the physical environment and not an analysis of how it is actually used or designed for accessible use. Hence, these findings need to be supplemented with users' perspectives (outlined in Chapter 7).

Findings: PlayAUDIT step 2 – Universal Design Audits

6

6. Findings: PlayAUDIT step 2 – Universal Design Audits

6.1 Introduction

This section presents findings from step two of the PlayAUDIT: Universal Design audit. The Universal Design Audit consisted of assessing two dimensions. These included:

a) Assessing the physical characteristics of the design, approach and use of the playground, its surrounds (the park), and how to get to the playground; and

b) Assessing the playground environments and components with regard to the 7 principles of Universal Design, tailored for playspaces (Table 4.2).

Combined, these two dimensions served to identify fundamental Universal Design characteristics of each park-playground unit.

Note: The location of the park-playground units discussed in this chapter is detailed in Chapter 2, Table 2.1

6.2 Universal Design: Physical characteristics

The audits of the five parks and playgrounds were informed by the Technical Guidance Document M (TGD M, 2010) which aims to meet the goals of Universal Design (see Appendix L, section 2 for more information) . Overall, each park and playground was assessed for provision, under nine specific headings (see sub-sections 1 to 9 below) guided by existing regulations outlined in TGD M (2010) and Buildings for Everyone. Only one playground stated it was designed for inclusion: Fitzgerald's Park. See Appendix P for a summary of results of the Universal Design Audit on the named parks.

6.2.1 Finding out about the park-playground unit

Generally, the parks assessed were local neighbourhood parks with the exception of the city park (Fitzgerald's Park). There was extensive online information about the city park but no park, including the city park, had information on how to get to the park, the address of the park or practical information on the range of services (such as toilets). Opening hours of all parks was available. Of interest, unofficial websites had more extensive information available on the parks which provided the research team with information on what the public sought when looking for parks (for example, parking, transport, amenities).

6.2.2 Location and general site information about the park-playground unit

All of the parks were accessible by public transport but this was only known through local knowledge, as again it was not readily available. Car parking was available at all except one

playspace. Limited universally designed features were present, but none had family friendly parking spaces and few had wheelchair accessible parking spaces. Of note, free car parking was available at Tory Top park, Lough Mahon park and Glenamoy Lawn park. Paid parking was available at Fitzgerald's park. No parking, with the exception of on-street parking, was available at Gerry O Sullivan park.

Figure 6.1: An example of parking options available at Lough Mahon park

Figure 6.2: An example of disabled parking options available at Tory Top park

6.2.3 Getting into the park-playground unit

Gaining access to the park-playground units ranged from universally designed access routes to those which were poorly designed. For example, some park-playground unitswere lacking foot paths from car parks. In areas where there were good examples of design, the design application was inconsistent. Internal access routes were better designed, with gates being permanently held open, wide level paths and options of ramps or steps in the better designed spaces. At times, tree roots damaged the access routes and maintenance is an issue.

Figure 6.3: An example of narrow pathways in the playground in Fitzgerald's park

Figure 6.4: An example of wide ramped paths in Glenamoy Lawn park

6.2.4 Navigating around the park-playground unit

Only the city park had a map with a visual layout of the playspace. It is readable when standing next to the map. The pathways in the playspaces are for the most part universally accessible with a range of surface textures offering challenges and options. Of note is the poor visual contrast between paths and changes in height which could be viewed as a hazard for intergenerational users. Play equipment contrasts well with the background.

Figure 6.5: An example of play equipment in contrast with background in Gerry O Sullivan park

Figure 6.6: An example of poor visual contrast between paths and changes in height in Fitzgerald's park

6.2.5 Seating, tables and shelter

Intergenerational users may require varied supports in parks and playgrounds. Seating and tables afford improved accessibility for multiple users such as persons with small children, older people and persons with impairments. Seating in a range of heights was generally offered in the parks with MUGAs (Multi Use Games Areas), where higher than standard perched seating was an option. No park offered a bench with arm rests which are often used as a support to move from sitting to standing or to position a young child who requires support. Social interaction is not facilitated as strongly as it could because of the lack of tables to engage around. Shelter was only available in one park in a bandstand, and this was in use at the time of the audit.

Figure 6.7: An example of a park bench in Tory Top park

Figure 6.8: An example of seating options available in Fitzgerald's park

6.2.6 Toileting and water facilities

Only the city park had access to a designated pay-per-use toilet that met minimum design criteria set out in TGD M. One other park had access to toilets in the community centre but this was dependent on the centre being open. There was no signage in the park informing users of this option. One park had a water fountain but it was clogged with sand.

Figure 6.9: An example of pay per use toilet in Fitzgerald's park

Figure 6.10: An example of toilet facilities located in community centre in Tory Top park

6.2.7 General maintenance

Maintenance of the park-playground units was generally found to be of a good standard. There was evidence of vandalism in some parks and these ongoing issues are a challenge to park-playground providers.

Figure 6.11: An example of burning in Gerry O Sullivan park

Figure 6.12: An example of graffiti in Lough Mahon park

6.2.8 Safety

All parks had a daily, weekly, monthly and annual safety schedule, as confirmed by the Cork City Council (see Chapter 9, section 9.3.4 - provider interview).

6.2.9 Feeling welcome

Feeling welcome and included in parks and playgrounds is a key factor in thinking about access and inclusion beyond the more obvious physical environment. From the physical audits carried out, the playspace that was identified as being most welcoming was Tory Top park. A community centre on Tory Top Road had welcoming staff offering commentary. Locals who were walking engaged in unsolicited social interaction, also offering suggestions. It was notable also that this was the playspace with the highest number of older users present in the space, whether with children or at their own leisure.

6.3 Universal Design in the playground

Playground space, flow and components were considered with regard to the 7 principles of Universal Design to determine to what extent the playspace was designed for inclusion. Examples of playground components will be presented here to illustrate features that supported usability and those that did not. For a playspace to be successful, general accessibility, flow, layout, and play value is also important. See Appendix P for a summary of the results of the Universal Design Audit on the park-playground units and play components

6.3.1 Getting onto ground-level play components

All the playgrounds had ground-level play components for children of different abilities, ages, and sizes. These included, for example, roundabouts, Spicas and swings. Taking swings as an example, Table 6.1 provides an analysis of successful design for inclusion and design issues that may exclude certain users.

Table 6.1: Getting onto ground-level play components

Successful design for inclusion	Design issues
Providing multiple choices and accessible components Fitzgerald's Park provides bucket swings that are more accessible and usable than traditional swing seats because you can use them in a seated/ lying position. In addition, bucket swing seats can be used by more than one person at a time, which allows for social interaction. Fitzgerald's Park made further attempts to facilitate social interaction, by arranging the swings in a circular fashion. Tory Top Park provides a shared swing seat, allowing for intergenerational use and encouraging social interaction.	**Issue 1: Inaccessible surfacing leading to swings** In Fitzgerald's Park, all users cannot access the grouped swings because of inaccessible surfacing (bark mulch) and the absence of pathways leading to the swings.
	Issue 2: Inaccessible pathways leading to swings In Gerry O Sullivan park, the pathway to the large swing set is inaccessible for many users, because of the presence of steps.
	Issue 3: Inaccessible swing types No playground had a large swing seat with back support to support users with mobilty impairments

From a Universal Design perspective, the swings are not designed for equitable or flexible use. Without different sizes of swing seats, the body fit does not work for larger children, or children of diverse abilities, and comfort level can be low unless more support is provided.

6.3.2 Getting onto elevated play components

All the playgrounds had elevated play components for children with different abilities, ages, and sizes. This included composite structures, slides and climbing walls. Taking slides as an example, Table 6.2 provides an analysis of successful design for inclusion and design issues that may exclude certain users.

Table 6.2: Getting onto elevated play components

Successful design for inclusion	Design issues
Providing multiple choices and accessible components Fitzgerald's Park and Tory Top Park provide double-width slides which are more accessible for users that require a caregiver to support a child going down the slide. The double width slides also facilitate social interaction as they can carry two people side-by-side. Fitzgerald's Park also provides tube slides, allowing users to explore light. While most of the slides had a straight drop, Gerry O Sullivan Park provides a curved slide, allowing users to explore direction. In terms of the layout of the slides, most of the playgrounds offer slides at different heights to facilitate graduated challenge and accommodated different sizes (smaller and larger slides). In addition to providing typical slides, four of the playgrounds provide fireman poles, located on composite play components (at different heights), for sliding.	**Issue 1:** Inaccessible climbing structures Although there is a double width ladder in Glenamoy Lawn Park, the raised structure at the end of the steps could cause an obstruction for many users (for example, users with visual difficulties, mobility difficulties).
	Issue 2: Inaccessible surfacing leading to climbing structures Despite multiple opportunities for climbing in Fitzgerald's Park, not all users can access these components because of inaccessible surfacing (bark mulch surfacing) and an absence of pathways leading to climbing components.

From a Universal Design perspective, the slides are not designed for equitable or flexible use. This can result in high physical effort to successfully negotiate around or onto the play component. Or, in some cases, exclusion if a child cannot physically access the slide.

6.3.3 Getting around the play components

All the playgrounds were located in one designated area within the park and were surfaced according to safety standards. This involved tarmacadam, rubber tiles, or bark mulch. Table 6.3 provides an analysis of successful design for inclusion and design issues that may exclude certain users.

Table 6.3: Getting around the play components

Successful design for inclusion	Design issues
Accessible access routes As noted above, the pathways in the playspaces are for the most part universally accessible with a range of surface textures offering challenges and options. In Fitzgerald's Park, the contrasting surfaces helped identify a pathway through the playspace. This playground also had slopes and ramps to add to the variety of ways to get around the playground.	**Issue 1:** Insufficient perceptible information. For children with visual, cognitive, or emotional impairments, more information is needed to support intuitive use of the playspace. There was a lack of colour contrast to identify the pathways through the playspaces.
	Issue 2: Inaccessible access routes None of the other playgrounds included slopes or ramps for accessing play components.

From a Universal Design perspective. The surfaces and pathways throughout the playground are not designed to maximise equitable use.

6.3.4 Equal access to play affordances

All playgrounds provided a variety of play affordances including for example swinging, sliding, climbing, jumping, rotating. They also provided for affordances for social and individual play, which were enhanced by the layout and arrangement of play components. Table 6.4 provides an analysis of successful design for inclusion and design issues that may exclude certain users.

Table 6.4: Equal access to play affordances

Successful design for inclusion	Design issues
Providing challenging play options Glenamoy Park, Fitzgerald's Park and Gerry O'Sullivan park had successfully included varied types of elevated play structures that incorporated sliding, climbing, jumping affordances from different heights. This resulted in high play value as it provided for increasing challenge and stimulation.	**Issue 1: Unequal opportunities** For children with impairments, there is a challenge to provide an equal experience as well as equal access. For example, to get to the top of a composite structure by providing a slope or ramp is not enough if the main play affordance is to slide down. There needs to be an equal play experience of speed or sliding for all children as an outcome.

From a Universal Design perspective, when playgrounds are considered, the accessibility and usability issues need to be addressed in relation to the play affordances being provided. Children of all abilities need to be able to access varied challenging play experiences; sometimes this may mean providing an alternative equivalent experience, for example a roundabout works better for all children compared to a Spica that may not be usable for children with visual or motor impairments.

6.3.5 Usability of playground related to hazards

All playgrounds were positioned within a park that had a large boundary fence. This helped support safety for child-adult units within the park as it provided a barrier to the outside traffic, for example. The playgrounds did not have a separate boundary fence within the park. Table 6.5 provides an analysis of successful design for inclusion and design issues that may exclude certain users.

Table 6.5: Usability of playground related to hazards

Successful design for inclusion	Design issues
Boundless playgrounds All playgrounds were designed to be part of the interior of the park, with no separate fencing to segregate users from the green areas nearby, or the MUGA's (Multi Use Games Areas). This served as a successful way to incorporate intergenerational use of the playground and park overall.	**Issue 1: Lack of boundaries** Fitzgerald Park has a river on the northern boundary instead of a fence. As the playground does not have its own boundary fence, small children or children who have cognitive impairments and who like to run, are exposed to the potential hazard of the river.
	Issue 2: Lack of segregation based on age Because Fitzgerald's park playground is in a city park, it is larger with more hidden areas than the smaller playgrounds. The play components for younger children are not gathered in one spot, resulting in the need for adults to follow the children rather than leave them play more independently.

From a Universal Design approach, the absence of fencing in playgrounds results in a lack of intuitive use and perceptible information. This is particularly relevant for some children with impairments, who do not have the ability to judge where the edge of the playground is, and who may like to run without caution into unsafe areas.

6.4 Conclusion

To summarise, Universal Design principles were used to assess and analyse the accessibility and usability of the environment from a physical observational analysis. The parks in general had accessible routes to the playground and around the park. However, not all playgrounds had level, firm surfaces to each playground component, resulting in poor accessibility for users with mobility impairments. Colour or texture contrast was rarely used as a strategy to promote intuitive use on the surfacing. The playgrounds were identified as having few design features that support equitable or intuitive use. From this analysis it was possible to determine a number of design issues that exclude certain users.

Findings: PlayAUDIT step 3 – Usability audits

7

7. Findings: PlayAUDIT step 3 – Usability audits

7.1 Introduction

This section will discuss the findings from usability audits (interviews and observations) that were conducted with child-adult units in relation to the five parks and playgrounds. The findings are divided into two sections:

a) Section A summarises the findings on how the parks and playgrounds are used from the perspectives of children and adults; and

b) Section B outlines the challenges users face in relation to accessibility, usability, and affordances for play.

The chapter will conclude by summarising the main findings from the perspectives of adults and children.

Note: The location of the park-playground units discussed in this chapter is detailed in Chapter 2, Table 2.1

7.2 Section A: Why and how the parks and playgrounds are used

7.2.1 Reasons for visiting the selected community parks and playgrounds

People visit parks and playgrounds for a variety of reasons including location, amenities and play value. Overall, these parks and playgrounds are intergenerational sites, where children typically use the playgrounds in the company of adults. These included family members - (primarily) mothers, fathers, siblings, aunts, grandparents - but also included childminders and teachers. We see these reflected in the responses of children when asked about who accompanied them to the playground:

> "With mom" (Girl, age 7; Boy age 10)
>
> "With dad or Granda" (Girl, age 6)
>
> "Mum or dad… sisters" (Boy with Down Syndrome, age 11)

From the adults' perspective, they expressed the need for their children to be accompanied to the park by an adult or an older sibling. This applied to the younger children and to older children with impairments:

> "I wouldn't leave her here on her own … her father takes her to playgrounds at the weekend" (Mother of girl, aged 5)

> "My daughter usually brings him to the playground … she is tuned into watching his every move" (Mother of boy with Down Syndrome, aged 11)

For adults, their reasons for visiting was primarily based on the location of the parks and playgrounds. This included the park and playground being located within proximity to home:

> "We live locally. This is our nearest playground… (Mother of boy with Down Syndrome, aged 11)

Participants also spoke about choosing parks and playgrounds based on what they had available. These included the amenities, opportunities to access fresh air, and the presence of others:

> "Because of what's on offer. The variety. There's much more facilities" (Mother of boy with Down Syndrome, aged 11)

> "[For] fresh air" (Grandmother of girl, aged 3)

> "Other kids at the park … keep the kids occupied … more independent [don't have to entertain her]" (Grandmother of girl, aged 7)

For adults, their favourite things to do while visiting the parks and playgrounds included observing, supervising, or playing with their children, as well as accessing additional opportunities (for example, meeting friends, going for a walk) and amenities, such as having coffee or going to the shop:

> "Keep an eye, observe and then go for a coffee … I like to walk around the park or to here [from home] as well" (Mother of boy with Down Syndrome, aged 11)

> "Play soccer with them [two older sons] if partner or mum is around to mind the small fella [younger son] … kicking ball … have fun with them" (Father of boy, aged 8 and boy with Autism, aged 9)

> "Walk around park … shop nearby" (Grandmother of girl, aged 3)

In addition, some parents noted that they visit with their children and do not plan to meet other adults or children. Yet as it is a local park, it is likely to happen:

> "Just randomly meet up" (Grandmother of girl, aged 7)

> "By chance … [visit the playground] spur of the moment" (Father of boy aged 8 and boy with Autism, aged 9)

In contrast, other adults made plans to meet friends and family in their local park:

> "Friends… all friends have kids … cousins" (Mother of girl with physical impairment, aged 9)

For children, their visits were determined by adult choices (parents and teachers) but were also informed by what they enjoyed in terms of play, having space to play, and friends to play with:

> "Play soccer and meet friends …" (Boy, age 8; Boy with Autism, age 9)

> "My school friends … my teacher" (Girl, age 9)

Children spoke of playgrounds being for fun and playing with their favourite things. Their comments largely featured around physical play components (for example, components for swinging, climbing, sliding) and the play opportunities they afforded, such as going high:

> "The climbing wall … going up high and climbing" (Girl, age 7; Boy, age 10)

> "Swings for going high… climbing wall" (Girl, age 3)

> "Swings [for] going high … roundabout [for] going fast and spin around" (Girl, age 6)

In addition, one adult user spoke about her son's favourite thing to do in the park. His favourite thing was to seek out opportunities to explore and interact with nature:

> "hole in tree and looks for water … stick and picks at it" (Mother of boy with Autism, aged 5)

Overall, these five parks and playgrounds are intergenerational sites, visited by children accompanied by adults or adolescents, and visited primarily due to location, play value and amenities. Therefore, the children in this study used their parks primarily based on adult choice to visit, but this was also determined by the adult desire for the child to be happy.

Children reported having fun because of having favourite things to play on and having friends to play with. For older children, the favourite things to do involved more challenge such as climbing walls, or more commonly playing games such as soccer using the MUGA areas or open spaces in the parks.

7.2.2 Visiting other parks and playgrounds and reasons for same

In addition to visiting the parks and playgrounds included in our project, it became apparent that child-adult units visited numerous playgrounds in Cork City and County. Being nearby was still a primary factor:

> "Very local " (Grandmother of girl, aged 7)

But for those who were able to travel, they went to parks and playgrounds that offered more variety with different play and social affordances for meeting others and experiencing accessible play components:

> "Can go on swing in Ballincollig … larger swing, harness … I'm thinking of taking her to Whitegate over the [Easter] holidays. There's a [wheelchair] swing there – it looks great" (Mother of girl with physical impairment, aged 9)

It is of note that these playgrounds were not nearby, but could be as far as 30 miles away.

The children described the important play features of the playground rather than naming the playgrounds they were referring to:

> "The tractor one" [Clonakilty] (Girl, age 5)

However, one parent noted that there are no other parks in the locality within walking distance. Consequently, they do not visit other parks and playgrounds in the locality:

> "Only park can walk to" (Mother of girl, aged 3 and boy with Autism, aged 5)

7.2.3 Users perspective on what makes a good playground

Users were asked to explain what makes a park and playground a good place to go. The child users noted that playground should be fun. Fun playgrounds were described as spacious, catering for all age groups and being free from certain things, such as monsters. In addition, the children identified essential play components for making a playground fun. These included loose elements (toys), components for climbing, sliding, swinging and jumping, and opportunities to observe nature, have fun and use their imagination:

> "Stuff for all ages" (Girl, age 7)

> "Slide and climbing wall" (Boy, age 11)

> "Swings … [for] going high … roundabout, do you know the ones you sit into and spin around" (Girl, age 6)

> "bouncy thing … trampoline for soccer … zip line … see birds/wildlife – I love nature … having fun … imagination" (Father of boy, aged 8 and boy with Autism, aged 9)

The adults also described what makes a good playground. Their responses included several considerations including a well-maintained space, offering a variety of play components, safe play components, located within a park, family oriented, and accessible, particularly for children with additional needs:

> "Cleanliness, variety, space, easy access" (Mother of girl, aged 3 and boy with Autism, aged 5)

> "Things [play components], family-oriented, clean and tidy, broken items replaced, colour contrast" (Mother with visual impairment)

> "… a lot of safe equipment to use … enough for everyone" (Father of girl, aged 6)

> "A few of them [pointing at the MUGA] … zip line … bit of separation – a smallies park and a big park" (Father of boy, aged 8 and boy with Autism, aged 9)

> "More accessible swings, roundabout, slides … A wheelchair swing would be good … A friendly hour would be good also where we would be able to come and [name of child] would not get stressed out and there would not be too many people on her back – like the autism friendly hours they do in Dunnes, Tesco and Funderland … You need time ring fenced – it's not fair. Also, if it was divided up and for younger children because you see my friends' kids with Autism and they are hanging off the highest pieces – they just have no sense of danger…" (Mother of girl with physical impairment, aged 9)

Notably, the children and adults' recommendations did not always involve equipment – the importance of having spaces to play, and opportunities to bring play items to the park and playground was also a common issue of note:

> "Playing … space" (Girl with physical impairment, age 9)

> "Brings dolls buggy, scooter, bike" (Father of girl, aged 6)

> "Bring ball [for soccer]" (Father of boy, aged 8 and boy with Autism, aged 9)

The children and adults in this study spoke of playgrounds being good when they provide comfortable spaces that are well maintained and have play opportunities that are stimulating and challenging. These play opportunities are closely related to the children's play preferences and play ability. Their recommendations did not always involve equipment – the importance of having spaces to play was also a common issue of note.

7.2.4 Parks and playgrounds as friendly and welcoming spaces

Child and adult users were asked if they felt that the parks and playgrounds were friendly and welcoming spaces to be. When asked if they felt welcome in the park, users generally agreed that parks and playgrounds were friendly and welcoming spaces. However, some users noted that they did not like the park and playground if it is too busy, while others liked it when it was:

> "Yes [friendly] when nice and quiet - not a big gang" (Mother of girl, aged 3 and boy with Autism aged 5)

> "Friendlier in the summer cause there's more people" (Girl, age 3)

Adults differed also in their experiences of socialising in parks: one adult user noted that people tend to "keep to themselves", while other users felt welcome and a sense of belonging:

> "Generally, it can be [friendly] – although people tend to keep to themselves" (Mother of boy with Down Syndrome, aged 11)

> "This is my own park" (Father of boy, aged 8 and boy with Autism, aged 9)

Notably, some users noted that the park and playground was sometimes not a friendly place because of bullies or the absence of people:

> "Sometimes not [be]cause bullies everywhere" (Boy, age 8; boy with Autism, age 9)

"No. Never meet people" (Mother of girl with visual impairment, aged 5)

However, one parent noted that they would organise to meet friends in the park and playground if there were more amenities nearby:

"If there was coffee nearby I would" (Mother for girl, aged 3 and boy with Autism, aged 5)

7.3 Section B: Challenges

7.3.1 Reasons for not visiting the selected community parks and playgrounds

Reasons for not accessing the parks and playgrounds were varied and included a few considerations closely related to the issues raised in the previous section, regarding when playgrounds are seen as not fun. Bad weather was a predominant consideration but also having an available person to take the child to the playground, maintenance issues, physical design considerations to do with age and play value, as well as other commitments. In general, users noted that they did not visit the parks and playgrounds in bad weather:

"When it's raining" (Girl, age 3)

"Wet [weather] - Risk of flooding" (Mother of girl, aged 7 and boy, aged 10)

"When it's raining … looking for other things to do … if the car park is full…" (Father of boy, aged 8 and boy with Autism, aged 9)

One adult user identified that not having an available person to take a child to the playground acted as a barrier. In addition, one child user noted that her mother does not always have the time to bring her to the playground:

"If mam doesn't have time … she has a new baby as well" (Girl, age 6)

The need to have an adult accompanying the child while in the playground was also identified. This was related to the presence of gangs of teenagers in the summer in particular, or due to fear of dogs:

> "I wouldn't leave her here on her own… the dogs off the lead and barking frighten her… once someone defecated on the slide" (Mother of girl with visual impairment, aged 5)

Some adults noted that they do not visit the park and playground because of children growing up and getting too old to use the space:

> "I don't go there [to the park and playground] anymore. I used to visit when the children were smaller and enjoyed visiting for the space for the freedom it offered. We have no back garden or green area nearby so the big green area [in the park] allowed for the children to play ball" (Mother with visual impairment)

Moreover, some adults noted that a lack of fencing and obstructed line of sight were concerns especially for supervising younger children. This resulted in less frequent use of Fitzgerald's Park in particular:

> "Lack of fencing [Fitzgerald's park] … 2-year olds disappear – can't see them. Security guard retrieves small children wandering" (Mother of girl, aged 7 and boy, aged 10)

> "Fitzgerald's park is too busy … can't see through thing [large ship structure]" (Father of boy, aged 8 and boy with Autism, aged 9)

7.3.2 Playgrounds as sites for exclusion for children of diverse abilities

Users were asked if they felt parks and playgrounds were suitable spaces for children and adults of all abilities. There was a general agreement by all participants that playgrounds were unsuitable spaces for some children based on age, mobility, visual and social difficulties.

For the most part, children and adults spoke of a lack of suitable challenge for different ages and abilities:

> "Not for over 10's" (Girl, age 7; Boy, age 10)

> "My brothers are too big [brothers age 11 and 15] – it's only for smallies" (Girl with visual impairment, age 5)

> "Not for 9 years … 6 to 7 years more suitable" (Grandmother of girl, aged 3)

> "… [up to age] 9 or 10" (Father of girl, aged 6)

In addition, one child user noted that playgrounds were unsuitable for persons over 10 years of age because of size and antisocial behaviour:

> "Not past 10 [because they are] too big. Might be bold and flip the swings like they did loads of times" (Girl, age 6)

However, a number of children and adults noted that they felt the playgrounds were suitable for children of all ages:

> "Yes [the playground is suitable for children of all ages]" (Girl with physical impairment, age 9)

> "I suppose it is – although I don't see too many older children using the playground. You would see them more at the skate park or basketball nets" (Mother of boy with Down Syndrome, aged 11)

Some children referred to particular user groups (wheelchair users, persons with visual impairments, younger children) that they felt the playground was not suitable for:

> "If someone was using a wheelchair they could not access anything up high or get over the wood chip" (Boy, age 10)

> "Not blind because they can't see properly. Not wheelchair because they can't go on anything" (Girl, age 6)

> "Climbing wall not safe for smallies" (Boy, age 8)

This was sometimes from personal experience; for some, the inaccessible design of play components and lack of perceptible information, meant that they were unable to access and use the play components:

> "Not able to go on stuff…" (Girl with physical impairment, age 9)

> "No sense of danger … leg through ropes [climbing nets]" (Father on behalf of boy with Autism, aged 9)

In these examples, both children had impairments that excluded them from accessing age-appropriate play opportunities. As a result, the girl was unable to use any play component in her local playground, while the boy typically played soccer instead in his local playground.

Adults equally reported that their local playgrounds had limited play value for children with impairments. In addition, one mother of a child with mobility difficulties noted that the physical design features (for example, flow, layout, safety concerns) of the playground acted as a barrier:

> "There's a boy in a wheelchair that lives near me – there's nothing for him. For people with visual impairments – providing brighter/ colour contrast would work well. It would look nicer too" (Mother of girl with visual impairment, aged 5)

> "When kids run in front of the chair as well she could just roll over them – it's not their fault but it's not [name of child] either and she could end up toppling her wheelchair and getting really hurt" (Mother of girl with physical impairment, aged 9)

One mother with visual difficulties noted that her impairment was a factor in not using her local park. Poor maintenance acted as an additional barrier to her being able to use the park amenities comfortably:

> "Yes - visual impairment … Hygiene. A lot of stuff broken - makes me feel disappointed, disgusted, upset, when you can't use it it turns you off going" (Mother with visual impairment)

One adult of a child with a mobility impairment noted that although they could not use the playground, they used the park for dog walking:

> "We come to this playground to walk her grandmother's dog. We collect the dog and bring it for a walk and that's fun" (Mother of a girl with physical impairment, aged 9)

The outcome is sometimes child-family units find alternative activities to do in the park. However, this does not address the fact that sometimes users feel excluded:

> "I'm not able to go on stuff. I am able to go on the swings with my mam but not with school… because mam helps… I just look at them and that's not good for me… it makes me feel odd" (Girl with physical impairment, age 9)

7.3.3 Users perspective on what makes a playground less fun

The child users identified their least favourite things, which included play components that were not fun, or presented certain feelings (feeling dizzy), as well as surfacing problems:

> "Baby swings … I don't like them…" (Girl, age 7)

> "Spiny thing [pointed to a space where a play component had been removed from]" (Girl with visual impairment, age 5)

> "Surface chips … falling on them … don't like [the] roundabout … makes you feel dizzy" (Boy with Down Syndrome, age 11)

Moreover, some children noted that they did not like the upgrades made to the playground, noting that there was less open space to run:

> "We preferred the old playground because there was more space to run around and play catch. We don't like having a load of equipment in a small space" (Girl, age 7; Boy, age 10)

They noted that small spaces that included either too many or too few play components were boring playgrounds. In addition, one child noted that the inaccessible nature of the playground meant that it was a boring space since she was unable to do what others were doing:

> "If it's too small and has too much stuff [play components]" (Girl, age 7; Boy, age 10)

> "There would be nothing [play components]" (Girl with visual impairment, age 5)

> "Not being able to do what others are doing" (Girl with physical impairment, age 9)

Adult users also identified their least favourite things which ranged from play components to the presence of too many people or teenage gangs:

> "the tunnel … small kids … stuff for bigger kids right in front of them [when they go up the ladders - talking about potential hazard]" (Father of boy, aged 8 and boy with Autism, aged 9)

"Swings because you have to be constantly pushing her" (Grandmother of girl, aged 7)

"Crowded … don't like it when it's too busy" (Mother of girl, aged 7 and boy, aged 10)

"… it does not seem as safe when the playgrounds close later in the Summer … teens like to taunt the attendant … at about 8pm I like to leave as I can feel a bit intimidated" (Mother of boy with Down Syndrome, aged 11)

Safety was identified as an issue and discussed in terms of maintenance issues, vandalism, dogs off leashes, the presence of teenage gangs and a lack of boundaries around the playspace:

"Dogs not on lead" (Grandmother of girl, aged 3)

"broken glass, dogs off leashes, needles, vandalism, the lack of a boundary around the playspace, people fouling on slides" (Focus group 1)

"Teens sit around … intimidating" (Mother of girl, aged 3 and boy with Autism, aged 5)

"run down … work on rust – clean and paint … closed in a lot more … older kids come in and take over … picked on from bigger kids" (Father of girl, aged 6)

7.4 Conclusion

To summarise, child and adult user's perspectives were sought to determine the usability of the parks and playgrounds.

From adults' perspectives, the parks and playground audits highlighted how the parks and playgrounds in each local area are valued for being local and easy to get to, but not valued if they are poorly maintained, or when they are overly crowded - particularly with groups of teenagers. Adults primarily used parks for walking dogs, exercise, and family time. Sometimes, especially in the city park, they used it as a place to gather with other families, such as friends or cousins. They spoke of the importance of having amenities in parks such as toilets, comfortable seats, and a place to have refreshments such as coffee. Although some adults commented on young children or children with autism being unaware of risk/danger, no adult spoke of avoiding playgrounds because of the worry that their children would fall from heights or have accidents from play. Instead, safety issues were raised in reference to broken glass, needles, or excrement.

In the city park, the hazard of the nearby river and the lack of an enclosed fence around the playground was an issue raised by all families, especially those of younger children and children with disabilities.

From children's perspectives, the main reasons for using their local playground was because an adult brought them there, and this was associated with wanting to play and have fun. Children reported on their favourite play activity which most commonly was climbing on climbing walls and slides. For children with mobility or sensory impairments, most playgrounds were not places of fun. For these children, and consequently their families, playgrounds were not designed to be welcoming, inclusive, accessible spaces. In this way, playgrounds can sometimes perpetuate exclusion.

In general, the users reported feeling welcome in their local park but not enjoying being there at certain times when it is busy or when gangs of teenagers gather. The playgrounds were identified as being most stimulating and enticing for younger children rather than 9-10-year-olds, and not at all accessible for children with significant mobility or visual impairments. In the large city playground, adults all agreed that two design features resulted in the playground being less usable: having the play components for younger children spread throughout the space instead of gathered in one zone, combined with a lack of fencing/boundary to ensure the child would not wander off unseen. Both factors resulted in adults having to follow the child at play instead of allowing them freedom to play independently.

Summary of findings from the PlayAUDIT

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8. Summary of findings from the PlayAUDIT

The goal was to determine the overall playability of these playspaces. Five parks and playgrounds were audited for physical characteristics for play, play affordances, accessibility, and usability. Then 27 participants were involved in walk-and-talk interviews, individual interviews, focus groups and observations on site. The five parks and playgrounds were identified as having strengths and weaknesses in different aspects of play value, Universal Design, and usability. When these three dimensions are combined, it is clear that **playability** is complex and is a result of the inter-connection between play value, Universal Design, and the users' perspective (as outlined in the inner circle in the Playability model - Figure 4.1). Within this inner circle, play value in a playspace is heightened by the presence of dichotomies such as, fast and slow, space and components, solitary and social, predictable and unpredictable, quiet spaces and noisy spaces, light and shade, predictable and unpredictable, loose material and fixed material, texture and smoothness, ground level and elevated. Although many of these features were observed in these playgrounds, the users experience illuminated the actual play value experience in more detail. For example, they spoke of the components not providing enough height, speed, or challenge overall that would maximise fun experiences for older children in particular. In effect, this finding speaks to the issue of needing to have accessible-inaccessible elements of play. Good design includes areas of play that are inaccessible due to the challenge involved.

Instead, the inaccessible features were associated with poor accessibility to the play **opportunities** for children with impairments in particular (for example, no ramp or steps to the highest point)**,** rather than inaccessibility due to play **challenge** (for example, the slide is too high). Although one playground was designed for maximum inclusion, many features exclude children from taking part, such as the loose surfacing underneath the swings and slides, and the difficulties in determining the pathways through the playspace due to lack of colour contrast. While 100% accessibility is not possible, there is a requirement to address general access as a fundamental concern in providing for play.

For some children, the busyness of this playground was also a negative feature and consequently, they preferred to play elsewhere, where there was more space and comfort. In general, these five parks and playgrounds were used frequently but were not always the most favourite or important playspaces for these users: child-adult units seek varied opportunities for play and often visit a range of playgrounds in their communities for the different play affordances offered in each one.

Findings: Exploring the perspectives of park and playground providers

9

9. Findings: Exploring the perspectives of park and playground providers

9.1 Introduction

This section will discuss the findings from semi-structured interviews that were carried out with park and playground providers in one local council area (Cork City Council) in Ireland. The findings are divided into two sections:

a) Section A provides an overview of findings in relation to parks and playground provision; and,

b) Section B reports on findings in relation to challenges in the provision of local parks and playgrounds.

The chapter will conclude by summarising the main findings from the perspectives of providers.

Note: The location of the park-playground units discussed in this chapter is detailed in Chapter 2, Table 2.1

9.2 Section A: Parks and playground provision

From the perspective of the local council, parks and playgrounds form only part of the overall provision within a city area that can also include open spaces and natural green areas, including along roadsides. Providers are engaged in planning, providing, and maintaining all these open, green park areas across the city, involving bulbous planting, grass cutting, and overall creation of attractive spaces. However, there are multiple considerations for the design and provision of parks and playgrounds. These are outlined below.

9.2.1 Determining the location of parks and playgrounds

In terms of the location of parks and playgrounds, providers identified that their main priority was to provide parks and playgrounds in lower socioeconomic areas: "… for the reason being that obviously lower socioeconomic groups have less opportunity to access recreational facilities" (Council staff 1). Providers explained the rationale for this: economic factors have a number of knock-on impacts on a local community. Lower socioeconomic groups have less money to spend on leisure, are less likely to have private transport, and therefore tend to need facilities that are within walking distance for family access. Therefore, at a national and regional level, local councils prioritise provision in lower socioeconomic areas, and consequently provision is targeted at being universal: accessible to all and free of charge. In addition, providers commented that the provision of attractive parks and playgrounds entice more users to an area: "… attracting businesses or industry … in addition to directly serving the immediate needs [of the community] …" (Council staff 1).

9.2.2 Providing parks and playgrounds for health and wellbeing benefits

Parks and playgrounds are provided for a number of reasons related to health and wellbeing: for example, meeting the needs of modern lifestyles, physical activity, leisure, and opportunities for socialising:

> "It's all back to the modern lifestyle, the absolute necessity now for good outdoor space … it's about exercise, you know, general health, socialising …" (Council staff 2)

> "… physical literacy is also really important for children. So, playgrounds need to help develop that physical literacy; so, things to jump off, things to turn over, monkey bars, all those things … the old-fashioned playground actually, are really important for children's development" (Council staff 4)

Notably, there was a general agreement among providers that health and wellbeing is of particular concern in lower socioeconomic areas, as there is evidence that these groups tend to have more health problems than other groups. For the most part, health and wellbeing benefits were derived from physical activity, typically available in the parks and playgrounds provided by local Council:

> "They provide opportunities for team sports … you know, large teams … football, hurling, rugby" (Council staff 1)

In addition, providers noted that in addition to physical health and wellbeing benefits, parks and playgrounds also provided for visual wellbeing:

> "… visual wellbeing, in the sense that you have greenery and nature about you…you have the seasons changing …" (Council staff 1)

9.2.3 Meeting the needs of intergenerational users in parks and playgrounds

Parks and playgrounds are provided to meet the intergenerational needs of local communities. In providing for intergenerational users, there is a need to cater for the interests of people of different ages. For younger users, the primary focus was on providing park-playground units that offer challenging varied play opportunities. In addition, provisions for younger users focused on current trends, and the provision of BMX facilities:

> "More physically challenging items, you know, you've zip wires, and you know, you're into MUGA's [Multi-Use Games Areas] …" (Council staff 2)

> "We've a BMX now in a new park … which is a different type of recreation" (Council staff 1)

For adult users then, the current trend is the provision of outdoor gyms. Providers noted that they are arranging the outdoor gym equipment in a circular fashion to encourage social interaction: "Well, we are putting one, an outdoor adult gym facility, where there is a circuit…. the aim is for it to be a more social thing that you'll go as a group …" (Council staff 2). However, providers noted other factors also that need consideration; for example, that other forms of activity are important too: "… you'd have to provide for both of them [active and passive activity] or you are not doing your job properly, and for all age groups" (Council staff 3). But trends can come and go, resulting in provisions that no longer meet the needs or interests of the local community: "we installed an outdoor chess unit … it was used for a period, but a lot of interest lost, and reverted back to kicking the ball and all that sort of thing" (Council staff 1).

Providers identified a number of considerations when providing for local communities. These included accessibility, positive experiences, and encouraging people to re-visit the park and playground:

> "That every member of a family, irrespective of their abilities or otherwise, can access and enjoy the space … you've a certain number of items that you would hope every kid can sort of access" (Council staff 1)

> "The experience of the play area … what it should offer in terms of your memory of the place, how much you want to return to the park and play facility" (Council staff 2)

From the playground perspective, play opportunities are provided based on several reasons, including basic expectations: "I think it is something people think they must have" (Council staff 2) balanced with "I do think we need to move onto more natural type play if we can get there" (Council staff 1). These expectations typically involve core playground items: "There'll probably be a list of fairly standard items that people want to see there because they're just well used … you know swings, slides, stuff like that" (Council staff 2).

In addition, providers acknowledged that regardless of ability, children have different interests and play preferences, that require different design considerations:

> "not all of them use each item of equipment … some of them have limitations … and we all have different shortcomings in certain areas, whether it's fear of heights, or a fear of flying or a fear of water …" (Council staff 1)

> "and there's the sensory area, you know, … the smells of different plants and that type of thing" (Council staff 1)

With regard to designing and upgrading parks and playgrounds, providers recognised the need to include users' perspective:

> "… [if it's] not what the locals are looking for, I mean, you're not starting off on a good footing" (Council staff 2)

> "… the place has to be welcome for everybody and maybe that's where the community consultation comes in and that chat with what's actually needed here …" (Council staff 4)

However, involving users as part of a formal consultation process has emerged as a more recent approach that was not always an approach adopted: "And that's another thing that has changed … now there is consultation" (Council staff 3). The process typically involves a series of workshops, where views are discussed, and ideas exchanged:

> "their requirements and their requests and so forth … we'll assess those and generally come back with drafts based on … their requests, and then giving explanations about why some things may or may not work in certain situations" (Council staff 1)

9.2.4 Planning, providing and maintaining parks and playgrounds

Numerous considerations are taken into account when planning, providing and maintaining parks and playgrounds. These include: age groups, abilities, position of playground within the park, amenities, maintenance, accessibility, and car-parking, among others.

For the most part, providers spoke about a number of considerations in combination:

> "it's your age group, its location, it's the risk of wanton vandalism … and the whole range of disabilities that you're attempting to cater for" (Council staff 1)

> "… locating the playground within the park is very important … that it's easy to get into … car parking, all that kind of seating, planting around" (Council staff 3)

> "You've to think outside of play … obviously we've to consider toilet facilities; there's pressure now that most people feel you need to be able to get a cup of coffee when you are going there as well … car-parking is a major issue because if you don't make provision for it, it can become a serious risk and hazard" (Council staff 1)

> "… taking into account the park as a place overall and how the play area fits and … it's about the children, parents, grandparents, minders as well as the range of abilities that the kids themselves have" (Council staff 2)

> "… community needs are different … when you have smallies … it needs to be fenced in … for older people it's about feeling safe in there … things are being damaged, but that is because there isn't other facilities in the park, so teenagers need hang-out spaces" (Council staff 4)

In addition, a number of providers noted that if considerations are taken into account, users are more likely to enjoy their time, hold fond memories, and make new discoveries on repeated visits:

> "Maintenance is critical … If you go to a well-maintained area, you're more likely to sit down and enjoy your time there …" (Council staff 1)

> "Ease of access, well-defined position of the play area within the park, distinctiveness, something iconic about the facility you know that will hold your memory, potential for discovery on repeat visits … non-segregation … segregation so that young kids don't get run over by a stampede" (Council staff 2)

9.2.5 Universal Design as a more recent design approach

Universal Design was identified as a more recent approach in the design and provision of parks and playgrounds. While traditionally providers planned parks and playgrounds based around budgets, this has changed in recent years. Providers noted that Universal Design features prominently in design briefs sent for tender for the development of playgrounds:

> "The Universal Design aspect, … there's more specific requirements and wider based spectrum of requirements, other than just providing a list of play items in particular areas … inclusion is a newer sort of concept" (Council staff 2)

While Universal Design was identified as being important, providers tended to rely on expert knowledge from UK-based commercial playground providers:

> "It was an area we felt we needed to have some specialist input on the project; so we had two play specialists involved … who are UK based and have a particular slant towards natural and inclusive play areas" (Council staff 2)

When asked about their own knowledge, providers noted that they had not engaged in any specific training. Instead, they rely on the input from UK-based commercial playground providers:

> "we haven't gone down that route yet of taking very specific training. We've relied on the advice of input from [UK-based commercial playground providers]" (Council staff 2)

Notably, Universal Design was conceptualised as designing for persons with impairments rather than the general population. As participants noted:

> "there's a whole range of disabilities as we know, and that's [what] the difficulty is, how can you cater for each individual …" (Council staff 1)

> "I think it should be inclusive but I also think that it needs to work with the area that it's in …" (Council staff 4)

In relation to design features that are inclusive, providers typically mentioned the wheelchair accessible roundabout in Fitzgerald's Park, and the bucket swing. In addition, MUGA's were considered to be accessible areas for older children. Having footpaths accessible was also mentioned and places from where to watch what was happening.

9.3 Section B: Challenges

Providers also noted a number of challenges in the planning, design and provision of parks and playgrounds, that can determine and limit provision. These are outlined below.

9.3.1 Funding and income generation

Parks and playgrounds require funding in terms of planning, designing, development and maintenance. When playgrounds are being designed and developed, cost is both an enabler and a limitation. As participants noted:

> "… some of it will come down to funding … trying to prioritise and cater for as many people as we could …" (Council staff 2)

> "… if funding was not an issue you would be making sure that all the playgrounds were accessible for everybody …" (Council staff 4)

This is particularly relevant when exploring design solutions for accessibility. For example, in Fitzgerald's' Park, efforts were made to ensure all children could access the highest point in the playground, i.e. the top of the castle. However, budget constraints meant that no cost-effective solution was found:

> "and the budget thing again … provide some facility that would get someone in a

> wheelchair up to that height but it was only something you could accommodate over in the corner … it needs to be practical …" (Council staff 2)

In terms of the ongoing costs of maintenance providers noted that their priority is to maintain access to parks and playgrounds free of charge: "I am still of the view, primarily we should still maintain our access to our parks our open spaces areas, including playgrounds … free …" (Council staff 1). However, because free access generates no income, providers noted that it is a challenge to provide facilities free of charge when you consider the cost of maintaining the parks and playgrounds. Providers identified that cost-effective solutions are fundamental in this regard.

9.3.2 Maintenance and vandalism

Maintenance and vandalism were identified as ongoing challenges in the maintenance of parks and playgrounds. While maintenance referred to wear and tear, vandalism referred to anti-social behaviour and damaged play components:

> "Because it is there over ten years … you have the continual wear and tear, you do get vandalism, … all the problems with anti-social activity and vandalism …" (Council staff 3)

In addition, the challenge of vandalism means that, for the most part, playgrounds are provided within enclosed parks for security reasons. These parks remain open during daylight hours and close at dusk:

> "the majority of our playgrounds are within enclosed parks so that provides a good degree of security from wanton vandalism outside of park opening hours" (Council staff 1)

Due to the added security of locating playgrounds within enclosed parks, providers noted that instead of incurring costs from vandalism, money can be spent in upgrading the playgrounds:

> "… I want to repaint all the playgrounds, because they're tired looking … the playground equipment is perfectly sound and it has plenty of life left in it!" (Council staff 3)

Only Fitzgerald's park has a supervisor onsite, and this impacts the playspace significantly - vandalism is minimal and maintenance needs are low compared to the other four parks. However, providers noted that Fitzgerald's park is a City park, meaning families travel distances to visit and therefore adults typically accompany children. In contrast, the other four parks are local parks situated in residential communities, where children are more likely to be unsupervised. One participant noted, "we have to recognise that and design accordingly" (Council staff 1).

However, in some playgrounds vandalism takes up a considerable amount of time and money. One provider noted their frustration as a result of having to close off parks and playgrounds to the public while repairs are taking place:

> "the likes of swing seats … in some parks you could be replacing those three or four times a year because they're vandalised. That's very frustrating … because you have to do repairs, you've got to close the park …" (Council staff 3)

Providers noted that a playground is a failure when it has missing pieces due to vandalism or damage: "A not [so] good playground is if there's broken pieces of equipment that haven't been replaced" (Council staff 3).

From an intergenerational perspective, providers highlight however, that vandalism is often the result of "high unemployment, kids have nothing to do, where do you go? You go to the park and you start messing, you've a few cans" (Council staff 3). Nonetheless, providers acknowledged that teenagers are not well provided for in communities. Despite efforts on the part of the local Council to incorporate MUGA's in parks and playgrounds, providers noted that further solutions are needed to meet the needs of this population group:

> "Providing somewhere that has a couple of sofas and a cup of coffee, out of the rain, that is what they want! They don't want to be sitting on the swing" (Council staff 3)

> "there isn't other facilities in the park, teenagers need hang-out spaces" (Council staff 4).

9.3.3 Making informed decisions regarding design solutions

Providing for play value in the context of trends is an ongoing challenge. Providers made reference to providing facilities that were 'on trend' (for example, skateboarding parks). Providers noted that trends from industry could be a big influence that can be problematic when children take up new outdoor play activities and communities advocate for facilities to support them. This was noted to be a costly task and not always sustainable:

> "Like the skateboard… but the manufacturers of skateboards had nothing to do with the major cost of putting a large skate park in place, which fell on the local authority and that being the local taxpayer" (Council staff 1)

In addition, providers aim to provide for the needs of users with diverse abilities. They noted that planning for play value is a challenge, in the context of different expectations:

> "… we have a lot of people with … autism now, so you know, you might need to take that into account … that there is you know, space between the equipment, that it is not too loud, stuff like that …" (Council staff 4)

> "Making sure you include items that are well known for being really useful, and sort of, you know, opportunities for autistic kids to just stand aside and sit and observe … and then the wheelchair accessible roundabouts seem to be a number one sort of item" (Council staff 2)

In this context, the provider is considering the need for quiet or private spaces for children with autism alongside active spaces. The provider is recognising the fact that different types of opportunities are required for high play value, and this does not always include physical activity play.

However, providers identified that consultations with playground users consistently highlight the need to include swings, slides, and roundabouts and in full sight of the adult. Some providers proposed that this may be an indication of lack of understanding of play value and the need for free, independent play: "they certainly seem conditioned - I am not convinced they fully appreciate what they should have in the playground" (Council staff 2). Providers also note that for some adults, being able to observe their child at play is not a concern:

> "we have undertaken observation of the playground from time to time, just observing parents and more often than not, the parents are on a smart phone of some description or other …" (Council staff 1)

9.3.4 Balancing risk and safety

Providers talked about the need for challenge in play. Providers noted that challenge could be provided for by incorporating natural elements that were not necessarily organised:

> "I think it is recognised that there needs to be a level of challenge, and maybe a lot of it comes out of providing more natural solutions … you know that sort of stuff that isn't too organised" (Council staff 2)

Notably, providers recognised the need to allow for basic risk as part of play, as one participant said: "I know we have designed out the risk factor completely and utterly and kids should be able to fall on their knees, pick themselves up and off you go" (Council staff 3). Providers were also aware of the challenge in providing open play opportunities for some, while also balancing this with supervised play. This arises specially in different age groups:

> "that is something we've to be concerned about as well … certain items of equipment in unsupervised play areas, while it can be great play value to a ten or twelve-year-old, it might be quite dangerous to an unsupervised four year or six-year-old" (Council staff 1)

However, providing for risk is curtailed by regulations and safety standards. Providers consistently speak of the fundamental issue of safety: "the bottom line is, you know, it has to be compliant with regulation" (Council staff 3). Providers spoke of a rigorous system of safety checking and training for safety inspections. These checks aim to ensure the play equipment is in working order and to remove any damaged pieces:

> "Any general operative who would be opening a park got a one-day course, which

> meant they can do the visual inspection and flag if there was something wrong. Then all the foremen would have done the 2-day, which mean they could do the weekly written inspections. And then our fitter would do the monthly [safety inspection]. And obviously, the annual independent assessment" (Council staff 3)

Providers dealing with safety also spoke of the negative side of this issue. This included public liability and claims. Even though there are systematic process of safety checks, injuries will happen as this is the nature of play. However, in some instances, this becomes a problem for the local council:

> "You could have done everything you legally possibly can, reasonably practicable and you followed all the standards and you've done everything possible and because [they are a] minor … [the case is settled in favour of the complainant] … it's a long battle" (Council staff 3)

9.3.5 Universal Design, accessibility and inclusion

Providers noted that providing accessible parks and playgrounds is a challenge, particularly in relation to providing for wheelchair users. While provisions for wheelchair users was being addressed in newer playgrounds, older playgrounds tended to be inaccessible and were not built with accessibility in mind:

> "So, we're working, and we've achieved those [accessible play components] with the newer playgrounds, but access was the big thing we found from both parents and carers of children with disabilities being able to be a part" (Council staff 1)

While previous approaches to inclusive design featured largely around providing accessible play components, more contemporary provisions focused on providing spaces that are not segregated based on age, thereby facilitating interaction and a sense of belonging:

> "We did have one [wheelchair swing] in Fitzgerald's Park in the previous playground …" (Council staff 1)

> "Maybe it's just getting over the old idea. Through the years we've seen the typical sort of you know, the fenced off area for toddlers … whereas, the inclusive idea is that the interaction between kids brings on the younger kids or brings on, the less able kids" (Council staff 2)

> "it's the feeling that once you've entered the particular zone, is that you are part of something … and its distinctly not segregated" (Council staff 2)

Providers reported that while inclusion and age integration is important, there is still a need for sectioning off an area for younger children, and for having fencing to protect them from wandering off also, especially when there are rivers nearby:

> "A playground needs to be intergenerational in its use, so in an ideal world, you'd have the space for smallies, that there would be enough space between that and the next space, that they are not banging off each other" (Council staff 4)

> "Like the playground in Fitzgerald's park is aesthetically pleasing … but as a parent, it's not a good playground to use at all, you can't see them, and they could be down to the river in two minutes … I think fenced-in is very important for the smallies, maybe not the older age group" (Council staff 4)

However, there are also considerations in relation to inclusion, age, and regulation. Playgrounds are designed primarily for children under 12 years. Therefore, fixed playground equipment is restricted according to age, based on insurance and safety standards. This standard is based on typical child development, and the knowledge that typically children of 12 years move on to sports. However, this results in excluding some older children who may still enjoy playing on these play components, for example a teenager with intellectual disability:

> "Personally, I don't think a playground is a space for a young adult who has disabilities … when you are that size … you have to look at it from a small set of eyes up as well. It can be very intimidating … it's a very difficult one to marry the two" (Council staff 3)

9.4 Conclusion

Perspectives from those involved in providing and maintaining parks and playgrounds demonstrate the perceived significance of playgrounds in providing inclusive spaces in local communities, particularly in areas of social disadvantage. Nevertheless, numerous competing factors govern provision. These include the considerations that were identified in the Playability model (Figure 4.1): for example, selecting the location of the parks and playgrounds, meeting community needs, trying to cater for different age groups, vandalism and public liability that impact on funding, substantial safety schedules to ensure compliance with safety standards, and developing inclusive design solutions. Providers confirmed that parks and playgrounds are designed to meet local play and leisure needs. However, a Universal Design approach to playground design was less well understood and a relatively new concept. In general, providers agreed that design for inclusion was an area that required external expertise and involvement. Specialists were relied on for advising on inclusive design specially for new playgrounds. While providers were aware of the need to integrate natural and built elements in designing parks and playgrounds, they did not know how best to go about this challenge in relation to play and inclusion.

Recommendations for consideration in applying a Universal Design approach to playground design

10

10. Recommendations for consideration in applying a Universal Design approach to playground design

10.1 Introduction

The aim of this section is to present some of the play component challenges identified in this study of five parks located in Cork City, Ireland and to offer **some examples** of play solutions, including ideas and recommendations for planning, designing, and retrofitting playspaces. The ideas and recommendations highlight the need for providing for play value whilst also incorporating the principles of Universal Design. Playspaces designed from a UD approach need to be designed to be playful, with spaces that can be accessed, used, and enjoyed by users of all ages, sizes, abilities and disabilities. The recommendations come with some caveats:

1. The ideas and strategies are **not a complete list**, rather some ideas to think about.
2. Solutions need to be considered on a case-by-case basis, as the needs and possibilities for each community and playspace will differ greatly therefore consultation with the providors and users by the design team(s) prior to work commencing on the ground is crucial
3. Rather than incorporating all ideas in one playspace, it is recommended that individual choices be made. Thus, the end goal should not be about quantity, instead the focus should be on providing quality playspaces.
4. All recommendations need to follow national codes, technical guidance documents and safety regulations.

10.2 Strategies for maximising play value through Universal Design

10.2.1 General design considerations for play value and Universal Design

For high play value and Universal Design, consideration needs to be given to:

- Level routes and slopes to each play component so that users can access multiple choices;
- Multiple ways to use each play component - steps, ladders, transfer platforms, contrasting colour and texture, grips;
- Transfer solutions for accessing play opportunities on different heights - transfer platforms, ramps, deck spaces, steps;
- Space requirements - adaptive devices, head clearance, accessible equipment;
- Access to important information - consistent and good colour contrast, kerb edging, textures underfoot, clear easy-to-understand information, pictograms explaining how play items might be used, acoustics;

- Simple and intuitive use - desire lines that lead users from one space/item to the next, flow and layout of components in circular routes;
- Play value
    - More varied ground-level components as well as elevated ones
    - Grouping play components in circles to increase social play; considering components that require more than one person to operate and use them (such as see-saws) for social play
    - Ways to include vegetation and landform to increase physical, sensory, social, and cognitive play: small hills and tunnels accessible to all users; low hedging to demarcate areas and give the child a sense of privacy
    - Providing small, as well as large, spaces to foster imaginative, creative play
    - Ways to incorporate loose materials or parts, such as sand, water, stones, sticks
    - Strategies to include loose parts in play such as providing buckets, spades, ropes. Storage solutions (for example, sheds, lockers, boxes) will help with this
- Every child must be able to access the highest point in the playground; and,
- Community involvement in designing playspaces, including young children and users with impairments.

10.2.2 Implications: Designing for play value and inclusion

While all of the playgrounds included in our project provided affordances for users to engage in different play types, further strategies could be implemented so that playgrounds can be accessed, understood, and used to the greatest extent possible by all people regardless of their age, size, or ability. However, it is neither possible nor desirable to make every piece of a playspace 100% accessible and usable when we consider people's different ages and abilities and the need to provide for graduated challenge. Thus, as a means to develop Universal Design playgrounds that offer high play value, the 7 principles of Universal Design (UD) to be considered in relation to play and play value.

Table 10.1: Tailoring the 7 principles of Universal Design for Playspaces

7 Principles of UD	Principles for play value
Equitable use	There is a need to design for challenge and complexity that caters for people of different ages and abilities, resulting in equality of experience.
Flexibility in use	There is a need to design for variety in order to cater for people's individual play preferences and play styles.
Simple and intuitive use	Challenge is an integral part of children's play. As such, there is a need to design stimulating playspaces that offer opportunities for adventure and excitement.
Perceptible information	Discovery and imagination is an essential part of children's play. As such there is a need to design playspaces that encourage user's natural curiosity.
Tolerance for error	Risk is an integral part of children's play. As such, there is a need to design risk-rich playspaces that afford users the opportunity to participate in challenging and risky behaviour without being exposed to overly dangerous activities or risks.
Low physical effort	Physical effort is integral for children's active play. There is a need to design playspaces to provide for active play, while minimising unnecessary fatigue.
Size and space for approach and use	People of different ages, abilities and sizes participate in play. Thus there is a need to design playspaces that offer appropriate size and space to accommodate everyone and facilitate participation in the playspace.

The following sections offer some design strategies for planning, designing, and retrofitting playspaces - providing for play value whilst also incorporating the principles of Universal Design.

Note: The location of the park-playground units discussed in this chapter is detailed in Chapter 2, Table 2.1

Swinging

Successful design for inclusion: All of the five Cork playgrounds offer opportunities for swinging. These include small enclosed toddler seats and wide seats large enough for an adult, that move in a linear motion. The infant and large swing seats are accessible for people of different heights and sizes. Fitzgerald's Park also provides bucket swings that move in a linear motion. Bucket swing seats are more accessible than traditional swing seats because you can use them in a seated/ lying position. In addition, bucket swing seats can be used by more than one person at a time, which allows for social interaction. Fitzgerald's Park made further attempts to facilitate social interaction, by arranging the swings in a circular fashion. Tory Top Park provides a shared swing seat, allowing for intergenerational use and encouraging social interaction.

Issues: In terms of the layout of the swings, the infant and large swing seats are located in different areas, resulting in segregation based on age. Attempts have been made in Fitzgerald's Park to facilitate more intergenerational use by grouping infant and large swing seats in a circle. However, not all users can access the grouped swings because of inaccessible surfacing (bark mulch) and the absence of pathways leading to the swings. Instead, accessible surfacing and pathways lead to the bucket swing seats in Fitzgerald's park, but the bucket swings are not located in the same area as the other grouped swings. In addition the pathway to the large swing set in Gerry O Sullivan Park is inaccessible for many users, because of the presence of steps.

Play value and Universal Design strategies

- Regular and accessible surfacing should lead to all swings in the playgrounds.
- Include a variety of swing types (for example, swings that move in linear and circular motion; small enclosed toddler seats; wide seats large enough for an adult).
- Include accessible swing types. There are many accessible swings where children need to transfer in order to use them (for example, bucket swings; an adaptive swing with a harness; seats with back and side support). There are also wheelchair accessible swings that allow persons that cannot leave their chair to roll on.
- Include swings at a variety of heights for play value.
- Consider grouping the swings (for example, circular grouping of swings in Fitzgerald's Park) to encourgae social interaction and intergenerational use.

Figure 10.1: Circular grouping of swings in Fitzgerald's Park

Figure 10.2: Shared swing seat (on right-hand-side) in Tory Top Park

Sliding

Successful design for inclusion: All of the five playgrounds offer opportunities for sliding. All playgrounds provided open slides. Fitzgerald's Park and Tory Top Park provide double width slides, which are more accessible for users that require a caregiver to support a child going down the slide. The double width slides also facilitate social interaction as they can carry two people side-by-side. Fitzgerald's Park also provides tube slides, allowing users to explore light. While most of the slides had a straight drop, Gerry O Sullivan Park provides a curved slide, allowing users to explore direction. In terms of the layout of the slides, most of the playgrounds offer slides at different heights to facilitate graduated challenge and accommodated different sizes (smaller and larger slides). In addition to providing typical slides, four of the playgrounds provide fireman poles, located on composite play components (at different heights), for sliding.

Issues: For the most part, slides can only be accessed via climbing (for example, climbing ladders, climbing ropes, climbing walls), making them inaccessible for many users. Despite double width slides being provided, they are inaccessible for many users because of inaccessible routes (for example, the castle doors in Fitzgerald's park were too small for wheelchair users to get through). The tube slides in Fitzgerald's Park only accommodate users of certain heights and sizes, and do not allow for caregiver assistance due to their enclosed nature. In addition, the drop-off points for fireman poles could be dangerous, particularly for children that have difficulties perceiving danger or for younger children that require caregiver assistance.

Play value and Universal Design strategies

- Regular and accessible pathways should lead to all slides in the playgrounds.
- The highest slide should be accessible for all users (consider access routes and transfer stations).
- Include slides at a variety of heights for graduated challenge.
- Include different slide types (for example, tube slides, curved slides, spiral slides, straight slides, wave slides, double width slides, slide poles).
- Include slides that allow for individual use and shared use (for example, double width slide).
- Access options should be considered. Accessible hand grips and transfer decks at the top of slides. The run out of a slide should be long enough to allow for transfers.

Figure 10.3: Double width slide in Fitzgerald's Park

Figure 10.4: Curved slide in Gerry O Sullivan Park

Rocking

Successful design for inclusion: Three of the playgrounds offer opportunities for rocking. For the most part, spring-loaded rockers are provided, allowing for a to-and-fro and/or side-to-side motion, in a seated position. Fitzgerald's park offers a see-saw that requires shared use to operate it, therby facilitating social interaction and intergenerational use. In addition, Lough Mahon Park provides two large spring-loaded rockers (one to sit on, and one to stand on), that require shared use to operate it, therby encouraging social interaction. One small spring-loaded rocker in Fitzgerald's park and one small spring-loaded rocker in Tory Top Park, designed to be used by a small child, have backrests making them more accessible and usable for users that need additional support when sitting.

Issues: Tory Top Park and Glenamoy Park offer no obvious opportunities for rocking. In terms of the layout of the rockers, they are located in a scattered fashion throughout the playgrounds, resulting in limited opportunities for social interaction. However, attempts have been made to facilitate social interaction by providing rockers that require shared use. In Fitzgerald's Park, not all users can access the rockers as a result of inaccessible surfacing (bark mulch), and an absence of pathways leading to the rockers. In addition, the seat heights of the rockers are inaccessible for users small in stature – caregiver assistance would be required.

Play value and Universal Design strategies

- Regular and accessible pathways should lead to all rockers in the playgrounds.
- Include rockers that provide a to-and-fro and side-to-side motion (for example, spring-loaded rockers).
- Include accessible rocker types (for example, rockers with side and back supports; rockers that support users in a variety of positions - sitting, standing, lying). Consider transfer systems, backrests, foot supports and handgrips.
- Include rockers that allow for individual play (accommodate one user) and social play (accommodate multiple users).
- Consider grouping the rockers to facilitate intergenerational use and encourage social interaction.

Figure 10.5: See-saw in Fitzgerald's Park playground that requires shared use to operate it

Figure 10.6: Spring-loaded rocker with back support in Lough Mahon Park playground

Hanging

Successful design for inclusion: All of the five playgrounds offer opportunities for hanging. For the most part, the playgrounds provide hanging bars and/or hanging rings, with an obvious use (move from one to the next). Fitzgerald's Park provides hanging bars, at different heights, with no obvious use (arranged in a linear fashion). In terms of the layout of the hanging bars and nets – for the most part, they are available on the large composite play components, meaning that affordances for hanging are available at great heights. Fitzgerald's Park is the only playground that offers opportunities for hanging at ground level that can be used by a seated or standing user.

Issues: The layout of the hanging bars and rings on the large composite play components, results in segregation based on age. For the most part, the hanging bars, rings and nets can only be accessed via climbing onto the large composite play components (for example, climbing ladders, climbing ropes, climbing walls). As a result, not all users can access opportunities for hanging. In addition, hanging bars located at great heights, while providing for risk and challenge, make it difficult for caregivers to assist and/or supervise children that may need assistance. Despite hanging bars being located at ground level in Fitzgerald's Park, not all users can access these hanging bars as a result of inaccessible surfacing (bark mulch), and an absence of pathways leading to the hanging bars.

Play value and Universal Design strategies

- Regular and accessible pathways should lead to all hanging components in the playgrounds.
- Include accessible hanging items (for example, bars that can be reached by a seated or standing user). Consider accessible handgrips.
- Consider different hanging components (for example, bars, rings, hoops, nets).
- Additional access routes and transfer stations should be considered, to ensure that all users can access the highest point in the playground.

Figure 10.7: Hanging bars located at different heights in Fitzgerald's Park playground

Figure 10.8: Hanging bars located on large composite play component in Gerry O Sullivan Park

Climbing

Successful design for inclusion: All of the five playgrounds offer opportunities for climbing. For the most part, all playgrounds provide climbing ladders, climbing walls and climbing bars. In addition, Fitzgerald's Park also provides a log pyramid, climbing nets and climbing slopes on the small and large composite play components. Glenamoy Lawn park also has a climbing chain on the small composite play component and a double width ladder on the large composite play component. The double width ladder can accommodate caregiver assistance. In terms of the layout of the climbing structures, most of the playgrounds offer climbing structures at different heights, to facilitate graduated challenge.

Issues: In terms of the layout of the climbing structures, the climbing structures for younger and older children are located in different areas, resulting in segregation based on age. However, not all users can access these climbing structures, as they only accommodate users of certain heights and sizes. Although there is a double-width ladder in Glenamoy Lawn Park, the raised structure at the end of the steps could cause an obstruction for many users (for example, users with visual difficulties, mobility difficulties). Despite multiple opportunities for climbing in Fitzgerald's Park, not all users can access these components because of inaccessible surfacing (bark mulch surfacing) and an absence of pathways leading to climbing components.

Play value and Universal Design strategies

- Regular and accessible pathways should lead to all climbing components in the playgrounds.
- All users should be able to access the highest point in the playground. Consider accessible access routes and transfer stations.
- Include accessible climbers (for example, with spacious platforms, with wider stairs, with accesisble handgrip handles, located at ground level).
- Consider transfer systems, foot supports and accessible handgrip handles (for example, on climbing wall) that accommodate users of different sizes and abilities.
- Further attempts need to be made in grouping the climbing structures to facilitate intergenerational use and encourage social interaction.

Figure 10.9: Climbing ladder and wall located on composite play component in Fitzgerald's Park playground

Figure 10.10: Climbing bars and ropes located on composite play component in Tory Top Park

Spinning

Successful design for inclusion: Four of the playgrounds offer opportunities for spinning. For the most part, standing items for spinning are provided (Spica). In addition, Fitzgerald's Park has a roundabout. The Spicas and roundabout can accommodate one or more users. The roundabout in Fitzgerald's Park accomodates a wheelchair. When the spinning items are used by more than one person, it encourages reciprocal interaction to operate it, therby facilitating social interaction. In addition, accomodations for more than one person would facilitate intergenerational use.

Issues: The playground in Tory Top Park offers no obvious opportunities for spinning. The Spicas are inaccessible for many users, particularly users with mobility difficulties. While there are opportunities to sit on the Spicas in Gerry O Sullivan Park and Glenamoy Lawn Park, their intended use is via standing. Although provisions are made for wheelchair users in Fitzgerald's Park, provisions are limited to one seated user. In addition, for seated users, assistance is required to operate the roundabout.

Play value and Universal Design strategies

- Regular and accessible pathways should lead to all spinning components in the playgrounds.
- Include accessible spinning components that support users in a variety of positions (sitting, standing, lying).
- Consider transfer systems, backrests, foot supports and accessible handgrip supports that accommodate users of different sizes and abilities.

Figure 10.11: Spica in Glenamoy Lawn Park

Figure 10.12: Roundabout in Fitzgerald's Park

Balancing

Successful design for inclusion: Three of the playgrounds offer opportunities for balancing. For the most part, balancing is provided for by means of a shaky bridge. In addition, Tory Top Park has a skateboarding park. In terms of the layout of the shaky bridges in Tory Top Park and Glenamoy Lawn Park, they are available on the large composite play components and can be accessed via climbing (for example, climbing ladders, climbing ropes, climbing walls). Fitzgerald's Park is the only park that does not provide the shaky bridge on the large composite play component – it is located at ground level. In addition, the two sets of balance logs in Fitzgerald's park are located in separate locations at ground level. The skateboarding park in Tory Top Park is separated from the designated playground with the presence of a low fence. The skate park in Tory Top Park is intended for use by older children, however it can be accessed by younger children also (for example, on scooters/ bikes; running; as a place to hang out).

Issues: Gerry O Sullivan Park and Lough Mahon Park offer no obvious opportunities for balancing. In terms of the layout, the shaky bridges in Tory Top Park and Glenamoy Lawn Park are available on the large composite play components that can only be accessed via climbing (for example, climbing ladders, climbing ropes, climbing walls). As a result, not all users can access the balancing components in these playgrounds. Despite offering balancing opportunities at ground level in Fitzgerald's Park, they are inaccessible for many users as a result of inaccessible surfacing (bark mulch), and an absence of pathways leading to the balancing components.

Play value and Universal Design strategies

- Regular and accessible pathways should lead to all balancing components in the playgrounds.
- Include balance components that provide for graduated challenge (low, flat, high, narrow, rocking).
- Include accessible balance components at ground level (for example, hopscotch, a maze or obstacle course) and elevated levels. Consider access routes, transfer stations, foot supports and hand supports).

Figure 10.13: Balance logs in Fitzgerald's park

Figure 10.14: Skate park in Tory Top park

Crawling

Successful design for inclusion: Four of the playgrounds offer opportunities for crawling. Fitzgerald's Park offers space for crawling under play components (log pyramid, small composite play component; climbing rope on large composite play component). Tory Top Park and Glenamoy Lawn have crawling tunnels located on the large composite play components. Opportunities for crawling on the large composite play components can be accessed via climbing (for example, climbing ladders, climbing ropes, climbing walls), meaning that affordances for hanging are available at great heights. Lough Mahon Park has a crawling net on the large composite play component.

Issues: Gerry O Sullivan Park offers no obvious opportunities for crawling. For the most part, opportunities for crawling can only be used by one user, therefore limiting opportunities for social interaction. In addition, the crawling tunnels in Tory Top park and Glenamoy Lawn have large gaps between the poles. As a result, they would most likely have to be used in a crouched standing position. Opportunities for crawling in Fitzgerald's Park are inaccessible for many users due to inaccessible surfacing (sand, bark mulch), an absence of pathways leading to crawling components, and accommodation for users of only certain heights and sizes. Opportunities for crawling on the large composite play components can only be accessed via climbing (for example, climbing ladders, climbing ropes, climbing walls), making them inaccessible for many users.

Play value and Universal Design strategies

- Regular and accessible pathways should lead to all crawling items in the playgrounds.
- All users should be able to access the highest point in the playground. Consider access routes and transfer stations.
- Consider locating opportunities for crawling at ground level (for example, tunnels, dens) and elevated levels. Consider access routes and transfer stations.
- Further attempts need to be made in grouping the climbing structures to facilitate intergenerational use and encourage social interaction.

Figure 10.15: Space for crawling under play components in Fitzgerald's park

Figure 10.16: Crawling net in Lough Mahon park

Loose materials

Successful design for inclusion: Two of the playgrounds offer opportunities for moving loose parts. Fitzgerald's Park offered the most moveable loose parts. These included a visual disc, a wheel of a ship, a hilder wicker sound maker, a ship bell and a bucket on a chain for moving sand in the small play area at the front of the ship. Gerry O Sullivan Park offered a moveable tunnel/ wheel. All moveable loose parts were located at ground level.

Issues: Lough Mahon Park, Tory Top Park and Glenamoy Lawn Park offered no obvious opportunities for moving loose parts. In terms of Fitzgerald's Park, although offering a number of moveable loose parts, there was limited variety in terms of what one could do with them (spin in a circle). The bucket and chain and wheel of the ship in Fitzgerald's Park was inaccessible for many users due to inaccessible surfacing (loose sand and bark mulch). In addition, the visual disc and hilder wicker noise maker would require a long reach for seated users to operate them. For Gerry O Sullivan Park, although the spinning tunnel/ wheel was accessible, there was no obvious use. Although this could stimulate imaginative play, it was difficult to understand its use/purpose.

Play value and Universal Design strategies

- Regular and accessible surfacing should lead to all loose parts in the playgrounds.
- Include additional loose parts to maximise variety and stimulate inclusive, imaginative play. Loose parts are natural or man-made and can be manipulated, moved, carried, built and demolished. Loose parts could include for example: items from nature (for example, sticks, logs, stones, leaves), sand (sand tables, sand pits, buckets and shovels for manipulating sand), water (including toys to interact with water), construction materials (for example, logs, tyres, blocks).
- Loose materials should be accessible and within reach (consider, for example, raised tables).
- Include spaces where users can bring loose parts such as balls, trikes, dolls, scooters.

Figure 10.17: Bucket and chain in Fitzgerald's park

Figure 10.18: Moveable tunnel/ wheel in Gerry O Sullivan park

Natural features

Successful design for inclusion: Fitzgerald's Park offers the most natural matarials. Natural materials included wooden structures, sand, bark mulch and a water fountain. Although the water fountain was not intended for play, there was evidence that it was being used for play (blocked by sand). Attempts had been made in Glenamoy Lawn to integrate natural materials (trees and grass) by means of a fenced boundary that includes the trees and grass in the designated playground.

Issues: Despite evidence of attempts to provide natural materials, they are limited. In addition, there were few opportunities for users to manipulate loose materials (with the exception of the bucket and chain in Fitzgerald's park for manipulating sand). Although natural materials were available in the outskirts/perimeter of the playgrounds in Lough Mahon Park, Tory Top Park and Glenamoy Lawn Park (for example, trees, grass, planting), they were not integrated into the designated playground.

Play value and Universal Design strategies

- Regular and accessible surfacing should lead to all natural elements in the playgrounds.
- Incorporate additional natural features to maximise variety and stimulate inclusive, explorative and imaginative play. Natural materials are items that can be manipulated (for example, sticks, logs, stones, boulders, leaves, pine cones).
- Items need to be accessible and within reach (for example, raised planters, sand tables as opposed to sand pits).
- Further attempts need to be made to include natural elements in the designated playground (for example, grass, trees, planting), rather than having them on the outskirts/perimeter.

Figure 10.19: Water fountain in Fitzgerald's park

Figure 10.20: Integrating natural elements (grass and trees) in Glenamoy Lawn

Cozy spaces

Successful design for inclusion: Fitzgerald's Park is the only playground that provides cozy, private spaces. Fitzgerald's Park offers opportunities under play components (for example, log pyramid, front of ship), which provide opportunities for accessing cozy, private spaces where they can hang out, hide, or watch other children playing. Although the spaces under the play components do not appear to be intentionally designed as cozy spaces, there was evidence that these spaces were being used (compacted sand).

Issues: For the most part, opportunities for accessing cozy spaces is via crawling, making them inaccessible for many users. All other playgrounds (Gerry O Sullivan Park, Lough Mahon Park, Tory Top Park and Glenamoy Lawn Park) are exposed and overlooked meaning there are no opportunities to access cozy private spaces. However, cozy spaces can be sought in the outskirts/perimeter of the playgrounds in Lough Mahon Park, Tory Top Park and Glenamoy Lawn Park (for example, behind trees/skateboard ramps), they are not integrated into the designated playground.

Play value and Universal Design strategies

- Regular and accessible surfacing should lead to all cozy places in the playgrounds.
- Additional cozy spaces need to be considered (for example, cosy corners, spaces to be an onlooker, huts, play houses). Consider access routes and transfer stations.
- Ensure that spaces give children a sense of privacy. However, adult caregivers must be able to see child users at all times.

Figure 10.21: Space for crawling under front of ship in Fitzgerald's park

Figure 10.22: Space for crawling under log pyramid in Fitzgerald's park

Exploring the senses

Successful design for inclusion: Fitzgerald's Park offers opportunities for exploring the senses. Opportunities to explore sound include a hilder wicker noise maker and talk tubes. Opportunities to explore touch included the provision of wooden structures, sand and bark mulch. Opportunities to explore sight was provided for in the provision of enclosed slides which allow users to explore light, and the visual disc.

Issues: The hilder wicker noise maker would require a long reach for seated users to operate it. The talk tubes, to look at, have no obvious use. The enclosed slides in Fitzgerald's Park would only accommodate users of certain heights and sizes, and do not allow for caregiver assistance due to their enclosed nature. Although opportunities to explore the senses are available in the outskirts/perimeter of the playgrounds in Lough Mahon Park, Tory Top Park and Glenamoy Lawn Park (for example, trees and grass), they are not integrated into the designated playground

Play value and Universal Design strategies

- Further attempts need to be made to integrate items to explore the senses in the designated playground, rather than having them on the outskirts/perimeter.
- Additional items to explore the senses (sight, sound, taste, touch, smell) should be considered, to maximise variety and stimulate explorative and imaginative play.
- Sight – consider for example ribbons, coloured materials, colour contrast.
- Sound – consider for example wind chimes, planting that provides sounds, musical activities.
- Taste – consider for example child-friendly non-poisonous or edible plants.
- Touch – consider textures that are soft, rough, bumpy, hard smooth etc. In addition, planting that has leaves that fall in Autumn offer additional opportunities for play.
- Smell – consider for example scented planting and shrubbery.
- Consider access routes, transfer stations and location of natural materials within reach (for example, raised planting).

Figure 10.23: Hilder wicker noise maker in Fitzgerald's park

Figure 10.24: Talk tubes in Fitzgerald's park

Summary and conclusions

11. Summary and conclusions

This small-scale study provides an important analysis of local park and playground provision in one local council area from the perspectives of children, adults, and providers. From a Universal Design perspective, the research examines five park-playground units in relation to evidence-based design: combining best practice, research and stakeholder's perspectives (users and providers). The study identifies good practice, strengths and challenges in relation to current parks and playground provision. Three main approaches to the research were used: a) a desk-based review of research evidence and policy, and b) a review of 21 best practice guidelines was undertaken, while c) 31 participants were consulted including 12 adults, 15 children, and 4 park and playground providers. These elements combine to provide a 3-dimensional overview of local park and playground provision and use.

PlayAUDIT summary

The five parks and playgrounds were audited for play value, universal design, and usability.

Physical design issues

Overall, these five playgrounds presented with many varied physical play opportunities. However, sensory and cognitive play were under-represented in the design features. The parks in general had accessible routes to the playground and around the park. However, not all playgrounds had level, firm surfaces to each playground component, resulting in poor accessibility for users with mobility impairments. The playgrounds were identified as having few design features that support equitable or intuitive use.

Users' perspectives

Adult users' perspectives

The parks and playground audits highlighted how the parks and playgrounds in each local area are valued for being local, and easy to get to, but not valued when they are poorly maintained, or when they are overly crowded, particularly with groups of teenagers. Adults used parks for walking dogs, exercise, and family time primarily. Sometimes, especially in the city park, they used it as a place to gather with other families such as friends, or cousins. They spoke of the importance of having amenities in parks such as toilets, comfortable seats, and ideally a place to have coffee. No adult spoke of avoiding playgrounds because of the worry that their children would fall from heights or have accidents from play. Instead, safety issues were raised in reference to broken glass, needles, or excrement.

Child users' perspectives

The main reasons children expressed for using their local playground was because an adult brought them there, and this was associated with wanting to play and have fun.

Children reported on their favourite play activity, which most commonly was climbing on climbing walls and slides. For children with mobility or sensory impairments, most playgrounds were not places of fun. For these children, and consequently their families, playgrounds were not designed to be welcoming, inclusive accessible spaces. In this way, playgrounds can sometimes perpetuate exclusion.

Parks and playground providers' perspectives

Parks and playgrounds are provided for local communities to use and are especially important in communities of social disadvantage. The providers confirmed that parks and playgrounds are designed to meet local play and leisure needs. However, a Universal Design approach to design was generally not something that had been thought about before. In general, providers agreed that design for inclusion was an area of expertise that required outside involvement. Specialists were relied on for advising on inclusive design, particularly for new playgrounds. While providers were aware of the need to integrate natural and built elements in designing parks.

Overall Play Value and Universal Design

From this study, it is possible to report on the overall play value of these playgrounds. Although the playgrounds appeared to provide stimulation and challenge from the initial play value assessment, the children and adults who used these spaces told us a different story. They spoke of the components not providing enough height, speed, or overall challenge , that would maximise fun experiences for older children in particular. In effect, this finding speaks to the issue of needing to have accessible-inaccessible elements of play. Good design includes areas of play that are inaccessible due to the challenge involved. Instead, the inaccessible features were associated with poor accessibility to the play **opportunities,** rather than inaccessibility due to play **challenge** (for example, no ramp or steps to the highest point). Although one playground was designed for maximum inclusion, many features exclude children from taking part, such as the loose surfacing underneath the swings and slides, and the difficulties in determining the pathways through the playspace due to lack of colour contrast. While, it is neither possible nor desirable to make every piece of a playspace 100% accessible and usable when we consider people's different ages and abilities and the need to provide for graduated challenge in playspace, there is a requirement to address general access as a fundamental concern in providing for play.

Key issues

Having summarised the issues in each aspect of the study, some key issues and points can be identified as an outcome of this research:

1. Universal Design is an emerging concept that is evident across policy documents internationally and nationally but has not yet been translated or operationalised into

community playground design and provision in Ireland. Despite the commitment to Universal Design and playgrounds that was established in the National Play Policy 2004, a national policy towards inclusive playground provision is yet to be developed.

2. Research shows that the provision of local greenspaces, parks and playgrounds is increasingly important in contemporary life, when populations in developed countries are more likely to be urban dwellers than rural. Having nature nearby is important for health, wellbeing, and social/community integration. However particular groups, such as children and adults with diverse abilities and impairments, face challenges in accessing local parks and playgrounds. When playgrounds are not designed with inclusion in mind, children and families are excluded as a consequence.
3. Play is a central issue in this regard as play is fundamental to the health and wellbeing of children. The importance of accessing local play opportunities therefore goes beyond fun – it is fundamental to enhancing children's quality of life, enabling development, learning, flexibility, and resilience. The design requirements consequently are highly related to play dichotomies outlined in the model of good practice in provision.
4. Users (children and adults) and providers value local parks and playgrounds. These places enhance communities and provide spaces for socialising and enjoyment - in the general park amenities and in the playground setting where most of the play activity takes place.
5. Barriers to accessing and engaging in play opportunities in local playgrounds include the role providers play in playground design and provision: lack of local knowledge and expertise limits the capacity of providers to establish a coherent evidence-informed approach to playground provision. Equally, the role played by national government bodies whose lack of awareness of Universal Design and play is a limiting factor.

Recommendations

The research identified a number of important recommendations relating to policy, providers, participation, research and evaluation, and implications for design. In addition to Chapter 10, a number of key recommendations are outlined below.

Developing and implementing policy and guidelines

There needs to be greater recognition of Universal Design in national policy on play, and the provision of inclusive parks and playspaces. This is arguably a cross-departmental government issue. Universal Design is an approach that should be embedded in national policy for outdoor play and leisure activity in particular. Specifically:

- There is a need to establish standards and guidelines for the universal design of community parks and playgrounds. Chapter 10 identifies a number of sample recommendations to be considered in applying the Universal Design approach to playground design, and could be considered a starting point for developing design guidance;

- The actions and objectives set out in the Irish National Play Policy (2004) relating to social inclusion and playground design need to be implemented;
- There is a need to apply existing regulations (i.e. Technical Guidance Document M, 2010) to community parks and playgrounds as it addresses the access and use of a space, its facilities and its environs (M1), and the sanitary facilities that may be provided (M3). Technical Guidance Document M is a legal guidance in relation to the design of the built environment. Applying this will meet many of the issues in relation to addressing inclusion in the physical and built environment from a design standpoint; and,
- There is a need to develop a high-level, preliminary audit in the future. For the purpose of this research project, the PlayAUDIT that was developed and used is detailed and lengthy. A shorter, more user-friendly audit taking in the main points might be useful for designers and playground providers in the future.

Building capacity and expertise amongst public park and playground providers

Knowledge, awareness and expertise regarding Universal Design and play design needs to be developed among those stakeholders and providers who fund, develop and design public park and playgrounds in communities. Close collaboration with local councils in relation to play policy, planning and local provision would support this development. There appears to be a misconception that a playground can be fully accessible; but it is not possible nor desirable to make every piece of a playspace 100% accessible and usable when we consider people's different ages, abilities and play preferences. However, this does not mean that separate or segregated design solutions should be chosen, as this results in exclusion.

Creating participatory mechanisms in inclusive playground development

There is a need to develop more effective participatory mechanisms which engage children and adults with diverse abilities in the development of universally designed parks and playgrounds. A guideline document, setting out how community participation might work in relation to park and playground design and development, would be of significant value, in line with the national Children and Young People's Participation hub, run by DCYA. Pilot research should be considered in this respect to explore methods for enhancing and maximising community participation in design and resulting sustainability, and the usability of community parks and playgrounds. This includes engagement with younger children, but also teenagers, who are not typically provided for in community parks and playgrounds.

A research strategy

There is a need to establish a research strategy to extend knowledge on Universal Design and its application to playgrounds, in particular as it relates to play and play value. This combination is essential if playground design is to be informed by evidence. In particular, the integration of playground safety standards with playground design to maximise challenge and stimulation

is essential. Risk-rich play environments need to be considered as central to good design. In addition, there is a need to extend research to persons that do not access or use community parks and playgrounds (non-users) to ascertain reasons for non-use.

Evaluating progress

Consideration should be given to establishing an audit and monitoring programme of Universal Design parks and playgrounds on a national level. An assessment of playground provision is warranted to assess the level and quality of provision of accessible, usable playspaces for diverse users. Initiatives such as the play sufficiency programme in Wales serve as a guide to inform the application of a systematic review of provision, and evaluation of progress.

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Appendices

Appendices

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Appendix P:	Summary of the results of the Universal Design Audit on the park-playground units and play components

Appendix A: Keyword search strategy phase 9

A number of databases were identified as appropriate sources of literature for the report. These included:

- EBSCO
- PubMed
- Scopus
- SocIndex

These databases were searched using the following keyword search strategy phase 9:

Keyword search strategy phase 9

Playground* OR "play space*" OR playspace * OR "outdoor play space*" OR "outdoor play site*" OR "outdoor play environment*" OR "public play space*" OR "outdoor shared space*" OR "outdoor neighbourhood space*" OR "public green space*" OR "community park*" OR "public park*" OR "public play provision" OR "urban public places" OR "urban public spaces"

AND

Access* OR usab* OR "universal design" OR "barrier free design*" OR "design for all" OR "building for everyone" OR "integral accessibility" OR "accessible design" OR "inclusive design" OR "transgenerational design" OR "accessibility for all" OR "life-span design" OR "social sustainability" OR inclus*

AND

Child* OR family OR families OR "User* perspective*" OR "user* experience*" OR "user* voice*"

NOT

School*

Appendix B: Literature review: Inclusion and exclusion criteria

Phase 1: Desk based research

Table 1: A systematic literature search, using keyword search strategy phase 9, was performed using PICOs framework as guidance

PICO framework	Broad areas	Specific search terms	Inclusion criteria	Exclusion criteria
Population	Public parks and playgrounds	**S1: Playspaces** Playground* OR "play space*" OR playspace* OR "outdoor play space*" OR "outdoor play site*" OR "outdoor play environment*" OR "public play space*" OR "outdoor shared space*" OR "outdoor neighbourhood space*" OR "public green space*" OR "community park*" OR "public park*" OR "public play provision" OR "urban public places" OR "urban public spaces" AND	Papers that are not commercialised and where children and adults gather socially for play will be included	• Studies which describe or report on homes or schools • Studies that report on homelessness
Intervention	Universal design	**S2: Universal design for parks and playgrounds as a means of progressing for lifetime communities** Access* OR usab* OR "universal design" OR "barrier free design*" OR "design for all" OR "building for everyone" OR "integral accessibility" OR "accessible design" OR "inclusive design" OR "transgenerational design" OR "accessibility for all" OR "life-span design" OR "social sustainability" OR inclus* AND Child* OR family OR families OR "User* perspective*" OR "user* experience*" OR "user* voice*"	Papers will be included if the principal focus is on design, accessibility, usability, and universal design of parks and playgrounds. Other sources will also be included provided they include the aforementioned. These include reports, guidelines, policy, and opinion pieces	• Studies which focus on soil, toxicology, design of arts or library programmes • Articles focusing on school environments

Comparison	Comparison against other interventions or with no intervention.	No specific criteria applied	No specific criteria applied	No specific criteria applied
Outcome	Informs design and considerations for good practice	No specific criteria applied		No specific criteria applied
Publication type/ level of evidence		**Databases searched:** • EBSCO host • PubMed • Scopus **Grey literature** • Google and online websites for play, playground design, NGOs for parks and playspace guidelines	**Time:** No limits were places on time **Language:** English language only **Publication type:** Full text availability	

Appendix C: Guideline review: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Documents that self-identified as guideline documents for the design and/or development of playspaces	Documents which the authors did not identify as guideline documents for the design and/or development of playspaces
Guideline documents that specifically focus on community playspaces	Documents that were not specifically focused on community playspaces (for example, guidelines for school settings)
Guideline documents with a general focus on community playspaces	Guideline documents that did not have a general focus on community playspaces (for example, documents that focused on nature grounds only)
Guideline documents that specifically focus on community playspaces and design for inclusion	Guideline documents that do not specifically focus on community playspaces and design for inclusion
Available in English language	Not available in English language

Appendix D: Development and use of the PlayAUDIT tool

Introduction

The approach taken for auditing playspaces is guided by the NDA Guidelines for Access Auditing of the Built Environment (O'Herlihy, 2005). This document outlines a clear structural approach to conducting audits in a systematic way. In all cases, it is essential that the access auditor has received access audit training. Typically, an access audit is concerned with ensuring the environment is compliant with national accessibility legislation and standards. In addition, accessibility audits commonly deal with safety standards. So, an access audit for playgrounds might include the assessment of safety and accessibility, and compliance with existing legislation (see for example, Australian Government, 2012).

However, as noted earlier in the context of playgrounds, there is already an existing safety standard procedure but this does not incorporate Universal Design. So, a different approach was required. For this study, we aimed to develop a Universal Design audit which aims to consider the usability as well as accessibility of an environment. Universal Design typically exceeds minimum criteria of accessibility and a UD audit is concerned with identifying design features that are accessible and usable for the greatest possible range of users. For playgrounds, an example of a Universal Design approach would be where there are ramps onto each play component in the playground - whereas an accessibility approach might only consider the need for one transfer platform on a major piece of equipment (INDR, 2016).

A UD audit requires the auditor to have a strong understanding of play and the play value of environments, in addition to an understanding of both accessibility and usability of playspaces. Play value refers to the opportunities in a playspace for challenge, risk and fun. This contrasts with access audits, where safety is more prominent. Play experiences that offer the most fun and that are most popular for the children are those that have highest play value. See the literature review for an overview of what children have said about what is most important to them for play. The UD auditor works to balance risk with play value: to identify where a child can enjoy risk, challenge and fun.

Method: Developing the PlayAUDIT

This second phase of the study implementation included the development of the Playground Assessment of Universal Design and Inclusion Tool (PlayAUDIT). The PlayAUDIT is comprised of three Audit tools that assess the accessibility, playability and usability of public parks and playgrounds. This PlayAUDIT tool development originally began in 2016 when the authors of the original Audit tool (Lynch, Moore and Prellwitz) worked to integrate items from many tried and tested checklists that aim to audit playgrounds and playspaces. The final draft tool (Version 5) was then distributed to other sites for validation: Iceland, Netherlands, Switzerland and Sweden, and feedback integrated and utilised to amend the final audit tool items. During the early stages of this CEUD/NDA project, the tool was piloted and following the guideline review in phase one, a number of gaps identified. Consequently, a decision was made to further separate the Audit tool into three distinct, yet interrelated, documents. These included: (1) play value audit tool; (2) Universal Design audit tool; and (3) Usability audit tools (including a child/ young person usability audit tool and an adult usability audit tool).

1. Play Value audit tool

The Play Value Audit tool was devised in recognition that Universal Design audits commonly capture elements of the physical built environment without capturing the experiences of the space: namely the fun and play value. For example, a playspace may be considered dull and boring or fun and engaging. The purpose of this tool, therefore, was to capture the play affordances within the play space. The tool is divided into two sections:

a) Section A focuses on design features of the playspace and rates the space from low play value to high play value. This section adopts the tool used by Woolley and Lowe (2013).

b) Section B pays particular attention to play types namely, physical play, social play, sensory play and cognitive play, also derived from the review of guidelines. This section includes a focus on play styles, i.e. whether a person participates alone, with others, or in groups.

The development of this tool was an iterative process and a pilot was completed to assess the usability of the tool. Further amendments were made based on the pilot test. Amendments were made after piloting the tool, particularly in terms of revising the wording of the questions and tailoring the information so that the tool was coherent yet concise. The current version being used for this research is version 6.

2. Universal Design audit tool

The aim in developing this tool was to move beyond minimum standards and incorporate best practice guidelines as proposed by the CEUD/NDA. Specific questions were listed as

"items" to reflect the current approach adopted by the CEUD/NDA. The tool was further amended with the expertise of an occupational therapist experienced in environmental audits. This phase was an iterative phase and a pilot was completed to assess the usability of the tool. Amendments were made after piloting the tool, particularly in terms of revising the wording of the questions and tailoring the information so that the tool was coherent yet concise. The tool is divided into two sections:

a) Section A focuses on the physical access, consisting of items based on accessibility standards and a section on Universal Design as applied to playgrounds.

b) Section B focuses on the seven principles of Universal Design and identifies core considerations for playspaces. These considerations were derived from the review of guidelines that highlighted best practices for the inclusion of all users in the play space.

The finalised version of the Universal Design audit tool (Version 11) was used for this study (see Appendix F).

3. Usability audit tool

This tool was developed to assess the usability of the playground. It was thought that while a playground may meet accessibility criteria, it may not be functional/usable. Thus, the purpose of this tool is to include the user's voice in auditing a space. A decision was made to include two tools for the purpose of this research project:

a) Section A includes a child/young person usability audit tool

b) Section B includes an adult usability audit tool.

The inclusion of child and adult perspectives was arrived upon in recognition that children and young people do not generally attend a playground on their own, rather with parents, grandparents, carers, childminders and friends. The finalised version of the Universal Design audit tool (Version 3) was used for this study (see Appendix G).

Goal of a PlayAUDIT

Conducting a PlayAUDIT is one way to rate an existing playspace against criteria for play value, usability and accessibility, in relation to the play and leisure needs of people. The aim of a PlayAUDIT is two-fold: 1) to consider how an environment performs in terms of play value, usability, and accessibility and 2) to recommend improvements. A PlayAUDIT can be used to guide planning for new playspaces, in addition to reviewing existing playspaces. The environment's performance is considered for use by a wide range of people, including those of different ages, sizes, and abilities. However, a PlayAUDIT approach also requires flexibility as each user (player) is unique, with their own play preferences and play style, regardless of ability. The aim of the PlayAUDIT is not to ensure every playspace is accessible to everyone but that a playspace is welcome to everyone, and accessing the social environment of a playspace is fundamental. For example, a universally-designed playspace would enable parents with an impairment to directly access play components alongside their children; or grandparents, who may have limited mobility, can negotiate more easily through the playground alongside their grandchildren; or children with social-emotional difficulties can play alone as well as alongside others when they prefer. Universally-designed playspaces should be intergenerational places for all ages, sizes and abilities.

The items included in the PlayAUDIT are designed to provide direction to play providers, landscape architects, community groups, occupational therapists and play workers when planning for playspace provision. The goal is to move beyond accessibility and progress to a Universal Design approach in providing for play in community playspaces. Play value is at the core of this.

Objectives of the PlayAUDIT

The PlayAUDIT was developed to serve as a research instrument to analyse current provision and implications of design factors in providing high-quality play opportunities. However, it also has potential to serve as:

1. A checklist for playspace providers to determine play value usability and accessibility for multiple users, including children, young people, adults and older adults.
2. A checklist for playspace providers to plan for quality outdoor environments to ensure compliance with standards aimed at inclusion for all.
3. A reference guide for landscape architects, occupational therapists and playspace designers working with local municipalities to improve existing playspaces.
4. A guideline for the development/construction of new playspaces.
5. A reference tool or requirement for funding agencies and policy initiatives to support the development of high-quality outdoor playspaces.

Outcomes of conducting an audit can include:

- Establishing current accessibility and usability
- Identification of areas for improvement
- Establishing good examples of what works

Health and safety

This PlayAUDIT tool is not concerned with Health and Safety, as the current EU Standards apply and are used to assess and ensure safety standards are applied.

Children and adults with impairments

This tool does not separate out users with special needs from users without special needs. The goal for high-quality community playspace provision is to provide for maximum use by most people through design: Universal Design. For playspaces, the importance of challenge is a core requirement so no playspace is fully accessible as there will always be play equipment too difficult for some to negotiate. If this was not the case, it is likely that the play value would not be present.

Steps for conducting a PlayAUDIT

There are several different types of audits (O'Herlihy, 2005):

a) An audit of the physical environment: no users involved;

b) An audit of the person using the environment: Walk-and-Talk audit. The user walks with the auditor and discusses environmental features that help or hinder. The auditor appraises the environmental design aspects;

c) An audit of a design: no physical environment exists yet but is in the planning stage and

d) An Acquisitional Audit: for clients who are planning to purchase a property.

For this research project, the aforementioned types (a) and (b) applied, and the final research methods involved a three-step process:

1. Step one: Play Value Audit

   This comprised of auditing the space for affordances for different types of play and play value

2. Step two: Universal Design Audit

   This comprised of a physical environmental access audit and analysis from a Universal Design perspective

3. Step three: Usability Audit

   This included the perspectives of users (children and adults) in a Walk-and-Talk format to assess the space for usability

Note that for this project, the parks and playgrounds were already built. The PlayAUDIT could equally be tailored to guide planning.

Step 1:
Play Value audit

- Based on an observation of the playground
- Assess play value of playground through analysing play types and potential affordances

Step 2:
Universal Design audit

- Based on observation of park-playground unit
- Accessible routes to and from the park
- Accessible pathways within playground
- Accessible components
- Adheres to national standards for accessibility
- Incorporates best practice guidelines for Universal Design

Step 3:
Usability audit

- Based on a walk-and-talk audit with users
- Personal expereinces of barriers and enablers
- Routes, pathways, usability of play components
- Personal play preferences
- Subjective play value identified

Appendix E: Interview guide for park and playground providers

1. Can you tell me about your role in park and playground provision in the Cork City area?
2. What is the purpose of a community playground?
3. Do you feel that playgrounds are valuable spaces in communities?

   If not, can you tell me more?

4. Who is a playground meant to cater for (expand on the categories and age profiles below)?

   Children (with and without disabilities) (Under 12 years)

   Young people/teenagers (with and without disabilities) (12 – 18 years)

   Adults (with and without disabilities) (18 years plus)

   Older adults (with and without disabilities) (Age 65 years plus)

5. What are the main considerations when planning/designing/retrofitting playgrounds?
6. What would you consider as your greatest challenge/barrier when planning/designing/retrofitting playgrounds?
7. Is Universal Design important when planning/designing/retrofitting playgrounds?
8. In your opinion, what makes a good playground?
9. In your opinion, what makes a playground not so good?

Appendix F: Child-adult unit participants

	User	Relationship to child/ Age	Sex	Ability
Child-adult unit 1	Adult user	Mother	Female	No known impairment
	Child user	10 years	Male	No known impairment
	Child user	7 years	Female	No known impairment
Child-adult unit 2	Adult user	Mother	Female	Adult with mobility impairment
	Child user	11 years	Male	Child with Down Syndrome
Child-adult unit 3	Adult user	Mother	Female	Adult with back pain (Sciatica)
	Child user	9 years	Female	Child with mobility impairment
Child-adult unit 4	Adult user	Grandmother	Female	An older person
	Child user	7 years	Female	No known impairment
Child-adult unit 5	Adult user	Mother	Female	Adult with visual impairment
Child-adult unit 6	Adult user	Mother	Female	No known impairment
	Child user	5 years	Female	Child with visual impairment
Child-adult unit 7	Adult user	Mother	Female	No known impairment
	Child user	5 years	Male	Child with Autism Spectrum Disorder
	Child user	3 years	Female	No known impairment
Child-adult unit 8	Adult user	Grandmother	Female	An older person
	Child user	3 years	Female	No known impairment
Child-adult unit 9	Adult user	Father	Male	No known impairment
	Child user	9 years	Male	Child with Autism Spectrum Disorder
	Child user	8 years	Male	No known impairment
Child-adult unit 10	Adult user	Father	Male	No known impairment
	Child user	6 years	Female	No known impairment

Appendix G: Participant information sheets (child-adult units)

University College Cork,
College Road,
Cork

Information letter for parent(s)

Invitation to participate in a research study

Study Title: Community parks and playgrounds: Intergenerational participation through Universal Design

Dear Parent(s),

You and your child is invited to take part in a research study. Before you decide whether or not you wish to take part, it is important for you to understand why the research is being conducted and what is involved. Please take time to read the following information carefully. If you do not wish to take part but would like for the person that usually takes your child to your nearby playground (e.g. grandparent, childminder) to be involved in the study, please talk about it with them, and, if he/she is okay with helping us, then we will need you to consent to your child's participation with their caregiver.

Who are we?

The research study is being organised through the Department of Occupational Science and Occupational Therapy, and ISS21 (*Institute for Social Sciences in the 21st century)*, University College Cork. The project is funded by the Centre for Excellence and Universal Design, National Disability Authority of Ireland. The project is headed by Dr. Helen Lynch. The other members of the team are Alice Moore, Dr. Claire Edwards and Linda Horgan.

What is the purpose of the study?

The purpose of this research is to explore and understand the needs of people who use local parks and playgrounds in the Cork City region.

What will happen if my child takes part?

If you wish to take part, a member of the research team will meet you (or the person who usually takes your child to the playground) and your child to ask about your local playground and what he/ she likes to play. We can meet in a place that best suits you (your home, or a local coffee shop or park) but most of all, we would like to meet you at the playground. Your child will

be asked to walk around the playground and discuss with the researcher about how they like to play in the playground, and their favourite things about it. Other researchers will be present to observe how you/ the person that typically takes your child to your nearby playground and your child use the playground. If you are happy for us to do so, a number of pictures may be taken. The researchers will use digital software to block any faces in photographs.

This meeting will be audio taped, and all materials, such as drawings or photographs, may be used in reports and presentations. All sessions will be conducted in a professional, sensitive, and non-stressful manner.

Do I or my child have to take part?

No - it is you and your child's choice to take part or not, but your agreement to do so would be greatly appreciated. If you want your child to be part of this research, please talk it through with your child using the child information sheet, and, if he/she is okay with helping us, then we need you to sign the attached form. If you would like for the person that typically takes your child to your nearby playground (e.g. grandparent, childminder) to be involved in the study, please talk it through with them, and, if he/she is okay with helping us, then we will need you to sign the consent form attached to state that you are happy for your child to be involved.

Can I change my mind?

Yes - you can change your mind and decide that you and/ or your child will not take part in the study at any time before, during or up to 1-month post interview and observation. You do not have to provide a reason why your child will not be taking part. We will explain clearly to the children that they can withdraw for all or part of the interview or observation if they decide to.

Will what I or my child/ child that I care for say be kept confidential?

Only you, your child/ person that typically takes your child to your nearby playground (e.g. grandparent, childminder), and the research team, will know what your child says. All information collected will be kept in a locked cabinet and password secured computer. All names will be changed and false names will be used on any written material in reporting the findings of the study to ensure confidentiality.

What will happen to the results of the research study?

Findings from the study will be presented in a report format to the Centre for Excellence in Universal Design, National Disability Authority of Ireland. It is expected that the report will

be made nationally available on the National Disability Authority's website. You and your child/ person that typically takes your child to your nearby playground will be offered the opportunity to review the research report, and may provide feedback to the researchers if you so wish. The results may also be used for educational purposes and published in professional journals.

Who has reviewed the study?

The study has been reviewed and approved by the UCC Social Research Ethics Committee who have given permission to proceed with the study.

Contact for further information

If you would like to find out more about the study, you can contact:

Dr. Helen Lynch, Tel: (021) 490 1535; e-mail: h.lynch@ucc.ie

University College Cork,
College Road,
Cork

Caregiver Information Letter

INVITATION TO PARTICIPATE IN A RESEARCH STUDY

Study Title: Community parks and playgrounds: Intergenerational participation through Universal Design

Dear Caregiver(s),

You are invited to take part in a research study with the child that you typically take to the playground (e.g. grandchild, child that you care for). Before you decide whether or not you wish to consent to your participation in the study, it is important for you to understand why the research is being conducted and what it will entail. Please take time to read the following information carefully.

Who are we?

The research study is being organised through the Department of Occupational Science and Occupational Therapy, and ISS21 (*Institute for Social Sciences in the 21st century*), University College Cork. The project is a funded project on behalf of the Centre for Excellence and Universal Design, National Disability Authority of Ireland. The project is headed by Dr. Helen Lynch. The other members of the team are Alice Moore, Dr. Claire Edwards and Linda Horgan.

What is the purpose of the study?

The purpose of this research study is to explore and understand barriers and opportunities for diverse users (child-adult users with and without disabilities) to access and participate in public/ community parks and playgrounds in the Cork City region.

What will happen if I decide to take part?

If you wish to take part, a member of the research team will meet you and the child that you care for over 2 sessions. The first session will be an interview session where the researcher will discuss with the child that you care for about your local playground and what he/ she likes to play. If they would like to they can draw a picture or write a story about the playground, from which we would like to form discussions. We would also like to talk to you about your nearby playground, your use of the local playground and your experience of same. We can undertake the interview a place that best suits you (your home, or a community setting).

The second session will take place at the playground. You will be asked to walk around the playground and discuss with the researcher about good and bad design features of the playground. Other researchers will be present to observe how you and the child that you care for use the playground. If you are happy for us to do so, a number of pictures may be taken. The researchers will use digital software to block any faces in photographs.

Sessions will be audio taped, and all materials, such as art work, children's writing or photographs, may be used in reports and presentations.

All sessions will be conducted in a professional, sensitive, and non-stressful manner.

Do I have to take part?

No - it is your/ the child's parent(s) and child that you care for choice to take part or not, but your agreement to do so would be greatly appreciated. If the child's parent(s) are happy for you and you would like to be involved in the study, please talk it through with the child and their parent(s). We will need the child's parents to sign a consent form to say that they are happy for their child to be involved in the research.

Can I change my mind?

Yes - you can change your mind and decide that you will not take part in the study at any time before, during or up to 1-month post interview and observation. You do not have to provide a reason why you will not be taking part. We will explain clearly to the children that they can withdraw for all or part of the interview or focus group occupations if they decide to.

Will what I or my child/ child that I care for say be kept confidential?

Only you, your child/ child that you care for, and the research team, will know what your child says. However, if we hear something that makes us worried about the safety of a child, we have to follow Child Protection guidelines. All information collected will be kept in a locked cabinet and password secured computer. All names will be changed and false names will be used on any written material in reporting the findings of the study to ensure confidentiality.

What will happen to the results of the research study?

Findings from the study will be presented in a report format to the Centre for Excellence and Universal Design, National Disability Authority of Ireland. It is expected that the report will be made nationally available through the Centre for Excellence and Universal Design, National Disability Authority's website. You, the child that you care for, and the child's parent(s) will be offered the opportunity to review the research report, and may provide feedback to the researchers if you so wish. The results may also be used for educational purposes and published in professional journals.

Who has reviewed the study?

The study has been reviewed and approved by the UCC Social Research Ethics Committee who have given permission to proceed with the study.

Contact for further information

If you would like to find out more about the study, you can contact:
Dr. Helen Lynch, Tel: (021) 490 1535; e-mail: h.lynch@ucc.ie

University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

University College Cork,
College Road,
Cork

Information letter for child/ young person

Hi! Hi our names are Helen, Alice, Claire and Linda and we need your help...

We are doing a project about playgrounds in Cork. We want to hear all about the playgrounds you choose to play in and have adventures! Your ideas about the playground will help us write a report on what is good about our Cork City playgrounds, and what would make them more fun and exciting places to play.

If you want to take part, we would like you to:

- Tell us about your nearby playground and what you like to play;
- Draw a picture about your nearby playground, if you would like to;
- Go on a tour of your nearby playground and show us some of your favourite and least favourite places to play

Just so you know!

- It is your choice to take part, so you don't have to if you don't want to
- If you choose to take part, your parent/ grandparent/ caregiver will also be taking part
- If you change your mind, or do not feel like taking part, you can stop at any time
- We would like to record our discussions with you using a tape recorder
- We would like to take pictures of you in the playground, but it is your choice whether or not you allow us to take pictures.
- If you tell us about something that makes us worried about your safety, we will have to tell somebody. We just want to keep you safe!
- We won't use your name in our report or any presentations and if you allow us to take pictures we will block out your face

Make sure to talk to your parent(s) about this playground project. You and your parent(s) can decide together if you would like to take part or not.

If you would like to find out more about the study, you can contact:
Dr. Helen Lynch, Tel: (021) 490 1535; e-mail: h.lynch@ucc.ie

Appendix H: Participant consent and assent form (child-adult units)

University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

University College Cork,
College Road,
Cork

Consent form for parent(s)

Research Study: Community parks and playgrounds: Intergenerational participation through Universal Design

Name: _____

Name of child: _____

This is to confirm that (please tick the box):

I have read the attached information letter which explains the research study ☐

I understand that the letter is asking me to consent to my participation in discussions, observations and tour of a local playground with my child to explore our experiences of using the playground ☐

I understand that all the information gathered will be kept strictly confidential, which means that my name will not be included in any written reports, publications or presentations. ☐

I understand that in addition to my participation being voluntary, I am free to stop participating in the research at any time before, during or up to 1-month post interview and observation, without reason. ☐

I understand that this research will be published by the Centre for Excellence in Universal Design, National Disability Authority of Ireland and that the researchers might publish the information in professional journals. ☐

I understand that the researchers might present the information at conferences and seminars. ☐

Optional: I also confirm (please tick the box):

That any materials (photographs) produced may be used in the research, provided my confidentiality is maintained. ☐

I freely consent for my participation in the study. No-one has put pressure on me.

Signature(s): _____ Date: _____

University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

University College Cork,
College Road,
Cork

Caregiver Consent Form

Research Study: Community parks and playgrounds: Intergenerational participation through Universal Design

Name: _____

Name of child (that you are participating in the research with): _____
_____

Your Relationship to the child (e.g. grandparent/ childminder, etc.):
_____

This is to confirm that (please tick the box):

I have read the attached information letter which explains the research study ☐

I understand that the letter is asking me to consent to my participation in discussions, observations and tour of a local playground with the child that I care for to explore our experiences of using the playground ☐

I understand that all the information gathered will be kept strictly confidential, which means that my name will not be included in any written reports, publications or presentations. ☐

I understand that in addition to my participation being voluntary, I am free to stop participating in the research at any time before, during or up to 1-month post interview and observation, without reason. ☐

I understand that this research will be published by the Centre for Excellence and Universal Design, National Disability Authority of Ireland and that the researchers might publish the information in professional journals. ☐

I understand that the researchers might present the information at conferences and seminars. ☐

Optional: I also confirm (please tick the box):

That any materials (photographs) produced may be used in the research, provided my confidentiality is maintained. ☐

I freely consent for my participation in the study. No-one has put pressure on me.

Signature(s): _____ Date: _____

University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

University College Cork,
College Road,
Cork

Assent form for child/ young person

Research Study: Learning about how children and adults use local playgrounds

I _____ agree to take part in the research study: *Community parks and playgrounds: Intergenerational participation through Universal Design*.

- I understand that the researchers want to chat with me about what I like to play in my nearby playground
- I understand that I will go on a tour of my nearby playground and show the researchers some of my favourite and least favourite places to play
- I understand that the researchers will take pictures of me in the playground, if I allow them to
- I understand that I don't have to take part
- I give permission for the sessions to be recorded
- It's fine if I drop out of the study
- I understand that nobody will know it's me in the report because the researchers will change things so people won't recognise it's me

Please tick the box:

I agree that any materials (drawings/ artwork/ stories/ photographs) produced may be used in the research, provided my confidentiality is maintained. ☐

I do not agree that any materials (drawings/ artwork/ stories/ photographs) produced may be used in the research, provided my confidentiality is maintained. ☐

Signed: _____

Date: _____

Appendix I: Focus group participants

Focus Group 1: 5 adults				
User	**Relationship to child user**	**Sex**	**Ability**	**Included in child-adult usability audits**
Adult user 1	Mother	Female	Adult with visual impairment	Yes
Adult user 2	Mother	Female	No known impairment	Yes
Adult user 3	Mother	Female	No known impairment	Yes
Adult user 4	Mother	Female	English as a second language	No
Adult user 5	Mother	Female	No known impairment	No
Focus group 2: 5 children				
User	**Age**	**Sex**	**Ability**	**Included in child-adult usability audits**
Child user 1	7 years	Female	No known impairment	Yes
Child user 2	10 years	Male	No known impairment	Yes
Child user 3	11 years	Female	No known impairment	No
Child user 4	11 years	Female	No known impairment	No
Child user 5	10 years	Male	No known impairment	No

Appendix J: Participant information sheet (park and playground providers)

University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

University College Cork,
College Road,
Cork

Information letter for City Council staff

Invitation to participate in a research study

Study Title: Community parks and playgrounds: Intergenerational participation through |Universal Design

Dear City Council Staff Member,

You are invited to take part in a research study to explore and understand barriers and opportunities for diverse users (child-adult users with and without disabilities) to access and participate in public/community parks and playgrounds in the Cork City region. Before you decide whether or not you wish to consent to your participation in the study, it is important for you to understand why the research is being conducted and what it will entail. Please take time to read the following information carefully.

Who are we?

The research study is being organised through the Department of Occupational Science and Occupational Therapy, and ISS21 (*Institute for Social Sciences in the 21st century*), University College Cork. The project is a funded project on behalf of the Centre for Excellence and Universal Design, National Disability Authority of Ireland. The project is headed by Dr. Helen Lynch. The other members of the team are Alice Moore, Dr. Claire Edwards and Linda Horgan.

What is the purpose of the study?

The purpose of this research study is to explore and understand barriers and opportunities for diverse users (child-adult users with and without disabilities) to access and participate in public/community parks and playgrounds in the Cork City region.

What will happen if I decide to take part?

If you decide to take part, you will be asked to participate in an interview with the researcher(s), where you will be asked a series of questions about barriers and opportunities for diverse users (child-adult users with and without disabilities) to access and participate in public/community parks and playgrounds in the Cork City region.

Sessions will be audio taped. All sessions will be conducted in a professional, sensitive, and non-stressful manner.

Do I have to take part?

No - it is your choice to take part or not, but your agreement to do so would be greatly appreciated.

Can I change my mind?

Yes - you can change your mind and decide that you will not take part in the study at any time before, during or up to 1-month post group discussion. You do not have to provide a reason why you will not be taking part.

Will what I or my child/ child that I care for say be kept confidential?

Only you, and the research team will know what you say. All information collected will be kept in a locked cabinet and password secured computer. All names will be changed and false names will be used on any written material in reporting the findings of the study to ensure confidentiality.

What will happen to the results of the research study?

Findings from the study will be presented in a report format to the Centre for Excellence in Universal Design, National Disability Authority of Ireland. It is expected that the report will be made nationally available through the Centre for Excellence and Universal Design, National Disability Authority's website. You will be offered the opportunity to review the research report, and may provide feedback to the researchers if you so wish. The results may also be used for educational purposes and published in professional journals.

Who has reviewed the study?

The study has been reviewed and approved by the UCC Social Research Ethics Committee who have given permission to proceed with the study.

Contact for further information

If you would like to find out more about the study, you can contact:
Dr. Helen Lynch, Tel: (021) 490 1535; e-mail: h.lynch@ucc.ie

Appendix K: Participant consent form (park and playground providers)

University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

University College Cork,
College Road,
Cork

Consent form for City Council staff

Research Study: Community parks and playgrounds: Intergenerational participation through Universal Design

Name: _____

This is to confirm that (please tick the box):

I have read the attached information letter which explains the research study ☐

I understand that the letter is asking me participate in a research study about barriers and opportunities for diverse users (child-adult users with and without disabilities) to access and participate in public/community parks and playgrounds in the Cork City region. ☐

I understand that all the information gathered will be kept strictly confidential, which means that my name will not be included in any written reports, publications or presentations. ☐

I understand that in addition to my participation being voluntary, I am free to stop participating in the research at any time before, during or up to 1-month post interview, without reason. ☐

I understand that this research will be published by the Centre for Excellence and Universal Design, National Disability Authority of Ireland and that the researchers might publish the information in professional journals. ☐

I understand that the researchers might present the information at conferences and seminars. ☐

I freely consent for my participation in the study. No-one has put pressure on me.

Signature: _____ Date: _____

Appendix L: Detailed review of literature and policy

Introduction

This chapter is divided into two sections:

1. Section one explores international literature to identify existing evidence and research from inter-disciplinary databases in relation to parks and playspaces. In particular, it draws on literature which explores the experiences of playspace providers and users – namely, municipalities and local councils, children, families, older adults.
2. Section two explores international and national legislation, policies, and standards as they relate to parks, playgrounds and Universal Design. This helps us to situate the research in the broader social and political context.

The chapter concludes by summarising the key points of discussion surrounding the social and political context and findings from researching with stakeholders that shape and influence the provision of inclusive, universally designed parks and playgrounds in the Irish context.

Section One: Literature review

Research has shown that park-use is determined by a combination of objective and subjective (perceptual) variables (see Bedimo-Rung, Mowen, and Cohen, 2005; Loukaitou-Sideris and Sideris, 2010). These include:

- Individual-level characteristics and capacities (including age, gender, race and ethnicity, socioeconomic status, place of residence);
- Society-level characteristics (for example, social norms, public policies);
- Neighbourhood characteristics (such as street layout, connectivity levels, availability of public transit, crime rates); and
- Park characteristics (including size, design features, programmes, maintenance, aesthetics, comfort, safety, rules, and regulations)

While it is beyond the scope of this literature review to account for all variables in great detail, the following section will explore research from the perspectives of stakeholders. The findings of the literature review are synthesised into four main themes. These include:

- Parks and playgrounds: Public space, urban green spaces and municipalities
- Parks and playgrounds: Child and young person's perspectives
- Parks and playgrounds: Family perspectives
- Parks and playgrounds: Seniors perspectives

Parks and playgrounds: Public space, urban green spaces and municipalities

A significant body of work has developed exploring the perspectives of municipalities and local councils on park and playground provision. Research in this regard covers a broad range of issues such as provision of greenspaces in urban environments, park use, playgrounds, safety and maintenance, and design for social inclusion (including intergenerational use). Through a review of literature, it was possible to determine what characterises public space and urban green spaces. Physical space is primarily organised into two realms: private and public. Public spaces are defined as "places outside the boundaries of individual or small group control, mediating between private spaces and used for a variety of often overlapping functional and symbolic purposes" (Madanipour, 1999, p. 881). 'Public space' suggests a variety of typologies, including markets, town greens, plazas, esplanades or interstitial spaces such as medians or traffic circles. Urban green spaces, such as parks and playgrounds, are outdoor places where communities gather and socialise. Public parks are typically categorised based on size, catchment area and resources and facilities provided (Dunnett, Swanwick, and Woolley, 2002). These include Principal/City/Metropolitan park, District park, Neighbourhood park and Local park (Dunnett, Swanwick, and Woolley, 2002, p. 25).

Typically, municipalities develop urban green spaces to provide for local communities, especially in urban areas where public spaces are under threat. These forms of social spaces are known to be important for residents to develop social identities, a sense of community and belonging. Urban green spaces provide opportunities for tourism, recreation, exercise, relaxation, education, encountering nature, spirituality, self-expression, socializing, being with companion animals, escaping the city, and for solitude, personal development, and to earn a living (Hayward, 1989; McIntyre et al., 1991; Loukaitou-Sideris, 1995; Manning and More, 2002). Park activities are diverse, spanning both active recreation (for example, walking, riding bicycles, running, jogging, playing and playing sports) and passive recreation (for example, sunbathing, picnicking, painting, fishing, photography, reading, studying nature, and people-watching) (Hayward, 1989). Although rites of passage occur in parks also (for example, weddings, birthday parties) they are infrequently mentioned in the literature.

Regarding children, playgrounds play a central role in municipal parks. Playgrounds typically fall into three main types: traditional, contemporary and adventure (National Children's Office [NCO], 2004). These three different types of playgrounds elicit different play experiences due to the different play affordances found there. For example, playground design influences play, based on the spatial layout, and the availability of varied types of play components, opportunities for challenge and novelty, loose parts, and enclosed areas (Barbour, 1999). While these three types of playgrounds have been identified, many studies do not differentiate so it is difficult to determine which features are best for maximising play experiences. In an overview of evidence, Czalczynska-Podolska (2014) found that traditional playgrounds elicit physical activity play, and competition primarily, while adventure playgrounds elicited more social and cooperative play (Czalczynska-Podolska, 2014). In another study comparing contemporary playgrounds to naturally constructed ones, researchers found that playing in natural playgrounds results in more prolonged play episodes (Luchs and Fikus, 2013). In addition, studies from Canada and Iceland note that outdoor playspaces that have higher levels of vegetation and diversity are highly rated

Studies have also focused on the play value of playgrounds. For example:

- In New Zealand, two studies were conducted across 57 playgrounds to explore play preferences in order to inform playground design. Both found that swinging, spinning and climbing were the favourite activities. They noted that these activities involved height and speed and were not reliant on having play partners (Bourke and Sargisson, 2014; Sargisson and McLean, 2013). They also noted that in contrast to other studies that identified slides as being highly popular, children tended to avoid them - possibly due to the presence of more exciting play alternatives.
- In Denmark, researchers studied children's use of four playgrounds in Copenhagen. The most commonly used aspects in these playgrounds were the elevated play structure, sand-play, the open space, with physical activity play being the most prominent from of play observed. Water-play provided the most frequent opportunities for social interaction. The researchers reported that although sand-play resulted in more sedentary play, when it was combined with loose parts and other play opportunities, the children engaged in higher levels of physical activity overall (Refshauge et al., 2013).
- In the Netherlands, researchers examined levels of physical activity between 20 playgrounds - where 10 playgrounds were designed with loose parts, and involved a playworker, compared to a control group of 10 typical playgrounds (Flaes et al., 2016). Their results showed that these factors resulted in a significant increase in physical activity and playground usage.

Playground safety and standards have also been a focus of research. Standards play an important role in ensuring playspaces are safe environments but it is difficult to clearly identify factors that contribute to safety. For example, Brussoni et al. (2015) noted that head entrapment used to be the main cause of death on playgrounds but due to implementation of safety standards around shape and size of equipment and apertures, it was no longer a threat (Brussoni et al., 2015). In contrast, Ball (2004) conducted a cost-benefit analysis of rubber surfacing and injury reduction. He found that despite an increase in investment in rubber flooring, the injury rate in the UK had not decreased). In another study in Canada, researchers noted a reduction of 12% in hospitalisations from playground injuries between 1994 and 2012 (Brussoni et al., 2015). However, this was multi-factored and potentially due to a decrease in playground use, combined with an increase in adult supervision, as well as an increase in safety standards. Overall, studies show that injuries from playgrounds were high in comparison to sports, for example, but when the time spent in each activity is compared, injuries from playgrounds are lower in incidence than for sports (Brussoni et al., 2015).

While safety standards play an important role in ensuring playspaces are safe environments, there are also many arguments against risk-aversion. Kerrins et al. (2011) note that risk-aversion displayed by local authorities can result in playgrounds providing insufficient stimulation or challenge. In such cases, the outcomes of over regulation of safety can result in the production of KFC playgrounds (Kit, Fence, Carpet) which was the term coined to denote playspaces that

have limited creativity or variation across countries (Woolley, 2007; Woolley and Lowe, 2013). For specific playground components, standards can be a barrier to play with limitation set on height of play equipment, for example, resulting in an excessive restriction on play opportunities. Notably, in 2001 the Play Safety Forum in the UK reviewed its position of risk-aversion and developed a new perspective on the importance of providing opportunities for risky play (Ball, 2007). Another issue is that of cost. Gill (2007) argues that the proportion of money spent on safety surfacing is out of proportion with the amount of risk involved in falls in playground (Gill, 2007). In summary, adopting an evidence-informed approach is important to systematically review research evidence on risk and safety, in conjunction with benefits of opportunities for physical activity play.

Parks and playgrounds: Child and young person's perspectives

A significant body of research has emerged in recent years describing children's use of the outdoor environment as a place for play. In the Irish context, children have consistently reported the preference for playing outdoors and the need for more opportunities for outdoor play, including more playgrounds (Kilkelly et al., 2016; Coyne et al., 2012). Overall, there is consistent evidence across different countries that children value having access to nearby friends, opportunities for play and freedom to play.

With regards to having access to nearby friends, studies from Norway, Canada, and India, show that children chose places to play based on where friends gathered (Castonguay and Jutras, 2009; Gundersen et al., 2016a; Oke et al., 1999). This can result in children choosing places to play that are nearby, such as playing in building sites, pathways, home zones or parking spaces (Oke et al., 1999; Aarts et al., 2012). These choices are also determined by children's sense of comfort in community places for play. Researchers have found that children in urban studies like to avoid places that have high volumes of traffic and high levels of crime, or that felt threatening (Cohen et al., 2016; Sarti et al., 2015).

Age is a key factor in determining play preferences. Studies show that children of preschool age typically chose exploratory activities such as sliding, swinging, rocking on animal rides, and making sand-castles (Ferre et al., 2006).;Children in middle childhood tend to choose more challenging climbing activities or develop their own games, including hopscotch, ball-play and bike riding (Gundersen et al., 2016a; Lynch, 2009). In relation to playgrounds, usability according to age is directly related to design features.:For example, when playgrounds are designed for use by children in middle childhood, older children tend to be absent from the playground due to their need for different equipment in terms of size and challenge (Ferre et al., 2006; Veitch et al., 2006). Instead, older children and adolescents typically move onto more challenging and risky-play, such as skateboarding. Many municipalities have developed skate parks to meet these needs more appropriately, but for many skateboarders, using natural terrain is preferable due to the play affordances there (Woolley and Johns, 2001). In the Irish context, when 54,163 children were consulted, they reported that there is a need to improve playgrounds by designing them to suit older children (Coyne et al., 2012).

In addition to age, researchers have studied the differences between genders in outdoor play needs and play preferences. For example, while it has been noted that the youngest children tend to play in similar ways, for older children it differs - children begin to separate by gender and play differently according to gender (Hart, 1979). In a synthesis of ten studies of outdoor play and gender, researchers found that boys are typically allowed more freedom than girls (Lee et al., 2015) and play outside more often (Karsten, 2003). In this study Karsten found that girls preferred playgrounds that were in good condition and tended to stay longer in playgrounds that had most variety in terms of play components. In contrast, boys gathered in larger groups often to play soccer and consequently controlled larger territories of space. Despite this, researchers found that there are also common favoured activities for both boys and girls. These included sand and water-play, climbing on play components, and speeding along on bikes or roller skates.

Ability is also an area of research that is often assumed to be interchangeable with age, but this is not the case. For example, studies have shown that the characteristics of different disabilities (such as visual, motor and social-emotional impairments) affect play preferences and impact social interactions in such a way that specific environmental considerations are required to enable play (Sandberg et al., 2004). Yet, as noted in the introduction, the play needs of children with disabilities has not been an area of focused research to date and limited studies have been conducted with children themselves (Moore and Lynch, 2015; Barron et al., 2017). However, in a study of children with different abilities, all children reported valuing playgrounds and enjoying the opportunities for risk and challenge (Ripat and Becker, 2012).

Moore and Lynch (2015) reviewed evidence of usability and accessibility of playgrounds to synthesise what is known. Their review identified 14 studies that reported social, physical, and political barriers for children in using playgrounds. In particular, a lack of a user's perspective was noted alongside few guidelines for playground providers on designing for inclusion (Moore and Lynch, 2015). In Sweden, Prellwitz has conducted a number of studies with children of mixed abilities. Her findings show that children typically valued their local playgrounds but the children with disabilities (motor, sensory, cognitive) differed in their play opportunities and experienced barriers. These included the need for adults to help, rather than being left to play freely, and the poor design features (such as size or shape of equipment, and use of ground surfaces such as sand or gravel) (Prellwitz and Skar, 2007; Prellwitz et al., 2001). These findings were similar to findings from a study of children with motor impairments in Canada and in Turkey. These studies identified barriers to play due to poor accessibility in playground design. Particular barriers were the use of sand for ground surface cover, the lack of opportunity to socialise, and feeling unwelcome or stigmatised (Ripat and Becker, 2012; Talay et al., 2010).

To date, the primary focus of playground studies has been on physical access for children with mobility difficulties. Few studies have examined playground usability for children with sensory, motor, or cognitive impairments. One study with children with autism found that designing a predictable route through the playground helped increase social play (Yuill et al., 2007). This involved, for example, positioning the slide so that the end of the slide faced the next activity.

Although spatial density was considered as a factor, the findings on impact of spatial density and increased play interaction is inconclusive (Yuill et al., 2007).

One area of research that has become more prevalent is the changing nature of independent mobility in childhood. There is a growing concern about the increasing restriction of children's independent access to outdoor playspaces, such as local parks (Hillman, 2006; Woolley, 2006), and the decrease of children's outdoor play, especially in natural environments (for example, Kellert, 2005; Louv, 2008). A combination of heightened parental concerns about children's wellbeing (for example, 'stranger-danger', teenage gangs, and especially fear of traffic accidents), loss of variety of outdoor spaces, high rates of car ownership and a fundamental shift in the structuring and routines of urban life have been identified as contributing to the decline in both active travel and outdoor play (Clements, 2004; Fyhri et al., 2011; Gaster, 1991; Mitchell, Kearns, and Collins, 2007; Veitch et al., 2006). Indeed, intergenerational studies of play behaviours confirm a progressively increased restriction in the age children are allowed to play outdoors alone, a decline in time engaged in outdoor and unstructured play, increased participation in structured, supervised, and indoor activities, and more parental rules and restrictions on children's spatial freedoms (Gaster, 1991; Karsten, 2005). From an Irish perspective, children have reported on issues that impact their desire to play outdoors. Aside from the bad weather, these included their dislike of littering and anti-social behaviour, and the need for increased security to prevent vandalism in public playspaces (Coyne et al., 2012).

Parks and playgrounds: Family perspectives

A significant body of work has developed describing how families value, use, or benefit from parks. Families report the importance of many issues when making choices about visiting parks, for example, opportunities for activity, safety, social interaction, and experience of nature/peacefulness (Berglund et al., 1985; Berglund and Jergeby, 1989). Sallis et al. (1997) identified safety, availability of toilets, drinking water, lighting, and shade as parents' most important factors for selecting playspaces outside the home or yard. A more recent study in two smaller towns in Sweden showed that the most visited playgrounds according to both children and parents were not always the most interesting, for example, having a unique piece of equipment or being newly renovated (Jansson, 2010). The most visited were instead the playgrounds located close to preschool facilities, central in the built area, and which had green surroundings (Jansson, 2010).

Cultural values also play a part. For example, outdoor access to play in nature is highly valued in Norway and the Netherlands (Gundersen et al., 2016b; Karsten and van Vliet, 2006). In these studies, parents valued the presence of natural elements such as green spaces in their communities, including forests, back gardens, or sledging hills. In contrast, studies of early childhood providers in Ireland found that there is a significant amount of time spent indoors: participants noted that we are an 'indoor culture' (Kernan, 2010). However, as families bring their children to parks and urban green spaces, this can form a positive habit of participation. Studies have found that playing in green areas may create a positive cycle, as it is more likely that children will go to similar places as adults (Ward Thompson et al., 2008) and eventually bring their own families.

Researchers have found varied contrasting results related to park access and low-income, ethnic communities.Some studies identify less access for low-income communities (Rigolon and Travis, 2014), while others show that there is a link between socio-disadvantaged neighbourhoods and increased activity in children (Kimbro et al., 2011). In their study of data from families of 5-year olds across major US cities, Kimbro et al. (2011) found that children in social housing and disordered environments played outside more than other children. Similarly, in a European study of children (8 – 12 years) from deprived areas in the Netherlands, the children reported the importance of playing outside, as their homes were cramped or did not have gardens (Sarti et al., 2015). However, these children desired more play challenge in their local playgrounds, which they described as boring. In other studies it has been noted that parks in low-income areas tend to be less used due to perceived threats of the higher threat of violence and crime (Cohen et al., 2016). For example, for children living with violence in such as areas in South Africa, safe places to play were a priority – these were not local parks but typically located in school or community centres (Benninger and Savahl, 2016). The children in this study reported being imprisoned in their homes and being denied outdoor play opportunities due to the presence of drug-dealers and the use of armed weapons within their communities. So, it seems that there is an added importance in having nearby parks and playgrounds that are safe places to visit for children and families, especially in areas of high crime and violence.

Ethnicity has also been a focus of study and to date, been nationally specific. Much of the research has been carried out in North America, identifying racial/ethnic and socio-economic disparities in urban green space accessibility (Dai, 2011) and differences in use, preferences and motivations in outdoor recreation amongst racially and ethnically diverse groups (Gobster, 2002; Stodolska et al., 2011). However, it is difficult to compare such results to European ethnic, cultural and spatial contexts. The pattern of racial segregation in USA neighbourhoods, for example, is on a different scale to that in Europe (Horowitz, 1989). City and green infrastructure layout varies by spatial scale, with USA cities more sprawling, having higher levels of car dependency and less street connectivity, which makes comparisons with the European findings on green space and health relationships problematic (Richardson et al., 2012). Research in England has identified that black and minority ethnic (BME) groups, together with people living in urban deprived areas, choose to access natural environments far less frequently than the average for the white British population (Burt et al., 2012; Comber et al., 2008). CABE (2010) found the opposite pattern, with some BME groups more likely to visit for physical activity (including people of Bangladeshi, Indian and Pakistani origin), whilst white British were more likely to visit for rest and relaxation. There is therefore a need to understand motivations for day-to-day outdoor health behaviours from different cultural perspectives.

The issue of safety in playgrounds differs between children and adults, where adults more commonly view playground equipment as being a source of danger, in contrast to a child's perspective (Ferre et al., 2006). This contradictory approach can result in diminished play opportunities for children and has been the focus of re-education of adults in programmes in Australia and Canada (Bundy et al., 2009; Bundy et al., 2011; Niehues et al., 2013; Tremblay et al., 2015). So, the importance of 'risk-reframing' has become fundamental in progressing the play agenda for children in many international communities.

In addition, parental attitudes can significantly shape children's play. For example, when researchers explored risky outdoor play, they found different views among parents that related to social norms for what is appropriate play for boys versus girls, with rough-and-tumble play being seen as more suitable for boys (Brussoni et al., 2015). Overall, parental attitudes and permissions to play outdoors have made young children dependent on their parents' motivation for visiting public parks and playgrounds, making it one of the most commonly stated barriers for park use (Veitch et al., 2006).

Parks and playgrounds: Seniors' perspectives

In addition to child and family units, there is a need to consider park and playground users across the lifespan. With increasing life expectancies, the need to provide intergenerational spaces is gaining momentum as a means to cater for older adults/seniors. Indeed, research has shown that neighbourhood parks offer benefits which contribute to seniors' quality of life (Gardner, 2008; Sugiyama, Thompson, and Alves, 2009), self-reported health (Rappe, Kivela, and Rita, 2006), and even longevity (Takano, Nakamura, and Watanabe, 2002). Sugiyama et al. (2009), using a cross-sectional survey, found that the life satisfaction of 284 older adults in Great Britain was related to the pleasantness and safety of their neighbourhood parks and green spaces. Meanwhile, a study of 45 older women in Helsinki found that self-reported health was related positively to more frequent visits to neighbourhood parks and green spaces (Rappe et al., 2006). In addition, Takano et al. (2002) analysed the five-year survival of 3,144 Tokyo seniors born in 1903, 1908, 1913, and 1918. The researchers found that living in neighbourhoods with parks and walkable green spaces positively influenced the longevity of those seniors, independent of age, sex, marital status, income, or baseline functional status. Moreover, spending time at neighbourhood parks and outdoor gardens can have a positive influence on seniors' mental health, helping to reduce stress and improve feelings of wellbeing (Hansman et al., 2007; Rodiek, 2002).

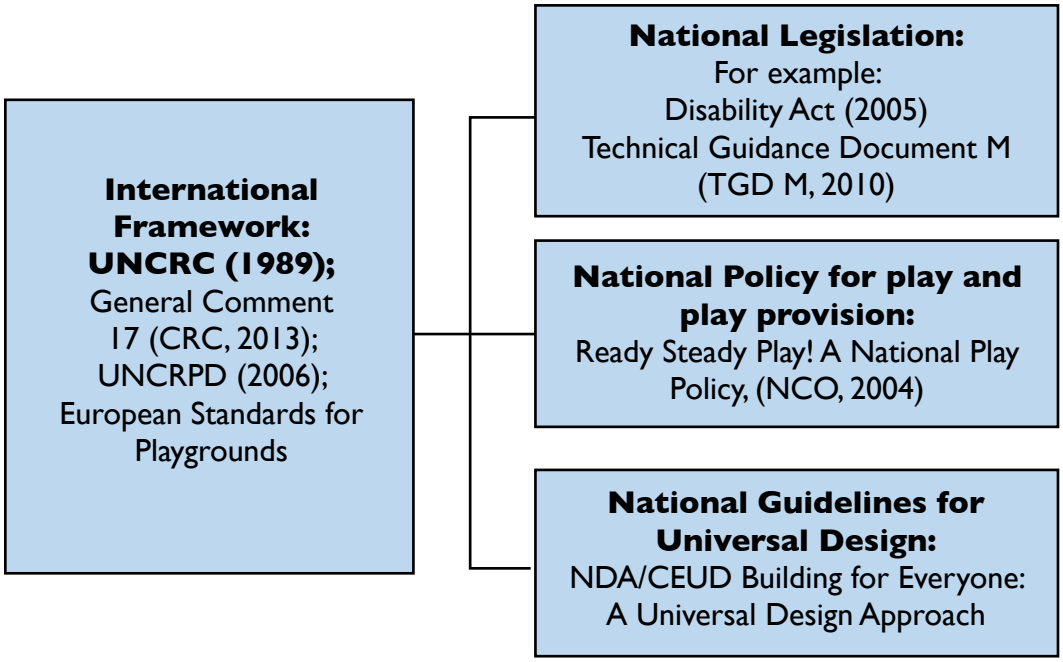
However, few studies examine the neighbourhood or park variables that may attract or deter elders from visiting a park. Aspinall (2010) sampled 237 seniors in Britain and found that what attracted them to a park included the presence of park facilities (for example, cafés, toilets), trees and plants, things to watch, and good maintenance. Things that detered their park use included signs of vandalism or dog fouling, youths hanging around, and heavy traffic on the way to the park. Researchers also found that older adults highly value contact with nature and are attracted to parks with natural elements, flowers, greenery, wildlife, fresh air, and views of water (Rodiek, 2002; Talbot and Kaplan, 1991). The trip to and from the park is important for older adults, with distance and heavy traffic acting as deterrents to park use (Kemperman and Timmermans, 2006). In other studies, elders express the desire to have public transportation close to a park (White et al., 2010), "zebra crossings" (Borst et al., 2008), and limited vehicular traffic (Parra et al., 2010) on the route to the park. Thus, urban green spaces have significant contributions to older adults' overall health and wellbeing, but there are numerous factors and barriers which determine whether or not older adults access and use these spaces.

The next section outlines an analysis of the legislation, policy and standards context of community parks and playgrounds.

Section Two: Reviewing legislation, policies and standards

This section explores international and national legislation, policy, and standards as they relate to parks, playgrounds and Universal Design. An initial review of play policy identified that legislation, policy and standards all play a different part in guiding community park and play provision (Lynch and Moore, 2017). Therefore, key documents were identified and analysed for content on public parks and playspaces, design, diversity and inclusion. Play provision is governed by a multi-tiered system from international and national levels. Figure (a) identifies examples of key International and National legislation, policies and standards.

Figure (a): International and national legislation, policies and standards as they relate to play provision, parks, playgrounds and Universal Design



International context

United Nations Convention on the Rights of the Child (UNCRC, 1989)

The United Nations Convention on the Rights of the Child (UNCRC, 1989) sets out 54 articles that define how children and young people should be treated and how governments should monitor its implementation. The Government of Ireland signed the Convention in 1992 and in turn accepted statutory obligations as a state. There are two articles in particular that are useful to consider when providing for inclusive playspaces. These include:

- Article 23: The right to accessible and inclusive environments and facilities
- Article 31: The right to play

Article 23 states that:

accessible and inclusive environments and facilities must be made available to children with disabilities to enable them to enjoy their rights under article 31. Families, caregivers, and professionals must recognize the value of inclusive play, both as a right and as a means of achieving optimum development, for children with disabilities. States parties should promote opportunities for children with disabilities, as equal and active participants in play, recreation, and cultural and artistic life, by awareness-raising among adults and peers, and by providing age-appropriate support or assistance (UNCRC, 1989 [Article 23]).

Article 31 states that:

parties recognise the right of the child to rest and leisure, to engage in play and recreational occupations appropriate to the age of the child and to participate freely in the cultural life and the arts. The provision of accessible and inclusive environments is integral to the realisation of the rights of the child's right to play (UNCRC, 1989 [Article 31]).

However, despite this clear statement of duty around play provision, the United Nations review process identified poor adoption among States. Hence in 2013, General Comment 17 was published.

General Comment 17 (CRC, 2013)

General comment (GC17) was developed in 2013 to address mounting concerns regarding the lack of realisation of children's rights to play under Article 31 of the UNCRC. Poor recognition of the significance of play in the lives of children was noted as a primary contributor for insufficient investment in appropriate provisions, weak or non-existent protective legislation, and the invisibility of children in national and local-level planning.

GC17 (CRC, 2013) identified fourteen challenges in relation to play provision that included public resistance to children's use of public spaces and over-commercialisation of children's play. It specifically stated that accessible and inclusive environments must be made available for all children for their rights to be met. GC17 (CRC, 2013) made particular reference to the necessity of providing accessible and inclusive environments. Some highlights are outlined in Box (a).

Box (a): Highlights from GC17 that made particular reference to the necessity of providing accessible and inclusive environments

Legislation is required to guarantee access for every child, without discrimination on any grounds, to all recreational, cultural, and artistic environments, including public and private spaces, natural spaces, parks, playgrounds, sporting venues, museums, cinemas, libraries, theatres, as well as to cultural activities, services, and events (p.18). This speaks to the recognition that there has been an emergent resistance to children being visible in public places - in some cases playgrounds are used to segregate rather than include children in social community life.

To achieve this, children are entitled to exercise choice….and to contribute to the development of policies, …strategies. And design of services….to include for example, the development of parks (p. 8)

Investment in Universal Design is necessary regarding play, recreational, cultural, arts and sports facilities, buildings, equipment, and services, consistent with the obligations to promote inclusion and protect children with disabilities from discrimination. States should engage with non-State actors to ensure the implementation of Universal Design in the planning and production of all materials and venues, for example, inclusive design for play environments (p.21).

And specifically, in relation to play, the Committee stressed the need to balance risk and safety – (with an overemphasis on safety in many westernised countries, the play value has been reduced inadvertently) alongside the need to enable play in natural settings.

Source: http://www.refworld.org/docid/51ef9bcc4.html

United Nations Convention on the Rights of Persons with Disabilities (UNCRPD, 2006)

Environments, including physical, social, and attitudinal environments, can either disable people with impairments or foster their participation and inclusion. The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD, 2006) stipulates the importance of interventions to improve access to different domains of the environment including buildings and roads, transportation, information, and communication. These domains are interconnected - persons with disabilities will not be able to benefit fully from improvements in one domain if the others remain inaccessible.

The provision of accessible environments is set out in the UNCRPD (2006) and Universal Design is adopted as the primary concept of designing for inclusion. There are four articles in particular that are useful to consider when providing Universal Design parks and playgrounds. These include:

- Article 4 provides that States Parties are to undertake or promote research and development of universally designed goods, services, equipment, and facilities that require minimum possible adaptation and the least cost to meet the needs of persons with disabilities.
- Article 9 is the overarching article on accessibility in relation to it enabling 'persons with disabilities to live independently and participate fully in all aspects of life'.
- Article 26 provides that States Parties are to support participation and inclusion in the community and all aspects of society, are voluntary, and are available to persons with disabilities as close as possible to their own communities, including in rural areas.
- Article 30 is the overarching article on participation in cultural life, recreation, leisure, and sport and provides that States Parties ensure that children with disabilities have equal access with other children to participation in play, recreation and leisure and sporting activities, including those activities in the school system.

It is of note that on 20th March 2018, the Irish Government finally ratified the UNCRPD.

Playground standards

Playground standards exist in many countries and are an established way to ensure good practice in playground provision. However, they are primarily focused on safety. Table (a) offers an overview of internationally-recognised playground safety standards and guidelines.

Table (a): Internationally-recognised playground safety standards and guidelines

Country	Safety standards and guidelines
Europe (UK)	CEN/CENELEC Guide 14 (2009) Child safety – Guidance for its inclusion in standards
	EN1176 (2008) Playground equipment and surfacing
	EN1177 (2008) Impact attenuating playground surfacing – Determination of critical fall height
	ISO/IEC Guide 50 (2014) Safety aspects – Guidance for child safety
	ISO/IEC Guide 51 (2014) Safety aspects – Guidance for their inclusion in standards
Australia	AS/NZS 4486.1 (2015) Playgrounds and Playground Equipment
	AS/NZS 4422: 1996 Playground Surfacing – Specifications, Requirements and Test Method
Canada	CAN/CSA-Z614 (2014): Children's Playspaces and Equipment
Singapore	SS 457 (2007) Specification for Playground Equipment for Public Use
	SS 495 (2001) Specification for Impact Attenuation of Surfacing Systems Under or Around Playground Equipment
USA	ASTM F1487-11 (2011) Standard Consumer Safety Performance Specification for Playground Equipment for Public Use
	ASTM F1292-17a (2017) Standard Specification for Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment
	CPSC (Publication #325 November 2010), Handbook for Public Playground Safety. Washington DC: Consumer Product Safety Commission

Source: http://playright.synology.me/2016_12/Playright_Inclusive_Play_Space_Guide.pdf

In the U.K., the British Standards Institute developed more specific standards for accessible playground equipment. The aim was to provide guidance for inclusion as well as general safety, and these standards were designed to be used in conjunction with the safety standards (EN 1176). Table (b) provides an overview of internationally-recognised standards related to accessibility.

Table (b): Internationally-recognised playground accessibility standards and guidelines

Country	Accessibility standards and guidelines
United Kingdom	DIN 33942 (2016) Barrier-free accessible playground equipment – Safety requirements and test methods
	BS 7000-6 (2005) Design management systems – Managing inclusive design – Guide
	PD CEN/TR 16467: 2013 Playground Equipment Accessible for All Children, British Standard Institute
Australia	AS1428 (2015) Australian Standards for Access and Mobility
Canada	CAN/CSA-Z614 (2007) Annex H: Children's Playspaces that are Accessible to Persons with Disabilities
Hong Kong	Design Manual: Barrier Free Access (2008) Buildings Department
	Hong Kong Planning Standards and Guidelines (2015) Chapter 4 Recreation, Open Space and Greening, Buildings Department, Planning Department
	Universal Accessibility for External Areas, Open Spaces and Green Spaces, Architectural Services Department
USA	DOJ 2010 (2010) American with Disabilities (ADA) Standard for Accessibility Design
	ASTM F1951 (2014) Determination of Accessibility of Surface Systems Under or Around Playground Equipment
	U.S Access Board Summary on Accessibility Guidelines for Play Areas (2007)
	Surfacing the accessible Playground: 7 Things every Playground Owner Should Know about the Accessibility of Their Playground Surfaces (2014)

Source: http://playright.synology.me/2016_12/Playright_Inclusive_Play_Space_Guide.pdf

The next section explores legislation, policies and standards as they relate to the Irish (national) context.

National context

National law and policy in Ireland that is of interest to this project includes documents such as the Disability Act (2005), Healthy Ireland (2013-2025) (Department of Health, 2013), Better Outcomes, Brighter Futures (DCYA, 2014), and Early Years Strategy: Right from the Start (DCYA, 2013) (see Appendix C for more details). However, this section will prioritise documents developed from a children's rights-based perspective in relation to play and playspaces.

Ireland ratified the United Nations Convention on the Rights of the Child (UNCRC) in 1992 and accepted obligations under international law to take active steps to implement the rights contained within to ensure their application to all children within their jurisdiction, without discrimination of any kind. Consequently, Ireland developed national policy plans to progress children's rights in Ireland. For example, the National Children's Strategy was established in 2000, with a commitment to developing a national play policy for the first time (National Children's Office [NCO], 2000).

Ready Steady Play! A National Play Policy

In 2004, Ready, Steady, Play! A National Play Policy was adopted with the aim of increasing public play facilities (NCO, 2004). Specific objectives relevant to this research study include:

- To give children a voice in the design and implementation of play policies and facilities [Objective 1];
- To raise awareness of the importance of play [Objective 2];
- To ensure that children's play needs are met through the development of a child-friendly environment: for example, local authority greenways, Home Zones, development of guidelines for local authority planning, development of county play plans [Objective 3];
- To maximise the range of public play opportunities available to children, particularly children who are marginalised or disadvantaged or who have an impairment: local authority to identify play sufficiency through collaboration with local stakeholders, local play policy [Objective 4];
- To improve the quality and safety of playgrounds and play areas [Objective 5]; and,
- To improve information on, and evaluation and monitoring of, play provision for children in Ireland [Objective 8]

Evaluation of its implementation has been criticised for its focus on counting the number of playgrounds per county and identifying the number of local authorities with play policies and play officers (Kerrins et al., 2011). Such an approach fails to consider whether these measures are improving the quality of children's play opportunities. The policy has now expired and the

Department of Children and Youth Affairs [DCYA] is currently conducting and concluding a review and update of the policy (2017). Meanwhile, play is evident in government policy documents related to children's lives, including the more recent policy document Better Outcomes, Brighter Futures (DCYA, 2014), where play is recognised as essential for children's overall health and well-being.

Planning

Since 2000, the Irish Government has consistently made a commitment to building child-friendly communities to support children's learning and developmental needs (NCO, 2000; NCO, 2004; DCYA, 2014). For example, a number of measures were identified to enhance the design of open space provision, giving consideration to children's safety while walking or cycling when planning traffic management policies (NCO, 2000). More recently, the government pledged to develop child and youth-friendly communities through local government in County and City Development plans.It has further promised to prepare and issue National Guidelines on Planning for Child-Friendly Communities (DCYA, 2014a).

Some progress was made by the Planning and Development Act 2010 which amended the principal legislation, the Planning and Development Act 2000, to require Local Authorities to indicate that children or groups representing children are entitled to make submissions on development plans (Section 8 (bb) of the Planning and Development Act 2010). However, to date, children's rights and interests are rarely considered in the arena of planning and development.As Kerrins et al. (2011) note "planning and development have not traditionally been considered by policy-makers to be a 'children's issue' or a 'children's service'".

Playground standards and building regulations

As noted earlier, playground standards primarily relate to safety. Public playground equipment and environments in Ireland must meet European safety standards (I.S. EN1176 and I.S. EN1177) and are independently inspected annually for insurance purposes under Royal Society for the Prevention of Accident regulations (RoSPA) (Kerrins et al., 2011). However, application of the Building Regulations, Technical Guidance Document M, (TGD M, 2010) Access and Use, would meet many of the goals of Universal Design that could apply to parks and playgrounds. In general, Building Regulations apply to the construction of new buildings. TGD M sets out to meet minimum level of provision for requirements M1-M4 (see Box (b)). It is of note that playgrounds or playspaces are not mentioned.

Box (b): TGD M (2010) Minimum level of provision for requirements M1 – M4

Access and Use	M1	Adequate provision shall be made for people to access and use a building, its facilities and its environs.
Application of the Part	M2	Adequate provision shall be made for people to approach and access an extension to a building.
	M3	If sanitary facilities are provided in a building that is to be extended, adequate sanitary facilities shall be provided for people within the extension.
	M4	Part M does not apply to works in connection with extensions to and material alterations of existing dwellings, provided that such works do not create a new dwelling.

Source: http://www.housing.gov.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/BuildingStandards/FileDownLoad%2C24773%2Cen.pdf

Disability Act (2005) and Universal Design

The National Disability Authority (NDA), as the independent statutory body provides information and advice to the Government on policy and practice relevant to the lives of persons with disabilities. The Disability Act (2005) established a statutory basis for the establishment of the Centre for Excellence in Universal Design to promote the Universal Design of the built environment, products, services and information and communication technologies so that they can be easily accessed and used by everyone, including persons with disabilities. The NDA is mandated to provide expert advice on disability policy and practice to the government and the public sector, and promoting Universal Design in Ireland.

To summarise, the UNCRC's (1989) emphasis on the provision of inclusive outdoor public spaces for children is particularly important. Despite Ireland's ratification of the UNCRC in 1992, and subsequent implementation of the National Play Policy (NCO, 2004), there has been a significant absence of policy for play for the past 10 years. However, there has been a surge of interest in recent years among international researchers for policy, planning, and designing for inclusive play environments in schools and communities.

It is of note that there are no specific standards for Ireland, and to date, no specific Irish guidelines on best practice in playground design, or accessibility. There are no technical guidance documents in relation to the design of amenity spaces apart from those published by the CEUD/NDA, and those published as part of guidance documents for developing "Quality Housing for Sustainable Communities" (Department of the Environment, Heritage and Local Government, 2007).

Conclusion

To conclude, this appendix has provided an overview of international and national laws, policies and standards relating to the provision of inclusive outdoor public spaces, from a children's rights perspective. Using the UNCRC as a framework, it analysed examples from social policy to help identify measures that support the development of inclusive public parks and playgrounds in Ireland. From this analysis, it is clear that outdoor parks and playspaces play a fundamental role in enabling social inclusion. Furthermore, guidance exists on how to progress this agenda to support inclusion through implementing a Universal Design approach.

Yet children and families continue to face significant barriers in accessing and using public parks and playgrounds. The literature review identifies many aspects that prevent people from using parks and playgrounds, including poor maintenance, lack of amenities, and no shade, among other things. In terms of play, when playgrounds are not carefully designed, they exclude users of varied ages and abilities (such as older children or children with impairments). Furthermore, from this review, it is clear that few studies have included a child's perspective on playgrounds - much of the data originates in observational studies that show how frequently play components are used. While this serves as a useful guide to inform design, more research is needed on children's perspectives on play value. Finally, no studies were found that analysed a Universal Design approach in playground design.

To summarise, the importance of community parks and playgrounds has been well established. Yet, despite this, public parks and playgrounds can perpetuate marginalisation and exclusion. This can be attributed to the lack of a clear approach to planning for inclusion, or the pursuit of other adult agendas (for example, providing safe places). Stafford (2017) highlights the importance of recognising human diversity and breaking down spatial barriers through responsive planning and design. Moreover, with the establishment of the United Nations Convention on the Rights of Persons with Disabilities (2006), Stafford notes that an increased demand for Universal Design, and user-friendly planning, ought to raise understanding amongst built environment professionals. Being responsive to the needs of people of all ages and abilities is fundamental for the planning and design of Universal Design parks and playgrounds.

Focusing on family-use of parks and playgrounds is one way to extend social inclusion across the generations. Playgrounds play a central role in this regard. However, it is difficult to establish good practice in playground design and development due to the fact that there are no national guidelines on best practice for including children and their families in designing for play, nor are there specific guidelines for play designers and providers, on how to operationalize a Universal Design approach when planning public parks and playgrounds for communities.

Appendix M: Universal Design principles

The principles of Universal Design, Version 2.0 (Connell et al., 1997)

Principle 1: Equitable use

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

- Provide the same means of use for all users - identical whenever possible, equivalent when not.
- Avoid segregating or stigmatising any users.
- Make provisions for privacy, security, and safety equally available to all users.
- Make the design appealing to all users.

Principle 2: Flexibility in use

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

- Provide choice in methods of use.
- Accommodate right- or left-handed access and use.
- Facilitate the user's accuracy and precision.
- Provide adaptability to the user's pace.

Principle 3: Simple and intuitive use

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

- Eliminate unnecessary complexity.
- Be consistent with user expectations and intuition.
- Accommodate a wide range of literacy and language skills.
- Arrange information consistent with its importance.
- Provide effective prompting and feedback during and after task completion.

Principle 4: Perceptible information

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

- Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- Maximise "legibility" of essential information.
- Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

Principle 5: Tolerance for error

The design minimises hazards and adverse consequences of accidental or unintended actions. Guidelines:

- Arrange elements to minimise hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.
- Provide warnings of hazards and errors.
- Provide fail-safe features.
- Discourage unconscious action in tasks that require vigilance.

Principle 6: Low physical effort

The design can be used efficiently and comfortably and with minimum of fatigue. Guidelines:

- Allow user to maintain a neutral body position.
- Use reasonable operating forces.
- Minimise repetitive actions.
- Minimise sustained physical effort.

Principle 7: Size and space for approach and use

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility. Guidelines:

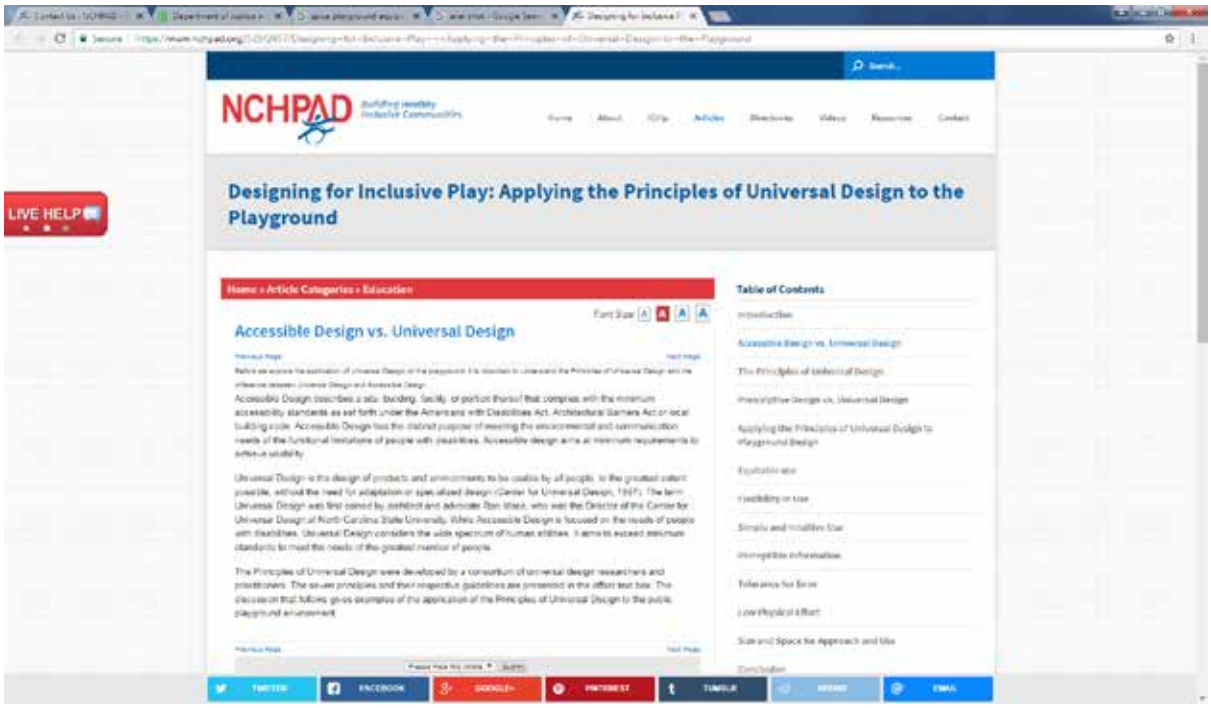
- Provide a clear line of sight to important elements for any seated or standing user.
- Make reach to all components comfortable for any seated or standing user.
- Accommodate variations in hand and grip size.
- Provide adequate space for the use of assistive devices or personal assistance.

Appendix N: Mapping Me2® 7 principles of inclusive playground design to 7 principles of Universal Design

The principles of Universal Design, Version 2.0 (Connell et al., 1997)	Me2® 7 principles of inclusive playground design (PlayCore and Utah State University, 2010, 2016)
Principle 1: Equitable use The design is useful and marketable to people with diverse abilities.	**Principle 1: Be fair** The play equipment provides social justice by being equitable and usable by people of all abilities so they can enjoy their right to play.
Principle 2: Flexibility in use The design accommodates a wide range of individual preferences and abilities.	**Principle 2: Be included** The play environment supports the participation of individuals with diverse abilities in social and physical activities for inclusive, intergenerational play.
Principle 3: Simple and intuitive use Use of the design is easy to understand, regardless of user's experience, knowledge, language skills, or current concentration level.	**Principle 3: Be smart** The play environment is easy to understand, allowing individuals to be successful and gain confidence through play.
Principle 4: Perceptible information The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.	**Principle 4: Be independent** The play environment allows children to effectively explore and participate in play at their own level.
Principle 5: Tolerance for error The design minimises hazards and adverse consequences of accidental or unintended actions.	**Principle 5: Be safe** The play environment addresses current safety standards while providing developmental opportunities needed for exploration and challenge.
Principle 6: Low physical effort The design can be used efficiently and comfortably and with minimum of fatigue.	**Principle 6: Be active** The play environment supports various degrees of physical and social participation in play while minimizing unnecessary fatigue.
Principle 7: Size and space for approach and use Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.	**Principle 7: Be comfortable** The play environment is usable for individuals with sensory needs, diverse body size, posture, mobility, and motor control.

Appendix O: National Center on Health, Physical Activity and Disability (NCHPAD) application of 7 principles of Universal Design to playground design

For more information visit: https://www.nchpad.org/529/2457/Designing~for~Inclusive~Play~~~Applying~the~Principles~of~Universal~Design~to~the~Playground



Screenshot of webpage

Appendix P: Summary of the results of the Universal Design Audit on the park-playground units and play components

Section A: Universal Design Audit of the Parks

Description of provision	Fitzgerald Park	Gerry O'Sullivan park	Lough Mahon park	Tory Top park	Glenamoy Lawn park
General Information about the playspace	Adventure playground City park	Traditional Local park	Traditional Local park	Traditional Local park	Traditional Local park
1 Finding out about the playspace	History and pictures on official website	Listed on website.	Not listed on website.	Listed on website.	Not listed on website.
2 Location & general site information	Limited information Unsecured river boundary	Limited information Main road boundary	No information	Limited information main road boundary	No information
2.1 Transport	Accessible public bus but no information on routes information etc. available for any park.				
2.1. 2 Parking	On street parking with limited safe footpath access. Limited number of universal spaces.	No parking	Parking but not universal	Secure parking but not universal	Parking but not universal
2.2 Getting into the Playspace					
2.2.1 Access Routes from public transport/drop off points	Universally designed public footpaths en route.	To some extent	To some extent	Poor	Not universally designed
Access Routes from Parking areas.	Located next to park but footpaths limited.	No parking Not relevant	To some extent	Universally accessible from car park	Not universally designed

Description of provision	Fitzgerald Park	Gerry O'Sullivan park	Lough Mahon park	Tory Top park	Glenamoy Lawn park
Access Routes to the Playspace	To some extent universally designed paths/ramps	Universally designed. Difficult site due to topographical nature.	To some extent universally designed paths/ramps. Site is challenging	Universally accessible to some extent	Universally designed to some extent
2.2.2 Gates/Barriers/ Enclosures to parkland	Universally accessible.	Universally designed to some extent	Universally designed	Universal	Universally designed
2.2.3 Gates/Barriers/ enclosures to the playspace	None in situ.	None in situ	None in situ	None in situ	None in situ
2.3 Navigating around the playspace					
2.3.1 Signage	Map present in standard print	No information	No information	No information	No information
2.3.2 Pathway & Circulation. In the park playspace	Universally designed	To some extent.	To some extent	Universal	Universally designed.
2.3.4 Accessible Design of Playground Spaces (surfaces/paths)	Universally designed to some extent.	To some extent	Universally designed	Universally designed to some extent.	Universally designed
2.3.5 Visual Effects for accessibility	Poor contrast with hazards present in pathways. Equipment contrast good.	Stronger design features in play equipment but poor in circulation routes.	Universally designed Stronger in play equipment	Stronger design features in play equipment but poor in circulation routes.	Stronger design features in play equipment but poor in circulation routes
2.4 Seating and tables					

Description of provision	Fitzgerald Park	Gerry O'Sullivan park	Lough Mahon park	Tory Top park	Glenamoy Lawn park
2.4.1 Seating, tables & shelter within park	Seating available in one height, backrests, no arm rests, no standing areas. Recessed to some extent.	Seating available in one height, backrests, no arm rests, no standing areas. Recessed	limited seating available, backrests, no armrests.	Seating available in one height, backrests, no arm rests, no standing areas. Recessed. Shelter from band stand.	None
2.4.2 Seating & tables within playspace.	Seating available in one height, backrests, no arm rests, no standing areas. Recessed to some extent Limited view of playspace	Seating available in one height, backrests, no arm rests, no standing areas. Recessed. Clear view of playspace	limited seating available, backrests, no armrests. Good view of play equipment	Seating available in one height, backrests, no arm rests, no standing areas. Recessed clear view of playspace	Seating available in two heights, backrests, no arm rests.
2.5 Toileting, Changing and Water Facilities	Paid public toilet cubicle in park. Minimum TGD M. Water fountain but poorly maintained	No toileting or water facilities	No toileting or water facilities	Toilets in community centre. Minimum TGD M. No drinking water	No toileting or water facilities
2.6 General Maintenance	Very good	Good	Good Vandalism	Very good	Good Vandalism
2.7 Safety	System in place				
3. Feeling welcome in the playspace	Not universal as vision occluded of play site. Service dog users not facilitated.	To some extent. Service dogs not facilitated.	To some extent. Service dogs not facilitated.	To some extent. Service dogs or dog walkers not made welcome.	To some extent. Service dogs not facilitated.

Section B: Universal Design Audits of the playgrounds

Legend: ✓ = Yes X = No

	Fitzgerald's park	Gerry O Sullivan park	Lough Mahon park	Tory Top park	Glenamoy Lawn park
Principle 1: Equitable use					
Is the playspace designed for people of all ages	x	To some extent	x	To some extent	To some extent
Is the playspace designed for people of all abilities	x	To some extent	x	To some extent	To some extent
Is the main pathway within the playspace designed to lead to each play component so that all children can get to every play area	x	x	✓	x	✓
Is the playspace designed for graduated levels of challenge	✓	To some extent	To some extent	To some extent	To some extent
Are there provisions for privacy, security (for example, playground fencing) and safety for all users	To some extent	To some extent	To some extent	To some extent	To some extent

	Fitzgerald's park	Gerry O Sullivan park	Lough Mahon park	Tory Top park	Glenamoy Lawn park
Principle 2: Flexibility in use					
	Fitzgerald Park	**Gerry O'Sullivan park**	**Lough Mahon park**	**Tory Top park**	**Glenamoy Lawn park**
Is the playspace designed for people of different ages to play together	✓	To some extent	To some extent	To some extent	To some extent
Is the playspace designed for people of different abilities to play together	To some extent	To some extent	x	To some extent	To some extent
Can composite play components be accessed in more than one way	To some extent	To some extent	✓	To some extent	To some extent
Can composite play components be used in more than one way	✓	✓	✓	✓	✓
Do the play components allow for left-hand and right-hand use	To some extent	To some extent	✓	To some extent	✓
Can the play components manipulated by hand be used from a seated or standing position	To some extent	x	x	x	To some extent

	Fitzgerald's park	Gerry O Sullivan park	Lough Mahon park	Tory Top park	Glenamoy Lawn park
Principle 3: Simple and intuitive use					
Is there an obvious route throughout the playspace	To some extent	x	x	x	To some extent
Are looping patterns evident throughout the playspace	To some extent	x	x	x	x
Is the playspace designed to allow for independent use	To some extent	x	x	To some extent	x
Are play components designed for independent use by people of all ages	To some extent	To some extent	x	x	To some extent
Are play components designed for independent use by people of all abilities	To some extent	x	x	x	x
Principle 4: Perceptible information					
	Fitzgerald Park	**Gerry O'Sullivan park**	**Lough Mahon park**	**Tory Top park**	**Glenamoy Lawn park**

	Fitzgerald's park	Gerry O Sullivan park	Lough Mahon park	Tory Top park	Glenamoy Lawn park
Is the signage in the playspace easy to read and understand	To some extent	N/A	x	N/A	x
Does the signage in the playspace communicate expectations, encourage participation, and offer directional cues	To some extent	N/A	x	N/A	x
Does the colour combination avoid the use of orange/brown; blue/green; red/green	To some extent	✓	x	x	x
Are there high contrast colours between play equipment and the main route throughout the playspace	x	To some extent	x	x	To some extent
Are there high contrast colours to indicate different heights	x	To some extent	x	To some extent	✓
Are the colours of the surfacing material different within and outside a fall zone	x	x	x	x	x
Principle 5: Tolerance for error					

	Fitzgerald's park	Gerry O Sullivan park	Lough Mahon park	Tory Top park	Glenamoy Lawn park
Is age-specific equipment clearly defined with signage to clearly indicate the developmentally appropriate user group	To some extent	x	x	x	x
Is there environmental feedback to indicate potential hazards	x	To some extent	To some extent	To some extent	To some extent
Is appropriate surfacing provided under fall zones	✓	✓	✓	✓	✓
Is the risk of children leaving the play area unsupervised minimised	x	To some extent	To some extent	To some extent	To some extent
Is the playspace designed to allow for easy supervision by adult caregivers	To some extent	To some extent	To some extent	✓	✓
Principle 6: Low physical effort					
Is the pathway to the playspace located at a reasonable distance from the parking area	To some extent	✓	✓	✓	✓

	Fitzgerald's park	Gerry O Sullivan park	Lough Mahon park	Tory Top park	Glenamoy Lawn park
Is the main pathway within the playspace and between play components designed to minimise unnecessary fatigue	To some extent	To some extent	✓	✓	To some extent
Are there specific play components designed to support and maintain neutral body position	To some extent	To some extent	To some extent	To some extent	To some extent
Are the play components designed to require an adequate amount of effort for successful play	To some extent	✓	✓	✓	✓
Are there easy access points to composite play components	To some extent	To some extent	To some extent	To some extent	To some extent
Principle 7: Size and space for approach and use					
Is the playspace designed to allow for intergenerational play	To some extent	x	x	To some extent	To some extent
Is every potential user able to get to the highest point in the playground	x	x	To some extent	x	x

	Fitzgerald's park	Gerry O Sullivan park	Lough Mahon park	Tory Top park	Glenamoy Lawn park
Are there specific play components usable for individuals with diverse posture, mobility, and motor control	x	To some extent	To some extent	To some extent	To some extent
Is there adequate space for the use of assistive devices or personal assistance	To some extent	x	x	x	To some extent

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