

Best Practice Access Guidelines

Designing Accessible Environments



Edition 4, November 2020



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Irish Wheelchair Association's Best Practice Access Guidelines Edition 4.

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Foreword

Irish Wheelchair Association (IWA) has a vision of an Ireland where people with disabilities enjoy equal rights, choices and opportunities in how they live their lives, and where our country is a model worldwide for a truly inclusive society. To achieve this vision, high standards of accessibility across the built environment is of vital importance as without the ability to get out and about, people with disabilities will never achieve a life with real equal rights, choices and opportunities.

Therefore, I am delighted to present the fourth edition of IWA's Best Practice Access Guidelines. These guidelines are informed by and directly respond to the experiences of IWA members who continue to experience poor accessibility within local communities that impose limitations on their daily lives.

IWA will use these guidelines to advocate for improvements within public policy in respect of increasing access standards within legislation and to ensure that proper accessibility is built into all public buildings at design stage. We will empower and support our members to use the guidelines to self-advocate on access issues that relate to their lives, be that issues within their homes or across their communities. IWA will also engage with the retail, tourism, hospitality and sporting sectors to identify access solutions to legacy issues of poor access within older buildings and facilities.

This approach is in line with IWA's strategy to drive positive change in Ireland through the influencing of public policy and enabling accessibility to all aspects of society. While the work which will follow the introduction of these guidelines is ambitious, it is the right way to ensure that the Ireland of the future reflects and works toward the achievement of IWA's vision of the Ireland of the future.

Finally, these guidelines would not be available without the work of many, but I must recognise our founding member, Dr. Oliver Murphy and the IWA Access Team of Dolores Murphy, Bridget Boyle and Nicola McDonnell. Oliver has driven the agenda of Access for the 60 years of IWA's existence, and without his drive and determination, Ireland would be a poorer place for people with disabilities.

Sincerely

Rosemary Keogh,

CEO, Irish Wheelchair Association



Pictured right:
Dr Oliver Murphy, IWA Founding Member.



IWA Members Recount Their Personal Experiences

IWA Members Recount their Personal Experiences

“Comparing where we are now to 1960, when we founded IWA, there has been a vast improvement, but there’s definitely still places where we need to make things happen.”

Dr Oliver Murphy, IWA Founding Member

Dr Oliver Murphy, IWA Founding Member, Co Louth Accessibility is a question for anyone, whether you’re a wheelchair user or a walker. Accessibility is about getting on with life and doing things you want to do. It’s fundamental in my case, being a wheelchair user. Toilets are very vital to people with disabilities in their day-to-day life, and because of my years of experience I always plan ahead.

On a recent trip, a hotel in Mayo was very accessible until we went into the bathroom and there was a big wooden structure in front of the sink. I couldn’t even touch the sink - it was that bad! In other words, they got everything right until they got to the sink! Why they did this I’ll never know! I had to wash myself in a basin on the dressing table, which upset me. After the experience at the hotel in Mayo I couldn’t understand the thinking that went into this sink. Who were the people who designed it? How in the name of God did they think this would have worked for a person in a wheelchair? I’ve always thought, where do they get their information from when they’re designing these things? I was frustrated after this experience. Architects, designers, engineers and planners should have to do a course or module around the building of good access for people with disabilities and knowing from the planning stages the right thing to do. Hotels are a big one. Hotel rooms should be accessible so we can use them like everybody else. The people in charge in planning and design should be making sure that the world we live in is planned to a standard design that people with disabilities can use. All hotels should have universal design rooms which mean people with disabilities should not face any barriers.

Rachel Creevey, IWA member, Dublin I can’t really participate in life like everyone else and sometimes that really gets me down. A lot of the time I’m used to it and I’m ok. On holiday in Washington DC everything seemed accessible, there was no issue. The train stations were great, the only difference between me and other commuters was that I needed to access the lifts. In Chicago, shopping was very accessible, 99% of shops had automatic doors and were used to customers in wheelchairs. Everyone who comes into a shop there is approached by staff and asked if they need help, so when they approach me, I don’t feel any different to anyone else. Ideally, I’d just be able to do what everybody else can do and I wouldn’t have to plan ahead and research the accessibility of each building I’m going to. I wouldn’t have to make calls. That would really take the stress out of life. I also wouldn’t have to say I’m a wheelchair user when booking things.

Declan Ryan, IWA member, Lucan, Co Dublin My main problem is with Dublin Bus. I am a wheelchair user and like to meet up with my friends in Liffey Valley. A lot of times the bus comes and there is no space for me. Buggies are always blocking the wheelchair space. I like to meet my friends and go out and cannot do this as often as I would like. This is not fair, I get annoyed about it and frustrated as well. Sometimes I just don’t bother going out.

Joe Treacy, IWA member, Co Galway Poor accessibility is a daily frustrating experience. The only way I can do my daily things is to have assistance from a PA or family member. Accessible automated doors in all buildings would allow me to be more independent.

Tommy Caswell, IWA member, Co Kildare I have a visual impairment and only go where I am familiar. If I have to go to a new place, I need to bring someone with me. Lots of places in my town are inaccessible to me and it's nothing to do with doors. It's to do with the floor plan of the stores. Product displays in the aisles and general clutter within the store can be like an obstacle course for me. It is second nature to me now to plan every trip outside my front door before I even leave. I know where I am going, which route I am going to take (footpaths, etc) and what I will do in the event of an emergency. I wouldn't leave my house without a plan. The footpaths in my area are too narrow, uneven or broken. I tend not to frequent certain buildings within the town (pubs) etc. I spend a lot of money on taxis because I don't have any other choice. I was in France many years ago and it was fantastic. Easy to get around, and I didn't feel isolated.

Gabrielle Ni Riain, IWA member, Co Limerick I find in Limerick when going for a coffee or to a restaurant, which I do regularly, that there is generally good access with these. I travel by bus a lot now and I find that drivers are very helpful to me in getting on and off with my scooter.

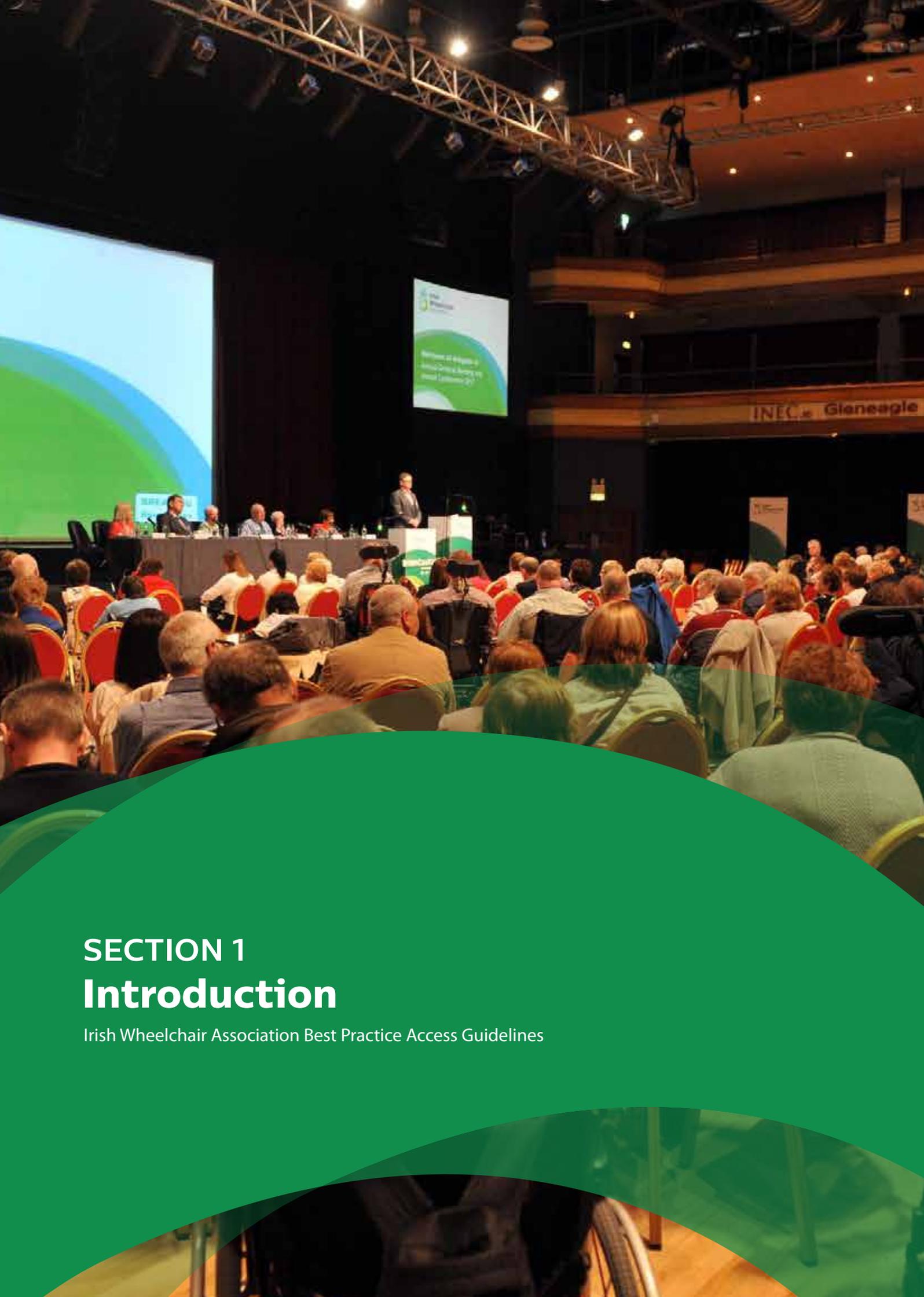
Being able to get out and be independent, that for me is paramount. Without this my mental health would suffer, and I would feel depressed. When I'm not independent I feel stuck and useless. This is the impact that poor accessibility has on me. It restricts my whole life! Several times in the past I have phoned the council about particular things and they have come out and rectified the situation.

Paul Cunningham, IWA member, Co Tipperary I always check beforehand if I'm going to an event. The first question I will ask, is it wheelchair- friendly? When I can't access a place, it makes me feel excluded. Shops are a big problem for me. The queuing systems in shops are not wide enough for wheelchair users. It's embarrassing!

Jane Fennessy, IWA member, Co Meath Lack of accessibility is a consideration in my day-to-day life as it reduces my independence greatly. I can never decide to go somewhere on the spur of the moment. The most common issues, which occur daily, are signs in front of shops on the footpaths, blocking the footpath and shop entrances, overcrowding in shops with products obstructing access to the aisles, cars parked on footpaths, and poles on footpaths obstructing access. Also, when steps and ramps are located beside each other it is hard to tell one from the other. Dished kerbing is also a major access issue that I experience regularly. Dished kerbing is not available and when it is available the kerbing does not match on either side of the street crossing. Lighting on streets is very poor and so I find it hard to see my path clearly and it is difficult to distinguish between the road and the footpath when they are both of similar colour. This frustrates me at times.

I previously visited Germany and the UK, and transport is so accessible in those countries. Ireland is a long way off. Accessible transport would make such a difference to my life and to that of my peers, especially in relation to buses and taxis as we do not have rail service in Navan. To access a bus to Dublin, I must book it 24 hours in advance. There are no clamping procedures on CIE buses, so I feel insecure. Drivers on buses are not familiar with using the accessible ramps on the bus and sometimes even if they have the knowledge it's a bother to them to use it. People who are involved in planning and design need to link more with people with disabilities and organisations such as IWA and Disability Federation of Ireland.

Marco Sabatini Corleone, IWA member, Co Cork I need to plan if I want to meet someone, which an able-bodied person doesn't have to. I feel my life can be controlled because I don't have the opportunity to be spontaneous. I used to get quite angry, but I don't now because it's not a surprise anymore. In Europe, USA and Dubai they are much better at accessibility. When I was in these places my life and headspace was better. I didn't have to plan as much in advance. I could make a spur-of- the-moment decision and know there wouldn't be an issue. That makes such a difference in your life!



INEC at Gleneagle

SECTION 1

Introduction

Irish Wheelchair Association Best Practice Access Guidelines

Section Contents

1 Introduction

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Introduction

This publication (2020) is the fourth edition of Irish Wheelchair Association's *Best Practice Access Guidelines - Designing Accessible Environments* and follows previous editions published in 2009, 2010 and 2014.

Irish Wheelchair Association (IWA) works with, and on behalf of, people with physical disabilities to drive positive change in Ireland through the influencing of public policy, the provision of quality services and enabling accessibility to all aspects of society. IWA believes in a fair and inclusive society. We work actively to ensure that every person with a physical disability in Ireland can achieve their right to an independent life, with equal access to opportunities, services and supports within their communities.

IWA has a vision of an Ireland where people with disabilities enjoy equal rights, choices and opportunities in how they live their lives, and where our country is a model worldwide for a truly inclusive society.

IWA is made up of a vibrant network of 20,000 members, over 2,700 employees and 2,000 volunteers and is one of the largest representative organisations in Ireland.

IWA provides a full range of quality services that enables people with disabilities to enjoy equal rights, choices and opportunities in how they live their lives and that enables accessibility to all aspects of society. These services include IWA Resource and Outreach Centres, with community hubs in 57 locations throughout the country, Holiday and Respite facilities, and the Assisted Living Service, which provides a community-based personal assistant service to individuals with a physical or sensory disability nationwide.

Since IWA's foundation in 1960, by ten people who were all wheelchair users, one of the single biggest issues facing people with physical disabilities has been access to the built environment.

The rationale behind the development of IWA's *Best Practice Access Guidelines* has been to address the concerns of IWA members who experience restrictions in their lives as a result of poor or bad accessibility within the built environment, a fact which was evident in the feedback during the consultation process for this document. This new edition will continue to address the numerous access issues identified by IWA members and will provide access solutions based on up-to-date national and international best practice. Having updated access guidelines will enable IWA to: maintain and enhance its consistent approach across all its departments in responding to all access-related queries; provide a basis for making submissions on access-related policies and legislation; and utilise these guidelines to inform the delivery of access advice and guidance and assist with the carrying out of access audits.

1.1 The Use of Irish Wheelchair Association's Best Practice Access Guidelines

In the period since the first publication of Irish Wheelchair Association's *Best Practice Access Guidelines* in 2009, the guidelines have been used in many ways to further IWA's objective of improving access to the built environment for its members and for all people with limited mobility.

The most notable uses were as follows:

- To influence policy, regulations, practice and design standards, nationally, regionally and locally.
- To inform IWA submissions to local and national government on access-related documents and project plans that were out to public consultation, for example: Department of Housing, Planning and Local Government draft document on *Fire Safety in Communal Dwelling Houses*; the Housing Agency's *Designing Housing to Meet the Needs of All - A Roadmap*.
- To inform IWA submissions to various County Development Plans thus ensuring that access is embedded into all development plans from the outset and using IWA's *Best Practice Access Guidelines* to support access upgrades.
- To lobby the Department of Housing, Planning and Local Government regarding access to election polling stations for people with limited mobility.
- To act as an advisor to the National Transport Authority regarding carrying out audits of potential locations for accessible bus stops using IWA's *Best Practice Access Guidelines* as a reference tool.
- To inform an IWA review of plans and on-site access audits of Uninest and Aparto accessible student accommodation and submit recommendations based on IWA's *Best Practice Access Guidelines* to ensure accessibility for students with limited mobility.
- To work with various commercial entities such as: IKEA, Dublin, Shannon and Ireland West airports, Applegreen Filling stations, Tayto Park and Dundrum Town Centre regarding recommendations on Changing Places bathroom installations.
- To provide advice and recommendations on the installation of Changing Places bathrooms and access upgrades to: National Gallery of Ireland, Irish Human Rights and Equality Commission, The Mansion House Dublin, Primary Care Centre Tullamore, University of Limerick, Marley Park, Áras an Uachtaráin, Irish Rail, Irish National Heritage Park Wexford and Trinity College Dublin, using IWA's *Best Practice Access Guidelines* as a reference.
- To provide access guidance on the development of Center Parcs Longford and with the Dalata/Clayton hotel groups to encourage accessibility across all new bedroom design.
- To provide advice on the upgrade of the out-patients department at University Hospital Limerick and access upgrades at Cavan General hospital.
- To carry out access audits using IWA's *Best Practice Access Guidelines*, with many national and international companies, for example: PepsiCo, Dell, PayPal, Chartered Accountants Ireland, Fidelity Investments, and Irish National Stud.
- To inform the design of accessible housing through working in partnership with Approved Housing Bodies and Local Authorities.

IWA's *Best Practice Access Guidelines* is also recorded as a reference document within the Technical Guidance Document accompanying Part M of the Building Regulations, *Access and Use* (2010) which is an endorsement of the professional standing of the Guidelines.

1.2 Consultation for the Development of the Fourth Edition of IWA's *Best Practice Access Guidelines*

The development of this edition of IWA's *Best Practice Access Guidelines* is again underpinned by extensive consultation with members and staff, professional bodies, designers/architects and members of the public, whose valued opinions and recommendations were requested regarding specific access issues encountered and to be addressed within this fourth edition of the guidelines.

To facilitate the consultation and review process, an editorial team was set up with the aim of capturing and collating the opinions and recommendations of all consulted for inclusion in the new edition of the guidelines.



Consultation for the Development of IWA's *Best Practice Access Guidelines*, Edition 4

The approach taken by the editorial team to the development of the 2020 edition of IWA's *Best Practice Access Guidelines* was as follows:

- The editorial team identified national and international regulations and best practice design guidance documents to be used as references in developing the new edition of IWA's *Best Practice Access Guidelines*, Edition 4, (2020). Internal submissions were sought from IWA Service Managers who reviewed their allocated sections of the existing guidelines against the identified references in order to propose and substantiate any suggested new text and diagram changes.
- Submissions were sought and received from external organisations and agencies who were asked to review the existing guidelines and make recommendations regarding the development of Edition 4.

Among the submissions received were contributions from the National Council for the Blind Ireland (NCBI), Chime, Inclusion Ireland, Royal Institute of the Architects of Ireland (RIAI), the Housing Agency, Changing Places Ireland, Athlone Access Awareness Group (AAA), local authorities and community-based access groups.

- In order to capture the opinions and recommendations of IWA members, a Communication and Engagement Week, entitled 'Review of IWA *Best Practice Access Guidelines*, Edition 3' was hosted across all IWA Resource and Outreach Centres within each HSE/CHO (Community Healthcare Organisation) area. IWA members and staff were asked to join in group discussions related to access and to highlight specific accessibility issues encountered that have prevented people from participating in their local community. The desired outcome was to ensure an 'IWA member-led approach' to the review of the existing IWA's *Best Practice Access Guidelines* Edition 3, (2014) in order that the new edition responds fully to the accessibility design requirements of people with limited mobility. Comments made by participants during these discussions are referenced throughout the guidelines. In total, 550 people in 25 IWA Resource and Outreach centres participated in the Communication and Engagement Week. Members identified the five top access issues that continually impact on their daily lives as:
 - 1 Poor or no access to public transport or taxi services.
 - 2 Not enough and badly designed accessible parking.
 - 3 Narrow, uneven and dangerous footpaths.
 - 4 WC facilities that are too small and not fit for purpose.
 - 5 Public access terminals that cannot be reached or used ie ATMs, etc.

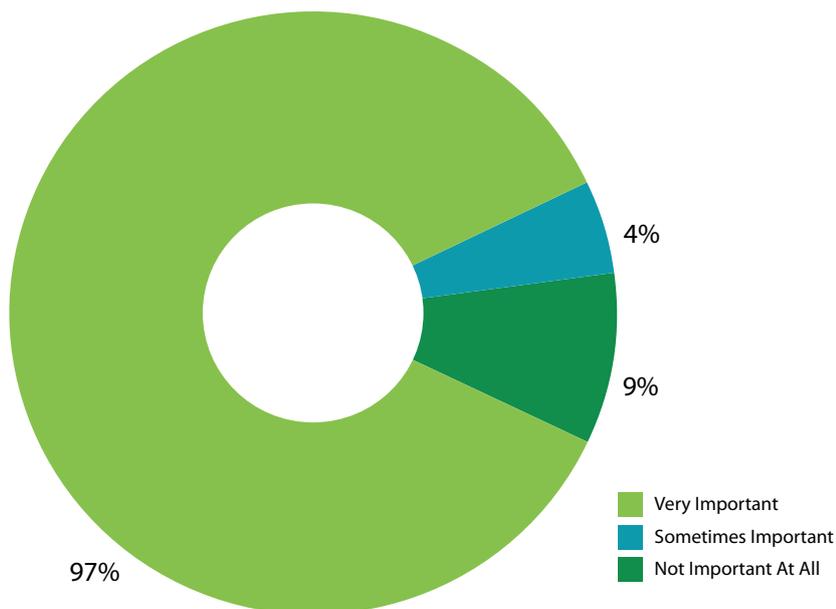
Based on feedback from IWA members during these discussions, additional sections covering topics such as access to places of worship, student accommodation, office accommodation and beauty salons are also included in this new edition of the guidelines.

- Personal interviews were carried out with nine IWA members nationally, including Dr Oliver Murphy who is one of the founding members of IWA. All interviewees were asked a series of questions relating to accessibility and whether poor access impacts their daily lives. Those interviewed shared their experiences on how access-related issues affected their lives and made recommendations on how best to improve accessibility to the built environment.
- An online access questionnaire was distributed through IWA Resource and Outreach Centres, on IWA social media and on the IWA website. A total of 944 responses were recorded. The questions posed were designed to seek opinions on levels of accessibility in specific locations such as the outdoor environment, buildings to which the public has access, and facilities and services within buildings. Of the people who completed the questionnaire 87% stated that access to the outdoor environment was very important to support them to be active in their community, and 90% agreed that access to indoor facilities was also very important. The top three access issues identified as requiring continued promotion and guidance within the new edition of the IWA guidelines were:
 - 1 The design and provision of Changing Places bathrooms.
 - 2 Wheelchair accessible housing design.
 - 3 The design of health care facilities.

Those who completed the questionnaire were also asked for their opinion on what additional topics they would like to see covered in the new edition of the guidelines. Some of the top suggestions requiring guidance are as follows: accessible hotel/guest accommodation; accessible sport facilities; the design and use of platform lifts; shared space and cycle lanes; office accommodation; student accommodation; hair salons; places of worship; and accessible restaurants/shops.

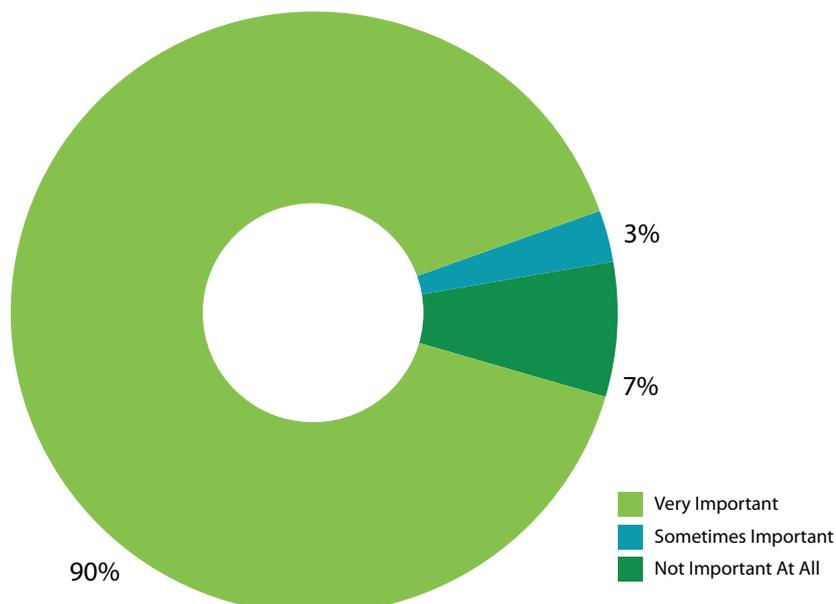
Access Survey 2019

Q: How important is access to the outdoor environment in supporting a person with a disability to be active in their community.

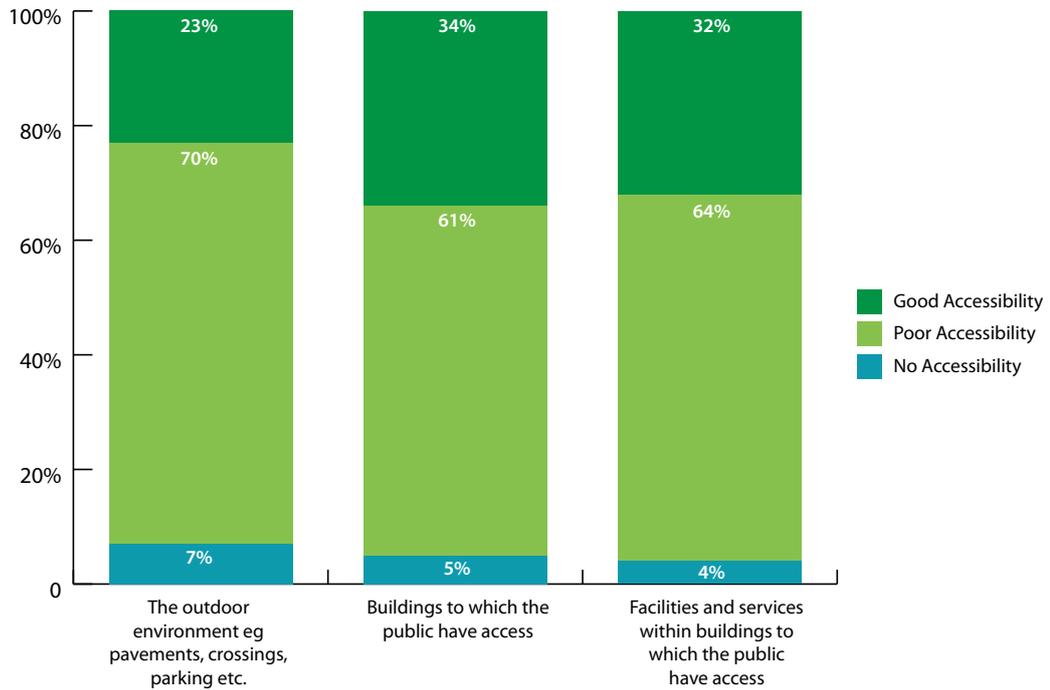


Access Survey 2019

Q: How important is access to indoor facilities in supporting a person with a disability to be active in their community.

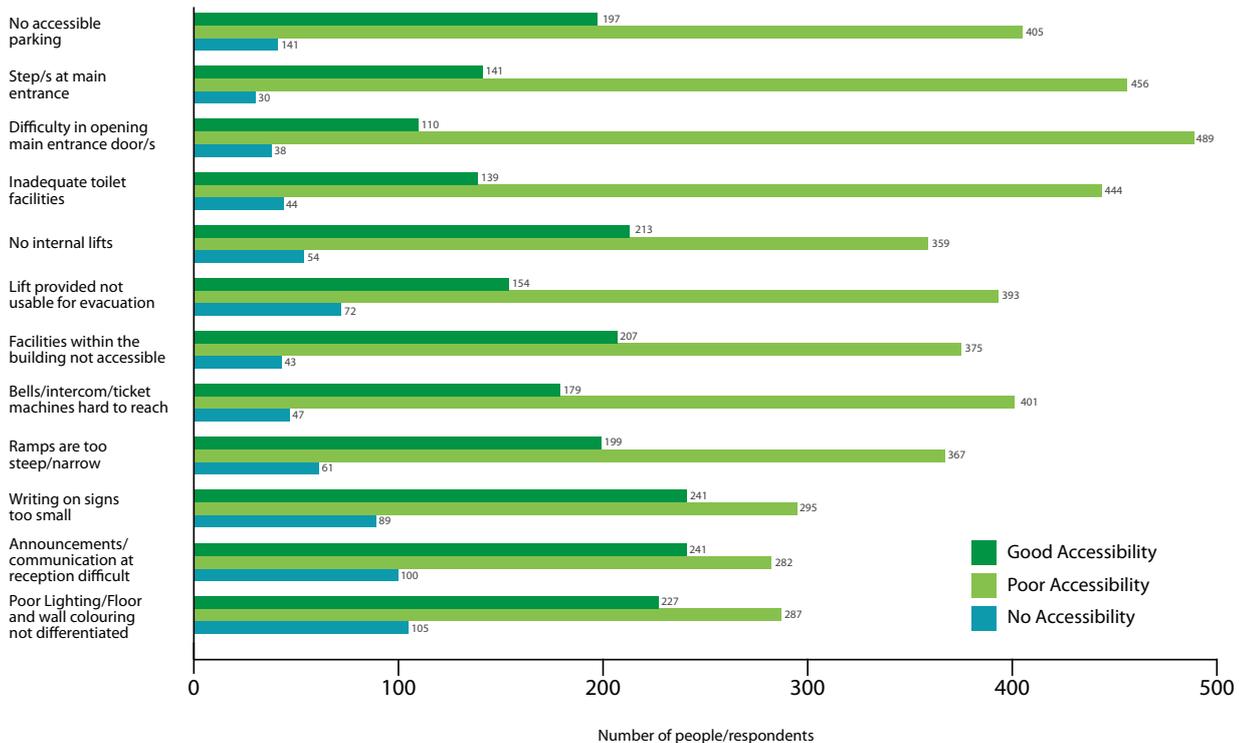


**Q: Based on the needs of people with physical and sensory disabilities
Please rate the level of accessibility you have experienced in these locations:**



Access Survey 2019

Q: How often are the following barriers encountered in accessing public buildings?



1.3 The Purpose of the *IWA Best Practice Access Guidelines*

“Many of the recommendations contained in Edition 4 of these guidelines go beyond the minimum requirements outlined in Irish Building regulations and in some instances also exceed many international standards”¹

The fourth edition of *IWA's Best Practice Access Guidelines* will respond fully to the accessibility design requirements of people with disabilities. These new guidelines will be utilised to influence and advocate for future legislation and the development of new regulations on improved access standards.

IWA's Best Practice Access Guidelines, Edition 4, is designed to partner the *Great Outdoors - A guide for accessibility*, published by IWA Sport & Sport Ireland in 2018.

In this, the 60th anniversary year of the foundation of Irish Wheelchair Association, Edition 4 of *IWA's Best Practice Access Guidelines* will act as a roadmap, whereby people with disabilities and particularly people with complex needs are facilitated to independently access the built environment.

These guidelines recognise and respond to societal changes. People with disabilities are leading fully independent lives and rightfully expect to be able to participate in all aspects of society. Edition 4 of *IWA's Best Practice Access Guidelines* demonstrates the rationale behind the various space requirements and the recommendations stated in these guidelines consider how we need to be aware that a 'one-size fits all approach' is not the answer to accessible design. As with IWA's previous guidelines, the concept of best practice in accessible design is based on feedback received from IWA members who have first-hand experience of the many access issues they incur daily and how best practice accessible design can enable them to live 'ordinary lives in ordinary places.'

Edition 4 of the guidelines recognises the end users, some of whom use a larger type wheelchair or a powered wheelchair which requires a 1800mm turning circle. These guidelines reflect the space required for specific transferring techniques while also considering a person's functional ability and the use of additional equipment such as a hoist. The guidelines demonstrate the rationale behind increased dimensions such as door widths, pavement widths and turning circles to reflect the requirements of people who use various types of mobility aids, including powered wheelchairs.

To underpin the development of Edition 4 of *IWA's Best Practice Access Guidelines*, in-depth research was carried out using national and international best practice guidelines and standards in order to ensure that this edition reflects best practice in accessible design. The intention of these guidelines is to give informed guidance in relation to creating best practice accommodation for people with disabilities with regard to accessibility to and within the built environment.

1 Chris Hoey, IWA Chief Operations Officer, May 2020

The research and policy documents, as well as guidelines that have been reviewed, emphasise the importance of the promotion of the dignity and rights of people with disabilities.

A full list of referenced documents and useful websites is listed in Sections 12 and 13 of the guidelines. Notable references include:

- *UN Convention on the Rights of Persons with Disabilities* (2006), United Nations.
- *Building Regulations, Technical Guidance Document Part M Access and Use* (2010), Department of Housing, Planning and Local Government.
- *Design of an accessible and inclusive built environment Part 1: External environment* - BSI Standards BS 8300-1:2018, Code of Practice BSI Standards Publication.
- *Design of an accessible and inclusive built environment Part 2: Buildings* - BSI Standards BS 8300-2:2018, Code of Practice BSI Standards Publication.
- *Great Outdoors A guide for accessibility* (2018), Irish Wheelchair Association (SPORT) and SPORT IRELAND.
- *Changing Places: the practical guide*, UK Changing Places Consortium.
- *Building for Everyone A Universal Design Approach, Series 1-10* (2012), Centre for Excellence in Universal Design at the National Disability Authority.
- *The Sign Design Guide: A Guide to Inclusive Signage* (2004), UK Sign Design Society (SDS) & Royal National Institute of Blind People (RNIB).
- *Guide to Safety at Sports Grounds 'Green Guide'* (2018), Sports Ground Safety Authority formerly the Football Licensing Authority.
- *Fire Safety in the design, management and use of buildings* BSI Standards BS 9999:2020, Code of Practice, BSI Standards Publication.
- *Building Regulations Technical Guidance Document Part B Fire Safety* (2006), reprinted (2020), Department of Housing, Planning and Local Government.
- *Universal Design Guidelines for Homes in Ireland*, (2015), Centre for Excellence in Universal Design at the National Disability Authority.
- *Wheelchair Housing Design Guide* (2018), 3rd edition, Royal College of Occupational Therapists and Habinteg Housing Association.
- *Designing Housing to Meet the Needs of All - A Roadmap* (2019), The Housing Agency.
- *AOTI Housing Design for Occupational Therapists* (2019), Association of Occupational Therapists of Ireland.

In some instances, where the existing guidelines and standards did not sufficiently meet the requirements of some wheelchair users, as was highlighted during the consultation process, the editorial group devised a guideline appropriate to meet that specific need. Examples include guidance on Changing Places WCs, accessible parking spaces suitable for multi-purpose vehicles, wheelchair accessible housing design, accessible office and student accommodation, and places of worship. Irish

Wheelchair Association, in making these recommendations, portrays the extensive experience of IWA members.

IWA is conscious that many of the recommendations contained in Edition 4 of these guidelines go beyond the minimum requirements outlined in Irish Building regulations and in some instances also exceed many international standards. We can confidently and legitimately advocate for this because our guidelines reflect the first-hand experiences of our members and aspire to create an accessible built environment that is inclusive for all, including people with limited mobility.

1.4 Using IWA's *Best Practice Access Guidelines*

“*The guidelines are a roadmap that will ensure buildings and their environs will be designed and built to a standard that will meet the needs of all, particularly, people with disabilities*”²

IWA's *Best Practice Access Guidelines* should be used to inform plans for the development of new facilities or for the upgrade and/or retrofitting of existing buildings. The guidance contained in this document, which can be used as a reference tool, will be a valuable resource for local authorities, designers, architects and engineers in order to address access issues and source solutions. The guidelines are a roadmap that will ensure buildings and their environs will be designed and built to a standard that will meet the needs of all, particularly, people with disabilities. By adhering to these guidelines, in the case of new builds, the present and future needs of all individuals will be met by the initial build, thus negating the need for future and often costly building modification.

IWA suggests a pragmatic approach be adopted when using its *Best Practice Access Guidelines*. In certain situations, where retrofitting or developing buildings under a particular size, it may not be possible to achieve best practice. In these situations, careful consultation with people with disabilities and/or access consultants should make it possible to work out the best compromise solution.

1.5 IWA's *Best Practice Access Guidelines* – Making a Difference

There are a number of 'next steps' regarding the promotion of the IWA *Best Practice Access Guidelines*. These include:

- Promotion of the guidelines within Irish Wheelchair Association, across all IWA departments.
- Promotion on IWA's website www.iwa.ie and across all IWA social media platforms.
- Liaison with statutory and policy-making sectors including government departments, local authorities and like-minded disability organisations to promote best practice in accessible design.

2 Chris Hoey, IWA Chief Operations Officer, May 2020

- Utilisation as a reference tool in the development and delivery of Access Awareness training modules
- Utilisation by IWA Advocacy, Access and Housing departments for the purpose of extracting access information and recommendations to support IWA members.
- Consultation with architectural representative and training organisations or bodies.
- Influencing Government policy and support submissions on access-related issues.
- Creating a consistent approach in delivering information on design advice by IWA staff working throughout our services.



Utilisation of IWA's *Best Practice Access Guidelines, Edition 4*

1.6 Summary

The publication of the fourth edition of IWA's *Best Practice Access Guidelines* is the culmination of extensive research, review and analysis. We are confident that these guidelines will be a valuable reference tool which can be utilised in the development of an inclusive environment.

IWA would like to thank everyone who has given their time to provide advice, guidance and support to this project. We particularly want to thank all those who participated in the online access questionnaire, those who made submissions, and all those who participated throughout the development of these guidelines.

It is with pleasure that IWA endorses these guidelines for use by individuals, public sector bodies, like-minded disability organisations, architects, planners, and society in general.

Chris Hoey
Chief Operations Officer

Dolores Murphy
Access Team

Bridget Boyle
Access Team

Nicola McDonnell
Access Team



“My social life can be neglected as I cannot get to places; in this day and age it’s a joke!”

IWA member, Co Sligo



SECTION 2

Design Base and Rationale

Irish Wheelchair Association Best Practice Access Guidelines

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Design Base and Rationale for Irish Wheelchair Association's Best Practice Access Guidelines

2.1 IWA's understanding of Design and Disability

In keeping with Editions 1, 2 and 3 of this publication, Irish Wheelchair Association continues to define and understand accessible design within the built environment as:

"Free and unimpeded access to and from and the use of all areas and functions of the buildings, facilities and physical features that make up the built environment."³

IWA understands the concept of accessible design from a human rights perspective where disability is understood, nationally and internationally, to arise from the interaction between a person's health condition or impairment and the multitude of influencing factors within their environment. Some of the influencing factors within a person's environment that have been demonstrated by IWA members and which create dis-ability or barriers to community and life stage involvements on an equal basis with peers include: public attitudes, the design of products and services, the design of buildings, the design of the external environments, and the design, operation and management of facilities that operate within the built environment. People are therefore seen to be disabled by an environment that is not designed to accommodate their needs and requirements. The UN Convention on the Rights of Persons with Disabilities (UNCRPD) considers that "disability is an evolving concept" and that "disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinder their full and effective participation in society on an equal basis with others."⁴

As part of the introductions to Sections 4 to 10 within this IWA *Best Practice Access Guidelines* publication, references are made to the UNCRPD with text quotations from the Convention that are relevant to each section, though in fact the whole of the Convention applies universally.

The concept of a Universal Design approach that was developed at the US University of Buffalo in the 1980's resulted in advances in accessible design being achieved in many countries; advances that are intended to make the world a more inclusive place for people living with disabilities. The concept of Universal Design gathered some momentum worldwide in the 1980's and 90's and, following the passing of the Disability Act in Ireland in 2005, The Centre for Excellence in Universal Design was established here in Ireland in 2007. The Irish Centre for Excellence in Universal Design,⁵ which is part of the National Disability Authority (NDA), is dedicated to promoting the design of environments and products that can be accessed, understood and used regardless of a person's age, size, ability or disability.

3 IWA *Best Practice Access Guidelines*, Edition 1 (2009)

4 UN Convention on the Rights of Persons with Disabilities. (2006) <https://www.ihrec.ie/crpd/>

5 Centre for Excellence in Universal Design <http://universaldesign.ie/>

Ireland's Building Regulations, including guidance relating to accessible design, came into force in 1992. The guidance on providing access to buildings for 'disabled people' (1992 Regulations and subsequent) has always been titled 'Part M'. Building Regulations apply to new builds and to material alterations and extensions to existing buildings; understandably building regulations did not apply to any building constructed prior to their introduction in 1992. Building Regulations do not apply retrospectively to existing buildings. The exception is where Section 25 of the Disability Act 2005 required all public buildings owned or managed by public bodies to comply with Building Regulation *Part M Access for People with Disabilities*, (2000) by the year 2015 and with all subsequent amendments to Part M not later than 10 years after the commencement of the amendment. Building Regulation *Part M Access and Use*, (2010)⁶ is presently the relevant legislation.

The guidance that was provided in *Building Regulation Part M Access for Disabled People*, (1992) was very limited in its scope and application and in the understanding of disability. While Part M of the Building Regulations has been reviewed and improved since the 1990's, much more work is still required both from a Universal Design and from a building regulation approach to fully meet people's access needs. The experience of IWA members continues to highlight and demonstrate the many restrictions imposed on their lives by poor and inadequate design of built environments and of products, facilities and services.

2.2 Universal Design and IWA's Best Practice Access Guidelines

Informed over a prolonged period by the life experiences of IWA members, IWA continues to have a mandate from its members to set out in its *Best Practice Access Guidelines*, Edition 4 what IWA considers the dimensions and detailed design guidance that can inform the design of environments that are truly accessible to people who have a mobility impairment, including people who may use a large powered wheelchair and who may require assistance with activities of daily living.

A Universal Design approach based on the seven principles of Universal Design, as set out in **Figure 1 on page 43**, means designing products, buildings, services, facilities, equipment and exterior/internal spaces which allow the maximum number of people to use them without the need for adaptation or specialised design. Physical, sensory, cognitive and language requirements should always be considered during the initial design phase of any product or build. When skilfully applied, alongside collaboration and consultation with people who have a disability, a Universal Design approach should eliminate the necessity for specific access provisions for people who have a disability, while at the same time reducing barriers and promoting the inclusion of people with disabilities. Universal Design is intended to facilitate optimum use of the built environment by all people, and optimum access to the services and facilities within that environment. For example, wider and automated doors and wider corridors will make access more comfortable for a broad range of people, including parents with buggies, elderly people, people who use wheelchairs, etc. This same principle applies to: well-planned and spacious hotel guest rooms; internal building designs that do not need to incorporate lobbies; lifts that are large enough to comfortably accommodate a person using a powered wheelchair

6 The Building Regulations *Part M Access and Use*, (2010) <https://www.housing.gov.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/BuildingStandards/FileDownload%2C24773%2Cen.pdf>

and an accompanying person; lifts that can be used for evacuation purposes; and approach routes to buildings that are sufficiently wide to allow two people using wheelchairs or pushing buggies to pass each other or to go along side by side; etc.

IWA's *Best Practice Access Guidelines*, while based on the principles of Universal Design, focus specifically on the access requirements of people who have a mobility impairment, including people who may use a large powered wheelchair and who may require assistance with everyday activities of living. Even when a Universal Design approach is intended, IWA's experience has demonstrated that the access requirements of people who have a significant disability must be specifically named and incorporated into the design brief to ensure an inclusive environment outcome. It is not good enough to assume that a generalised Universal Design approach will encompass all requirements, and particularly where the design team may not have the relevant background in disability awareness and understanding across all disability groups. Building Regulations and many design publications focus their guidance on accessible design where individuals are physically fit, young and active, without the same consideration for people who may be older and/or have a more significant impairment. IWA's approach, informed by Universal Design principles, is always to promote design for the greatest possible need, to ensure everyone can use and participate within all environments at any time and throughout their life. In most instances, the dimensions and the guidance required to ensure that a design meets the greatest possible need must be specifically named and specifications detailed and agreed with the end users who have the life experience and with people having specific skills, knowledge and awareness in accessible design.

→ See Figure 1 Principles of Universal Design on page 43.

2.3 Building Regulations *Part M Access and Use, (2010)* and IWA's *Best Practice Access Guidelines, (2020)*

The Technical Guidance Document that accompanies the Building Regulation *Part M Access and Use, (2010)* while promoting a Universal Design approach in the introduction to the document (paragraph 0.1 pg.10), goes on to adopt a minimum design guidance approach throughout. While the design guidance in the *Part M Access and Use, (2010) Technical Guidance Document* has improved considerably since the 1992 and 2000 editions, the Building Regulations still need to incorporate significant design guidance improvements across all disability groups and within a range of different environments to truly deliver buildings, along with internal and external environments, that are fully accessible to everyone. IWA seldom, if ever, sees the extension of design beyond Part M 2010 guidance to what would be considered Universal Design. In IWA's experience, for the most part and with few exceptions, designers tend to only comply with Building Regulation requirements, which perhaps inadvertently results in many environments not being truly or fully accessible. The following brief table shows some of the deficits within the Technical Guidance Document that accompanies *Part M Access and Use, (2010)* that relate to the access requirements of people who have a mobility impairment. IWA intends to address these deficits within its *IWA's Best Practice Access Guidelines, (2020) Edition 4*.

Examples of some locations and environments where guidance is not given by *Part M Access and Use, (2010)*

Swimming pools and equipment –
Hoist vs Pool Pod pool entry systems

Gyms and equipment – layouts and inclusive use
equipment

Changing Places bathrooms

Office and meeting room design
and layouts

Places of worship

Shared communal living spaces

Hospital environments

Treatment rooms in health care settings

Play areas

Outdoor events

Shared co-living type accommodation with
shared communal facilities, including student
accommodation

Lifetime Adaptable Housing

Wheelchair Accessible Housing

Examples of where *Part M Access and Use, (2010)* does not meet the access requirements of people with a more significant disability

Ramps: steep gradient of 1:12 allowed

Accessible Parking: no requirement for parking for
multi-purpose vehicles

Doors: insufficient detail, automated doors not
considered essential

Fire doors within buildings are a continuous problem;
hold open systems not considered essential

The requirement for lobbies presents a great difficulty
for a wheelchair user to negotiate through double sets
of doors

Lifts: sizes allowed too small and are not required to
be fire-protected for use in an evacuation

Platform and stair lifts: additional guidance should
indicate the provision of platform and stair lifts as a
last resort only, and additional guidance is needed on
specifications

Smaller size of accessible independent use WCs
allowed in buildings less than 200m², which is too
small for users of powered wheelchairs

Changing Places bathrooms: not required www.changingplaces.ie

Limited guidance related to sensory impairment,
including relevant signage

No guidance re cognitive impairment

Hotel and other sleeping accommodation: lack of
detail and no recommendations relating to hoist
requirements

Bathrooms in hotels and other guest accommodation:
no hoist requirement

2.4 Consultation

Central to the use and application of IWA's *Best Practice Access Guidelines* is the need for a design team to establish a process that fully engages and consults on the details of the design with people who have a disability, so that their voice is heard and taken on board throughout the project. The understanding of how a person who has a disability experiences and uses an environment must come from people who live with a disability. Designers may not recognise their knowledge and experiential deficits when it comes to designing for disability, and consequentially may not realise that these gaps must be addressed and filled through continued learning and real-life experiences that include collaborations and consultation with people who have a disability. Too often, the experience of people with a disability is that their voices are not heard or their opinions not validated, that they are often told of design decisions after the fact, rather than have their expert 'living the life' views and opinions validated and welcomed into the design process from the outset. An accessible design advisory and consultation group with clear points of reference, objectives and time frames can be established at the outset of any project before any design decisions are set and there is still the opportunity to advise and to influence. Membership of the group should incorporate representation across disability groups and include people with specific life experience, knowledge and relevant skills. In short, 'Nothing About Us Without Us'⁷ should be the deciding factor when designing environments that are accessible to all, including people with limited mobility.

2.5 IWA's *Best Practice Access Guidelines* and Space Requirements

While the principle of Universal Design can be applied to many situations, including product design and access to goods and services, these IWA *Best Practice Access Guidelines* focus on access to the built environment in line with access priorities identified by IWA members, staff and volunteers.

The IWA's *Best Practice Access Guidelines* are based on the space requirements of people who have a mobility impairment as set out in Figure 2 Space Requirements, Figure 3 Common Reach Zones and Figure 4 Front and Side Cross Reach Distances. These space requirements and the guidance given within the IWA's *Best Practice Access Guidelines* are intended to accommodate all people with limited mobility, including users of large powered wheelchairs and people requiring assistance with activities of daily living.

→ See Figure 2 Space Requirements, Figure 3 Common Reach Zones and Figure 4 Forward and Side Cross Reach Distances on pages 44, 45 and 46.

7 'Nothing About Us Without Us' is the slogan of the worldwide Independent Living Movement. See Independent Living Movement Ireland at <https://ilmi.ie/>

2.6 Jurisdiction

IWA is a national organisation that works with and on behalf of people with disabilities living in Ireland. However, we are confident that the guidelines and recommendations included in this document could be implemented outside of Ireland by any organisation, group or company. IWA would be happy to assist this process in any way possible.



“If we want the freedom to move about without obstruction, use the facilities available and ensure we’ll have no problems because of bad planning, design and construction, we must reach out to get things right from the start.”

Dr Oliver Murphy, IWA Founding Member, Co Louth

Figure 1 – Principles of Universal Design

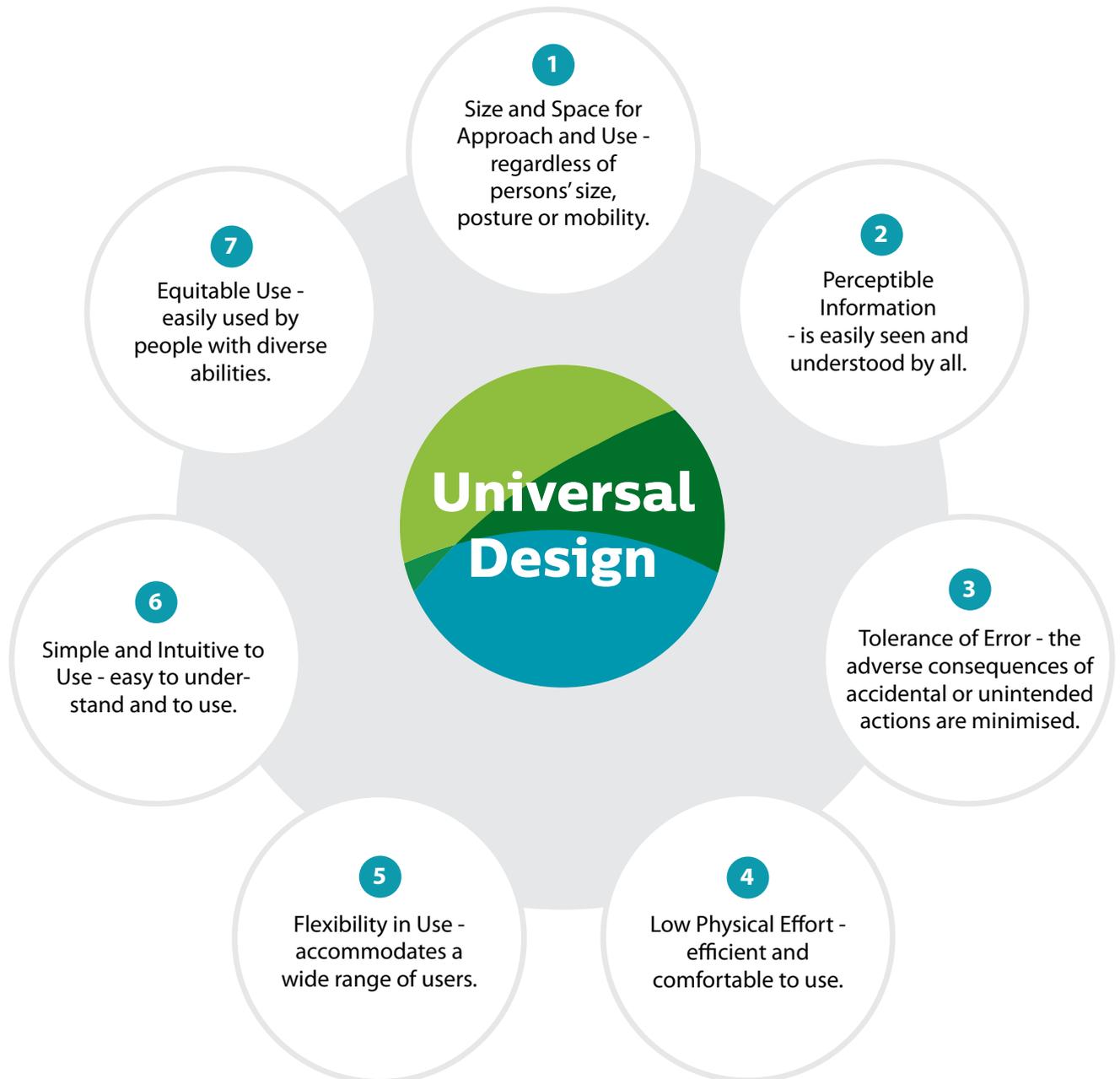


Figure 2 – Space Requirements

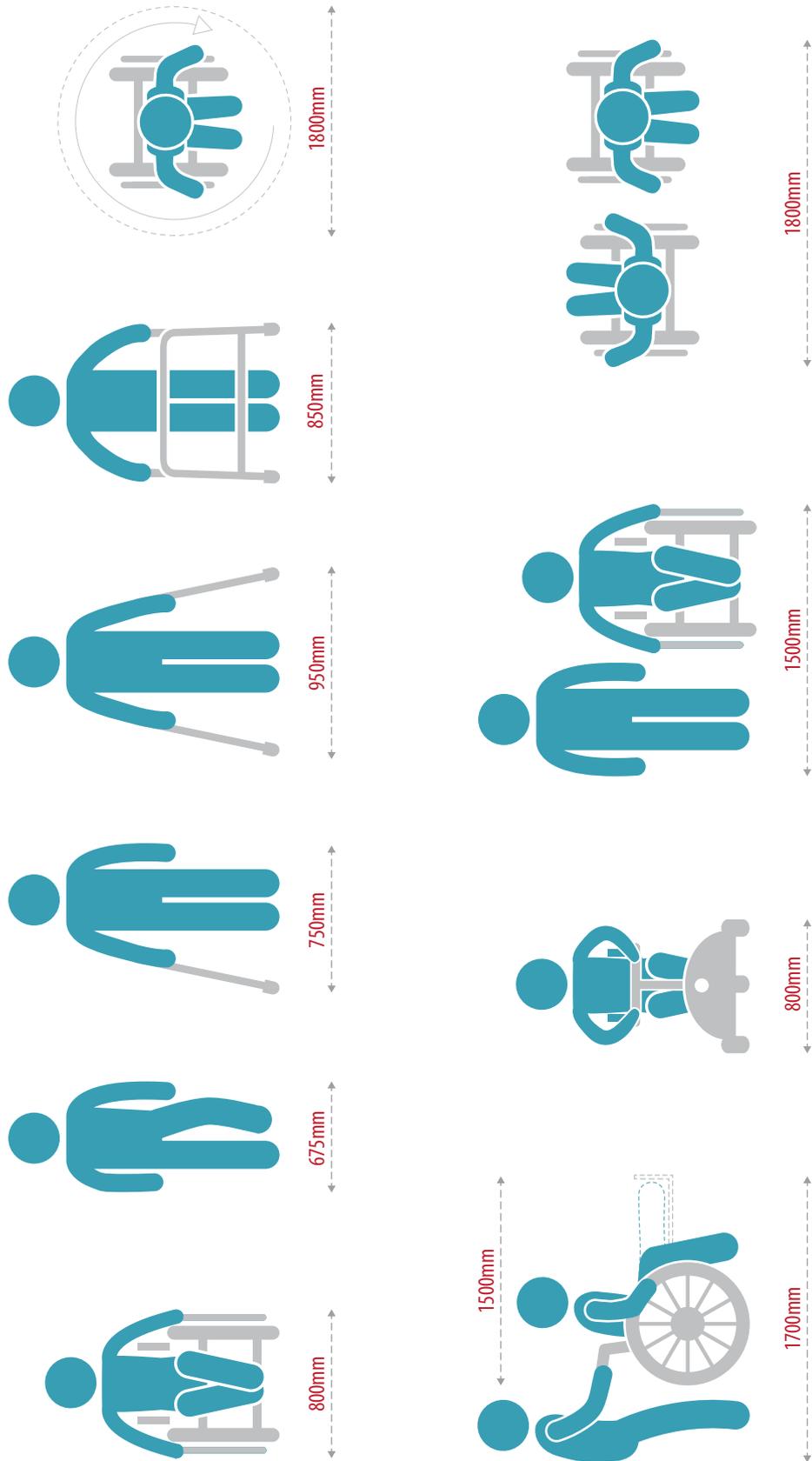


Figure 3 – Common Reach Zones

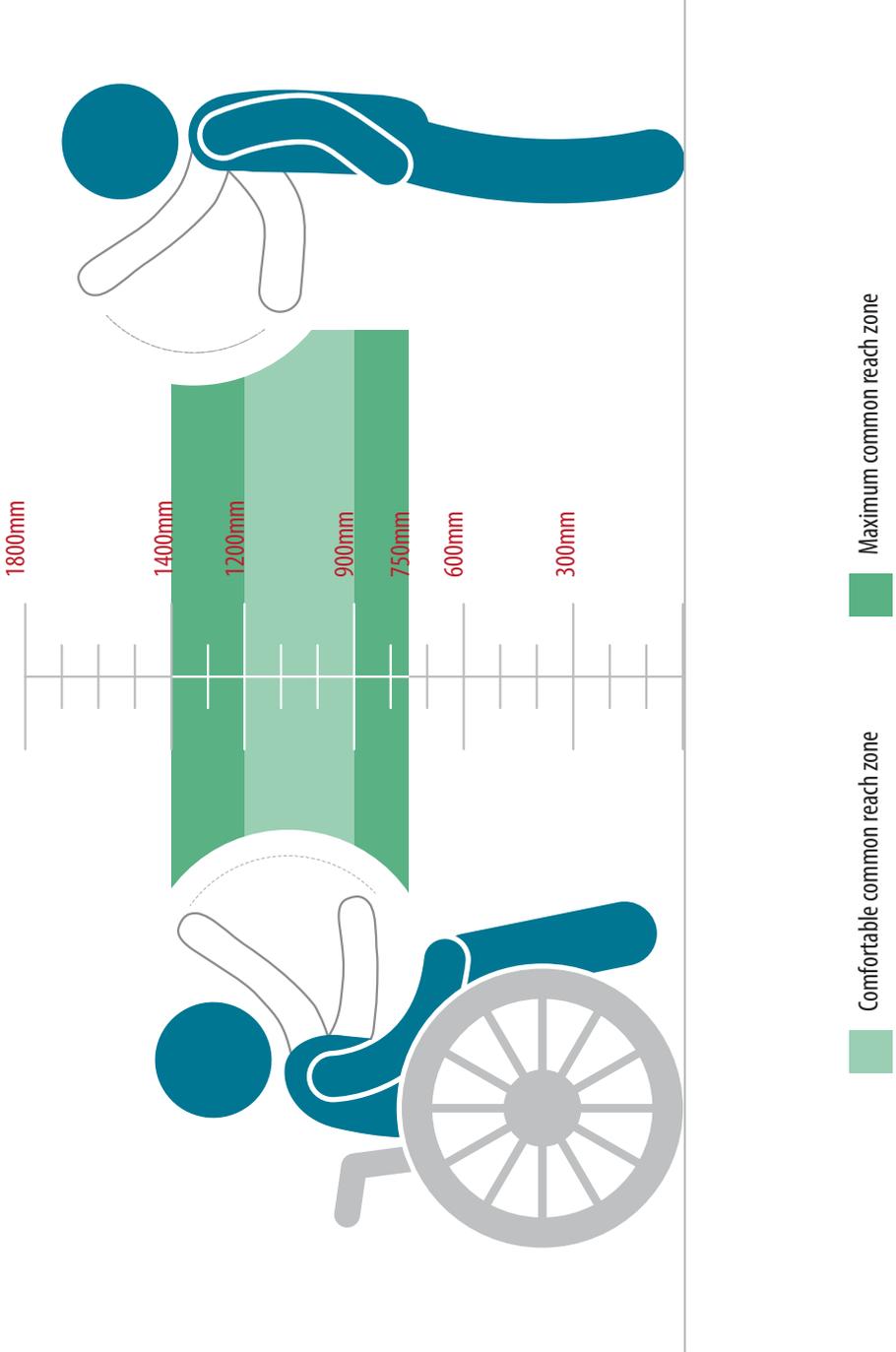
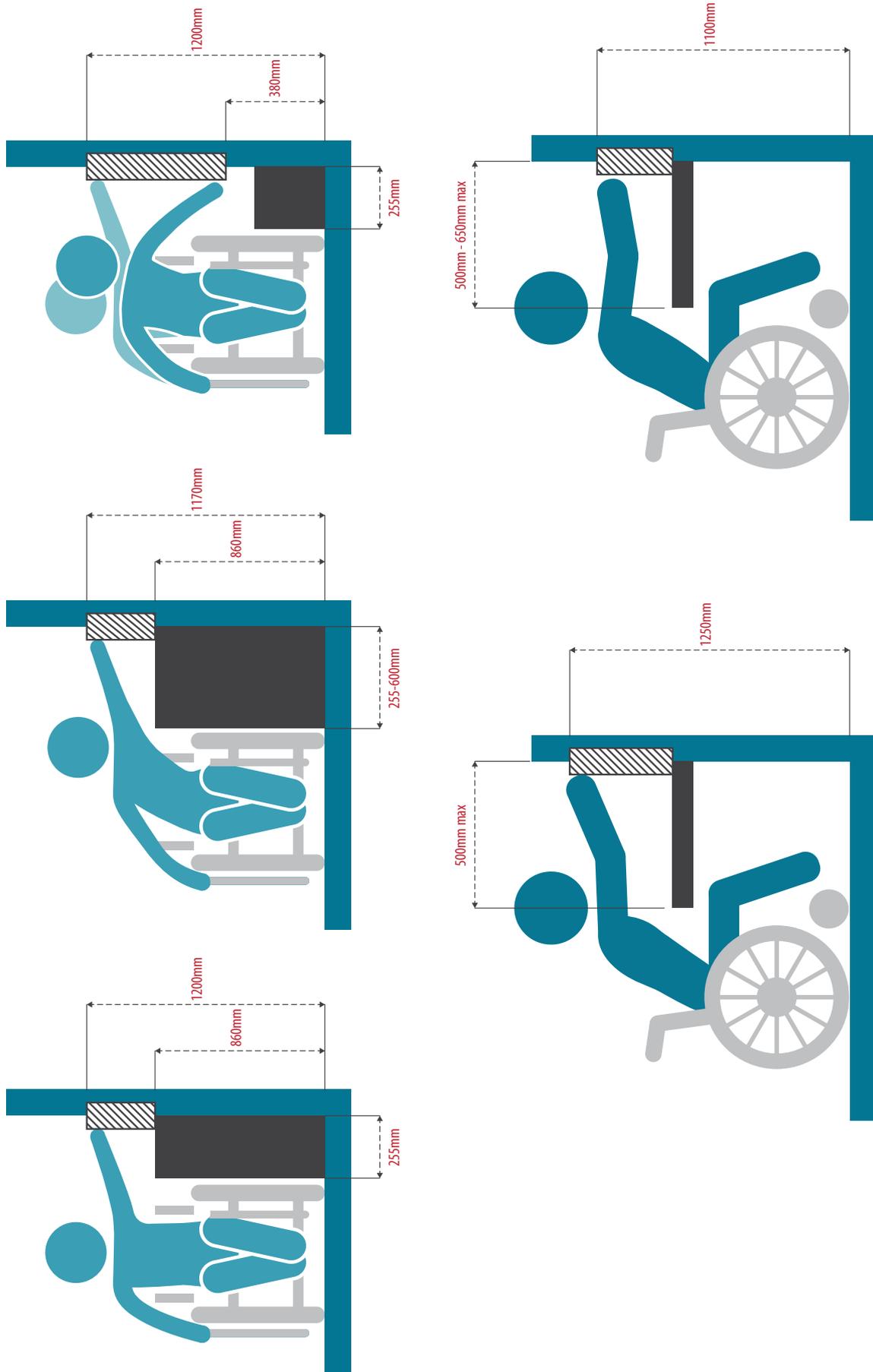


Figure 4 - Forward and Side Cross Reach Distances





SECTION 3

Policy and Legislative Background

Irish Wheelchair Association Best Practice Access Guidelines

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Policy and Legislative Background

The Building Control (Amendment) Regulations 2018 (S.I. No. 526 of 2018) are to be read in conjunction with pre-existing building control legislation, and came into effect on 17th December 2018. The Building Control (Amendment) Regulations 2014 (S.I. No. 9 of 2014) includes three certificates that must be in place:

1. **Certificate of Compliance (Design):** This Design certificate is to be completed by the building designer (a registered architect, building surveyor or chartered engineer), giving confirmation that the plans have been prepared to demonstrate compliance with the applicable requirements of the Building Regulations.
2. **Certificate of Compliance by an Assigned Certifier:** A professional such as a chartered engineer, building surveyor or registered architect will be appointed by the owner from a register, using the statutory form of appointment in the Regulations to inspect the works and ensure compliance with Regulations.
3. **Certificate of Compliance on Completion:** On completion of the project, the Assigned Certifier and the builder will each certify on different parts of the Certificate of Compliance that a finished building complies with the requirements of the Regulations.

According to the legislation, these mandatory Certificates of Compliance are intended to be “clear, unambiguous statements on statutory forms stating that each of the key parties to a project certifies that the works comply with the building regulations and they accept legal responsibility for their work”.

The Building Control Department in each local authority has a monitoring and enforcement role in relation to Building Control Regulations compliance.

The Building Regulations, Part M ‘Access and Use’ (2010) and Part B ‘Fire Safety’ (2006) reprinted (2020), with accompanying Technical Guidance Documents, set out the statutory minimum design features required in making provision for access to and egress from a building for all people, including those with a disability. These regulations are reviewed periodically. A Disability Access Certificate (DAC) is required to show compliance with Part M, Access and Use (2010). An additional guidance document associated with Part B ‘Fire Safety’ (2006), reprinted (2020) is **Fire Safety in Communal Dwelling Houses, Code of Practice for Fire Safety in New and Existing Community Dwelling Houses (2017)**, Department of Housing, Planning and Local Government.

The Disability Act (2005) is part of a framework of Government legislative measures which promote and support equality and social inclusion of people with disabilities. The Disability Act requires six named government departments to create equitable and integrated access to all premises and services within their remit. The stated aims, objectives and accompanying work plans are set out within Departmental Sectoral Plans.

The National Disability Inclusion Strategy (2017 - 2021), linked to the Disability Act (2005), calls to action individuals, organisations, and local and national government. It requires them to strategically plan to improve the lives of people with a disability by creating equality of opportunity so that people can achieve their potential. It addresses accessible transport, buildings and streets as key factors in enabling people with disabilities to participate in work, as well as cultural and social activities.

The Equal Status Acts (2000 to 2018) prohibits discrimination on nine specific grounds and requires service providers to provide reasonable accommodation of people with disabilities in the provision of goods and services.

The Department of the Environment, Community and Local Government's 'National Housing Strategy for People with a Disability' (2011 – 2016), extended to 2020, and its associated National Implementation Framework, sets out the housing and related support needs of people with disabilities and strategically plans for an integrated mainstream response to those needs. The strategy places a particular emphasis on the circumstances of people with disabilities who are living in congregated settings and on the circumstances of people with mental health illness.

The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), (2006), which Ireland signed in 2007 and ratified in 2018, entered into force in Ireland on 19th April 2018. The UNCRPD brings together in one document all of the existing rights outlined in other conventions and international human rights treaties. and aims to ensure that persons with disabilities enjoy human rights on an equal basis to others.

The National Positive Aging Strategy (2013) provides the blueprint for planning what government can and must do to make Ireland a good country in which to grow older. This strategy seeks to highlight that ageing is not just a health issue but requires a whole of government response to address a range of interconnected social, economic and environmental factors that affect health and wellbeing.

The Roads Acts (1993 and 2010) require road authorities to consider the needs of all road users when constructing and maintaining public roads. People with disabilities require specific consideration and provision to ensure they are not disadvantaged by road schemes and that their requirements are planned for.

The Housing Act (1966) is the principal legislation on local authority housing. It has been amended on numerous occasions and a number of other relevant Acts have been passed. The most recent legislation, the Housing (Miscellaneous Provisions) Act (2009), amends or replaces sections of a large number of Acts as well as introducing totally new provisions. This Act also amends the Residential Tenancies Act (2004) which sets out the rules in relation to the private rental sector.

The Safety, Health and Welfare at Work Act (2005) as amended and Safety, Health and Welfare at Work Regulations (General Application) (2007-2020) place responsibility for occupational health and safety on all stakeholders. The Act develops the role of employers, employees and Government in framing and implementing occupational safety and health policy in Ireland. Regulations deal with the physical environment at the place of work, welfare facilities, and the suitability of the workplace.



SECTION 4

The External Environment and Building Approach

Irish Wheelchair Association Best Practice Access Guidelines

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4

The External Environment and Building Approach

United Nations Convention on the Rights of Persons with Disabilities (UNCRPD).

Article 9 of the UNCRPD seeks to promote and protect disabled peoples' right to live independently and be included in the community.

Countries that ratify the UNCRPD commit *"To enable persons with disabilities to live independently and participate fully in all aspects of life [...] and to take appropriate measures to ensure access to persons with disabilities, on an equal basis with others, to the physical environment, to transportation, to information and communication, including information and communications technologies and systems and to other facilities and services open or provided to the public both in urban and in rural areas."*

United Nations Convention on the Rights of Persons with Disabilities (2006).

4.1 Background

In setting out design guidance for the external environment and building approach, the intention of Irish Wheelchair Association (IWA) is to support design planning for an outdoor environment whereby there is safe and easily used and understood access for people of all ages and with different degrees of personal mobility. IWA guidance is based on always affording priority to streetscape users through the use of clear sightlines, appropriate pavement widths, recognisable crossings, uncluttered pavements that give rise to recognisable streetscapes that intuitively draw people to key destinations, and clear, uncompromised physical divisions between pedestrians, vehicles and bicycles.

IWA considers the provision of pavements with appropriate widths, kerbs with appropriate heights, and including designated level access crossings points (always on opposing sides) as fundamental to creating a safe urban environment. Within such an environment the materials and finishes used should support the safe and confident use of the streetscape and include the provision of visual clues and information systems to create a strong and legible framework.

In order to maximise on opportunities for social and physical inclusion within the external environment, the specific detail of accessibility provisions should be addressed from the outset of any project before design parameters are set. IWA considers that a consultative and collaborative approach with key disability stakeholders throughout any project will result in the best and most inclusive design outcome.

4.1.1 Accessible Parking

People with limited mobility who travel to buildings by car need to be able to park, have sufficient space and appropriate pavement/ground level height to enter and leave their vehicle, on occasion

to move to the rear of their vehicle and then to walk or travel in a wheelchair to the main building entrance. Accessible car parking involves the appropriate design, designation and location of both car and multi-purpose vehicle accessible parking bays, along with the provision of set-down/pick-up bays.

If people need to obtain tickets for pay and display parking, the ticket dispensing machines should be located in a way that allows a person in a wheelchair to gain close access to the machine and to reach and use the payment and ticket dispensing functions. Where parking is provided within an enclosed/ barrier-controlled parking area there should be a means of gaining entry without the driver with a disability having to over-reach to a ticketing machine.

4.1.2 Design Criteria for Accessible Parking

Accessible parking bays designated for people with limited mobility should be provided adjacent to the shortest accessible route to the building entrance, with a maximum travel distance of 25m. The bays should be clearly signposted with an upright sign sited out of the circulation space. The signage should be designed using a white international symbol of accessibility on a blue background. The bays should be on firm and level surfaces with a maximum crossfall of 1:50. Avoid the use of inappropriate materials such as gravel, sand, cobbles, etc.

The design of the parking bay should also plan for the safe transfer (dished kerbs, level approach routes, adequate lighting, etc) from the parking bay to the access route leading to the building without undue effort. Barriers to wheelchair users or hazards that could cause a person to trip or to tip from their wheelchair should be avoided.

The size of the bay should allow for the safe transfer of a passenger or driver to a wheelchair, including a space allowance or accessibility zone for the use of a transfer hoist or ramp which may be attached to some vehicles.

4.1.2.1 Surface and Markings

The surface of the bay and adjacent accessibility zone should be firm, durable and slip-resistant. Examples of inappropriate materials are loose sand/pebbles, cobbles or gravel.

The colouring used for the surface of accessible parking bays should be white markings on a slip-resistant blue surface. The adjacent accessibility zone should be cross-hatched in yellow.

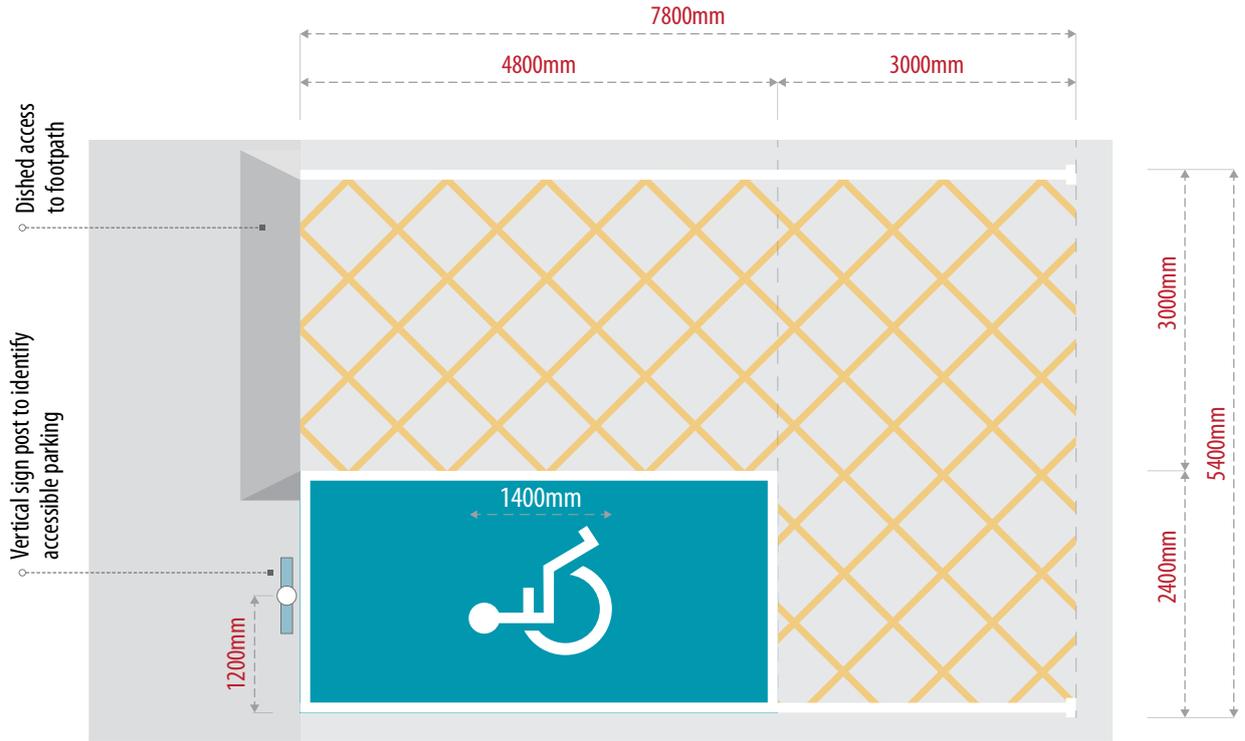
→ See Figure 5 Accessible Parking with Different Sized Bays on page 55 and Figure 6 Accessible Parking with Shared Access Zone on page 56.



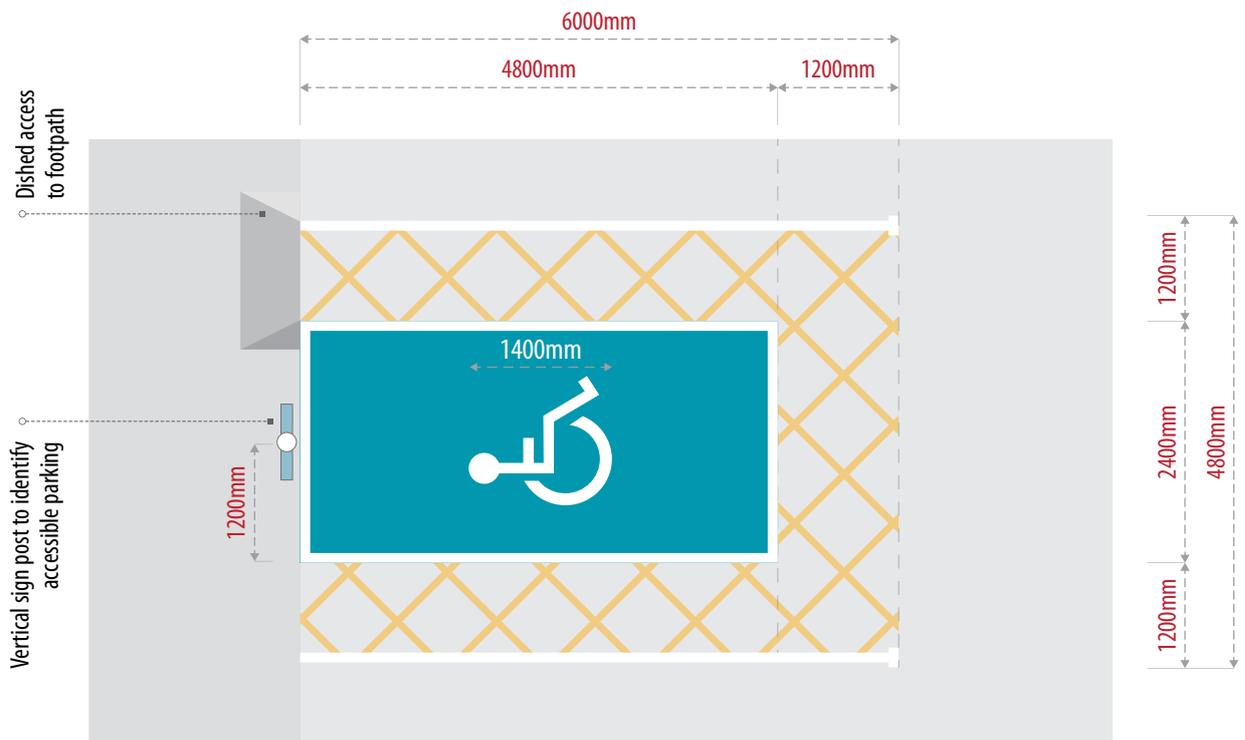
“There is no dished kerb at the disabled parking space at the bank I use. What is the point?”

IWA member, Co Roscommon

Figure 5 - Accessible Parking Showing Different Sized Bays



Multi purpose vehicle with ramps or hoist



Cars & Small Vans

Figure 6 - Accessible Parking Showing Shared Access Zone

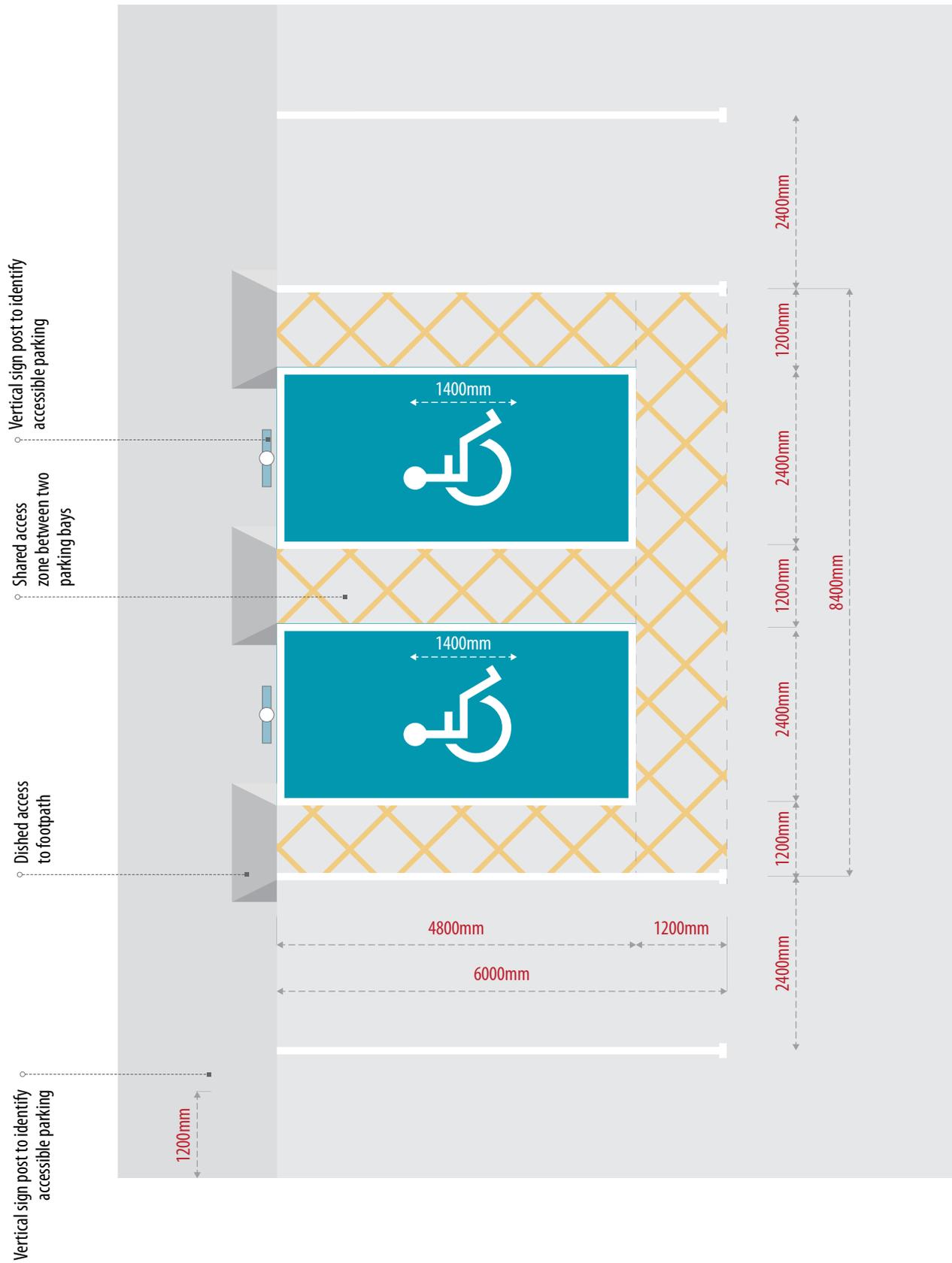
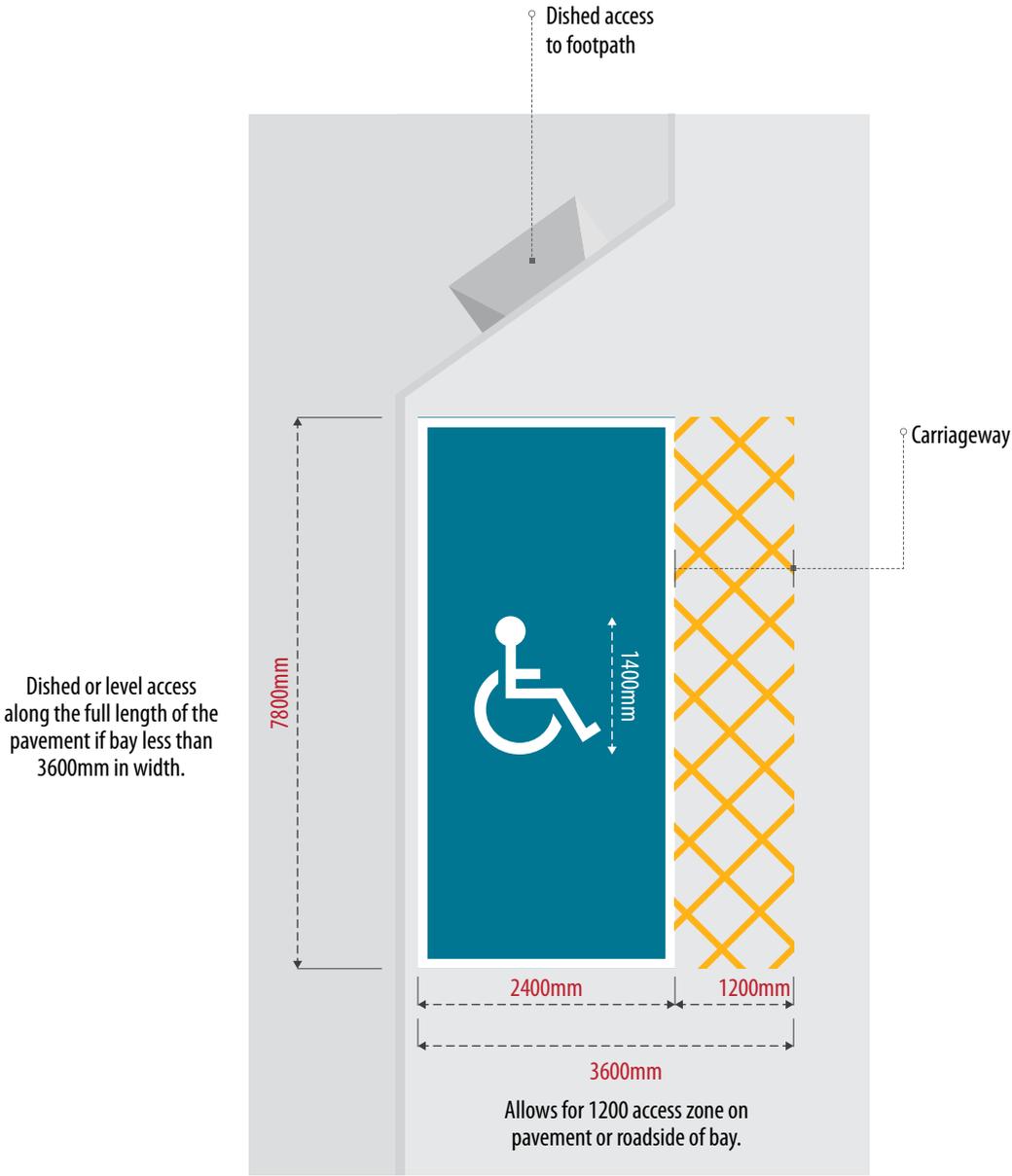


Figure 7 - Accessible Parallel Parking Bay



The accessible parking bay should be indicated by a vertical sign with its lower edge at 1000mm from the ground and located out of the access zone. This sign should display a white wheelchair symbol on a blue background. If the presence of a signpost would cause pavement clutter, resulting in reduced pavement width, a vertical signpost should not be provided and the reliance then is on the surfacing colours of blue/white/yellow to identify the accessible bay.

4.1.2.2 Accessible Car Parking Bays

The recommended dimensions of the designated parking bays for cars and small vans are 4800mm width x 6000mm length, which includes a 1200mm hatched accessibility zone to both sides and at the end of designated parking bays. The access zone allows a person who is a wheelchair user to position their wheelchair beside the open car door in order to transfer across from the car to the wheelchair. The wheelchair needs to be positioned so that the seat of the wheelchair is at the same height as the car seat from which the person is transferring. There should be adjacent dished access to the footpath. The kerb dish should have a slip-resistant surface with a minimum width of 1200mm and a gradient no steeper than 1:12.

→ See Figure 5 Accessible Parking Showing Different Sized Bays on page 55 and Figure 6 Accessible Parking Showing Shared Access Zone on page 56.

4.1.2.3 Accessible Multi-Purpose Vehicle Bays

The recommended dimensions of designated parking bays for larger vans and multi-purpose vehicles with an attached hoist/lift/ramp are 5400mm in width x 7800mm in length. This size includes a 3000mm accessibility zone to one side and to the rear of the vehicle for the use of a hoist/lift/ramp. A bay of this size is designed to accommodate adapted personal use vans or small eight-seater adapted vehicles. These multi-purpose vehicle bays are not designed for bus parking.

→ See Figure 5 Accessible Parking Showing Different Sized Bays on page 55.

4.1.2.4 On-Street Parallel Parking

The recommended dimensions for an on-street parallel parking bay are 3600mm width x 7800mm length, which allows for a standard 1200mm access zone to either side of the vehicle and a 3000mm access zone to the rear that provides for side and for rear entry/exit to the vehicle. The 1200mm access zone to the side allows the driver to position close to the roadway or pavement to create the access zone on the required side of the vehicle. The carriageway should be 'cut in' to facilitate the required bay width. A dished kerb should be provided to facilitate access to the footpath. The dished kerb should always be to the front of the bay so that a person who is a wheelchair user does not have to turn to reach the dished kerb; the 1200mm access zone is not sufficiently wide to allow for a 360° turn.

If the bay width is not sufficiently wide, ie 3600mm, to provide for the required access zone, then the adjacent footpath should be dropped along the full length of the bay to allow the person using a

wheelchair to transfer from the vehicle into their wheelchair which has been placed directly onto the pavement. In this location the pavement is acting as the access zone. If there is no space for an access zone and the footpath is raised with a kerb profile, it is difficult if not impossible for a person who is a wheelchair user to exit the vehicle directly into their wheelchair when their chair is placed onto a raised pavement, as the seat of the wheelchair and the seat of the vehicle need to be at the same level for transferring purposes. The same consideration applies where people have reduced mobility but may not be wheelchair users.

Dished side kerbs, eg at on-street parallel accessible parking bays, should not be fitted with tactile paving as they are not crossing points and, as they are not in the line of travel for pedestrians, they should not pose a hazard.

Where on-street parallel parking is provided there should be accessible parking bays provided on both sides of the street to allow for a choice of side for entry/exit to the vehicle.

IWA considers that the developing practice of locating a cycle lane between parked vehicles and the adjacent footpath is not safe and should not be encouraged or provided.

→ See Figure 7 Accessible Parallel Parking Bay on page 57.



Wheelchair Accessible Parking

4.1.3 Number of Accessible Car Parking Bays Required

Accessible car parking spaces should be made available where public parking is provided, eg on streets and at shopping areas, recreation and leisure facilities, hospitals and public transport parking facilities. It is recommended that there is a minimum of one accessible parking space and additionally one in 15 spaces should be designated for drivers and passengers with disabilities. Of these designated spaces, one in four should be designed to accommodate large multi-purpose vehicles. The recommendation is that these 1:4 bays would be of the largest size (5400 x 7800mm) to accommodate vehicles using all entry/exit options, ie hoists/lifts/ramps.

For example, where 60 parking spaces are provided, three spaces should be designated for standard cars used by people with a disability who are drivers/passengers and one space designated for larger multi-purpose vehicle use. Premises with high usage by people with disability may require a larger than average number of designated spaces, ie hospitals, health care facilities, organisations providing disability services, etc.

In addition to the above provision, spaces should be provided for employees who are drivers/passengers with disabilities.

Separate spaces should accommodate women who are pregnant and adults with young children. All spaces are to be clearly designated with the appropriate signage.

4.1.4 Location of Car and Multi-Purpose Vehicle Bays

The designated accessible parking spaces should be located at the same level as and no more than 25m from the principal entrance to the building or buildings served by the car park. Where parking serves more than one accessible entrance, accessible parking bays should be dispersed and located adjacent to each accessible entrance.

Approach routes to the building should be level and accessible in their design with dished kerbs and adequate lighting with a recommended 150 lux level. In multi-storey car parks, the route to accessible parking bays should be signposted at the entrance and on all levels; in addition, the accessible route from the parking bay to the building entrance should also be signposted.

4.1.5 Charging Points for Electric Vehicles

All charging points for electric vehicles should include a standard designated accessible parking bay with level access to the use of the charging equipment and including a 1200mm, but preferably a 1500mm, access zone between the vehicle and the charging point, to allow sufficient space for a person who is a wheelchair user to manoeuvre and gain access to the charging equipment and to the vehicle connection point. Charging points should not be located on raised pavements or on concrete plinths as the raised pavement and the plinth limits or makes access to the use of the charging point equipment impossible. There should be no barrier or bollards located in front of the charging point that could block the access to a person using a wheelchair. A footwell giving 300mm height clearance for wheelchair footplates to the base of the charging point is recommended to allow a person using a wheelchair to have a front-on close approach to the charging point. The use of all elements of the

charging point equipment should be located on level ground and within the comfortable common reach zone of 900-1200mm.

→ See Figure 2 Space Requirements, Figure 3 Common Reach Zones and Figure 4 Forward and Side Cross Reach Distances on pages 44, 45 and 46.

4.1.6 Barrier-Controlled Parking Facilities

Barrier-controlled car parks, typically in multi-storey over or underground car parks that are part of a shopping centre, public building or off-street parking facility, must include appropriately located and well-designed parking bays with all the accessibility features required to ensure safe passage from the car to the entrance of the building. In addition, particular attention must be given to the height clearance at the entrance to the car park and ticketing machine systems used to give barrier controlled entry and exit to the premises and for automated payment machines.

4.1.6.1 Entrance Clearance Height for Multi-Storey Car Parking Facilities.

To ensure access to all vehicles, a car park should consistently provide a height clearance of 2600mm. This height clearance should be maintained from the vehicular entrance to the car park, along the route to any designated accessible parking spaces and to the vehicular exit from the car park. The height designation should be clearly displayed at the entrance. Routes to the accessible parking bays should also be clearly displayed from the accessible bays to the entrance to the adjoining building or street.

4.1.6.2 Barrier Control Systems

On entering and exiting a car parking facility, the ticket entry/exit system should incorporate a voice or proximity activation control which can be used if the person cannot stretch to manually take the ticket dispensed to activate the barrier. Consider the use of a non-manual voice activated system to lift the barrier and/or the use of a mobile phone app whereby the driver who has a disability can pre-announce their arrival and the staff in the car park can activate the barrier as the person arrives/leaves. This type of mobile phone app is in use by some service stations and could provide the same function for barrier-controlled car parking facilities. The same app could incorporate a payment option. Another option would be automated barrier entry/exit based on pre-identification of a car registration plate.

① For more guidance on public access terminals, see the National Disability Authority's Irish *National IT Accessibility Guidelines* at: <http://universaldesign.ie/Technology-ICT/Irish-National-IT-Accessibility-Guidelines/>

4.1.6.3 Payment Machines

Car parking payment machines should be adjacent to designated disabled parking bays. The controls on the payment machine should be between 750mm and 1200mm above ground level. The plinth or

base should not project in front of the face of the machine in a way that prevents its convenient use or causes an obstacle for people with vision impairment. The approach aisles to the machines should have a width of not less than 1500mm. The immediate space in front of the machine should be level and unobstructed for not less than 1850 x 2100mm to give a wheelchair user clear side access to the machine and room to turn. The provision of hazard-warning tactile paving may be necessary in certain circumstances but, ideally, the machines should be located off circulation routes so that they are not hazardous to people who are blind or have a visual impairment. The use of a mobile phone app that allows for online payment is also recommended.

→ See Figure 2 Space Requirements, Figure 3 Common Reach Zones and Figure 4 Forward and Side Cross Reach Distances on pages 44, 45 and 46.

4.1.7 Design of Setting-Down and Picking-Up Points

In addition to the public parking, 'setting-down' and 'picking-up' points should be provided adjacent to high use public buildings and places of interest such as bus/train terminals, hospitals, busy shopping areas and tourists sites, etc. These set-down/pick-up points should be clearly sign-posted and should be located on firm and level ground. The setting-down point should be as close as practicable and within sight line of the principal building entrance. The surface of the setting-down point should be level with the carriageway or provide dished access (gradient no steeper than 1:12) to the adjacent path. This will allow for convenient access to and from the building entrance for people with walking difficulties or people using a wheelchair. Ideally a set-down/pick-up point should be weather-protected with minimum 2600mm height clearance. Seating and shelter should be provided within the setting-down point. A level access route which is weather-protected should be provided from the setting-down area to the main building entrance.

The setting-down point should include both side and rear access zones to provide for the use of a passenger lift/hoist/ramp at the rear and to the side of all vehicles. The required additional rear and side space for the use of passenger hoist/lift/ramp is 3000mm. A pedestrian crossing point with dished kerbs and appropriate tactile markings should be provided close to the setting-down/pick-up points for the safety of people who are blind or have a visual impairment and to facilitate wheelchair users to transition from the roadway to the adjacent pavement.

4.2 Pavements, Crossings and Approach Routes

4.2.1 Background

Pavements and approach routes to buildings should be designed to give easy and safe access to all. Pavements, crossings and approach routes should be distinguishable from the surrounding area visually by use of colour contrast with the background. Street and pavement clutter should be avoided, and clear space regularly maintained and/or enforced as appropriate where unlicensed street furniture encroaches. The pathway should be sufficiently wide for all users to move freely and to pass each other. Any street furniture provided should not intrude into the circulation route and should be clearly

detectable by design and contrast against the background. Street furniture which can assist with route identification should be located in a line along or set back into the pavement or approach route. The surface of the pathway should be level, smooth and slip-resistant, with no obstacles located within the clear width of the circulation route.

Pavement and approach routes should incorporate a continuous and detectable physical edge (kerb) which people who are visually impaired or blind can follow using a cane or with guide dog assistance. The provision of kerbs is recommended, particularly where pavements and approach routes adjoin a carriageway or cycle route, in order to provide both way-finding and protection to vulnerable pedestrians. Kerbs should be flat faced, not chamfered, with a minimum height of 60mm, but preferably 100mm. Dished crossings that are level with the carriageway should always be provided on kerbs at crossing points and always at opposing sides of the carriageway.

Where there are gates located within an approach route, the gate should have clear space of 500mm to the latch/pull side of the gate and 400mm of clear space on the push side; this clear space should be maintained on both sides for 1800mm. Any gate should be capable of being operated with minimum strength using a closed fist.

Cycle lanes should never be located on or within pedestrian routes. There should be a minimum 100mm flat topped high kerb that separates a pavement and any adjacent cycle lane.



Pavement Widths

4.2.2 Pavement Widths and Gradients

Clear pavement width means that no obstacle or obstruction is placed within the recommended pavement width. The minimum recommended clear pavement width is 2000mm when there is a raised kerb open to an adjoining carriageway. This width will allow two wheelchair users to safely pass each other going in opposite directions. Where this pathway width is not possible, the pathway or approach route should have a clear minimum width of 1700mm with passing places provided at intervals for wheelchair users. A width of 1700mm will accommodate a wheelchair user and a person walking

alongside where there is a raised kerb open to an adjoining carriageway. A width of 1500mm will accommodate a wheelchair user and person walking alongside where there is no open kerb line. The pavement width will need to be wider than 2000mm in busy urban/town centre locations and in any location where groups of people congregate.

① For information on passing spaces, see Section 4.2.2.4 on page 67.

→ See Figure 2 Space Requirements on page 44.

The surface of the pavement should be smooth and slip-resistant. Loose surface finishes are to be avoided, eg sand or gravel. A gap of any more than 10mm in the surfacing of the pathway is not acceptable. There should be no open concave (hollowed) gullies running the length of the pavement or across pavements, as open uncovered concave gullies cause great difficulty in manoeuvring on a pavement for people who are wheelchair users because the front small castors of a wheelchair or mobility aid can become trapped. These gullies are also a trip hazard for people walking who have a mobility impairment. If a gradient is needed, eg for drainage of surface water, it should be equal to or less than 1:50. If drainage grills are present and are dished/hollowed, a flat plate should be installed across the drainage channel. The direction of any ridges or drainage grills in the pathway should be set at right angles to the direction of travel. Gaps between drainage grills should be no wider than 10mm.



Woman with Guide Dog at Crossing

Any objects protruding into an access route by more than 100mm and with a lower edge more than 300mm from ground level should be protected, ie with a kerb or other solid barrier that can be detected by a person with a visual impairment who is using a white cane.

4.2.2.1 Raised and Dished Kerbs

Raised kerbs delineate the edge of the pavement and physically separate the pavement from the carriageway while also providing the necessary protection and sense of safety to vulnerable pedestrians. The level change between pavement and carriageway identifies which surface is the

carriageway and which is the pavement. Raised kerbs are also used as a means of way-finding by people with a visual impairment using a cane/guide dog to support their mobility. Flat topped raised kerbs should always be provided where pavements and approach routes adjoin the carriageway or adjoin a cycle lane. The kerb height should be minimum 60mm but preferably 100mm.

Dished kerbs should be provided at pedestrian crossing points and at designated parking bays. These dished kerbs should be painted white/yellow to assist people to easily identify their location and to discourage illegal parking. The central kerb dishing should be flush with the road/carriageway and have a width of 1200mm. The recommended gradient on the dished kerb is 1:20 where possible, but no steeper than 1:12. The kerb dishing should be located away from corners and always at opposing sides of the street. The dished crossing should also be located away from any drainage gratings/manholes. The colour and layout of tactile paving at dished kerbs is determined by whether the crossing is controlled or uncontrolled. The correct tactile paving must be laid along the full width of any dished kerb. The depth of the tactile paving into the footpath will depend on whether the crossing is in line with the pedestrian travel route or not.

① **For further information, please visit the National Council for the Blind Ireland (NCBI)'s, website:**
www.ncbi.ie

4.2.2.2 Tactile Paving

The different types of tactile paving should be exclusively reserved for their intended use within specific locations and consistently installed only in accordance with the guidance for their use and colour within those specific locations. Most people with impaired vision have some useful residual vision and may be able to make out a change in colour on the footpath which will alert them to the fact that they are coming to the end of a road and approaching a particular type of crossing point: controlled or uncontrolled. The colour and design of tactile paving is determined by the type of crossing, or to give a hazard warning.

The following colouring and types of tactile paving must apply;

- Red-coloured blister paving which is only used at controlled crossings where the pedestrian can establish priority over vehicular traffic, ie traffic signal junctions, zebra crossings and pelican crossings.
- Buff -, yellow - or grey - coloured blister paving which is used at uncontrolled crossings. Red blister paving is never used at uncontrolled crossings.
- Yellow - or buff - coloured 'off-set' blister paving. A further use of yellow or buff blister paving is near the edge of the platform at railway and street stations. In this location the paving can be referenced as off-set blister paving. The purpose of off-set blister paving is to warn people who have a visual impairment of railway and street rail platforms. The off-set blister paving surface consists of flat-topped domes (blisters) spaced 66.5 mm from the centre of one dome to the next. The spacing and size of these yellow or buff blisters can be a little different in these locations but it is the context of the railway or street rail locations, rather than any slight differences in the layout of the blisters, which enables people with impaired vision to identify it as platform edge tactile paving rather than a road crossing; people already know they are in a train station or close to a street rail location.

- Raised flat-topped lozenge-type tactile paving which is used along the edge of the raised kerb/platform, particularly at tram stops. The colouring of lozenge-type tactile paving should contrast with the background.
- Buff - or yellow - coloured corduroy paving, which consists of round bars running transversely across the direction of travel, is used to warn people who are blind or have a visual impairment of changes of level such as stairs, or steeper than usual slopes such as ramps leading to tram stops. In general, standard-type ramps within the external environment do not require corduroy paving, the exception being ramps leading to tram stops. The corduroy paving should always be in a contrasting colour to the surrounding area.
- Guidance path paving is probably the least used and least well-known type of tactile paving. It is used to lead people with impaired vision in a desired direction. Wide open spaces can be difficult for people with little or no vision to cross. A tactile guidance path can be used to lead people with impaired vision, when the traditional cues, such as a property line or kerb edge, are not available, to a place which they need to find, eg an information point, the entrance to a building, or the exit barrier of a train station. Longitudinal pattern-like rounded bars, in a contrasting colour to the surroundings, and laid in the direction of travel provide the guidance path.

Tactile paving should contrast as strongly as possible with the background pavement. Red brick paving should not surround the red tactile paving used at light-controlled road crossings, and grey tactile paving should not be installed on grey pavements.

Smooth, shiny metal tactile paving is not acceptable, as it is slippery when wet or in frosty conditions. People with vision impairment also report that in bright sunlight shiny metal paving creates a very unhelpful dazzling effect. Additionally, people with enough vision to see the colours red and yellow look for red - or yellow - coloured blister paving when searching for an accessible pedestrian crossing.

① For further information please visit the National Council for the Blind Ireland (NCBI)'s website: www.ncbi.ie

4.2.2.3 Laying of Tactile Paving

The laying of tactile paving is very specific to the location where it is used:

- Red blister-type tactile paving. At a road crossing where there are audible signals or a zebra-crossing, red blister-type surface is laid in an L-shape, with the shorter stroke of the L set into the dished area of the kerb, and the longer stroke of the L running from the right-hand side of the dished kerb to the building line, so that people walking along the footpath can find it underfoot and turn to follow it to the road crossing. The pole on which the crossing push button unit is mounted (900-1000mm) should be located as near as possible to the corner of the L, on the right-handed side of the crossing.
- Yellow or buff blister tactile paving. Yellow or buff blister tactile paving should be laid at a dished kerb in the direct line of pedestrian travel along a footpath, where it meets a side-road, but where there are no pedestrian signals or zebra crossings. At this type of location, the blister paving should not be red in colour, it should be buff, black or yellow in colour, and should contrast with the adjacent paving. Dished side kerbs at accessible parking bays should not be fitted with tactile paving as they are not crossing points and, as they are not in the line of travel for pedestrians, they should not pose a hazard.

- Yellow off-set blister-type tactile paving. Yellow off-set blister paving is laid back from and along a rail platform edge to give warning to stay back from the edge at railway platforms. Off-set blister paving should be set back a minimum of 500 mm from the platform edge
- Lozenge-type blister tactile paving. Lozenge-type blister paving is laid back from and along a tram platform edge to give warning to stay back from the edge. The lozenge tactile paving units should be in a contrasting colour and be installed to a depth of 400mm parallel to the platform edge and set back a minimum of 500mm from the edge.
- Corduroy-type tactile paving. The top and bottom landings on a flight of stairs should be provided with a corduroy-type hazard warning tactile surface in a ridged pattern to give advanced warning of a change in level. This tactile surface should comprise rounded bars running transversely to the direction of pedestrian travel. The bars should be 6mm (+/- 0.5mm) in height, 20mm in width, and spaced 50mm from the centre of one bar to the centre of the next. This ridged surface should extend the full width of the stairs at both the top and bottom of the flight. This surface should be of a contrasting colour to the surrounding area, but should not be red. The ridged surface should start 400mm from the first step nosing, where possible. When steps are in the direct line of travel, a depth of 800mm for the tactile surface is needed. This depth can be reduced to 400mm if a pedestrian has to make a conscious turn to encounter the stairs. Where one flight of stairs is followed immediately by a second flight, there is no need for additional tactile surface areas, as the handrails should give warning of another flight. However, if the stairs are accessed by a landing, then a corduroy tactile warning will also be required on that level. Corduroy-type tactile paving is not required to indicate the presence of a ramp, except where the ramp is leading to a tram stop.
- Guidance path tactile paving. The paving for a guidance tactile path comprises a series of raised, flat-topped bars running in the direction of pedestrian travel. The bars are 5.5 +/- 0.5mm high, 35mm wide, and spaced 45mm apart. It is recommended that the guidance tactile path be in a contrasting colour to the surrounding area, to assist people who are partially sighted.

① For more detailed instruction on types of tactile paving and how to lay tactile paving, contact NCBI - National Council for the Blind Ireland www.ncbi.ie

4.2.2.4 Passing Spaces

Passing spaces that allow two wheelchair users to pass each other should be provided on routes that are less than 2000mm in width and where the overall route length is greater than 25m. Passing space in the external environment should be 2000mm in depth and 2000mm in width, and located within direct sight of another passing place.

→ See Figure 2 Space Requirements on page 44.

4.2.2.5 Clear Headroom

The circulation route of any pathway and building approach should not present any headroom hazards. A door or window should not open onto a main thoroughfare. A clear headroom height of at least 2200mm must be maintained throughout the circulation route.

Any open areas below stairs or a ramp should be enclosed, or a protective guard rail provided with low-level white cane detection or alternatively a continuous barrier.

4.2.2.6 Street Furniture

The careful positioning of street furniture provides good access and reduces potential hazards. Street furniture and signage should always be located either close to, or recessed into, the inner shoreline (that is, a wall, fence or building), or alternatively, on the kerb edge, leaving the middle of the pavement clear. A clear path width of preferably 2000mm should be maintained along the circulation route. Temporary street furniture on pavements, such as shop displays, sandwich boards and utility bins should be placed out of the way of the pedestrian route and maintained in that position. Any temporary street furniture that encroaches into the clear width of the pedestrian route should be reported to the local authority and removed.

If free standing posts or columns are unavoidably located within access routes these should incorporate a band of contrasting colour at a height of 1500-1650mm. An additional band at a height of 850-1000mm is recommended. However, as a continuous clear path width of 2000mm is required, this situation ought not to occur. Cycle parking must be kept clear of pedestrian routes.

4.2.2.7 Hazard Protection

The swing of doors and windows, and the location of vending machines, public telephones, etc, should not extend into any access route. If this intrusion is unavoidable, then hazard protection should be provided where objects project more than 100mm into an access route and their lower edge is more than 300mm above ground. Hazard protection on the ground can be provided by a solid kerb or fixed element between 100-300mm above floor level under the protruding obstacle so that it is detectable by a cane. The hazard protection should not extend beyond the front edge of the object, nor should it be set back more than 100mm from its front edge.

4.2.2.8 Seating

Seating should be located within sheltered areas. Seats should be placed 600mm back from the line of movement so that the pathway is not blocked. The surface on which the seating is located should be firm, stable and flush with the surrounding path level. A clear level space on firm paving of 1400mm in depth and 900mm in width should be provided beside a seat to allow a wheelchair user/buggy to position adjacent to the seat. The seat height should be no less than 450mm, with a minimum of 450mm depth and with a heel space of 100mm to allow for easier rising from the seat. Back and arm rests are useful to provide additional support. Seating should be provided at regular intervals on long and sloping routes, no more than 25m apart. Signage should be provided to indicate distance to next seating area.

4.2.2.9 Bollards

Generally, the use of bollards should be avoided as they clutter the streetscape and can create an unnecessary hazard for people with mobility and visual impairments. Bollards should only be installed where absolutely necessary. Bollards, if used, should have a slimline profile with no bullnose type top (to discourage illegal cycle parking) and be a minimum of 1000mm in height, 250mm in width, and

contrast in colour and tone with the background. Adjacent bollards should not be linked with a chain or rope and should be a minimum of 1200mm apart.

4.2.2.10 Route-Finding

Clearly defined logical routes can be identified with the use of colour contrasts and textural changes in paving. Planting can assist in defining routes or identifying hazards through scent and colour, but should not obstruct any route or present an overhead hazard.

4.2.2.11 Crossing Times at Controlled Crossings

All kerbs at pedestrian crossings should be flush with the roadway and have appropriate tactile paving in place.

i For more information on tactile paving, please see Sections 4.2.2.2 and 4.2.2.3 on pages 65, 66 and 67.

At controlled crossings the pedestrian signals must allow adequate time for all pedestrians to cross safely. The minimum recommended time is 20 seconds. On a wide and/or busy roadway, a longer crossing period will be required. The pedestrian signals should be both audible and pulsating and the push button should be located at a height of 900-1000mm. Road markings at crossings should prevent vehicles from blocking sight lines and from blocking dished kerbing.

4.2.2.12 Pavements and Cycle Lanes

With growing interest in and promotion of cycling as a means of transportation, cycle lanes are commonly being introduced into urban and suburban environments. The design of busy urban and suburban environments must take account of adequate safety measures, particularly including physical divisions, to ensure their safe use for pedestrians, cyclists and vehicles. The safety of pedestrians, and particularly of vulnerable pedestrians, should always receive priority in the planning and design of any urban or suburban streetscape. Cycle lanes should be physically separated from all pedestrian routes by using flat-top kerbs with a minimum height of 60mm, but preferably 100mm in height; chamfered or sloped kerbs are not appropriate as they facilitate cyclists to mount onto the pavement.

Cycle lanes should not be located on or within pavements or between parked vehicles and the adjacent pavement. The course of a cycle lane should never deviate into a pedestrian route. The developing practice of diverting cycle lanes off the carriageway and around a bus stop, thereby causing the bus stop to be 'islanded' between a cycle lane and a carriageway, is considered by IWA, to be unsafe to pedestrians and should not be adopted as an acceptable design practice.



"I am sick of travelling on the road to try to get to places. Footpaths need to be made wider so everyone can access them."

IWA member, Co Waterford

4.2.3 Public Transport Interface

Bus and tram stops should be located on or adjacent to pavements and should be readily and easily accessible to transport users without the person having to cross cycle tracks. The developing practice of diverting cycle tracks around bus or tram stop locations is not recommended as the bus or tram stop then becomes located on an island bounded by a carriageway and a cycle track. This practice is considered dangerous to pedestrians and particularly to vulnerable pedestrians.

Kerb heights at bus and tram boarding points should be designed to negate or lessen any vehicle ramp gradient and to minimise vertical and horizontal stepping distance onto or off the bus/tram. The vehicle boarding area should have a minimum 2000 x 2000mm clear area, or as dictated by individual vehicle type requirements.

4.2.3.1 Bus and Tram Shelters

Where bus or tram shelters are provided, they should contrast against the surrounding background. The placement of shelters should not compromise the clear pavement width and any glazing on a glass-fronted enclosed shelter should incorporate manifestations on the glass between 850-1000mm and again between 1400-1600mm. There should be a clear view of approaching traffic and sufficient illumination so that timetables can be easily read. Timetables and all passenger information should be located with the mid-point of the sign at a height of 1400mm. There should be no obstacles located in front of the timetable/information so that a person using a wheelchair can position in front of the signage. Perch-style seating can be provided at heights between 460-900mm and arm rests should be incorporated into the seating. Fully enclosed shelters should incorporate an 1800mm turning circle, while open-type shelters should have a minimum depth of 1200mm.



4.2.4 Shared Space, Shared Surfaces

There are divergent opinions regarding the 'Shared Space, Shared Surfaces' design concept⁸. Shared Space, Shared Surfaces is a developing European urban design approach which seeks to establish pedestrian priority within the urban environment while reducing the traditional demarcations between pedestrians and traffic by removing or limiting features such as kerbs, crossing points and traffic signals but with textured surfaces often used to differentiate between vehicle and pedestrian routes. While a shared space environment can bring advantages for people who have a mobility impairment with mainly level surfaces, it can also create an anxiety regarding who has priority of use, the motorist or pedestrian, and whereby people, particularly vulnerable pedestrians, can lose their sense of security within their urban environment.

The Shared Space, Shared Surfaces design approach is increasingly being proposed by urban designers as a means of regenerating urban/town centres by seeking to reduce the dominance of vehicles through discouraging and slowing the passage of vehicular traffic while at the same time blurring the usual demarcations between vehicle and pedestrian traffic.

Shared Space, Shared Surfaces as an urban design concept is generally not supported by people with a disability and is not recommended by IWA as a safe and inclusive design approach to the design of urban streetscapes.

There are several very specific elements of the Shared Space, Shared Surfaces design approach that cause anxiety for people with disabilities and other vulnerable streetscape users, namely:

- The removal of signal-controlled crossings
- Courtesy crossings, which are not signalled, depend on the ability of the pedestrian to negotiate a roadway crossing through eye contact with the motorist/cyclist which is a complicated and uncertain process.
- The concern that the person will not have sufficient time to cross the road or will have incorrectly understood the giving of permission from the motorist/cyclist to cross the road.
- The removal of kerbs is particularly problematic for people who have a visual impairment as kerbs provide a way-finding function.
- Pedestrian interaction with cyclists is of particular concern to vulnerable streetscape users where cyclists are not required to dismount when passing through a shared area or where cycle lanes with no kerb demarcation are routed through a shared space environment.

Various UK reports⁹, having studied and consulted regarding this design approach, have recorded that people with disabilities experience concern about the uncertainty created within these types of

8 Ross Atkin Associates 'Lets' Stop Talking about Shared Space' <https://www.rossatkin.com/wp/?portfolio=lets-stop-talking-about-shared-space>

CABE 'Designing streets for People not Traffic' <https://worldlandscapearchitect.com/cabe-designing-streets-for-people-not-traffic/#.XuiW4xdKipo>

9 Government Response to the Report of the House of Commons Women and Equalities Committee 'Building for Equality: Disability and the Built Environment', (2018). https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/690852/CM9527_web.pdf. 'The Holmes Report into Shared Space: Accidents by Design' <http://chrisholmes.co.uk/news/accidents-by-design-the-holmes-report-into-shared-space/>

'shared' environments and have consequently recommended the provision of 'Comfort Zones' within the Shared Spaces, Shared Surfaces design, ie designated pedestrian routes, kerbs between pedestrian and vehicle/cycle traffic and designated crossing points; effectively a return to the more usual and traditional streetscape design. Where a space is badly designed or located so that people feel uncertain of their ability to safely negotiate a crossing, then people with disabilities and other vulnerable road and street users may avoid the area completely, leading to greater social isolation and disconnected communities.

Clearly, the inclusion of a 'Shared Space, Shared Surfaces' approach in an urban design project requires careful, collaborative and real consultation with people with disabilities and their representative organisations to ensure that the environment is safely and confidently usable by everyone. This consultative process should commence at the design and planning phase and should be cyclical in nature during the life of the project eg. regular feedback from users which can be incorporated into each phase of the design process.

4.2.5 Building Approach

The route to the principal entrance of a building, from all areas, including the car parking area, should be clearly identified and well-lit with non-glare minimum illumination of 150 lux.¹⁰

The danger of inadvertently moving into a vehicular access route should be minimised by providing a separate user route which is at least 1500mm in width (1700mm if there is a kerbside open to an adjoining carriageway), and preferably 2000mm, but wider still where the approach route is a busy thoroughfare. Where there is an uncontrolled crossing point across the vehicular route, this crossing point should be identified by coloured blister surfacing. This blister surfacing should contrast strongly with the background pavement. Red blister paving should not be used at crossings which are not signal-controlled.

The approach to the main building entrance from an adjacent road, car park or other area accessible to motor vehicles should be level and have a smooth, non-slip surface. Where it is not possible to provide a level approach, ie where there is a gradient of more than 1:50, both steps and ramps should be provided. The steps and ramps should be as close as possible to each other.

4.3 External Ramps

4.3.1 Background

Ramps are necessary for wheelchair users, and beneficial for people pushing prams, pushchairs and bicycles. Gradients should be as shallow as practicable. Steep gradients create difficulties for some wheelchair users who lack the strength to propel themselves up a slope or have difficulty in slowing down or stopping when descending. However, there may be circumstances, eg in retrofits, where a steeper gradient than the maximum recommended may be necessary for a short distance.

¹⁰ Lux is the measurement of the intensity of light on a surface. An illumination of 250 lux is suitable for reading purposes.

Ramps should always be accompanied by steps where the rise of the ramp is greater than 300mm, and by alternative means of access, eg a lift, when the total rise is greater than 2m.

→ See Figure 8 Ramp and Steps on page 77.

4.3.2 Ramp Gradient

If site constraints necessitate an approach of 1:20 or steeper, an approach incorporating ramped access must be provided. The recommended gradient of a ramp is 1:20 and the length of individual sections should be no more than 10m with a maximum rise of 500mm. Intermediate landings should be provided after each 10m slope.

In very exceptional circumstances, where site constraints require it, slopes no steeper than 1:12 may be provided. Individual sections in these circumstances should be no longer than 2m.



Ramp at Entrance to Building

These measurements change with the different ramp gradients as follows:

- When the ramp gradient is 1:20, there should be a maximum rise of 500mm and a maximum length of 10m between landings.
- When the ramp gradient is 1:15, there should be a maximum rise of 333mm and a maximum length of 5m between landings.
- When the ramp gradient is 1:12, there should be a maximum rise of 166mm and a maximum length of 2m between landings.

4.3.3 Widths of Flights and Landings

Flights and landings should have a clear unobstructed width of at least 1500mm. Where it is expected that there will be high usage of the ramp and with people moving in opposite directions, provision of a wider ramp with a clear width of 1800mm or more should be considered. Intermediate landings, where provided, should have a minimum length of 1800mm. If there is a change of direction in the ramp and no clear view of the top/bottom of the ramp possible, there should be a larger intermediate landing.

A clear flat unobstructed turning circle of 1800mm diameter is required at the top and at the bottom landings of a ramp. Where a door opens onto the landing, additional space is required, so that the door swing does not compromise the turning circle.

Unless the ramp is under cover, there should be a cross fall of 1:50 to aid drainage.

4.3.4 Tactile Provisions

It is not recommended to use tactile warnings to indicate ramps, as these are properly used to indicate the start of a flight of steps or stairs. An exception to this is a ramp leading to a tram stop, where corduroy tactile paving can be used to indicate the ramp to the tram stop.

4.3.5 Surface Finish

The approach to the ramp should be highlighted by the use of colour contrast, tone and texture change, to facilitate use by people with vision impairment.

The surface of the ramp should be non-slip. Rainwater lodgement must be avoided by ensuring appropriate drainage cross-fall of 1:50. The floor surface of the ramp should be flush at the top and bottom of the ramp where the level begins to change. Where there are different materials along the access route, they must have similar frictional characteristics.

The difference in level at joints between paving units should be no greater than 5mm and the gap between paving units should be no wider than 10mm, with the joins filled flush. If unfilled then the gap should be no wider than 5mm.

4.3.6 Edge Protection

In addition to the handrails, a raised kerb of at least 150mm in height should be provided on any open side of a ramp.

① For information on handrails, see Sections 4.5.2 and Section 4.5.3 on page 78.

4.3.7 Lighting

Lighting for ramps should come from the sides to avoid shadow. Lighting should be consistent along the length of the ramp and have non-glare illumination of 200 lux.

4.4 External Steps

4.4.1 Background

Ramps are not necessarily safe and convenient for people with a mobility impairment who are walking. For example, some people who can walk but have restricted mobility find it more difficult to negotiate a ramp than a staircase or steps. In addition, adverse weather conditions can increase the risk of slipping on a ramp. It is therefore necessary to have steps provided as well as a ramp.

The width of the stairways should be determined by the nature and use of the building. Flights and landings of stairways should preferably have an unobstructed width of 1500mm. This width of 1500mm is recommended to facilitate the assisted egress and evacuation of people with disabilities

and to accommodate contra flow in circulation spaces during emergency evacuation. Where a stairway is a secondary egress route, a minimum unobstructed stair width of 1200mm is acceptable.

A central handrail should be provided when the width of the stairs exceeds 2000mm.

4.4.2 External Step and Stair Design

Level landings with at least a 1500mm length, free from any door swings, should be provided at the top and bottom of each flight of steps. Single steps should be avoided as they present a tripping hazard even if there is visual contrast provided.

In the design of stairs, the rise of each step should be consistent and between 150-180mm. The going or thread, (ie where a foot rests on a step) of each step should be consistent and between 300-450mm. Tapered treads and open risers should not be used.

Nosings or step edgings should be integral with the step and distinguishable in tone and colour. Projecting nosings should be avoided. The surface material of the steps should be non-slip.

The outer edges of all steps in each flight must provide a permanent visual contrast with the rest of the steps, known as 'edge stair marking'. The edge stair marking should be 50-65mm on the tread, and 30-55mm is recommended on the riser, running the entire width of the step. The practice of marking the first and last step in each flight with a different distinguishing colour, often yellow, is recommended.

4.4.3 Tactile Provisions

Top and bottom landings should be provided with a corduroy-type hazard-warning tactile surface in a ridged pattern to give advanced tactile warning of the change in level. This tactile surface should comprise rounded bars running transversely to the direction of pedestrian travel. The bars should be 6mm (+/- 0.5mm) in height, 20mm in width, and spaced 50mm from the centre of one bar to the centre of the next.



Coffee Shop Access Ramp

“A person walking can use a ramp. A person using a wheelchair cannot use a step. Ramp before steps please!”

IWA member, Co Laois

This ridged surface should extend the full width of the stairs at both the top and bottom of the flight. This surface should be of a contrasting colour to the surrounding area, but should not be red.

The ridged surface should start 400mm from the first step nosing, where possible. When steps are in the direct line of travel, a depth of 800mm for the tactile surface is needed. This depth can be reduced to 400mm if a pedestrian has to make a conscious turn to encounter the stairs.

Where one flight of stairs is followed immediately by a second flight, there is no need for additional tactile surface areas, as the handrails should give warning of another flight. However, if the stairs are accessed by a landing, then tactile warning will also be required on that level.

4.4.4 Headroom Provision

Where the headroom on the underside of the stairs is less than 2200mm, this area should be guarded to eliminate hazard. This could be done by fencing the area off with railings, building a solid wall, or creating an area of planting.

4.4.5 Lighting

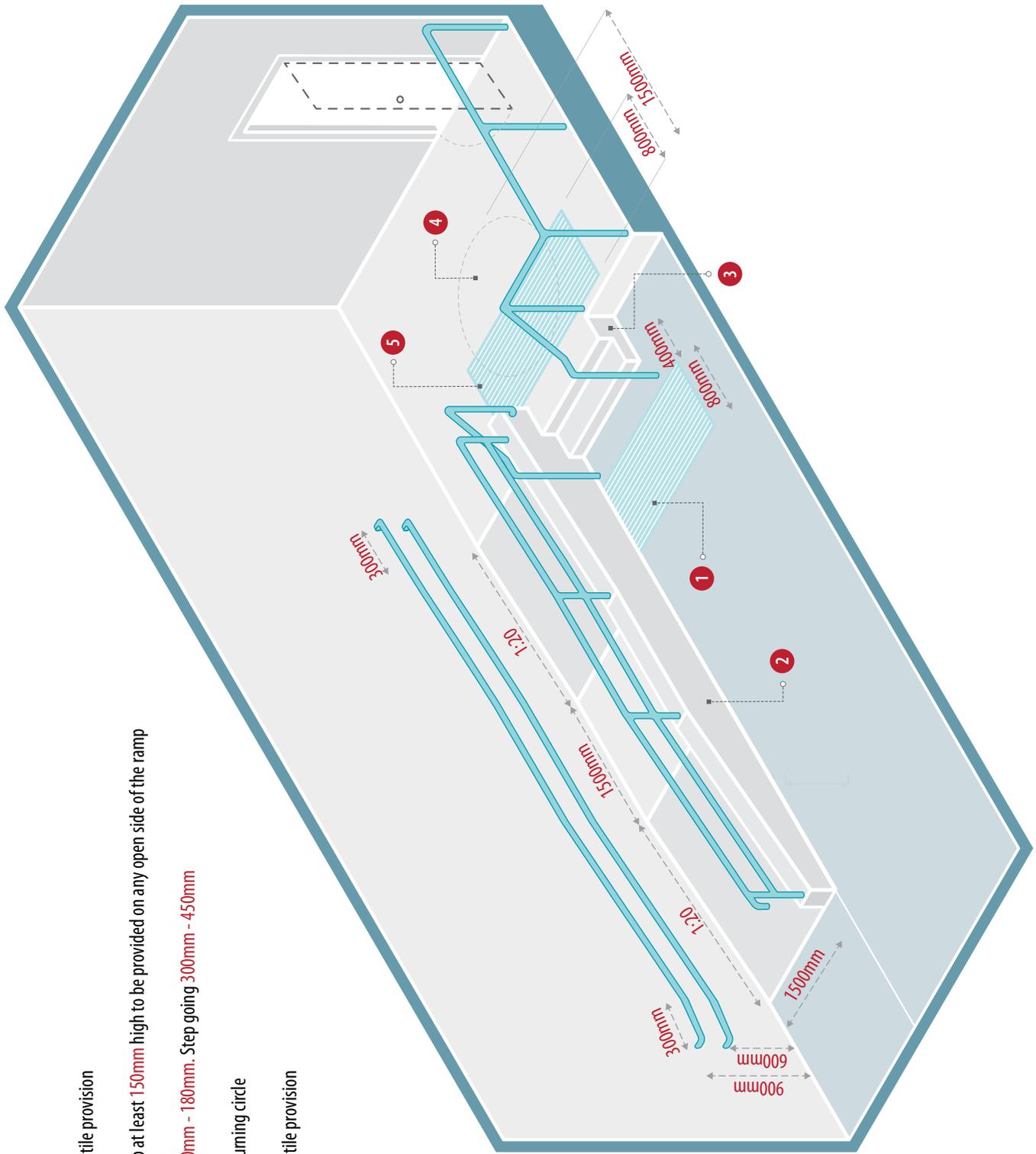
Lighting for steps should come from the sides to avoid shadow. Lighting should be consistent along the full flight and adjoining landings, and have non-glare minimum illumination of 200 lux.

4.5 Handrails to Ramped and Stepped Access Routes

4.5.1 Background

People using wheelchairs do not normally use handrails while using ramps, but they may find handrails useful to steady themselves on a long/steep ramp or to pull themselves along on a too steep ramp. People with a mobility impairment who are walking and people who have visual impairment find it easier to negotiate steps and ramps with a handrail. Handrails should be provided on both sides of every ramped and stepped access route.

Figure 8 - Ramps and Steps



- 1 Corduroy tactile provision
- 2 A raised kerb at least 150mm high to be provided on any open side of the ramp
- 3 Step rise 150mm - 180mm. Step going 300mm - 450mm
- 4 Ø1800mm turning circle
- 5 Corduroy tactile provision

4.5.2 Location of Handrails

There should be a continuous handrail on each side of the ramp and steps, including landings. The top of the handrail should be 900-1000mm above the pitch line of the stair flight/ramp and 900-1100mm above the surface of any landings. To accommodate people of different stature, provision of a second handrail should be considered on each side at 600mm height from the pitch line of steps/ramp surface. Both handrails should extend at least 300mm beyond the outer edge of the top and bottom steps/ramp and terminate in a closed end which does not project into a route of travel.

Handrails on intermediate landings should be continuous, to guide people who are blind or have a visual impairment.

When the width of the steps/ramps exceeds 2000mm, a central handrail should be provided. This allows users to be within easy reach of a support, especially when many people are using a wide ramp/steps.

4.5.3 Design of Handrails

The handrail should follow the exact pitch line or contour of the steps/ramp. In this way, information about the steps/level change is communicated through the person's hand. Handrails should be distinguished from the background environment in contrasting colour and/or tone.

A round or oval profile of handrail is preferred. Round handrails should be 32-45mm in diameter, and oval handrails should be 38mm in depth and 50mm in width. Any wall-mounted handrail should have a clearance of 60-75mm from the wall. A support connection located at the bottom of the handrail permits uninterrupted use.

The materials used for the handrail can include wood and nylon-sleeved steel tubing and should have a smooth finish with no sharp edges.

→ See Figure 8 Ramp and Steps on page 77.

4.6 External Lifts and Lifting Platforms

On occasion, standard-type lifts and/or lifting platforms may be provided within the external environment to overcome a height difference. While steps/ramps are always the preferred option as there are little or no maintenance requirements or management issues, an external standard-type lift or lifting platform may be required where there is a significant height to overcome. The choice of using a standard lift or lifting platform should be carefully considered and the particular lift type specifications clearly detailed to the supplier.

In any location where groups of people who have a mobility impairment may gather, eg civic offices/buildings used for workshops/seminars/launches, etc, the provision of an external lift or lifting platform is not recommended, unless in conjunction with ramp/steps, due to the time required by a group or groups of people to individually use the lift to arrive at their destination.

4.6.1 External Lifts

Within the external environment, mainstream passenger lifts and open or enclosed lifting platforms may sometimes have to be used to overcome a height difference, where providing a ramp alongside steps may be problematic for a variety of reasons. On occasion the space may be available to provide a ramp but the height to be achieved may result in the ramp being unacceptably long and therefore difficult or impossible for independent use where people may have strength and/or capacity limitations. Enclosed lifting platforms can achieve a travel height of up to 13m. Lift controls should be hardwired at each floor and the lift remote-controlled so that it can be operated from outside in the event of an emergency, or as required.

In locations where significant numbers of people may gather, eg a civic centre, the provision of a ramp alongside steps or a ramp/steps along with a lift is always preferable to only providing lift access as a ramp/steps requires little or no maintenance and allows many people to quickly access the building either using the ramp independently or with assistance. The presence of a lift in conjunction with ramp/steps gives an additional access option.

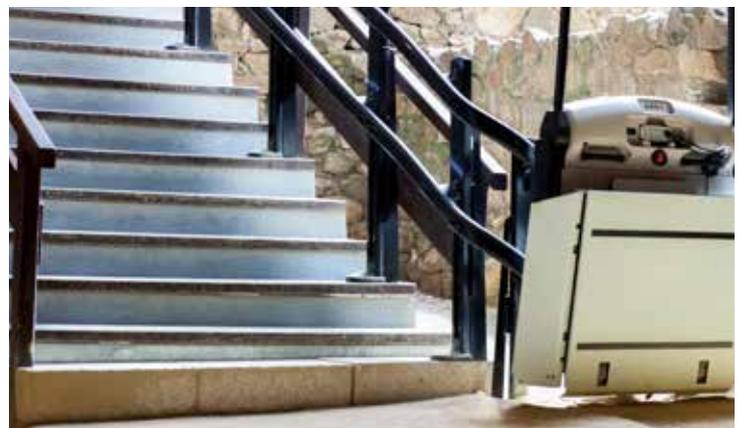


External Platform Lift

① For guidance regarding the design and use of passenger lifts, see Section 5.5.4 on pages 104, 105 and 106.

4.6.2 External Lifting Platforms

An open low-rise lifting platform can be used in both internal and external environments, overcoming a height difference of up to 3000mm. Where an external platform lift is being provided, the design of the lift should be sufficient to accommodate wheelchairs with a weight capacity of at least 400kgs. Door/s to the lift should always be automated, with controls carefully placed back from the lift entrance to be easily reachable on approach to the lift, so that the lift can be operated independently.



Platform Stair Lift on External Stairs

Power-operated lift doors need to be set to give sufficient 'dwell' time to allow people to safely travel through the door as well as having a fail-safe opening mechanism that opens the door if an object is detected during its closing operation; a minimum of six seconds dwell time after the door has opened is recommended, but in complicated turns (such as a 90° turn from a lift) this might need to be increased to allow for sufficient time to complete the manoeuvre.

Push-pad door controls should be conveniently located on the latch-side of the lift door 900-1050mm from floor level. When the door and the control pad are located on the same wall, the control pad should be located at least 500mm from the door. Where the control pad is located on the return wall or on a post, the control pad should be located at least 1400mm back from the lift door/s.

Preferably a lifting platform would be sited in a location whereby the lift doors can be directly opposed to each other. If a person using a wheelchair has to negotiate a right-angled turn to exit the lift car then the lift must be large enough to allow a turning space within the lift, a large or powered wheelchair requiring an 1800mm turning circle. The clear space on each landing should be 2440 x 2440mm to allow enough space for a person using a wheelchair to approach and manoeuvre around the lift door which opens outwards.



- ① For additional guidance regarding the design and use of lifts, see Section 5.5.4 and Section 5.5.5 on page 104, 105, 106 and 107.

FlexStep and Sesame Access Lifts are platform lifts that can be incorporated into a short flight of steps with the lift being called into service as required.

- ① For more information on FlexStep and Sesame Access lifts, please search for relevant videos on YouTube as the following links may change: <https://www.youtube.com/watch?v=vaQKTfL-qxw> and <https://www.sesameaccess.com/>

“I would like to have the opportunity and choice to access public buildings, clubs, pubs, etc.”

IWA member, Co Offaly

Quick Summary of: 4. The External Environment and Building Approach

Accessible Parking

- Locate as close as possible to main entrance - maximum distance 25m. Signage for easy identification.
- Minimum one accessible bay, then one accessible bay for every 15 parking bays.
- Firm, level surface with white markings on blue background. Dished kerb to access pavements.
- Size of standard accessible bays should be 3600 x 6000mm. This includes 1200mm wide access zones to one side and to the rear of the vehicle.
- Size of bay for multipurpose vehicles should be 5400 x 7800mm. This includes 3000mm wide access zones to one side and to the rear of the vehicle.
- On-street parallel parking bay should be 3600 x 7800mm, this includes access zones 1200mm wide to one side and 3000mm length to the rear of the vehicle.
- Minimum 2600mm height clearance to be maintained at entry and exit and along the route to accessible parking bays within an enclosed parking facility. Height requirement for multi-purpose vehicle and car roof-top box that stores a wheelchair.

Pavements and Crossings

- A 2000mm pavement width allows two wheelchair users to pass each other safely.
- Create a firm and level surface, with no gaps of more than 10mm and paired dishing at all pedestrian crossing points.
- Provide 2300mm headroom clearance.
- Use tactile paving as follows: red blister-type for controlled crossings; buff, yellow or grey blister-type for uncontrolled crossings; and corduroy-type for hazard warning.
- Provide seats for long and sloping routes. Circulation route to be clear of any shop displays, bins, seats, etc.

External Ramps

- Shallowest possible gradient for any sloped approach.
- Gradient 1:20, maximum rise 500mm and maximum length 10m.
- Ramp width 1500mm, with a 1800 x 1800mm level landing at top and bottom.
- Non-slip surface, with 1:50 cross-fall to ensure drainage, and 150mm-high edge protection.
- Provide a continuous handrail on both sides, at a height between 900-1000mm, extending 300mm beyond the ramp and terminating in a closed end.

External Steps

- Steps should be provided in conjunction with a ramp. Avoid single steps.
- 1500mm stairway width recommended. Tapered treads and open risers to be avoided.
- Consistent step design is critical. Risers to be between 150-180mm and goings between 300-450mm.
- Provide corduroy tactile warning on top and at bottom of the staircase, running across full width of steps.
- Provide a continuous handrail on both sides, at a height between 900-1000mm, extending 300mm beyond the last step and terminating in a closed end. Central handrail required when stair width greater than 2000mm.
- Step edges should contrast with the rest of the surface. Provide adequate lighting. Avoid confusing shadows.

Transport Interface, Cycle Lanes and Shared Space

- Bus and tram stops should be located on or adjacent to pavements and should be readily and easily accessible to transport users, without the person having to cross a cycle lane.
- Kerb heights at bus and tram boarding points should be designed to negate or lessen any vehicle ramp gradient and to minimise vertical and horizontal stepping distance onto or off the bus/tram.
- Bus or tram shelters should contrast against the surrounding background. The placement of transport shelters should not compromise the clear pavement width.
- Perch-style seating in transport shelters can be provided at heights of between 460-900mm; arm rests should be incorporated into the seating.
- Glazing on a glass-fronted enclosed shelters should incorporate strong manifestations on the glass between 850-1000mm and again between 1400-1600mm.
- Timetables and all passenger information should be located with the mid-point of the sign located at a height of 1400mm. There should be no obstacles located in front of the timetable/information.
- Cycle lanes should not be located on or within pavements or between parked vehicles and the adjacent pavement.
- Cycle lanes should be physically separated from all pedestrian routes by using flat-top kerbs with a minimum height of 60mm, but preferably 100mm in height.
- Shared Space, Shared Surfaces as an urban design concept is generally not supported by people with a disability. Shared Space, Shared Surfaces is not recommended by IWA as a safe and inclusive approach to the design of urban or suburban streetscapes.

EPIC



SECTION 5

Access to and Circulation Within a Building

Irish Wheelchair Association Best Practice Access Guidelines

Section Contents

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Access to and Circulation Within a Building

United Nations Convention on the Rights of Persons with Disabilities (UNCRPD).

Articles 24 and 25 of the UNCRPD concern the Right to Education and the Right to Health

Countries that ratify the UNCRPD commit to ensuring *“that reasonable accommodations are provided to people with disabilities to maximise academic and social development, [...] and, to take all appropriate measures to ensure access for persons with disabilities to health services as close as possible to people’s own communities.”*

United Nations Convention on the Rights of Persons with Disabilities (2006).

5.1 Main Entrance Doors

5.1.1 Background

The main entrance design to a building should give accessible entry to all people, including wheelchair users, people with limited mobility, people who are blind, people with a visual or hearing impairment, older persons, people with cognitive disabilities, and people pushing strollers. The entrance to a building should be easy to locate, safe, and convenient to use. The lighting level at the main entrance to a building should be 150 lux.

The main building entrance/s should contrast with the surroundings, have level access, be clearly signposted and have self-activating automated doors. The method and direction of opening of the main entrance door/s should be clearly indicated.

In order to provide shelter for those having to pause before entering a building, the main entrance should incorporate some form of weather protection such as a canopy or have the door set back from the building. Protection from weather is necessary if people are required to operate security or entry devices at the entrance of a building. A door recess or canopy should be 1200mm deep and have a clear height of 2200mm to 2500mm. No part of the structure of a canopy should present an obstruction to people who are blind or partially sighted.

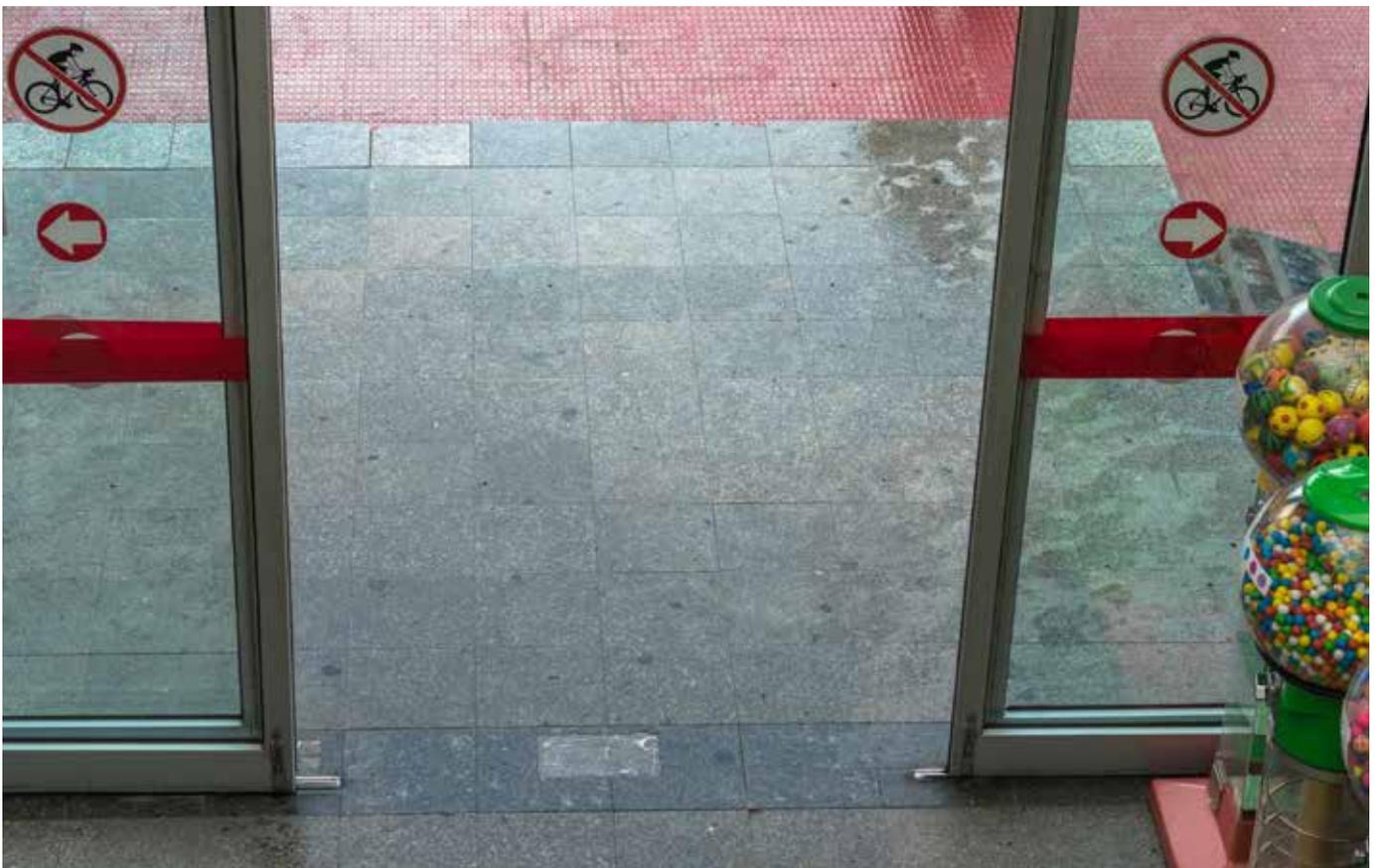
5.1.2 Door Dimensions and Design

Main entrance doorways should provide a minimum clear opening width of not less than 1000mm. Double doors should include at least one leaf which provides a minimum clear opening of 1000mm.

Doors opening into a building should be hung so that they open against an adjoining wall. A nib of

wall at the door hinge allows the door to open beyond 90° which will increase the effective clear width. There should be 500mm of clear space at the leading edge on the pull side of the door and 400mm of clear space at the leading edge on the push side of the door; the clear space on either side should be maintained, with no obstruction for 1800mm. The clear space at the leading-edge (latch) side of any door allows a person using a wheelchair to pull into that space to reach and operate the door handle while keeping clear of the door swing. The entrance threshold should be level with no upstand, which may require innovative design. To give level access, flush thresholds should be used. Door saddles, upstands or lips are not acceptable.

→ See Figure 9 Building Entrance Plan View on page 88.



Automated Doors into Shopping Area

In front of the main entrance door leading into the building there should be a minimum clear and level manoeuvring space of 2400 x 2400mm to facilitate large groups of people, and people using larger type wheelchairs and mobility scooters. All outward opening doors, eg escape doors, should not project into circulation areas and should have an unimpeded area outside of at least 1800 x 2300mm and have dished access or level access to the adjoining roadway.

5.1.2.1 Door Frames and Glazed Panels

The main entrance door should be located reasonably centrally within the thickness of the wall to minimise the depth of the reveal to both sides. Where the door must be unavoidably recessed, then the surrounding structure should be enlarged to create the required leading-edge clear spaces/s on either side. An entrance door should be designed to permit visual awareness of the layout of the building immediately beyond, except where it is necessary to maintain security or privacy.

→ See Figure 10 Door with Single Vision Panel on page 89.

Each door leaf should incorporate a glazed vision panel extending from 500mm to 1500mm above the finished floor level. If a door requires an intermediate horizontal section for strength or to accommodate door furniture, the door should have two vision panels, one between 500-800mm from the floor and the other between 1150-1500mm from the floor. The glazed vision panels should be flush with the door so as not to compromise use of the door handles.

Safety glass, compliant with European Standards should be fitted in instances where vertical glazed panels are in critical locations.

→ See Figure 11 Door with Intermediate Horizontal Section on page 90.



“Many doors in public buildings are not wide enough for powered chairs”

IWA member, Tralee, Kerry

Figure 9 Building Entrance Plan View

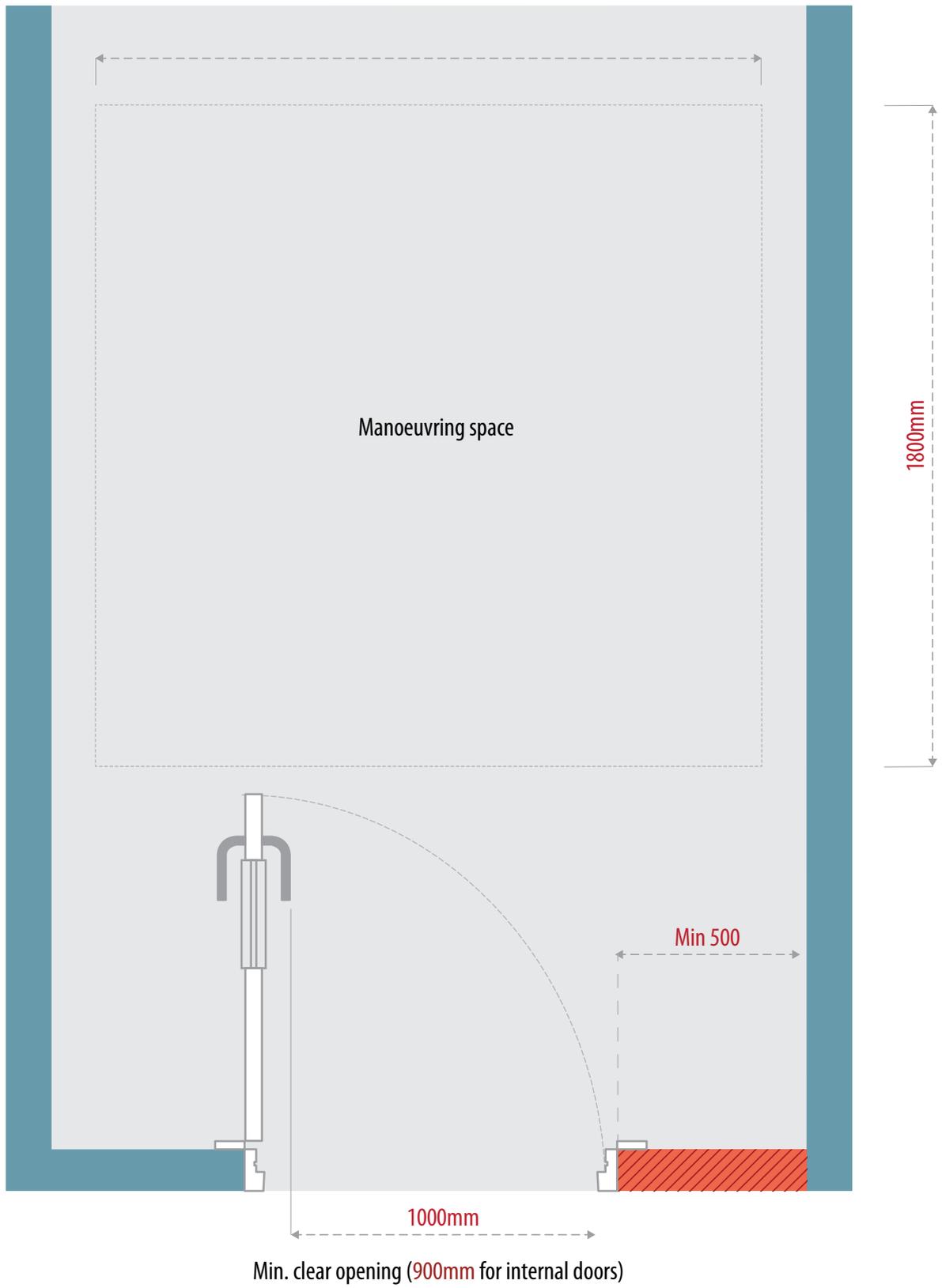


Figure 10 - Door with Single Vision Panel

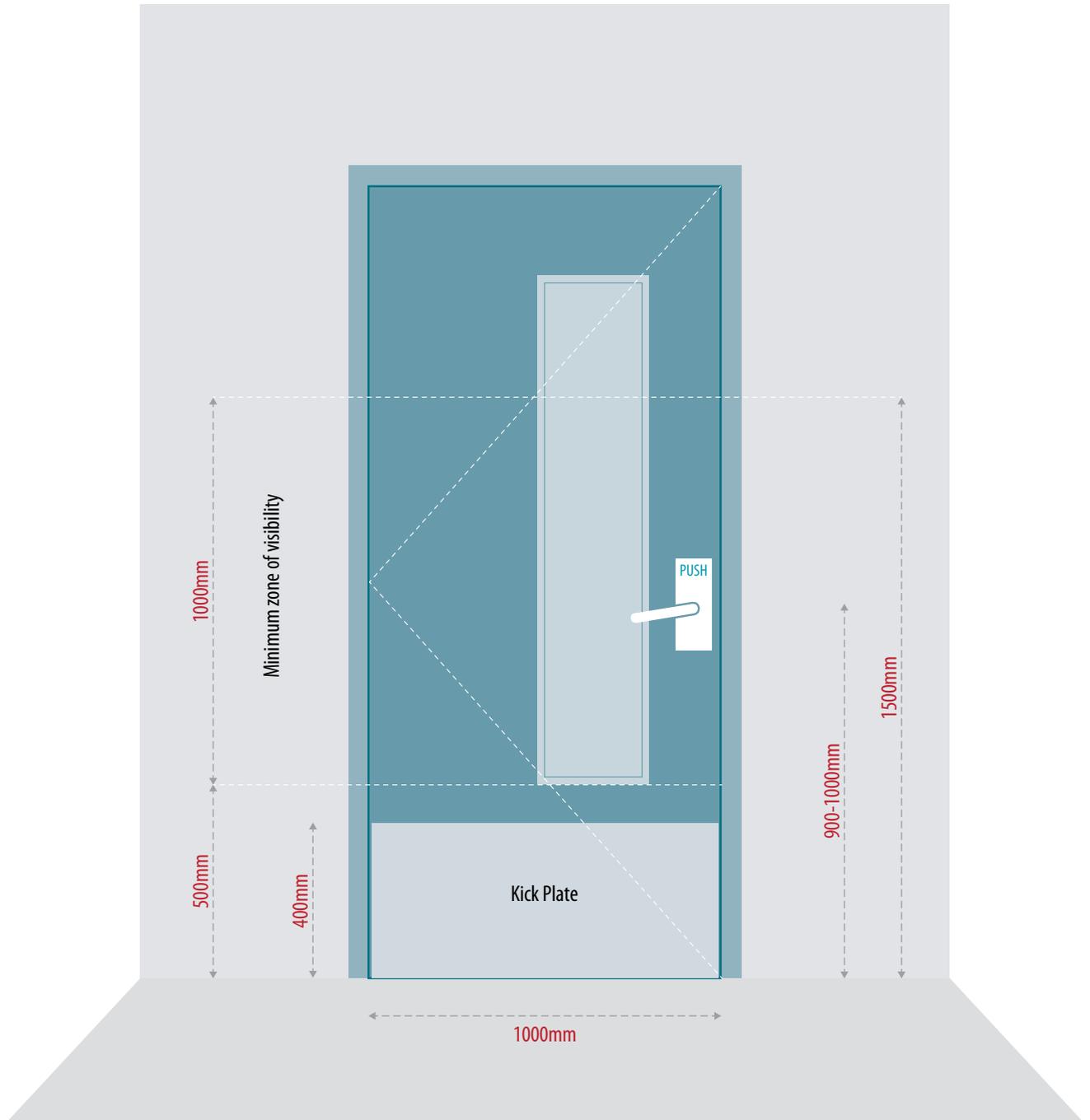
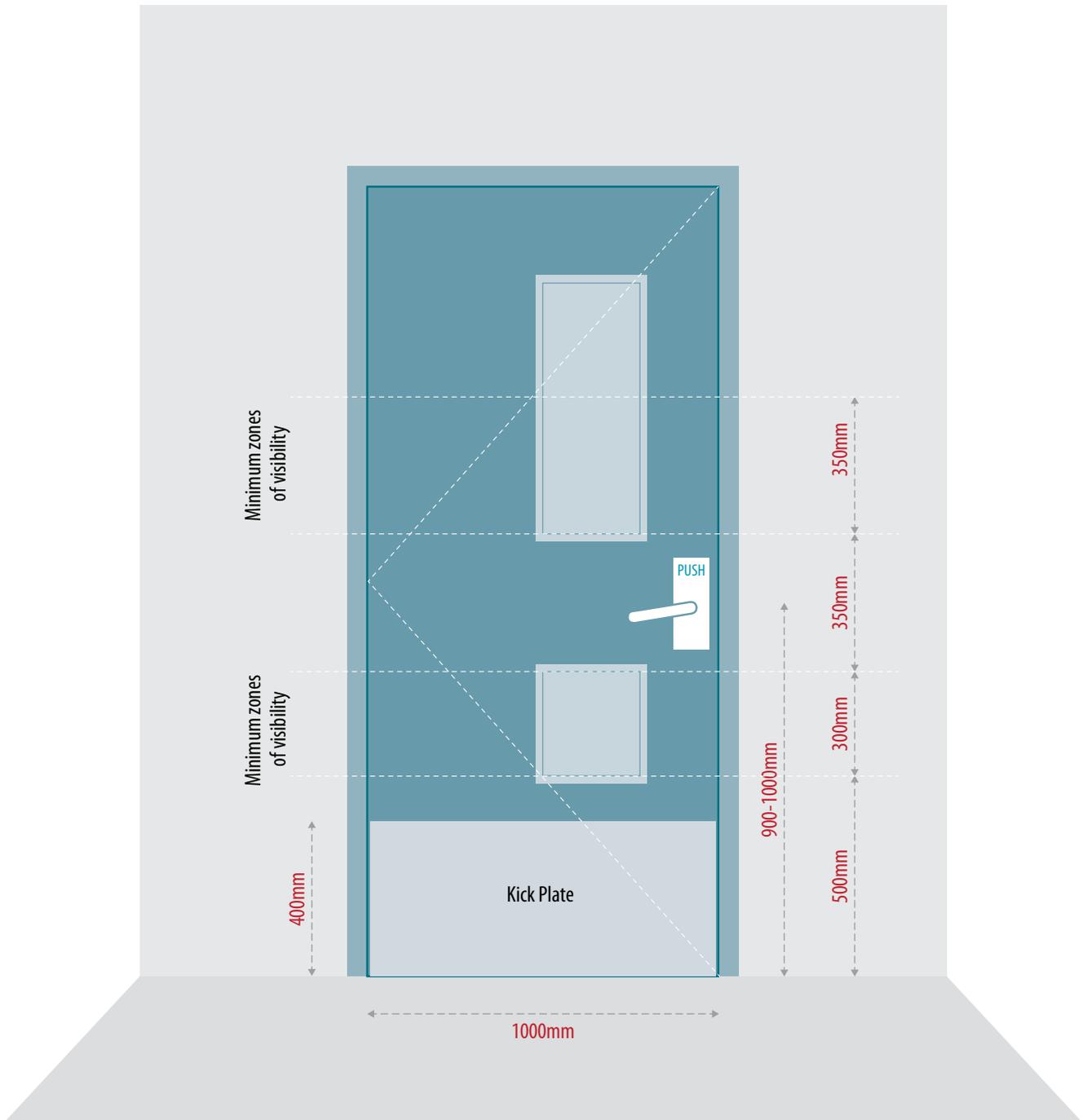


Figure 11 - Door with Intermediate Horizontal Section



5.1.2.2 Door Furniture

Door ironmongery which is situated between 900-1000mm from floor level should have a push/pull-down lever-type handle with a return at the end of the handle and be clearly identifiable by use of contrasting materials, colour and/or design. The handle/door lock should be easily used and manipulated by all, including someone with restricted hand movement and/or limited strength. Any door handle should not need to be operated at the same time as locking/unlocking a door. Where doors have a lock, the lock should be located above the handle or with vertical clearance of at least 72mm. This is so the keyhole is clearly visible.

If the door handle is vertical, then it should be more than 400mm long with the lower end sited between 700-1000mm from the floor and the top between 900-1300mm from the floor. The clearance from the door face to the handle should be 50mm.

Self-closing devices on manually operated non-powered swing doors are a disadvantage for many people who have limited upper body strength, are pushing prams, or are carrying heavy objects, as they make doors heavy and difficult to operate and result in doors prematurely closing on people using mobility aids as they try to negotiate through the door. If self-closing devices are unavoidable, the opening force of the door should be as low as possible and no greater than 20 newtons at the leading edge of the door.

5.1.2.3 Pull Handles

Doors that do not have a self-closing device should have a 300mm pull handle located on the push side. This pull handle will assist a wheelchair user in pulling the door closed behind them. The upper end of the pull handle should be centred on the door at 900mm from floor level, with the lower end sloped towards the hinged side of the door at 800mm from floor level.

5.1.2.4 Kick Plates

Kick plates to protect the door surface should be provided on the base of the door. The kick plate should extend across the full width of the base of the door to a height of 400mm. Typically, a kick plate would be made of sheet aluminium.

5.1.2.5 Glass Door Design

All large areas of glazing, such as glazed walls, screens, doors or fixed panels, shall be sufficiently highlighted to ensure that they do not pose a hazard, especially in areas where a person might reasonably assume unimpeded passage. Where the glazing is not sufficiently highlighted by mullions, transoms, frames, large door handles, stall risers or other components of the glazing system, it shall be provided with strong manifestation. A glass door that is adjacent to or is incorporated within a fully glazed wall should be clearly differentiated from the wall, with the door more prominent.

Any single-pane fully glazed door/wall or fixed glass panels should be marked permanently with manifestations at 850-1000mm and 1400-1600mm above floor level. If the manifestation takes the form of applied materials (eg stickers), they should be durable and not easily removed. These

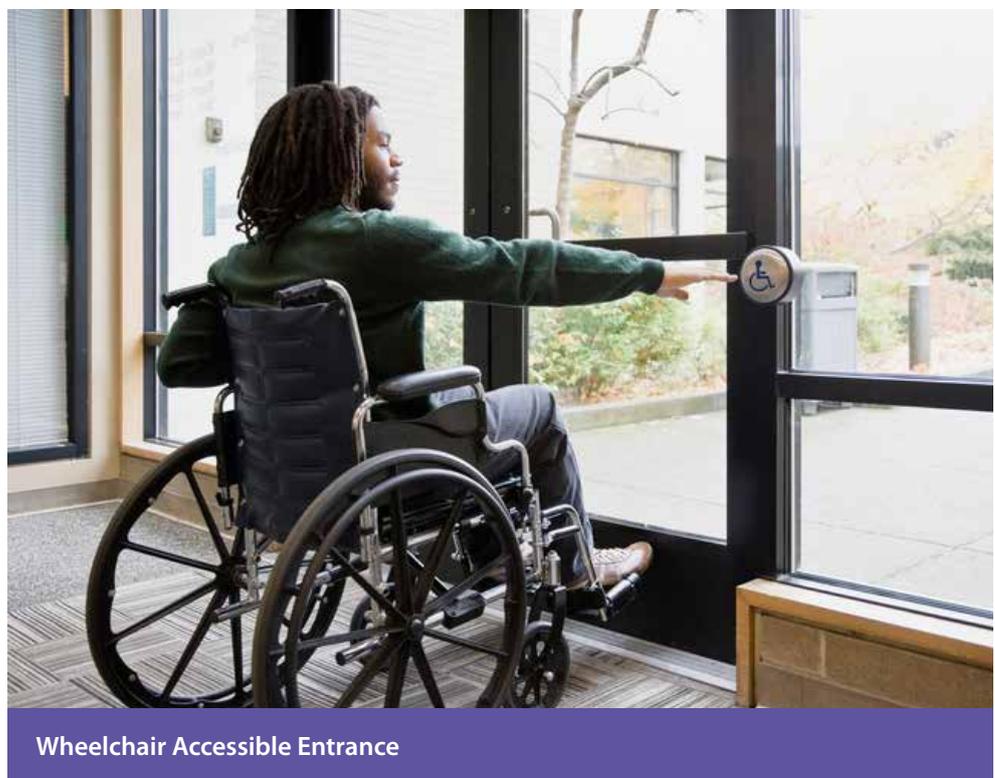
manifestations should strongly contrast visually with the background when seen through the door from both directions, in all lighting conditions, and at all times of day.

5.1.3 Revolving Doors

Revolving doors of any size are not suitable for use by all people, eg parents with prams or buggies and people with limited mobility. An accessible door should be provided immediately adjacent to a revolving door and should be available for use at all times. The accessible door could be a swing, sliding or folding door and should be automatic or power-operated. The accessible door should be clearly identifiable.

5.1.4 Powered and Automatic Doors

IWA always recommends the use of doors that are automated, as automated doors are significantly more usable where people have mobility impairments and/or reduced strength. Main entrance doors that are automated can be operated in a variety of ways. IWA considers the use of push pads, proximity cards or key fobs as being the most suitable, as people with limited hand function or upper body strength can find keypads difficult to engage and use. Clear instructions for any door fitted with a self-closing and opening or push-button device are required in visual and tactile format.



A change of floor surface texture should be provided at the approach to self-activating doors. Automatic doors should take at least three seconds to fully open from a closed position and should remain open for at least five seconds to allow safe entry and exit. Doors should incorporate a safety stop which is activated if doors start to close as a person is passing through. Doors should revert to manual control or failsafe in the open position in the event of a power failure. Automatic doors should ideally slide aside (like lift doors), rather than swing in or out.

With doors that swing open towards the user, both audible and visual warnings should be given. When in an open position, doors should not project into any adjacent access route. Electronic door-opening systems should be operated by a proximity type card or large push pad, with the activation point at a

height between 750-1000mm. Swipe cards and insertion type systems are not recommended as they are not suitable to all users where people have reduced hand/upper body function.

Provision of an additional foot-activated push pad will facilitate people with restricted hand functions. These low-level pads can be operated by foot/wheelchair footrests and should be mounted with the centre of the pad at 200mm height from floor level.

Where the control pad and door are located on the same wall, the controls should be clearly identified on the latch side and placed within 200mm of the door and 500mm from any corner. Where the control pad is placed on the return wall, it should be located at least 1400mm from the leading edge of the door so as to avoid collision with the door on opening. The door operating controls should be clearly distinguishable from the background in tone and colour contrast.

Automatic doors should be regularly serviced in line with manufacturers' guidelines.

5.1.5 Intercom Systems

Any intercom/door entry system should be provided at a height between 900 and 1050 mm from the floor level and located at least 500mm from any corner. Where the intercom/entry system and the door are located on the same wall, they should be placed at least 200mm from the latch side of the door and 500mm from any corner. Where the intercom system is placed on the return wall, it should be located 1400mm from the door. The system provided should have a visual display to facilitate people who are deaf or hard of hearing. The door release indicator should be both visual and audible.

5.2 Entrance Foyers

5.2.1 Background

Entrance foyers and lobbies should be designed and constructed in such a way that there is sufficient space to enable all people, including a wheelchair user and a person accompanying the wheelchair user, to move clear of one door before using the next door. In addition, there should be a sufficient space allowance for a person to pass in the opposite direction. Entrance lobbies should not be used as storage or display areas as this practice reduces the manoeuvring space and may cause an obstruction for a person using a wheelchair or mobility aid. Columns, ducts and similar full height elements should not protrude more than 100mm into the access route within a lobby; if this is unavoidable, a guardrail or hazard protection should be put in place. Matwells within entrance lobbies should be designed to be flush with the surrounding surface to avoid the risk of tripping.



Automatic Door Control
and Intercom

5.2.2 Lobby Design

The minimum clear door widths leading into and from a lobby/foyer area should be 900mm, with a clear space of 500mm next to the leading edge on the pull side of the door and 400mm of clear space at the leading edge on the push side of the door. The clear space enclosed by a lobby area must be at least 1700mm in depth x 900mm in width, and free of any door swing into that space.

The overall size of the lobby/foyer area will then be determined by the size of the door/s opening into and from the lobby area and by whether any doors are opening in the same or opposite directions. The recommended lobby width is 1800mm; the minimum acceptable lobby width is 1500mm.



Lobby or Foyer Area

→ See Figure 12 Internal Lobbies with Doors Opening in the Same Direction on page 98 and Figure 13 Internal Lobbies with Doors Opening in the Opposite Direction on page 99.

5.2.3 Turnstiles and Security Gates

Where turnstiles and security gates are used, ie within an office building or similar, they should operate on a proximity type card system rather than a swipe or insertion type card system to insure universal access. A clear turnstile width of 900mm is recommended. Revolving or tripod turnstiles are not suitable for use by people using a wheelchair or other mobility aid. Where turnstiles are necessary, bi-parting or folding type installations should be provided.

5.2.4 Internal Doors

Internal doors should provide a minimum clear opening width of 900mm. Doors opening into a room should be hung so that they open against an adjoining wall. A nib of wall at the door hinge allows the door to open beyond 90° which will increase the effective clear width. Double doors should include

one leaf that provides a clear minimum opening of 900mm. There should be 500mm of clear space at the leading edge on the pull side of the door and 400mm of clear space at the leading edge on the push side of the door; the clear space on either side should be maintained with no obstruction for 1800mm. The clear space at the leading edge (latch) side of any door allows a person using a wheelchair to pull into that space to reach and operate the door handle. Door handles which are situated between 900-1000mm from floor level should have a push/pull-down lever-type handle, with a return at the end of the handle, and be clearly identifiable by use of contrasting materials, colour and/or design.

Finger plates on internal doors should be positioned with the lower edge at 1000mm above floor level and should be at least 350mm high. Finger plates highlight which side of the door should be pushed where there is no handle to identify the leading edge of the door.

Signs to rooms should be not placed on doors but on the wall next to the leading edge (latch) side of the door as the sign may not be visible when the door is in the open position. There are some situations where signs need to be placed on a door eg signs to toilets, push/pull signs. Signs should be positioned to avoid reflections from daylight or artificial lighting.

Where doors do not have self-closing devices, a horizontal pull handle should be centred on the door; the upper end of the pull handle should be 900mm from floor level and the lower end sloped towards the hinged side of the door at 800mm from floor level.

Consider the use of delayed-action door closers for internal room doors.

Doors should open inwards from circulation areas and from busy to less busy areas. Internal doors should be designed and constructed in such a way that the doors and frames are clearly identified by colour and tonal contrast from the adjacent walls.

① For further information on door furniture, please refer to Section 5.1.2.2 on page 91.

“People in wheelchairs like to go places, but too often it is a case of ‘oops!’ Sorry can’t get in the door!”

IWA member, Co Laois

5.2.4.1 Glazed Vision Panels

Each leaf of a door should incorporate a glazed vision panel extending at least from 500mm to 1500mm above the finished floor level. If a door requires an intermediate horizontal section for strength or to accommodate door furniture, the door should have two viewing panels: one panel 500-800mm from the floor and the other panel 1150-1500mm from the floor. The glazed vision panels should be flush with the door so as not to compromise use of the door handles.

Vision panels can be less than the recommended size, or in some cases omitted, in doors to spaces that are required to be darkened, such as cinemas, sanitary facilities, therapy rooms or where privacy is required.

Any single pane fully glazed door leaf or fixed panel should have a permanent marking as a means of identifying the glass at heights of 850-1000mm and 1400-1600mm. This must contrast visually with the background and be visible through the door in all lighting conditions and at all times of day.

5.3 Corridor Design

5.3.1 Background

Corridor design should facilitate safe and convenient circulation through a building. A corridor must give easy access to rooms located off the corridor, as well as space to turn and retrace a route. With careful and considered use of signage and colour, a corridor route can assist in giving a sense of location within a building by signposting and tracing travel routes.

5.3.2 General Design of Corridors

The line of travel in a corridor should be clear and distinctive. Careful use of colour can aid navigation. Floor surfaces should not be reflective and should avoid busy patterns. The lighting level along the length of a corridor should be 150 lux and located where it does not create glare or silhouettes.

Ideally, a corridor or passageway should have a clear unobstructed minimum width of 1800mm along its length. Any corridors less than 1800mm in width should have a turning space of 1800 x 1800mm at the end of the corridor and at corridor junctions. This turning space should be repeated at intervals of 20 metres as the length of the corridor continues. Any corners on a corridor should be rounded.

A minimum acceptable clear unobstructed corridor width is 1500mm, with a width of 1200mm acceptable only when there is no alternative possible.



Corridor Design

To facilitate horizontal movement in emergency evacuation, designated escape routes should always have minimum corridor widths of 1800mm.

The provision of seating areas and handrails should be considered in corridors which are 20 metres or longer.

5.3.2.1 Doors in Corridors

All doors that open outward into a corridor should be recessed. If it is not possible to recess doors, then the corridor width should allow a minimum clear space of 1500mm within the corridor at the door opening points. The doors should open in the direction of the escape route. Internal fire doors in corridors should always be held open by way of an electro-magnetic system that will close the doors automatically should the fire alarm be activated.

5.3.2.2 Objects Fitted to Walls Along Circulation Routes

Wall-mounted objects within a corridor space should be recessed so as not to protrude into the circulation space. If it is not possible to recess wall-mounted objects, these objects should then be fixed at 700mm or more above the floor level and provision should be made to warn people who are blind or have a visual impairment of the presence of such obstacles by providing hazard protection. Hazard protection can include guardrails, provision of a solid kerb, hazard-warning flooring or an audible warning signal of some kind.

5.3.3 Floor Levels

Floors within a building should be level or predominantly level. Where minor changes of floor levels occur, these should be graded no steeper than 1:60. Where grading occurs, the floor should have a maximum rise of 500mm without a level landing rest. A landing rest should be 1800mm in length. Any changes of floor level should be accented with texture and highlighted with colour.

Figure 12 - Internal Lobbies with Doors Opening in the Same Direction

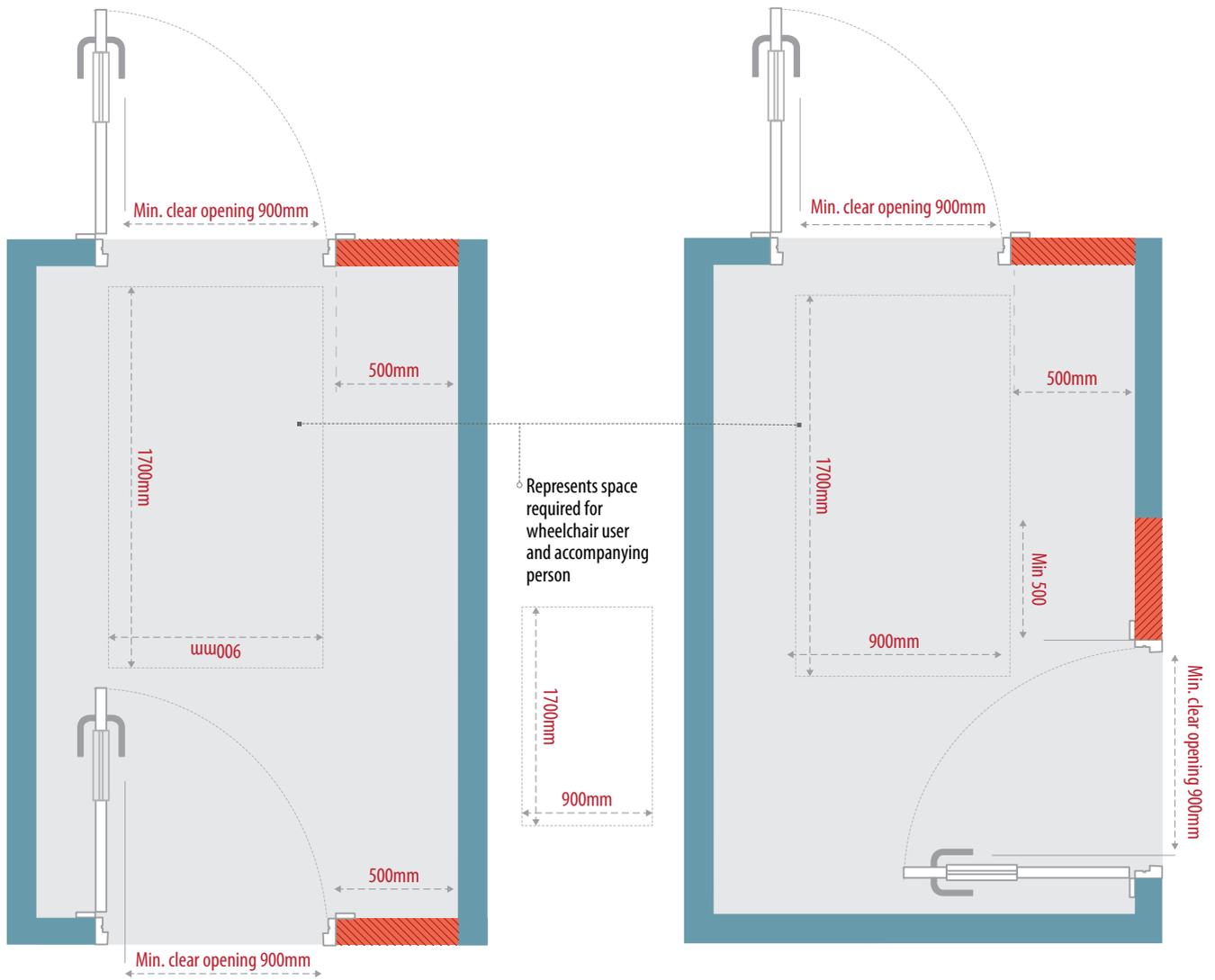
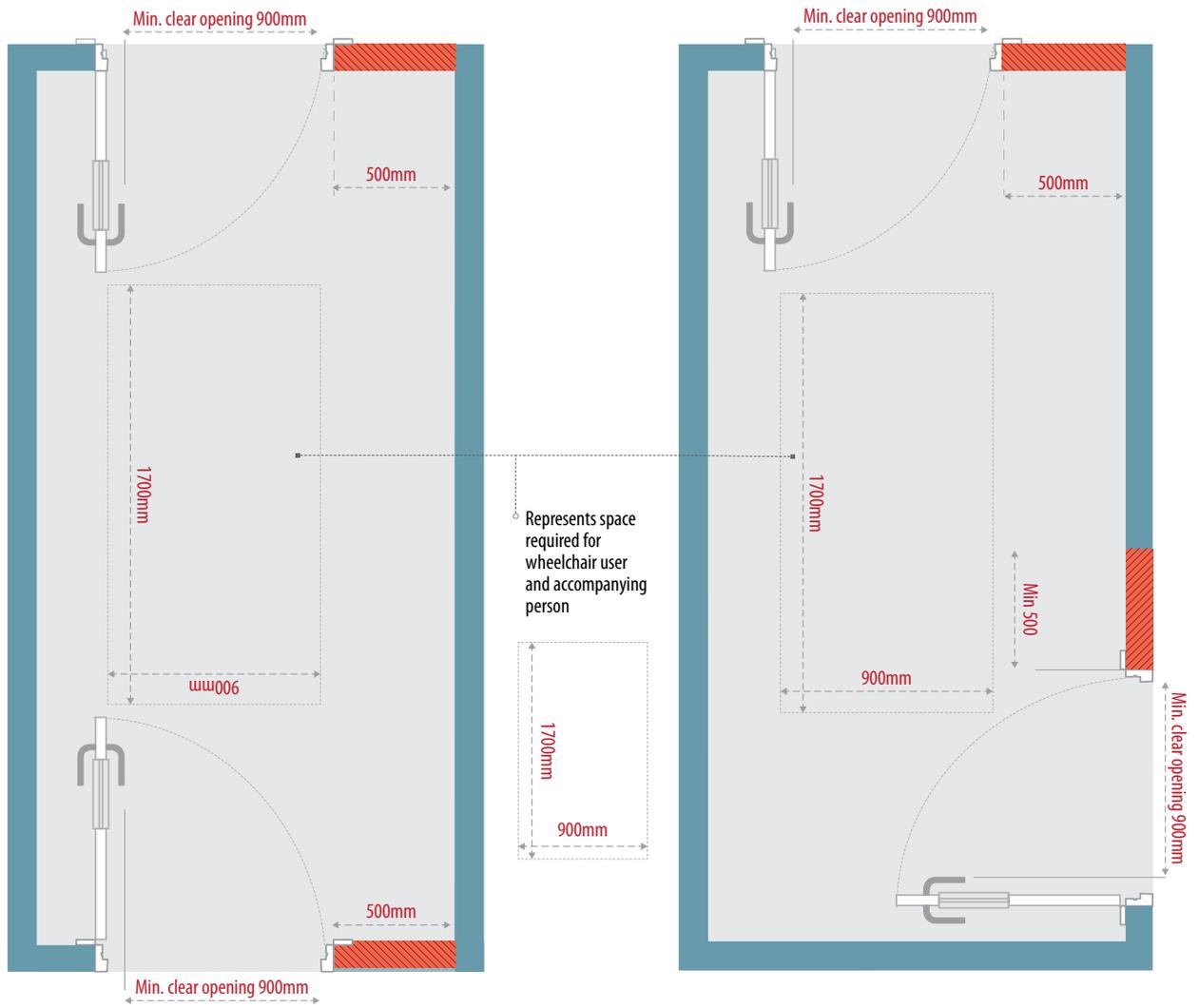


Figure 13 - Internal Lobbies with Doors Opening in the Opposite Direction



5.4 Signage and Wayfinding

5.4.1 Background

Signage is a way of giving information about a building and facilities, as well as aiding navigation around a building. Signage in a variety of formats should be easily detectable, readily understandable and easy to use for all people.

Signage should take account of National Adult Literacy Agencies (NALA) Plain English Guidelines.

5.4.2 Signage Lettering and Character Style

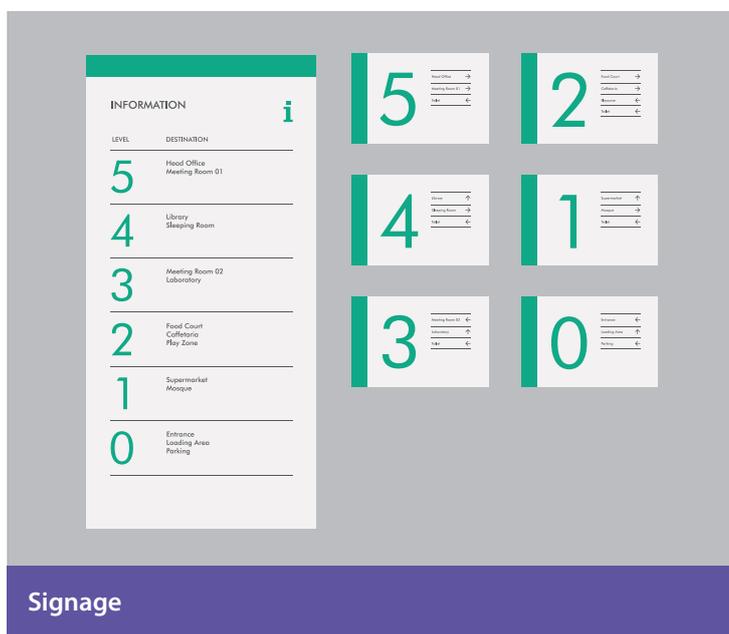
Directional signage should only be placed on fixed parts of the building such as walls, posts and floors. In spaces where signs would not be visible, for example where there may be large crowds, they should be projected or suspended from the ceiling. Signs that are projected or suspended from the ceiling must be positioned at a height to allow for a 2300mm clearance from floor level.

Character heights of minimum 150mm are suitable for long-distance reading, eg building signs; 50-100mm for medium-distance reading, eg directional signs; and 15-25mm for short-distance reading, eg room signs.

Characters on all signs should be raised by 1.5mm. Text and symbols should be consistent in design and use conventional colours and symbols. Legibility should be ensured by using a contrasting coloured background. In general, white lettering on a dark background gives good legibility. A matt finish should be used. San serif typefaces are more easily legible, eg Ariel, Verdana, Gill sans MT, etc. A mixture of both capital and lower-case letters that are aligned to the left is recommended.

The use of easily recognised symbols, pictograms and directional arrows can simplify the interpretation of signage and also aid wayfinding.

Signs that are to be read from a relatively short distance should be sited with the centreline of the sign, located at 1400mm



Signage



WC Signage: The bottom symbol on this signage is for a Changing Places Bathroom

from floor level. Safety instruction signage, which requires reading detailed instructions, should be duplicated at 1000mm-1100mm and 1600mm-1700mm, to suit people at a range of eye levels.

① For further information on signage refer to *The Sign Design Guide – A Guide to Inclusive Signage* (2004), published by JMU Access Partnership/The Sign Design Society and the Royal National Institute of Blind People (RNIB) <https://www.signdesignsociety.co.uk/book/the-sign-design-guide/>

5.4.3 Wayfinding

Careful consideration must be given to the visual access of facilities in a building and to wayfinding. All routes leading from the reception area should incorporate a wayfinding system and be clearly signed and unobstructed. Long distances between frequently used services should be avoided. The easiest access route to services and facilities should be clearly signposted. All public buildings should have an integrated system of wayfinding, public address and hearing enhancement.

Wayfinding can be achieved by the careful and considered use of pictorial signage and colour to indicate travel routes. Information on wayfinding should be visual and tactile and low enough to touch. Detectable directional indicators may be used to highlight information points and access routes. Contrasting coloured floor covering in circulation and movement areas aids orientation and wayfinding.

All buildings should be equipped with a wheelchair for loan purposes if long distances need to be travelled.

5.5 Internal Changes in Floor Level

5.5.1 Background

Vertical circulation or changes in floor levels can pose challenges to both designers and users of a building. Changes of levels are usually accommodated by the provision of stairs, ramps, escalators, travellers, platform and car lifts. The provisions made must ensure safety, ease of use and access for all people to all levels above and below the entrance level of the building.

Where steps are provided, these should be accompanied by an adjacent ramp. Ramps and stairs can be effective means of moving vertically within a building; however, a ramp slope that is too steep or a ramp that is too long can create difficulties for potential users. Equally, spiral stairways and stairways with open and/or tapered threads are potentially hazardous.

Car and platform lifts and, very occasionally, stair lifts can provide access where ramps and stairways are not practicable. The design of the approach route, the lift car and the lift controls must accommodate all potential users.

Travellers and escalators are not suitable for use by wheelchair users. Wherever an escalator or passenger conveyor is installed between floors, clearly signed alternative access by lift should also be provided.

The number of stairwells, ramps, escalators, car and platform lifts will be determined by the user profile and the services available within the building. Where there is no ramp or lifting device provided, the same range of services/facilities that are available on the other levels should be made available on the entry or accessible level.

5.5.2 Internal Stair and Step Design

In general, single steps should be avoided as they can be hazardous.

Straight flights are easier to negotiate than curved. Clear headroom of 2200mm should be maintained throughout the full length of the stair flight and any landings.

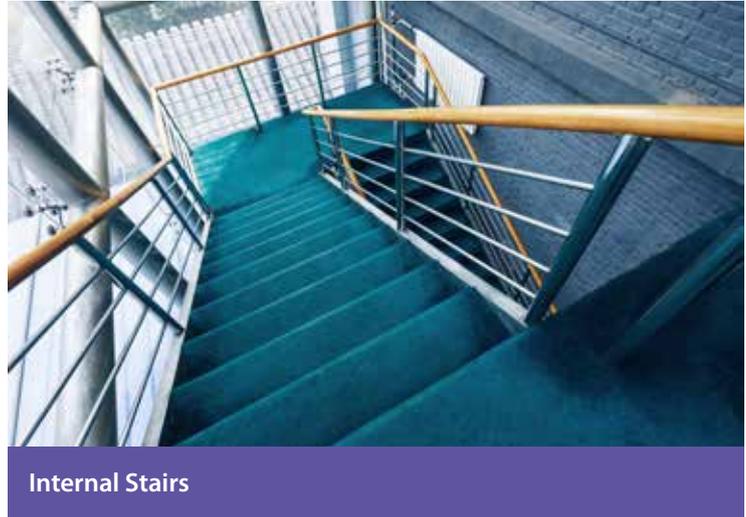
Ideally, flights and landings of stairways should have an unobstructed width of at least of 1500mm. This stair width is recommended to facilitate the assisted evacuation of people with disabilities and accommodate contra-flow traffic in circulation spaces, and to facilitate egress and evacuation in the event of an emergency. If the desirable width of 1500m cannot be achieved, a minimum acceptable width is 1200mm on a stairway that is not part of an evacuation route.

A central handrail should be provided when the width of the stairs exceeds 2000m. Lighting should be even and consistent along the flight and should not cause anyone to negotiate stairs in their own shadow. A lighting level of 200 lux is recommended at the top and bottom landings and along the length of the stairs.

5.5.2.1 Step Profile and Design

The rise of each step on a flight of stairs should be consistent, and between 150-180mm. The going or height rise of each step should be consistent and between 300-450mm. Nosings or step edgings should be integral with the step and distinguishable in colour and tone. Nosings should be used on the front face and the top of each step so as to be visible while ascending or descending the stairs. Nosings should be colour distinguishable on the top and bottom step, eg yellow. The nosing or strip should extend the full width of the step and be 50mm to 70mm deep, measured from the leading edge of the step. The practice of marking the first and last step in each flight with a different distinguishing colour, often yellow, is recommended.

Flights should contain no more than 12 risers between landings. The number of risers in successive flights should be uniform. Open risers should not be used.



Tactile hazard-warning surfaces should be installed at the top and the bottom of each flight to assist people who are blind or have a visual impairment, as well as at intermediate landings where there is access onto a landing other than from the steps themselves.

① For further information on step profile and design see Section 4.4.2 on page 75.

If it is not possible to use a tactile hazard-warning surface indoors (as this can be problematic with different frictional qualities of indoor surfaces), then floor finishes that contrast visually and in texture and sound should be used to highlight and to warn of the top and bottom of the stairs. There is no guidance on hazard-warning surfaces at the head of internal stairs, where possible, internal stairs should not be directly in line with an access route.

Level landings of at least 1500mm in length should be provided at the top and bottom of each flight of stairs, and this space must be free of any door swing into it.

→ See Figure 8 Ramps and Steps on page 77.

5.5.2.2 Handrails

Handrails should be provided in conjunction with changes in floor level, flights of stairs, ramps or steps. The height of handrails should be 900mm above floor level.

Handrails should continue without interruption across flights and landings and should be easily distinguishable from the background without being highly reflective. A central handrail should be provided when the width of the stairs exceeds 2000mm.

Consideration should be given to the provision of a second handrail set at 600mm above the pitch line on stairs, especially in buildings used by children. Handrails should be available on both sides of a flight of stairs to facilitate people who favour the use of their left/right hand.

Support brackets should be fixed to handrails centrally on the underside so a person can run their hands along the full length of the rail without interruption. The vertical clearance between the underside of the handrail and support brackets should be 50mm. Each handrail should extend 300mm beyond the first and last nosing and be rounded at the end. The surface of a handrail should be covered with easy-grip non-slip material.

① For further information on handrail design, see Section 4.5 on pages 76 and 78.

5.5.3 Internal Ramp Design

Ramps can be an effective way of moving from storey to storey within a building. However, as internal ramps require considerable space, they are normally only used in buildings with large open spaces. It is more common to use lifts internally to move from one storey to another.

The use of internal ramps is most likely to arise within an existing building where access provisions are being retrofitted. In new building design, changes of level within a storey should not occur and therefore short ramps should not be required. Wherever ramps are provided, there must also be the adjacent provision of steps and/or a lift as an alternative. A lighting level of 200 lux is recommended at top and bottom landings and along the length of the ramp.

The design of an internal ramp will be the same as that of an external ramp.

→ See also Figure 8 Ramps and Steps on page 77.

5.5.3.1 Hazard Protection Beneath Stairs/Ramp

Areas below stairs/ramps should be enclosed where the headroom is less than 2200mm from finished floor level. Where the clear head room height is less than 2200mm and the area below is not enclosed, a protective guardrail and low-level cane detection or continuous barrier should be provided.

① For further information on ramp design, see Section 4.3 on pages 72 and 73.

5.5.4 Passenger Lift

Internal passenger lifts are the usual means of moving from one storey to another within a building. Single-door lifts should ideally provide sufficient internal cabin space to accommodate a turning circle with a diameter of 1800mm. Passenger lifts should be located adjacent to stairs to offer an alternative option. Many people, when possible, will still prefer to use stairs rather than enter a lift.



Internal Lift

→ See Figure 14 Passenger Lift on page 109.

In smaller buildings, it may not be possible to provide a lift with the above internal dimensions. In such situations, as a minimum, a Class 3 lift, 2000mm in depth and 1400mm in width, is acceptable in order to comfortably accommodate a wheelchair user and another person. The larger lift size, in which an 1800mm turning circle is accommodated within the lift cabin, is always the preferred option.

In lifts where an alternative exit door is located directly opposite the entry door, an internal turning circle with a diameter of 1800mm is not necessary. In this situation, a minimum clear space of 1700mm in depth and 1200mm in width within the lift car is required.

Where a lift car is not square, it is always preferable that it be deeper (rather than wider) to facilitate the entrance and exit of mobility scooters.

5.5.4.1 Lift Use for Emergency Evacuation

Lifts in all new buildings should be fire-protected and capable of being used for evacuation purposes; this is the most effective means of emergency evacuation for people with disabilities. Evacuation lifts should be enclosed in a fire-resisting shaft and have an independent electrical supply. Existing lifts can be upgraded to be usable as the means of emergency evacuation.

The use of evacuation chairs requires planning and training; therefore, evacuation chairs are not an option for everyone.

① For further information on Emergency Evacuation, see Section 8 on page 239.

5.5.4.2 Lift Door Design

The lift door or doors should preferably have a minimum clear opening width of 900mm. The lift doors should be clearly distinguishable from the background by tone and colour contrast. They should be fitted with a reacting device which relies on infrared or photo-eye systems to ensure no person can become trapped in the doors. Lift doors should stay open for a minimum of eight seconds. A control button to keep the door/s open should be situated on both the inside and outside of the lift. Both visual and auditory warning should be given before the lift doors open and close.

5.5.4.3 Lift Controls, Fixtures and Fittings

In the lift, the controls should be situated on the side wall with the centre line of the control panel at a height of 1000mm and 500mm from the corner. Control pad buttons should be tactile, well spread and accessible to wheelchair users by parallel approach. Audible and visual notification of the floor level, and notice of door opening/closing, should be provided at each lift landing. Braille identification of control buttons should also be present and, ideally, be situated as close as possible to each button, rather than on it. If situated on the button, a person with vision impairment might accidentally push the button while trying to read the Braille information. Braille and control pad buttons should contrast with the background design of the lift car. In larger lifts ie 2000mm wide x 1400mm deep, or larger, a duplicate set of controls should be provided on the opposite side of the lift car.

The internal lighting within the lift car should be uniformly distributed at approximately 150 lux at floor level. The internal walls of the lift car should be covered with a non-reflective matt material. Light coloured walls should provide contrast with a darker floor shade but not black as a very dark colour can create the illusion, for people with vision impairments, of stepping into an open shaft. The floor should have frictional qualities similar to, or higher than, the floor of the landing. A rounded handrail should

be situated 900mm above floor level and along both the side and back walls of the lift car. In lifts with one entry/exit door, a mirror at the rear of the lift cabin is required to assist wheelchair users reversing out of the lift. This mirror should not extend the full height of the cabin but start at 900mm above floor level and extend to the top of the lift car, to avoid causing confusion to people with visual impairment.

5.5.4.4 Lift Landings

Lifts should be conveniently located in relation to the entrance/lobby area and be clearly signposted. There should be a clear unobstructed space of 1800 x 1800mm in front of the lift entrance and this area should be well lit with a minimum illumination of 200 lux. A change of floor surface and texture should be present to indicate the approach to the lift. Lift call controls at each landing should be tactile, contrast in colour/tone with their background, and be situated at a height of not less than 900mm and not more than 1100mm. Braille identification of control buttons should also be present and ideally be situated as close as possible beside each button, rather than on it.

Audible and visual notification of the floor level reached, and notice of door opening/closing, should be provided at each lift landing. A sign indicating the floor level should be provided in each lift lobby on the wall opposite the lift landing doors.

If a stairwell is situated in proximity to the lift car door, the distance to the stairwell should be at least two metres to allow for safe manoeuvring.

5.5.4.5 Lift Emergency Service Notification

Passenger lifts should be fitted with emergency instructions in visual and tactile format at a height between 900mm and 1100mm. A push-button control with tactile indicator should activate an emergency communication system situated within the lift car. A visual and auditory response indicator should also be fitted. The function of this response indicator is to confirm receipt of an emergency call, to detail the expected response action and time, and to allow ongoing communication. The communication system should incorporate an induction coupler for the benefit of people who use hearing aids, and signage alerting people to the presence of the induction coupler should be displayed.

5.5.5 Platform Lifts

Platform lifts are used by wheelchair users and people with limited mobility to transfer on a guarded platform from one level to another. While steps/ramps are always the preferred option, as there are no maintenance requirements or management issues, a standard-type lift or lifting platform may be required where there is a significant height to achieve and any ramp provided would be overly long. In any location where groups of people who have a mobility impairment may gather, eg civic offices, buildings used for workshops/seminars/launches, etc, the provision of a lift or lifting platform is not recommended due to the time required by a group of people to individually use the lift to arrive at their destination. In this situation the provision of a ramp alongside stairs is always the preferred option.

The choice of using a lift or platform lift should be carefully considered and the specifications required clearly detailed to the supplier. Platform lifts should be designed for independent use with clear instructions given for their use, and they should also be fitted with an emergency alarm system. Non-enclosed platform lifts should rise not more than 2000mm. Where the vertical travel distance is more than 2000mm, or the lift penetrates a floor, there should be a lift enclosure.

The entry and exit to the platform lift should be flush with the surrounding surface and flooring should be non-slip. Transition ramps onto vertical lifting platforms should be avoided; the floor level and the lifting platform floor should finish level. The lifting platform floor should contrast visually with the landing. The preferred size of a platform lift is 1100 x 1400mm, with a clear door-opening width of 900mm. Doors to platform lifts should always be automated with push-pad door controls conveniently located back from the lift for independent use on the latch side of the lift door at a height of 800-1050mm from floor level. When the door and the control pad are located on the same wall, the control pad should be located a minimum of 500mm from the lift door. Where the control pad is located on the return wall or on a post, the control should be located at least 1400mm back from the lift door/s.

Non-enclosed vertical platform lifts should have a gate or barrier on both the entry and exit side of the platform to ensure the safety of the person while travelling on the lift. The gate/barrier should remain in place while the platform is in motion. Gates/barriers should be at least 800mm high and should include a horizontal rail located at 300mm above the platform level. Any non-access side of the platform should have a permanent solid barrier located at a height of 1100mm.

Clear space on each landing should be 2440 x 2440mm to allow a person using a wheelchair or mobility aid to approach and manoeuvre around a door or gate of the platform lift and to turn through 180°.

Preferably a platform lift would be sited in a location whereby doors can be directly opposed to each other. If a person using a wheelchair must negotiate a right-angled turn to exit the lift, then the lift must be large enough to allow a turning space within the lift; a large or powered wheelchair requiring an 1800mm turning circle.

The minimum illumination level within the platform lift and surrounding areas should be 150 lux.

FlexStep and Sesame Lifts are types of platform lifts that can be incorporated into a short flight of steps with the lift being called into service, as required.

① For further information on FlexStep and Sesame Lifts, see: <https://www.youtube.com/watch?v=vaQKTfl-qxw> and <https://www.sesameaccess.com/>

5.5.6 Platform Stair Lifts

Platform stair lifts can accommodate a wheelchair user but are not recommended and should not be installed in new public buildings. They should only be used as a last resort in an existing situation where no other solution is feasible. The platform stair lift, when folded and out of use, must not impact on the clear stair width and must not present any hazards to people using the stairs.

Platform stair lifts are not to be confused with seated stair lifts, which are intended for use only in domestic circumstances, and which accommodate people who can transfer to sit on the lift seat.

5.5.7 Conveyors and Escalators

Travellers and escalators are not suitable for use by wheelchair users. Where a passenger escalator/conveyor is within a pedestrian access route, guarding should be provided along and at both ends of the conveyor for the safety of people who are blind or have a visual impairment.

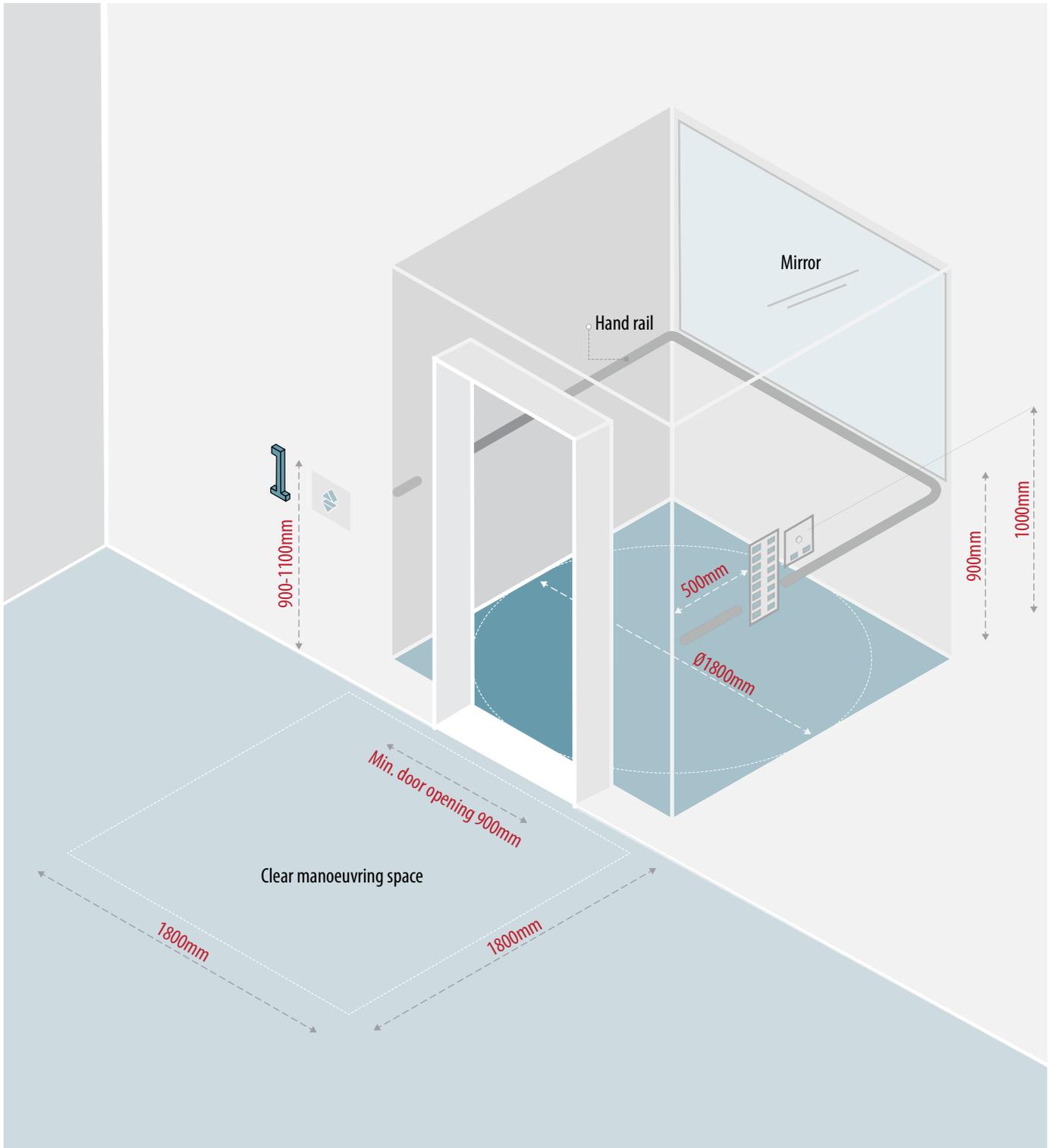
The direction of any escalator or passenger conveyor should be clearly indicated both audibly and visually. Handrails should contrast in colour and luminance with the surroundings for the benefit of people who are visually impaired. Clearly highlighted alternative accessible routes should be provided.



“Some lifts are too small! It isn’t the wheelchair that makes me disabled, it’s buildings and places!”

IWA member, Navan, Co. Meath

Figure 14 - Passenger Lift



Quick Summary of: 5. Access to and Circulation Within a Building

Entrance/Doors

- Main entrance should be easily identifiable and well signposted. Revolving doors are not suitable. Self-activating automatic doors should be provided.
- Provide 2400 x 2400mm level manoeuvring space outside the main entrance, with weather protection. A door recess or canopy should be 1200mm deep and have a clear height of 2200mm to 2500mm.
- Minimum clear door width is 1000mm for a main entrance, and 900mm for all other doors.
- There should be 500mm clear space at the leading edge on the pull side of the door and 400mm of clear space at the leading edge on the push side of the door; the clear space on either side should be maintained with no obstruction for 1800mm. Heavy door springs are not recommended.
- Vision panels should extend between 500-1500mm. Door handles should be located between 900-1000mm from the floor.
- Fully glazed panels should be marked between 850-1000mm and between 1400-1600mm from the floor.

Foyers/Lobbies

- Where turnstiles and security gates are used, ie within an office building or similar, they should operate on a proximity type card system rather than a swipe or insertion type card system to insure universal access. A clear turnstile width of 900mm is recommended.
- Overall size of lobby should be determined by location and opening direction of the lobby doors.
- Lobby size should allow 1700 x 900mm of clear space within a lobby, free from any door swing.
- Door widths to be minimum 900mm, with 500mm of clear space on leading edge side of the door.
- Recommended lobby width is 1800mm.

Corridors

- Recommended minimum corridor width is 1800mm. Wall-mounted objects should not cause obstruction.
- Doors opening into a corridor should be recessed.

- Design and colour scheme should aid wayfinding.
- Magnetic catches should be used to hold the doors in the open position to facilitate accessibility.

Signage

- Signage should be easily detectable, consistent and readily understandable.
- Suspended signs to allow minimum 2300mm height clearance.
- Close distance signs should be mounted with centreline at 1400mm height from floor. Safety instruction signage to be duplicated at height between 1000-1100mm and between 1600-1700mm.
- Use San serif typefaces, white lettering on dark background, recognised symbols and pictograms.
- Suitable character height is a minimum of 150mm for long distance signs, 50-100mm for medium distance signs, and 15-25mm for short distance signs.

Internal Stair and Step Design

- The rise of each step on a flight of stairs should be consistent, and between 150-180mm. The going or height rise of each step should be between 300-450mm. Nosings should be colour distinguishable on the top and bottom step e.g. yellow.
- Clear headroom of 2200mm should be maintained throughout the full length of the stair flight and any landings.
- Areas below stairs/ramps should be enclosed where the headroom is less than 2100mm from finished floor level.

Lifts

- All new buildings to have lifts that can be used for emergency evacuation.
- Lift car to preferably accommodate 1800mm turning diameter. For smaller buildings 2000mm deep x 1400mm width is acceptable.
- Lift door clear opening width of 900mm. Door should stay open for at least eight seconds.
- Provide 1800 x 1800mm of clear space in front of lift on each landing. Lift call button should be between 900-1100mm.
- In the lift car, centreline of lift control panel to be at 1000mm height. Lighting level 150 lux.
- Provide audible and visual notification of the floor level and notice of door opening/closing.

- A sign indicating the floor level should be provided in each lift lobby on the wall opposite the lift landing doors.

Platform Lifts

- Non-enclosed platform lifts should rise no more than 2000mm.
- The preferred size of a platform lift is 1100 x 1400mm, with a clear door opening width of 900mm.
- Doors to platform lifts should always be automated.
- Transition ramps onto vertical lifting platforms should be avoided.



SECTION 6

Access to and Use of Facilities Within the Built Environment

Irish Wheelchair Association Best Practice Access Guidelines

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6

Access to and Use of Facilities Within the Built Environment

United Nations Convention on the Rights of Persons with Disabilities (UNCRPD).

Article 27 of the UNCRPD concerns the Right to Work and Employment.

Countries that ratify the UNCRPD commit, *“to recognise the right of persons with disabilities to work on an equal basis with others [...] and, to safeguard and promote the realisation of the right to work.*

United Nations Convention on the Rights of Persons with Disabilities (2006).

6.1 Facilities, Fixtures and Fittings

6.1.1 Background

IWA recognises that careful attention to the smaller details of the building and to the interior design, in conjunction with good and regular space management, are the most important elements in creating a welcoming interior environment that is easily understood and accommodating to everyone, regardless of age, size or ability. From the reception area, right through all parts of the building, all services and facilities should be easily identifiable and readily available to all potential users. The range of services and facilities includes reception areas, WC facilities, lighting, window coverings, telephones, fire equipment, countertops, public access terminals, cash desks, etc. All wall-mounted controls on any permanent or occasional-use equipment or self-service terminals should always be located within the comfortable common reach zone that is suited to people both standing and seated. There should be clear space beneath any freestanding public access terminals to allow a person using a wheelchair to position in order to use the facility.

Wall mounted controls should be situated at least 500mm from any corner and not behind any door that will swing open to obscure the controls. The internal design of a building, signage, lighting and acoustic properties should all combine to enable users to identify and interpret the space and facilities within the building.

→ See Figure 2 Space Requirements, Figure 3 Common Reach Zones and Figure 4 Forward and Side Cross Reach Distances on pages 44, 45 and 46.

6.1.2 Reception Areas

The reception area should be strategically located to minimise external and internal noise. It should be easily identifiable from the main building entrance, with a direct and unobstructed approach. Storage

of any items/boxes/objects should not be located at or near the Reception area. The reception desk itself should also be clear of any 'clutter' including computer screens, literature/leaflet holders, etc, in order to maintain clear eye-to-eye contact between the person at reception and any approaching client/customer. Any literature/leaflet holders should be positioned in a location that does not block the view of the person working at reception or the view of the person approaching the reception area.

The lighting between the entrance and reception areas must be evenly dispersed, with minimum recommended illumination of 150 lux. The lighting level at reception countertop level should be 250 lux.

Reception areas should facilitate all users. Reception counter areas should provide sufficient space and access on both sides to facilitate employees and members of the public, including wheelchair users. A minimum 1800mm diameter of clear manoeuvring space should be provided on both sides of the reception area.



Reception Desk with High/Low Level Counter

The reception counter should be a minimum of 700mm deep, a minimum of 1500mm long (preferably 1800mm or longer as required), and 760-800mm high from the floor level. This will accommodate wheelchair users on both sides of the counter. There should be knee clearance height of 700mm underneath the counter with a minimum knee depth of 650-700mm to facilitate wheelchair users. If there is a requirement for people who are standing to use the reception counter to write, then a section of the counter should be positioned at 1050mm height from floor level to facilitate a person standing.

→ See Figure 15 Reception Desk on page 119.

Where a counter or hatch is used, it should be of an open design to give optimum acoustics and view. If a screen has to be used, it should be a clear glass screen with non-glare properties. Loop Systems and text phones should be installed and clearly identified at reception areas. A Loop System is an aid to people who have hearing loss and who are using a hearing aid. A Loop System transmits sounds directly to a person's hearing aid when the T switch on the hearing aid is selected. When a Loop System is present, an internationally recognised symbol alerts people to its availability. A portable Loop System should also be available at reception for use in offices/meeting rooms, etc, as required. A text phone allows people who are deaf to have a two-way conversation using a display screen.

6.1.2.1 Queuing Systems

Where queuing systems are provided, they should be suitable for all users. The controls on ticket machines should be positioned 750-1200mm above the floor, with a clear approach aisle of not less than 1500mm. The base of the machine should not protrude in front of the face of the machine. The immediate space in front of the machine should be level and unobstructed for not less than 1850mm x 2100mm, to give a wheelchair user clear side access to the machine and room to turn.

Careful consideration should be given to the use of queuing barriers, in terms of location and height. If not correctly located and designed, they can be a hazard to people who are blind and people with visual impairment. Where barriers are positioned to define queuing lines, they should be firmly fixed to the ground and provide a clear width between barriers of 1200mm. The barrier should incorporate a rigid rail to serve as a handrail.

6.1.2.2 Information Provision

Information available at reception areas and other locations regarding the building and the use of the building should be available in a variety of formats to accommodate the needs of as wide a range of users as possible. The variety of formats required include: all written documents available in large or clear print and Braille (on request); information on email or on audio; accessible websites; audio description services; touch facilities; a facility for exchanging written notes; verbatim speech-to-text transcription service; induction Loop Systems, including portable Loop Systems; sign interpretation (on request); information displayed on a computer screen; text phones; telephone amplifiers; inductive couplers within handsets; lip speaking interpretation; and fax machine and text facility.



① For further information, please refer to National Council for the Blind Ireland (NCBI) at <https://www.ncbi.ie/> and Chime – the National Charity for Deafness and Hearing Loss at <https://www.chime.ie/>

6.1.2.3 Seating

Seating should be provided in reception areas, and along routes and where waiting is likely. Seating provided should be stable, some with and some without arm rests and at a range of heights from 450-580mm. Minimum backrest height of 455mm should be provided on all seating.

Perch seats at 650-800mm in height can be provided for long routes or short stay areas.

The seating provided should include suitable spaces for wheelchair users to position themselves alongside the seating. Waiting areas should provide a minimum of two spaces for wheelchair users to sit side by side, or for a wheelchair user to position him/herself beside a companion. This space should be a minimum of 900mm in width by 1400mm in depth, with clear access from the approach routes.



Meeting Waiting Area

A space should be provided where a guide dog can rest.

6.1.2.4 Switches and Controls

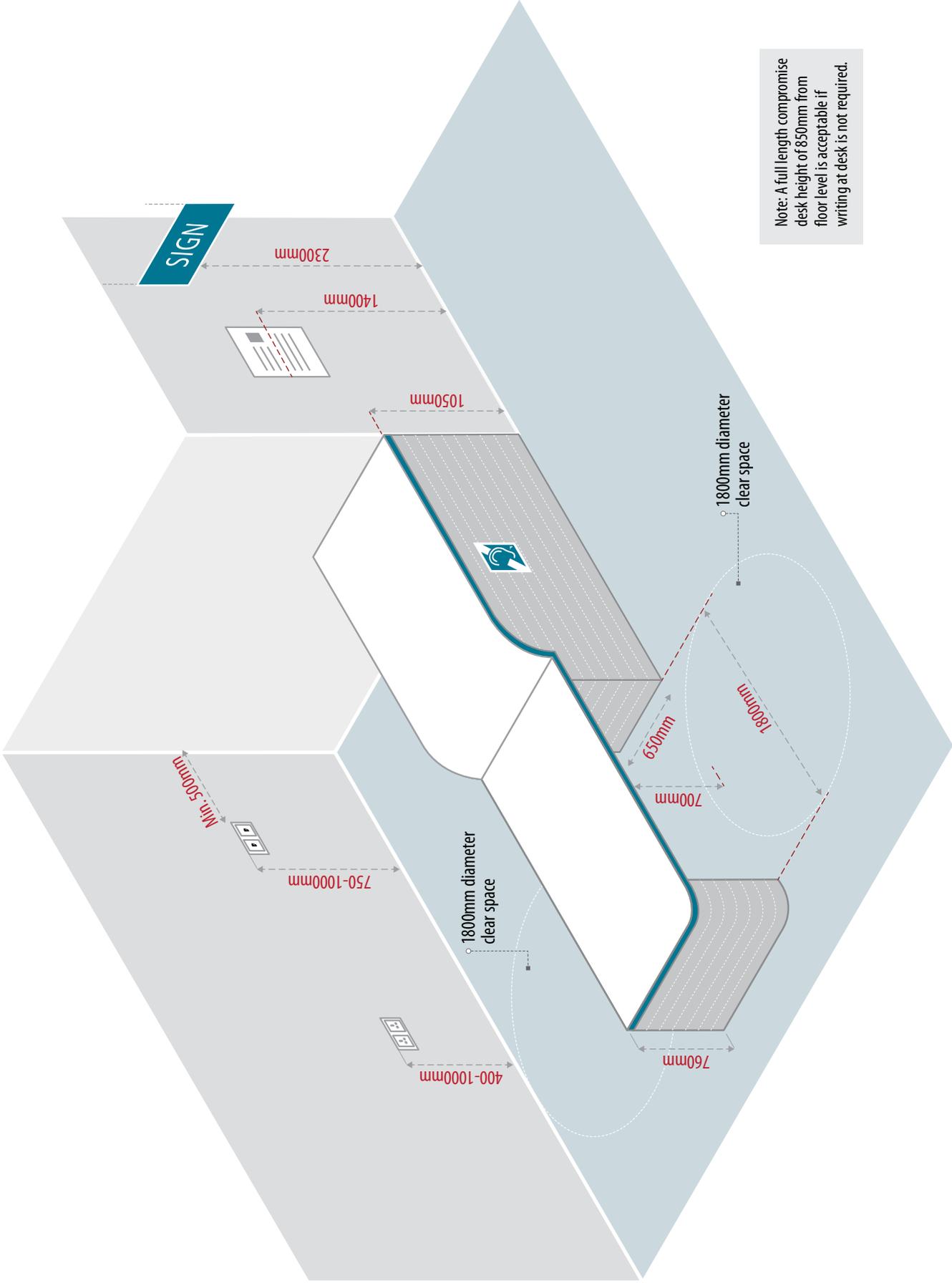
Switches, sockets, TV points and all controls should be located at heights of 400-1000mm. Electrical wall sockets should be located at a minimum of 400mm above floor level and 500mm from any corner. Light switches and socket outlets that are in frequent use should be placed higher, between 750-1000mm, and 500mm from any corner. Light switches should be of the large rocker type.

Switch and socket outlets should clearly indicate whether they are on or off. Electrical sockets should have the on/off control switch located to the outside of the surrounding mount.

Tactile buttons, where used, should be embossed rather than engraved. Flushed or recessed controls should be avoided. All switches and control pads should be operational with the use of a closed fist.

All switches or controls should be located at a minimum of 500mm from a corner.

Figure 15 – Reception Desk



6.2 Interior Decor

6.2.1 Background

Consistent design throughout a building is essential to support people in understanding the building layout, to aid orientation, and to enable access to facilities. Colour and lighting schemes can assist in differentiating utilities and areas within a building. The choice of surface type and colour with regards to floor surfaces can give ease of movement and way-finding guidance throughout a building.

6.2.2 Environmental Colour and Tonal Contrast

A combination of colour, tonal and textural contrast helps people who are blind or have a visual impairment to distinguish between doorways, corridors, surfaces or objects placed on surfaces (eg light switches). Colour and tonal contrast can be applied to internal areas, as well as to other specific areas, including the following locations: signage (contrast between letters and background to signage); switches; fixtures and fittings generally and within WC cubicles; and circulation routes and lobby areas. Changes in the colour and tone of floor finish can help to define circulation routes and door locations and provide a visual contrast between the door frame and the adjacent wall and the ironmongery on the door.

Tonal contrast is more important than colour contrast as some people may have difficulty distinguishing colours. There are key areas where the choice of colour and tonal contrast between colours can significantly aid people generally, and particularly people who have a visual impairment, in visually gathering information and understanding a space in terms of dimensions, size and way-finding. These key areas include flooring, skirting boards, doors, light switches/electrical sockets, and any general obstacles within a route whereby the choice of colour and tonal contrast can aid in identifying these locations. The way to ensure that key features within a building contrast visually with their surroundings is to ensure that colours that are adjacent to each other can be differentiated by people who have a visual impairment; this differentiation is achieved through attention to the Light Reflective Values of the colours chosen. Contrasts in colour, or more importantly tone, can be used to help identify objects and avoid hazards.

Light Reflective Values (LRVs) are used to measure the tonal contrast between two adjoining surface colours. The UK Building Regulations and the British Design Standards recommend a minimum difference of 30 points in LRVs between two adjoining surface colours. Most paint manufacturers give the LRV of colours on websites and/or on colour sample swatches. Skirting boards should have the same LRV as the walls in order to give as clear an understanding as possible of the size of the space, while the LRV of the walls should be 30 points different to the ceiling and to the floor.

① For additional information on light reflective values, see: https://www.e-paint.co.uk/BS_4800_Colour_chart.asp and <https://www.east-ayrshire.gov.uk/Resources/PDF/B/BSInclusiveDesignSightandContrastingColours.pdf>

6.2.3 Surface Finishes

Shiny surfaces and large repeating patterns should be avoided in the design of approach routes to reception/enquiry desks, along or adjoining hallways/corridors/walkways/access routes, and at presentation locations or speaker rostrums etc, as they can create glare and reflections. Designs which cause excessive shadow on walls and floors should also be avoided. Floor finishes with a matt or satin finish are preferred in most circumstances.

6.2.3.1 Floor Surfaces

Appropriate selection of floor surfaces can aid orientation, acoustic conditions and ease of passage for wheelchair users. Floor surfaces should be firm and non-directional to allow for easy passage. Floor surfaces should be slip-resistant and not cause reflection or glare. Large repeat floor patterns should be avoided.

For example, polished floorboards or tiles are easier for wheelchair users to negotiate than deep pile carpets. Carpets, where used, should be of shallow dense pile. Thresholds and junctions between surfaces should be flush, so as not to create a hazard for wheelchair users and people who are blind or have a visual impairment.

Floor areas that may become wet, such as inside a main entrance door, should not be of a type that becomes slippery. Consideration should be given to the safe provision of mats that are recessed to be level with the surrounding floor.

6.2.4 Windows

Windows should be positioned to distribute light evenly. The windowsills should be positioned no higher than 850mm from floor level. No transoms should be placed between 850-1200mm to allow a clear view through the window.

The window-opening device should be easy to operate with the use of a closed fist, and be located between 850-1000mm, in an accessible position. For manually operated windows, lever handles should be used as they require less dexterity.

The use of automated window-openers can eliminate the need to reach. Any window-opening handle/switch should be located at a height of between 750-1000mm. They should contrast in colour and tone with the surrounding background, so as to be easily identifiable.

Opening/closing mechanisms for blinds/curtains should be within reach and easily operated by a person using a wheelchair or a person of small stature.

Avoid having windows located at the end of a corridor as this can cause glare. In existing buildings, where windows are located at the end of corridors, they can be fitted with curtains and/or blinds to control strong daylight.

6.2.5 Lighting

Good lighting is essential for everyone. It enables people to move safely and independently around a building. Good lighting aids the perception of space, colour, and texture. All lighting within a building, including natural light, should be controllable and adjustable. Lighting should not cause reflections or glare, and flash lighting should be avoided. Lighting levels should be stronger at task areas and along stairs and ramps.

Lighting controls should be accessible to all with rocker-type switches placed at a height of between 750-1000mm and at a minimum of 500mm from any corner. The design and placement of natural and artificial light sources should be considered, alongside the selection of floor finishes to reduce the likelihood of glare and reflection and to ensure the floor surface is adequately and evenly illuminated.

6.2.5.1 Variations in Lighting Levels

Even levels of lighting should be present throughout a building, with task lighting available where it is likely to be needed, for instance, at desks where people may wish to read or write. Directed lighting for reading purposes should shine onto the task area, and such lighting should be 250 lux (lux is the measurement of intensity of light on a surface) and at a 45° angle so that excess light shines away from the eyes. Place the lamp as close as 150mm to the task. General lighting should be 150 lux, with an increase to 200 lux on stairs and ramps. In corridors, a suitable distribution of light that is comfortable to the eye can be achieved by fixing light fittings in a line down the centre of the corridor.

6.2.5.2 Glare Shadows and Reflections

Good balanced lighting, combined with the use of matt finishes on surfaces, will prevent glare and shadows occurring.

Where there are large areas of glass, care should be taken with the positioning of mirrors and in how lighting is provided. This prevents confusing and disorientating reflections for people with vision impairment.

① For further information on lighting levels, refer to National Council for the Blind Ireland (NCBI) at: <https://www.ncbi.ie/>

6.2.6 Acoustics

The acoustics (controlling the amount and quality of sound) within a room or any indoor space play a crucial role in how easily and comfortably a person can hear. Acoustics have a significant impact on people with hearing loss and can make it either possible or impossible to hear what is being said. The use of hard materials can create a noisy environment that reflects sound. The choice of soft furnishings and the use of noise-absorbing panels can reduce echo and absorb reflected noise. Noise-absorbing panels can be used on walls and ceilings, and also portable panels can be moved into place when required to create quiet spaces.

The provision of a sound system, such as an Induction Loop or similar that will assist people using hearing aids should also be planned into any public space at key interaction locations, including where audience or class attendance and participation is intended.

6.2.7 Acoustic and Visual Enhancement Systems

Communication points such as reception desks should be located away from potentially noisy areas. Adequate sound insulation should minimise any external noise. Consideration should be given to minimisation of magnetic fields which can be generated by the installation of systems such as heating units, air conditioning units, extractor fans, and the main power supply cable to the building.

Enhancement systems for people with a hearing/visual impairment should be installed as standard in spaces designed for activities such as meetings, lectures, performances, films, and spectator sports. Enhancement systems include:

- Loop or infra-red hearing systems which transmit sound to hearing aids and cochlear implants to enhance hearing for people who use these devices.
- Captioned performance and speech-to-text subtitles and on-screen display to give people who are deaf or hard of hearing access to a live performance or presentation. The speaker's words appear on display units placed within a set or next to a stage at the same time as they are spoken or sung.
- Audio Described Performances which provide a verbal commentary that tells a person who is visually impaired what is happening on a stage during the parts of the performance where there is no dialogue. Visually impaired audience members are equipped with a headset or earpiece to hear the information.
- Text phones or minicomms which allow two-way conversations using a display screen via a text relay service that re-speaks a text message.
- Irish Sign Language (ISL) interpretation for individual or group settings which can include a remote interpreting service which can be made available on request.

① For additional information on text relay and its use, see: <https://www.itrs.ie/>
For additional information on Irish Sign Language interpretation, contact Irish Deaf Society - Sign Language Interpreting Service www.slis.ie
For additional information on communications for people who have a sensory impairment, contact NCBI www.ncbi.ie and Chime www.chime.ie

The availability of enhancement facilities should be clearly signposted, with procedures in place for distribution and reclamation of audio description and portable loop packs.

6.3 Public Facilities

6.3.1 Background

Facilities that are provided and available to the general public should be universally accessible. The design, location and access to facilities requires careful consideration to ensure that all people can independently avail of all facilities provided. In some circumstances, there may be a requirement for

alternative provisions and/or supports in using facilities, where meeting all needs within the one provision is problematic.

6.3.2 Public Access Terminals

The approach aisles to ATM machines, to coin- and card-operated machines, and to other public access terminals such as vending machines, weigh points, library return terminals, post boxes, etc. should have a minimum width of 1200mm. Externally located machines should have a protective canopy extending not less than 1200mm and should be recessed into the building line or set into the grass verge. The immediate space in front of the machine should be level and unobstructed for not less than 1800 x 1800mm. This area should be a clearly identified privacy space. Wherever possible, a knee recess of minimum 500mm deep (and preferable 650-700mm) and 700mm high from ground level should be provided to the front of the terminal where the controls are located, to enable a person using a wheelchair to position and to reach the controls. Where this is not possible, then wheelchair footrest clearance should be provided with a clear space of 300mm in height and 200mm in depth located at ground level across the length of the machine.



→ See Figure 2 Space Requirements, Figure 3 Common Reach Zones and Figure 4 Forward and Side Cross Reach Distances on pages 44, 45 and 46.

Any public access terminal should be situated no more than 1200mm above floor level with the keypad/controls at a height of 900mm. There should be a small raised dot on the figure five on the keypad, to aid orientation for people who are blind or have a visual impairment. Any screen should be tilted towards the user. A privacy flap should be provided over an ATM keypad. An ATM can be hearing-enabled with a provision made for headphone connections and use. This will be of assistance to people who are blind and people with visual impairment.

The area surrounding any public access terminal should be well-lit, with an illumination of at least 200 lux in the interactive area and 50 lux at background level, with non-glare properties. Immediate space in front of these public access terminals should be level and unobstructed for not less than 1800 x 1800mm.

→ See Figure 16 ATM on page 126.

6.3.3 Public Telephones

Where there are public telephones, at least one accessible phone should be provided. An accessible telephone should be positioned with the telephone controls between 750-1000mm above a level, unobstructed floor space of 1800 x 1800mm, and with a clear knee recess of 700mm in height x 500mm in depth.

A fold-down seat, 450-520mm in height, or perch seat, 650-800mm in height, should be provided adjacent to the phone. Clear written instructions for the use of the phone should be provided at a height of 750-1000mm.

All public telephones should have an induction coupler in the handset and a text display. An induction coupler enables enhanced hearing for a person using a hearing aid when the person switches their aid to the T function. The volume control should be adjustable to provide sound 12–18dB (A) above normal. All phones located at reception areas, at public interaction locations, and throughout a building as required, can also be used to conduct a text conversation with a person who is deaf or hard of hearing by means of a text relay service. Text relay connects people who use a text phone with people using another text phone or other types of phone, including a home phone or mobile. A text phone supports people who are deaf, hard of hearing and people who have a speech impairment to stay in touch with friends and family and to make calls to businesses, etc.



Public Telephone

① For additional information on text relay and its use, see <https://www.itrs.ie/>

Phones situated in lifts or emergency refuges should be run in protective trunking. The phone should be of a contrasting colour to the background and be connected to the main entrance or switchboard operator.

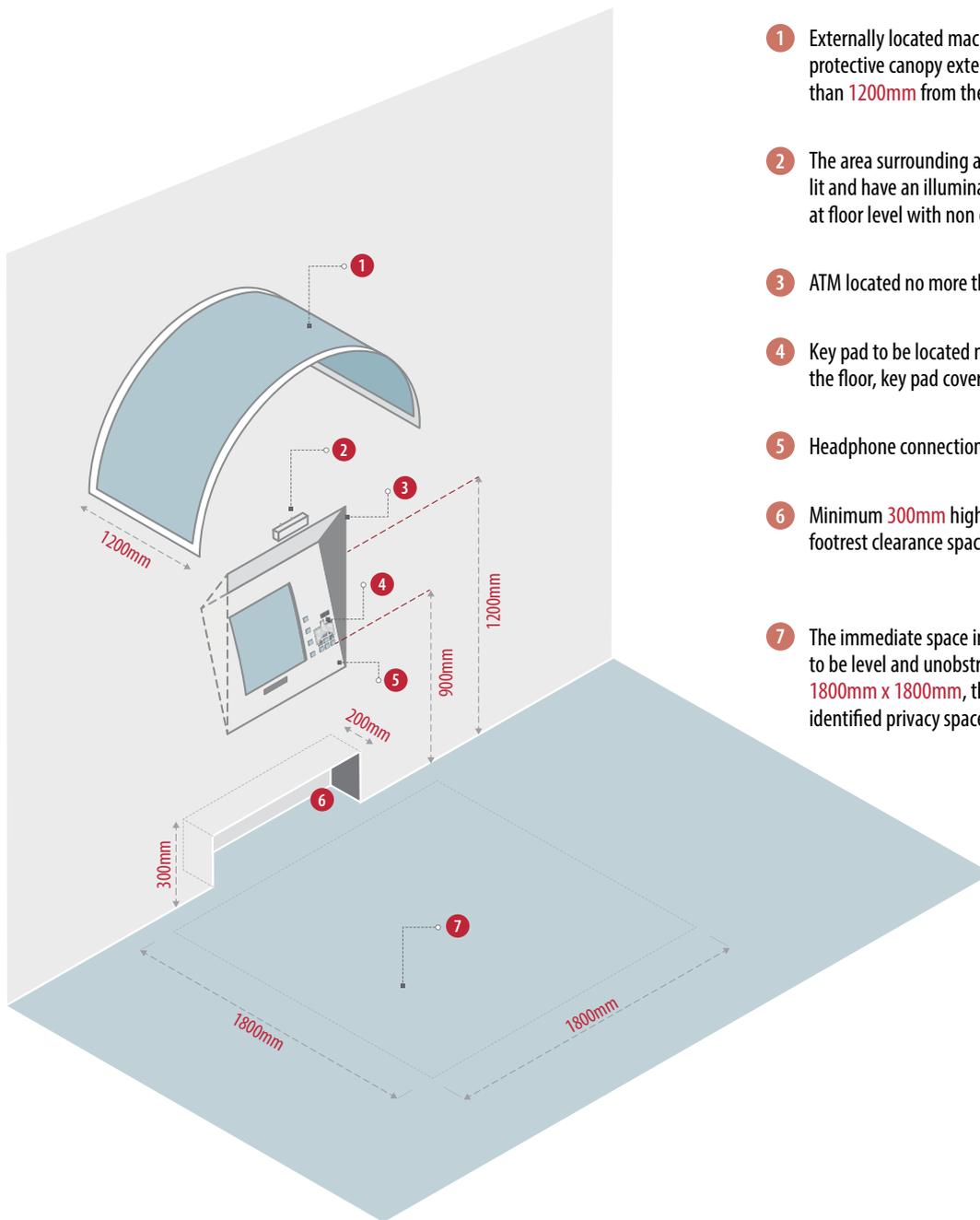
➔ See Figure 17 Public Telephone on page 127.



“ATMs are often too high for wheelchair users.”

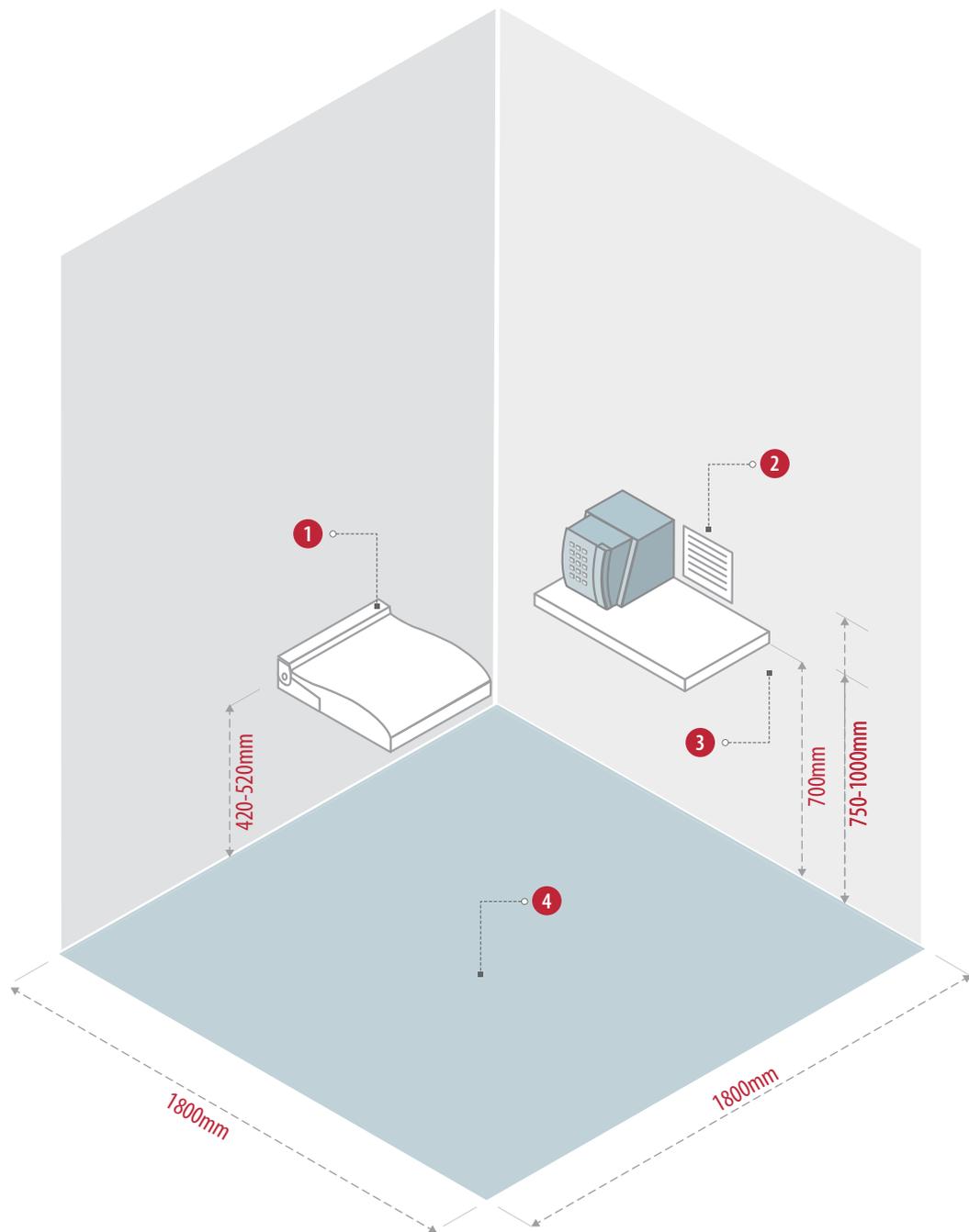
IWA member, Co Carlow

Figure 16 – ATM



- 1 Externally located machines to have a protective canopy extending not less than 1200mm from the wall
- 2 The area surrounding an ATM should be well lit and have an illumination of at least 200lux at floor level with non glare properties
- 3 ATM located no more than 1200mm above the floor
- 4 Key pad to be located no more than 900mm above the floor, key pad cover flap recommended
- 5 Headphone connection point
- 6 Minimum 300mm high and 200mm deep footrest clearance space for wheelchair users.
- 7 The immediate space in front of the machine to be level and unobstructed for not less than 1800mm x 1800mm, this area should be a clearly identified privacy space.

Figure 17 – Public Telephone



- 1 Fold down seat
- 2 Controls & instructions between 750 - 1000mm
- 3 700mm knee clearance height
- 4 Level unobstructed floor space of 1800mm x 1800mm

6.3.4 Storage Lockers

Where storage facilities are available for use by the general public, provision should also be included for fully accessible storage units. Some storage units should include knee access space to allow the option of either frontal or side access from a seated position for a wheelchair user.

Accessible lockers should be a minimum of 300mm in width and not more than 600mm in depth. Storage accessible from the front, from a seated position, is best placed with the bottom-end height no lower than 750mm and the top-end height no higher than 1250mm. The bottom-end height of 750mm allows for a half locker with knee recess of 700mm high, so a wheelchair user can gain frontal access to the locker.

Storage accessible from the side, from a seated position, should have the bottom-end height of the locker no lower than 665mm and the top-end height no higher than 1060mm.

Accessible storage units should have a 900 x 1400mm clear floor area to the front. The distance between opposing banks of storage lockers should be 1800mm.

Provide seating adjacent to lockers for use by people with restricted mobility.

6.3.5 Communal Kitchen Facilities

When planning a communal kitchen due consideration must be given to: the approach route to the kitchen; the communal kitchen layout and design; and the number and profile of people whom it is intended this area will accommodate. For example, will the kitchen be used in an office situation where the main purpose will be occasional use for coffee/tea/lunch preparation, or will the kitchen be intended for full-use including meal preparation with full cooking facilities?

For a low-use kitchen within an office environment, it may not be necessary to include an oven or hob within the kitchen, with the provision of a microwave and tea/coffee making facilities alongside sink, fridge and dishwasher being sufficient. Within an occasional low-usage kitchen, including where a hob/oven is present, providing compromise worktop heights of 850mm that can be used both by people standing and by people seated in a wheelchair, at key work areas (hob, sink and prep worktop area), may be a satisfactory kitchen design. To be suitable to a person using a wheelchair, these key work areas must have clear space beneath, with the oven located so that the floor of the oven is at the same height as the work top and with a heat-insulated pull-out shelf beneath the oven. A height-adjustable worktop area, comprising hob, sink and food preparation area, and including drop-down overhead storage, is also a possible consideration within a shared-use kitchen.



Shared Kitchen Area

Storage locations for utensils, crockery and food should always be accessible to both people standing and seated; this requires thoughtful location of shelving. Accessible storage options that include a choice of drawer-type storage within the base units is recommended; pull-out deep drawers being more accessible than hinged door presses.

Within a full-use kitchen the main consideration would be the profile and numbers of people who may use the kitchen at any one time and whether any critical kitchen facilities, such as sink, hob and food preparation area should be duplicated, eg, within shared student accommodation or within a teaching environment. A further consideration would be whether a compromise height of 850mm for the worktop area, hob and sink, suited to both people standing and seated, would be suitable, or whether a specific area of the shared kitchen, incorporating worktop area, hob and sink, should be specifically designed to wheelchair accessible height at 760mm height from floor level.

The guidance regarding kitchen design given in the following paragraphs and in [Figure 18 Wheelchair Accessible Kitchen, on page 132](#) is general and may need to be customised to suit individual preferences and circumstances.

→ See Figure 18 Wheelchair Accessible Kitchen on page 132.

6.3.5.1 Kitchen Area Size

To be accessible to a person who is using a wheelchair a kitchen area should have an unobstructed minimum floor space of at least 1800 x 1800mm between units and facing walls. The layout of the kitchen and the use of all kitchen facilities should be carefully planned to maximise available space and to minimise the need to reach and to lift or move hot pots/pans from one work area to another. Key work areas should be in close proximity with easy access to the fridge.

6.3.5.2 Work Surfaces

The depth of a kitchen work surface should be a minimum of 600mm. Key task areas, such as hobs, sinks and food preparation areas, should have knee clearance provided below them. The dimensions required for knee clearance are a height of 700mm and a width of 800mm. The underside of the sink and hob should be insulated to provide heat protection.

Work surfaces should be continuous and designed to minimise travel. Dual-height work surfaces may be considered for kitchens servicing both people who are ambulant and wheelchair users. The following different worktop heights apply:

- 900-1050mm for people standing within a full-use kitchen or area of a kitchen.
- 760mm for wheelchair users within a full-use kitchen or area of a kitchen.
- 850mm compromise height suited to both people standing and seated in a low-usage kitchen.

An electronically height-adjustable worktop, that includes key work areas of sink, hob and food preparation area, avoids compromise and facilitates a range of users including wheelchair users and people of different stature.

Consideration should be given to the use of drop-down baskets in wall-mounted storage presses and easy-access pull-out baskets/carousels in lower storage units. Deep storage drawers within the base units are easier to access than hinged presses.

6.3.5.3 Hob and Oven

The controls of a hob and cooker should be positioned to the front of the appliance and should not require reaching across burners to operate. The controls should be no higher than 1050mm and no lower than 700mm. The hob should be situated preferably within the worktop at a height of 760mm and with an insulated clear knee space of 700mm in height beneath.

A ceramic or induction hob is preferable as heavy pots can be moved by sliding them across the hob. The hob/cooker top should have an adjacent work surface of minimum 600mm in width.

The oven should be located so that the level of the drop-down door or the pull-out oven board is at 760mm in height.

The oven door should preferably be side-hung or a slide-and-hide type oven door. A heat-insulated pull-out board of minimum 250mm in depth should be provided directly beneath the oven. This pull-out board should be strong enough to support a heavy cooking vessel.

A side-hung door must open away from kitchen work areas.

6.3.5.4 Fixtures, Fittings and Appliances

Sinks should be shallow, with 700mm of clear space beneath, and be insulated on the underside. A swivel-head tap that can be operated by one hand and with clear indications of hot and cold is recommended. Sinks should be no more than 150mm deep to maximise reach.

Appliances such as washing machines, dishwashers and refrigerators should be installed on a 200mm high plinth. A drawer-type dishwasher is another option to consider giving easy access to filling and emptying the appliance. Refrigerators and freezers of 'over-and-under type' are difficult to access for wheelchair users. Consideration should be given to the use of separate refrigerator and freezer units fitted on a 200mm high plinth. Where the fridge/freezer is combined, locating the fridge section within the lower half of the appliance gives most accessibility on a day-to-day basis.

Within the counter area where knee recess is provided, switches and controls should be positioned on the back wall of the worktop at 1000mm in height. Where no knee space is provided beneath worktops, controls should be positioned on the return wall at the end of the worktop. These should be positioned 150mm back from the front edge of the worktop and within 100mm in height from the worktop surface. Consider locating sockets and switches to the front of or within the countertops. Remote controls are an option that can work well for the overhead hob extractor, or consider locating the controls within or adjacent to the worktop.

All hot surfaces such as exposed pipes and the underside of hobs and sinks, as previously referenced, should be insulated to prevent burning and injury.

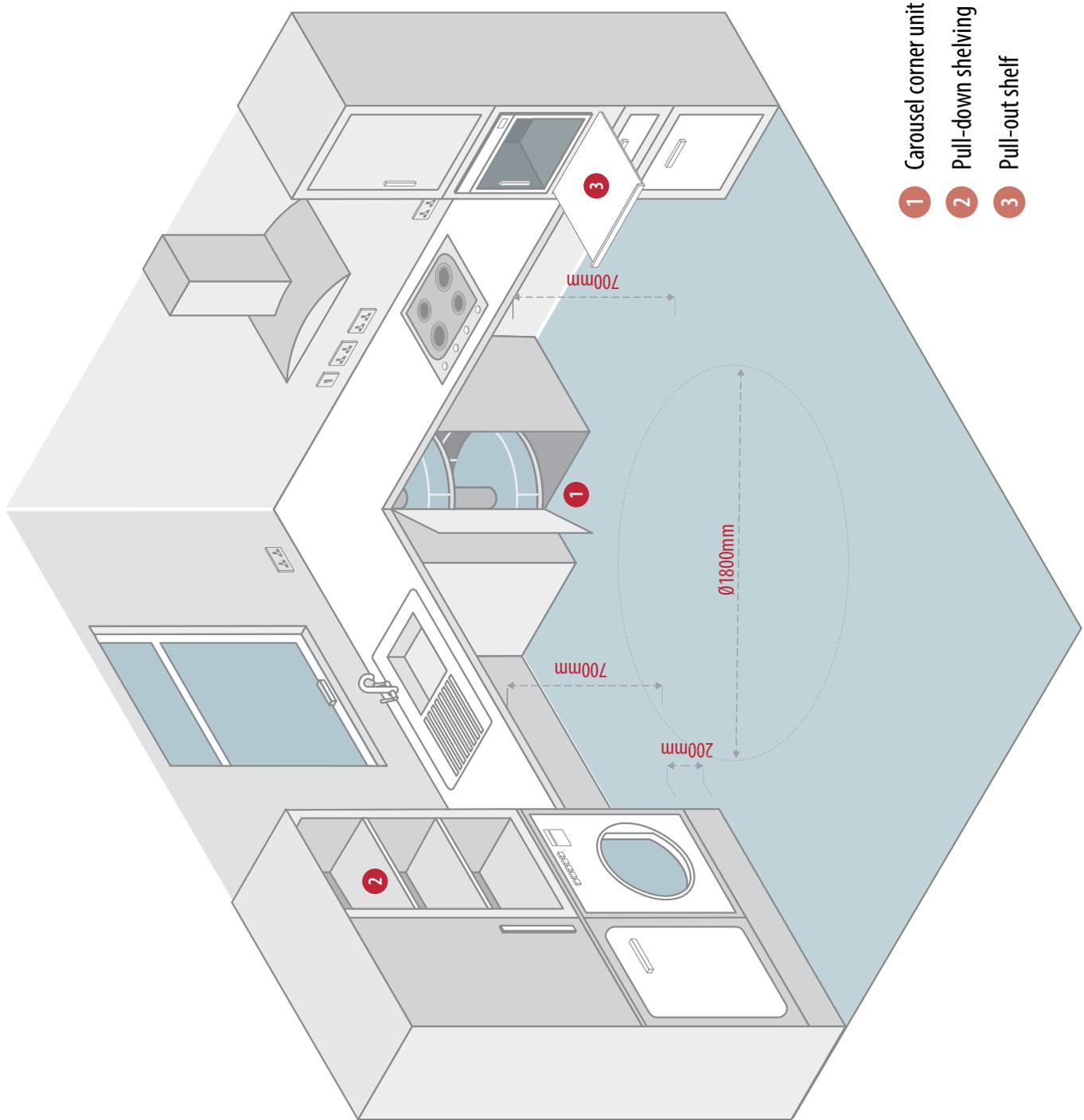
6.3.5.5 Storage

Careful consideration should be given to storage options within the fully accessible or shared kitchen. High kitchen presses located above worktops have limited usage to a person who is a wheelchair user. Any shelving located above a worktop area should have the lower shelf no higher than 1150mm. While pull-down baskets can make higher presses usable to an extent, the baskets can be heavy to pull down and are best suited to storing light-weight grocery items. Higher presses can also be automated to drop down by using an electronic control; again usability is limited to relatively light-weight grocery items. Other storage options to consider include: a tall pull out narrow larder that can be accessed from both sides; pull out baskets or carousels in the lower and corner presses; deep drawers within base units that can store crockery; a storage press with the shelving indented to allow a wheelchair user closer access to the back of the shelving; and pull out units for waste/recycling, etc. Doors on all kitchen cupboards should swing through 180° to give full access to the cupboard space within.

6.3.5.6 Kitchen Furniture

Any furniture located within a communal or shared kitchen should not encroach into the kitchen area workspace in front of the worktop/sink/hob/oven locations. An access route of minimum 900mm width should be maintained from the door, around any kitchen furniture, and with a turning area of 1800mm available in front of the kitchen work-space area. Any table provided should have clear space of 700mm beneath, with legs at the four corners of the table, or of a pod-type, with one central support. High counters with perch-type stools are not suitable.

Figure 18 - Wheelchair Accessible Kitchen



- 1** Carousel corner unit
- 2** Pull-down shelving
- 3** Pull-out shelf

6.4 WC Provisions

6.4.1 Background

The design of WC facilities should incorporate ease of access and use for all people. Where sanitary conveniences are provided in a building, provision should be made for universal access, and so facilitate the needs of as wide a range of users as possible, ie people who have impaired mobility and people who are using a mobility aid such as a walker or a manual/powering wheelchair. A correctly designed wheelchair accessible WC facility requires the provision of a WC cubicle with adequate turning space to accommodate a person using a manual or powered wheelchair. Additionally, the provision of a WC cubicle with adequate space for an assistant and the use of a hoist is required. Particular attention to the correct location of fixtures and fittings is also very important. All walls within bathrooms and WC cubicles should be capable of immediate firm fixing and support for adaptations at within 300-1800mm from ground level.

It is not possible to provide one accessible WC cubicle that will accommodate all access requirements. Therefore, a variety of accessible WC cubicles are required, both under Building Regulation (*Part M Access and Use 2010*)¹¹ and as recommended by IWA, both within and external to the public toilet blocks typically found within any building. IWA recommendations go beyond the Part M (2010) Building Regulation requirement in recommending wheelchair accessible WC cubicles be provided within male and female toilet blocks and that Changing Places bathrooms be provided; both provisions are in addition to the usual unisex accessible WC provision.

6.4.2 Provision of Accessible WCs – Type and Number

The number and location of toilet facilities required in a building should be determined by the size and usage of the building.

6.4.2.1 Minimum Provision

The minimum recommended provision of WCs to accommodate people with disabilities is as follows:

Ambulant WC Cubicle: In each male and female toilet block, there should be one WC for people with a disability who are ambulant. This WC is not designed to accommodate a wheelchair user. The size of this WC should be 1500 x 900mm. There should be 750mm of clear space between the WC bowl and the door of the cubicle, which should open outwards and not into a circulation area. Horizontal and vertical grab rails should be provided on either side of the WC bowl.

① For further detail on the positioning of grab rails, see Section 6.4.5.2 on page 139.

→ See Figure 19 Ambulant WC Cubicle on page 141.

11 Building Regulations Part M Access and Use, (2010) <https://www.housing.gov.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/BuildingStandards/FileDownload%2C24773%2Cen.pdf>

Enlarged Ambulant WC Cubicle: Where four or more WC cubicles are provided, there should be at least one enlarged WC cubicle in each male and female toilet block. Enlarged cubicle size should be 1500mm length x 1200mm width. This WC cubicle is designed to accommodate people with assistance dogs, people carrying luggage and parents with children. There should be 750mm clear space between the WC bowl and the door of the cubicle, which should open outwards and not into a circulation area. A horizontal and vertical grab rail should be provided adjacent to the WC bowl. A vertical grab rail should be provided on the rear wall adjacent to the side of the cistern that is furthest away from the side wall where the horizontal rail is located.

❗ For further detail on the positioning of grab rails see Section 6.4.5.2 on pages 139 and 140.

→ See Figure 20 Enlarged Ambulant WC Cubicle on page 142.

Urinals: In each male toilet block, there should be one or more urinals positioned at a lower height, with the lower edge of the urinal at 380mm. The rim of the urinal should be tapered, elongated and protrude at least 360mm from the wall, so that the foot plates of a wheelchair will fit beneath. There should be no steps up to urinals. There should be a clear area of 900mm in width x 1400mm in depth in front of the urinal. Wall space should be free of pipework to 300mm above floor level. A pair of vertical grab rails (600mm long) should be placed at a height of 800mm from floor level on both sides and at 450mm from the centreline of the urinal. Provision of a horizontal grab rail just above the urinal is recommended.

For standard-height urinals, it is recommended that at least one urinal should have a pair of vertical grab rails placed at a height of 800mm from floor level on both sides and at 380mm from the centreline of the urinal. A horizontal grab rail above the urinal is also recommended.

→ See Figure 21 Urinals on page 143.

Unisex Accessible WC Cubicle: One unisex accessible WC cubicle should be provided wherever sanitary conveniences are located and on each floor to which there is public access. In addition, where there is a WC provision for employees, this should include a unisex accessible WC. The unisex accessible WC cubicle provides for independent use by a wheelchair user. The minimum size of the accessible WC cubicle should be 1800 x 2500mm with the door opening outwards, or 1800 x 2800mm when the door opens inwards. These sizes will enable a person using a manual or powered wheelchair to



manoeuvre and to turn their wheelchair. Where there is more than one WC cubicle of this type, the WC bowls should be located on alternate sides of the cubicles to allow a choice of transfer side. There should be no open or boxed in pipes behind the WC bowl, as pipes in this location, particularly on the open side of the bowl, alter the working dimensions within the room whereby the person using a wheelchair will be unable to position parallel to the WC bowl to achieve a sideways transfer. Where the WC cistern is unavoidably boxed out, the 750mm dimension required from the back wall to the front of the WC bowl must then be taken from the front of the boxed area in order to facilitate side transfers from a wheelchair to the WC bowl.

→ See Figure 22 Unisex Wheelchair Accessible WC on page 144.

Where there is only one WC cubicle in a building, it should be sufficiently large to accommodate all users, including wheelchair users. This can be achieved by increasing the width of the accessible WC size to 2300mm width x 2500mm length, with the door opening outward and including an additional standing height wash-hand basin (no pedestal) with a rim height of 850mm above floor level. Baby changing facilities should not be located within an accessible WC.

① For information on the positioning of grab rails and on alarm system within a wheelchair accessible WC cubicle see Section 6.4.5.2 and Section 6.4.10 on pages 139 and 147.

6.4.2.2 Best Practice

In addition to the above minimum WC provisions, best practice in large public facilities would also include the provision of:

One Wheelchair Accessible WC cubicle:

Where six or more cubicles are provided within the male and female toilet blocks, then one wheelchair accessible WC cubicle, sized 1800 x 2500mm with the door opening outwards, or 1800 x 2800mm when the door opens inwards, should be provided within the block.



Changing Places Bathroom

A Changing Places Bathroom: In large public facilities such as airports, shopping centres, bus stations, concert venues, recreational facilities, public parks, etc, there should also be a minimum of one unisex Changing Places bathroom, with a peninsular WC layout designed for assisted use, in addition to the provision of the usual accessible WC cubicles. A Changing Places bathroom does not over-ride the requirement to provide a unisex accessible WC as these bathrooms meet differing requirements.

Within a Changing Places bathroom, direct access from the door should lead into a clear manoeuvring space within the bathroom that is adequate to accommodate a person using a wheelchair and receiving personal assistance from one or possibly two people. In a peninsular WC layout, the WC

pan should be placed at the centre of the back wall, with 900mm of clear space to either side of the WC bowl. There should be no open or boxed-in pipes behind the WC bowl. Where the WC cistern is unavoidably boxed out, the 750mm dimension required from the back wall to the front of the WC bowl must then be taken from the front of the boxed area in order to facilitate side transfers from a wheelchair to the WC bowl.

The wash-hand basin in a Changing Places bathroom should preferably be electronically height-adjustable.

The Changing Places bathroom should incorporate an adult height-adjustable changing bench facility. It should provide sufficient space within the bathroom for personal assistance to be provided and the use of a full-room cover ceiling track hoist to support the use of the WC and/or the changing bench. The size of this Changing Places bathroom with a changing bench and full-room cover ceiling track hoist facility should be 3000mm in depth x 4000mm in width (12m²), with a minimum ceiling height of 2400mm to allow for use of a tracking hoist or an attendant-operated mobile hoist.



WC Signage: The bottom graphic on this signage is for a Changing Places Bathroom

→ See Figure 23 Changing Places Bathroom with Hoist and Changing Bench on page 145.

An electronically controlled height-adjustable wall-mounted or freestanding changing bench should be provided with clear space beneath. The changing bench facility should be 1000mm in width and 1950mm in length, with a height-adjustable range between 450-900mm. For hygiene purposes a wide tear-off paper towel roll should be provided over the changing bench.

This facility would preferably include the provision of either a full-room cover tracking hoist, which is attached to the ceiling and operated electronically, or alternatively a mobile hoist would be available on site. The ceiling should be reinforced to accommodate a ceiling track hoist and a power point provision for the hoist to recharge (the charging point should be located out of the circulation route). Typically hoist slings are not provided in a Changing Places bathroom as people are required to bring their own slings for hygiene and safety reasons.

The inclusion of a shower facility within the Changing Places WC may be required. Consultation on the user profile and with people who require the use of a Changing Places bathroom should inform the detailed design of the room.

Heating should be provided within a Changing Places bathroom; and radiators should not block available floor or useful wall space or be located near the changing bench where a person could touch and receive a burn. The use of low surface temperature radiators, where the surface of the radiator is

kept at a low temperature without decreasing the heat performance, is recommended.

- ① For further information on hoists, see Section 6.4.11 on page 148.
Examples of different Changing Places bathroom layouts including where showers are provided, can be found in the UK Changing Places A Practical Guide at: <https://www.opemed.net/wp-content/uploads/2014/01/Changing-Places-a-Practical-Guide.pdf>
For additional information on Changing Places Bathrooms in the Irish context, please visit <https://changingplaces.ie/> and in the UK please see <http://www.changing-places.org/>

6.4.2.3 Family Rooms and Baby Changing facilities

Baby changing facilities should not be provided within wheelchair accessible bathrooms. Where family rooms and baby changing rooms are provided, the rooms and facilities within should be designed to be fully wheelchair accessible. There should be a clear turning area of 1800mm x 1800mm within the room that is clear of any door swing, and a clear circulation route of 900mm from the door to any facilities within the room; the circulation route or part of the route can be incorporated into the turning area. A baby changing bench should be situated at a compromise height of 850mm from floor level, with clear space beneath so that the bench can be used both by both people standing and by people seated in a wheelchair. Similarly, the height of the rim of a wash-hand basin should be 850mm, with clear space beneath, ie a wall hung basin with no pedestal.

Heating should be provided within family rooms and baby changing facilities.

6.4.3 Location of WCs and Signage

The shortest accessible route to WC facilities should be clearly signposted. The travel distance from anywhere in the building to the nearest accessible WC should be no more than 25m.

Clearly distinguishable tactile signs on a contrasting background should be provided to indicate ladies, gents, etc. These tactile signs should be used on the door, where they will be located by people with vision impairment, with the centreline of the sign 1400mm from floor level. As well as tactile lettering, Braille should be provided.

- ① For further information on Braille signage please, refer to the National Council for the Blind Ireland (NCBI) <https://www.ncbi.ie/about-ncbi/>.



“In most buildings, the toilets are too small to facilitate a wheelchair user and personal assistant.”

IWA member, Co Donegal

In large establishments, such as hotels and shopping centres, accessible toilets should be conveniently located and close to restaurant/bar areas.

6.4.4 Lobbies and Doors to WCs

Where the approach route to the accessible WC is through a lobby, the lobby should enclose an area of 1700 x 900mm, free of any door swing. This space will allow a wheelchair user to pass through one door and let it close behind them before reaching to open the second door.

→ See Figure 12 Internal Lobbies with Doors Opening in the Same Direction and Figure 13 Internal Lobbies with Doors Opening in the Opposite Direction on pages 98 and 99.

Doors to wheelchair accessible WCs should have a clear opening width of 900mm, with 500mm clear space at the leading edge on the pull-side of the door and 400mm of clear space at the leading edge on the push-side of the door; the clear space on either side should be maintained with no obstruction for 1800mm. The clear space at the leading edge (latch) side of any door allows a person using a wheelchair to pull into that space to reach and operate the door handle.

Doors to Changing Places bathrooms should have a clear opening width of 1000mm. WC signage is to be placed on the WC door with the centreline of the sign 1400mm from floor level.

Doors should open outwards wherever possible. If the door opens inwards, the door configuration should be arranged according to the location of the WC bowl (eg if the WC bowl is located at the bottom left of the cubicle, then the door should be located on the top right). A single entrance door is preferable to two doors in a series.

The door handle and lock should be a light lever-operated type handle that can operate both as a handle and a lock. A pull handle should also be provided on the door to facilitate closing. A pull handle should be 300mm in length and located on the push-side of the door. The upper end of the pull handle should be centred on the door at 900mm from floor level and with the lower end sloped towards the hinged side of the door at 800mm from floor level. There should not be a self-closing device fitted to the WC door. Consider providing an automated door opening and locking system.

The door locking system and hinges should allow the door to be opened/removed in an emergency situation.

The door to a wheelchair accessible WC cubicle or Changing Places bathroom should only open out into a corridor when it is located at the end of a corridor and is not opening into a circulation route.

① For further information on door furniture, see Section 5.1.2.2 and Section 5.1.2.3 on page 91.

6.4.5 WC Cistern and Pan, Location and Design

For unisex and accessible WC cubicles within a toilet block, the centreline of the toilet cistern or pan should be situated at 500mm from the adjacent side wall. A clear unobstructed space of 900mm is required on the transfer side of the WC bowl. This space should not be compromised by either open or boxed-in piping.

A distance of 750mm from the back wall to the front of the WC bowl is required. The height of the toilet seat should be between 460-480mm from floor level. The toilet seat should be strong, fitted with stabilisers/seat-retaining buffers and fixed tightly to the bowl. The cistern should have a fixed lid. If the cistern is high, then a backrest should be provided. If the cistern is low level and comfortable to lean against, a backrest may not be required.

In a Changing Places bathroom, the WC bowl should be situated in the centre of the back wall. In this situation, a clear transfer space of 900mm is required on both sides of the bowl.

In an Ambulant WC cubicle, the WC bowl is situated in the centre of the back wall.

In an Enlarged Ambulant WC cubicle, the centreline of the WC bowl is situated 450-500mm from a side wall.

6.4.5.1 WC Fixtures and Fittings

The flush handle on the WC should be spatula-shaped and should be located on the cistern on the side near to the person, ie the transfer side. The location and type of economic flush, if provided, must be convenient and easy to use for a person with limited hand function and strength, for example, a large push pad. Toilets with automatic flushers should provide sufficient time to prevent premature activation while the toilet is still in use. Toilet roll dispensers should be located within easy reach of the WC (seated position), and this should preferably be an automatic paper dispenser operated by proximity control. Additionally, a toilet roll holder can be affixed to the drop-down grabrail adjacent to the toilet bowl.

6.4.5.2 WC Grab Rails within WC Cubicles

All grab rails should be 35mm in diameter and 600mm in length. The distance between the grab rail and wall should be between 50-60mm. The grab rails should be located on solid or reinforced walls and should be installed to resist a force of at least 1.3 kN from any direction. All grab rails should contrast in colour with the background and should be slip-resistant. The grab rails should be located within the different WC cubicles as follows:

Ambulant WC cubicle: A pair of horizontal and a pair of vertical grab rails should be provided on both side walls. Horizontal grab rails should be at a height of 700mm and be positioned so that the near end of the grab rail is protruding 150mm from the front edge of the WC bowl. The lower end of the vertical grab rails should be at 800mm from floor level and should be placed at 150mm from the front edge of WC bowl.

Enlarged Ambulant WC cubicle: On the wall adjacent to the WC bowl, a horizontal and a vertical grab rail should be provided. Location of these should be similar to the Ambulant WC cubicle grab rails. On the rear walls, there should be an additional grab rail placed on the open side at 470mm from the WC centreline, with its lower end mounted at 700mm in height from floor level.

Unisex Accessible WC cubicle: On the transfer side of the rear wall, a drop-down horizontal grab rail and a vertical grab rail should be provided at a 320mm and 470mm distance respectively from the centreline of the toilet bowl, both at 700mm above the floor level. Two grab rails should also be provided on the side wall. The first rail should be horizontal, 700mm above the floor level, and positioned so that the near end of the grab rail is 150mm forward from the front edge of the WC bowl. The other should be vertical, with its lower end at 800mm above the floor level and placed at 150mm from the front edge of the WC bowl.

Changing Places bathroom: Two drop-down grab rails should be provided, one on either side of the WC bowl. They should be placed on the back wall of the WC cubicle at 320mm from the centreline of the WC bowl and at 700mm in height. In addition, there should be two vertical grab rails placed at 470mm from the centreline of the WC bowl, with the lower ends at 700mm in height. There should be a grab rail placed at the changing bench. This should be vertical, with its lower end at 800mm high from floor level and positioned at 150mm from the front edge of the changing bench on the available side wall.

→ See Figure 19 Ambulant WC Cubicle, Figure 20 Enlarged Ambulant WC Cubicle, Figure 21 Urinals, Figure 22 Unisex Wheelchair Accessible WC Cubicle and Figure 23 Changing Places Bathroom with Hoist and Changing Bench on pages 141, 142, 143, 144 and 145.

Figure 19 - Ambulant WC Cubicle

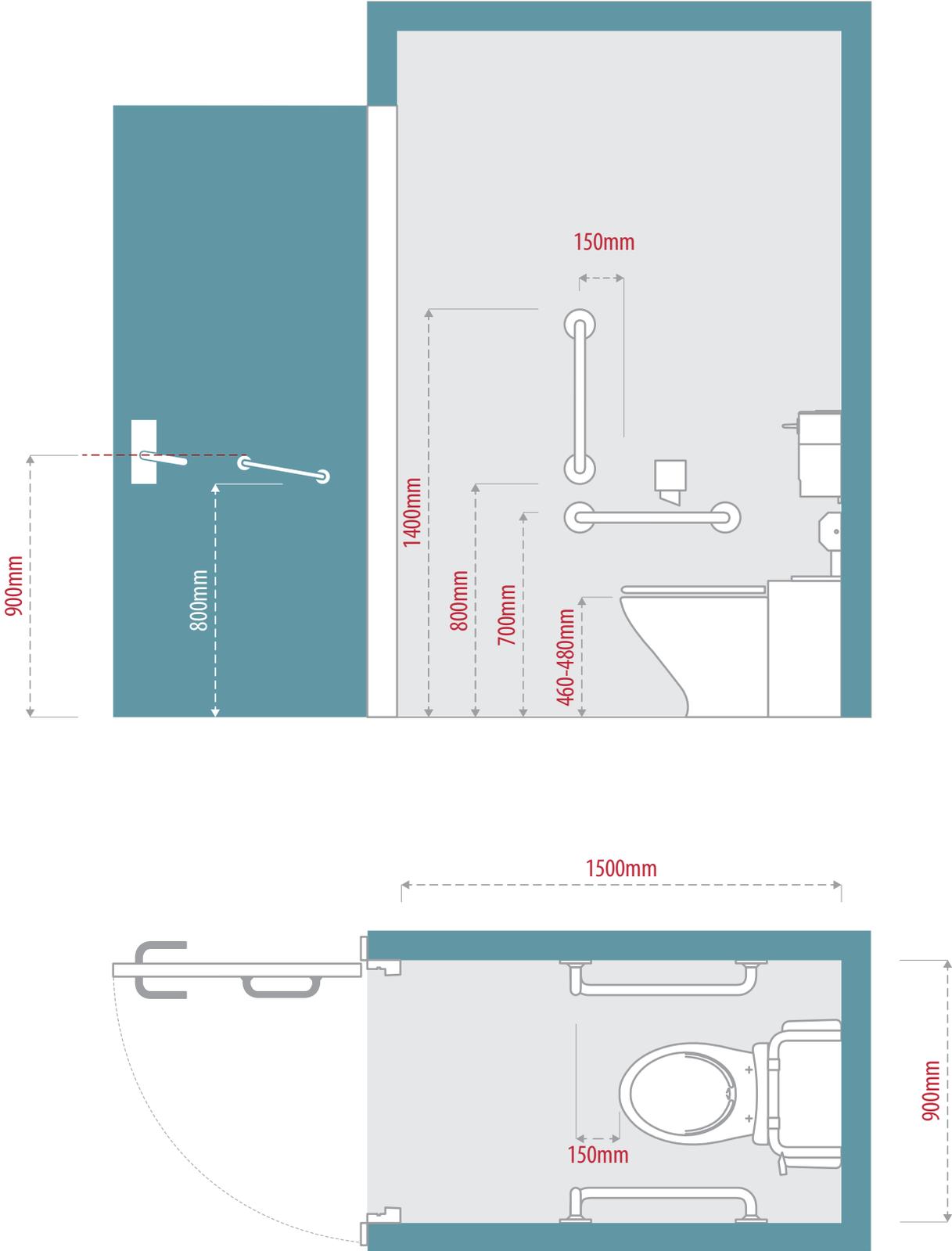


Figure 20 - Enlarged Ambulant WC Cubicle

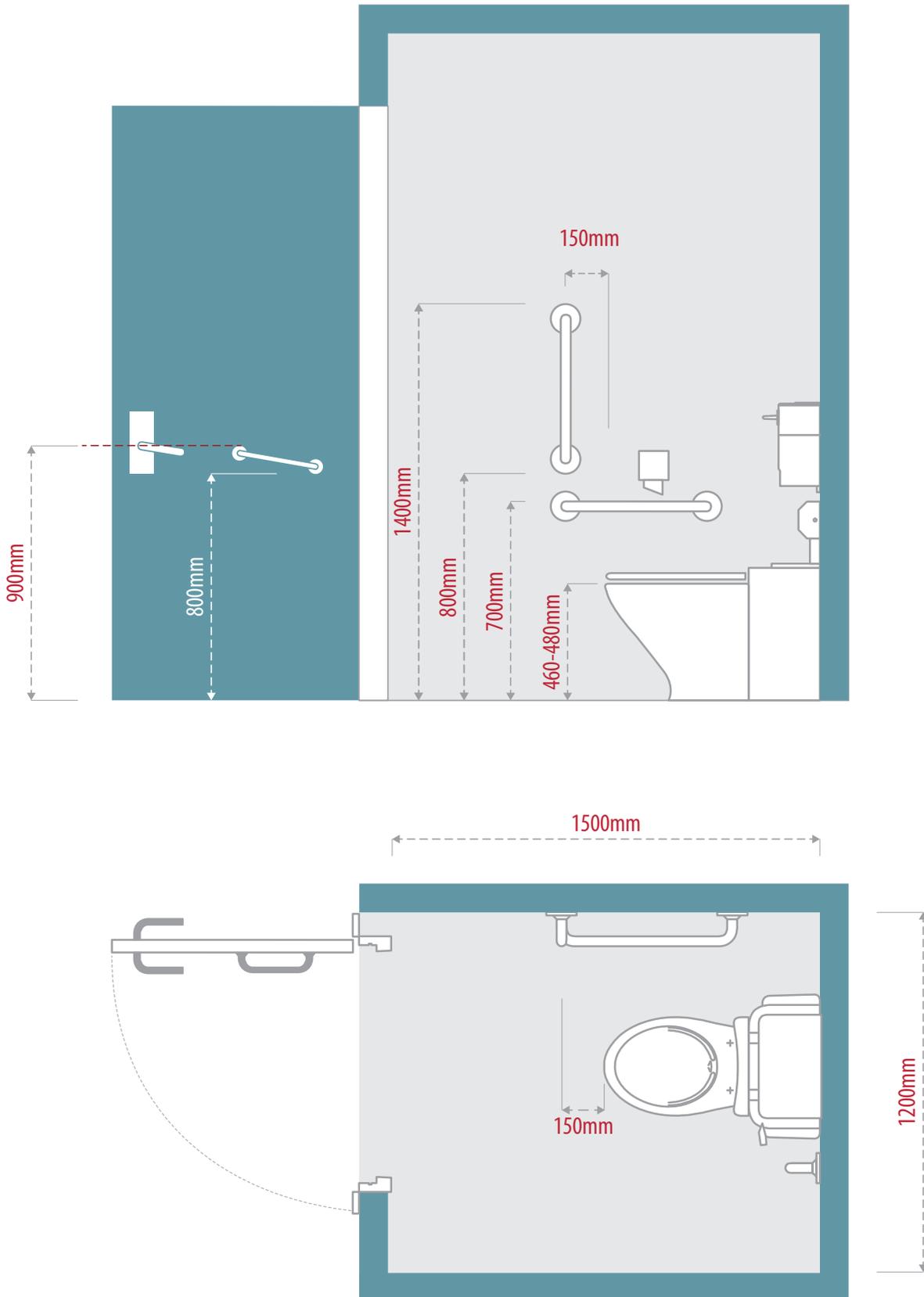


Figure - 21 Urinals

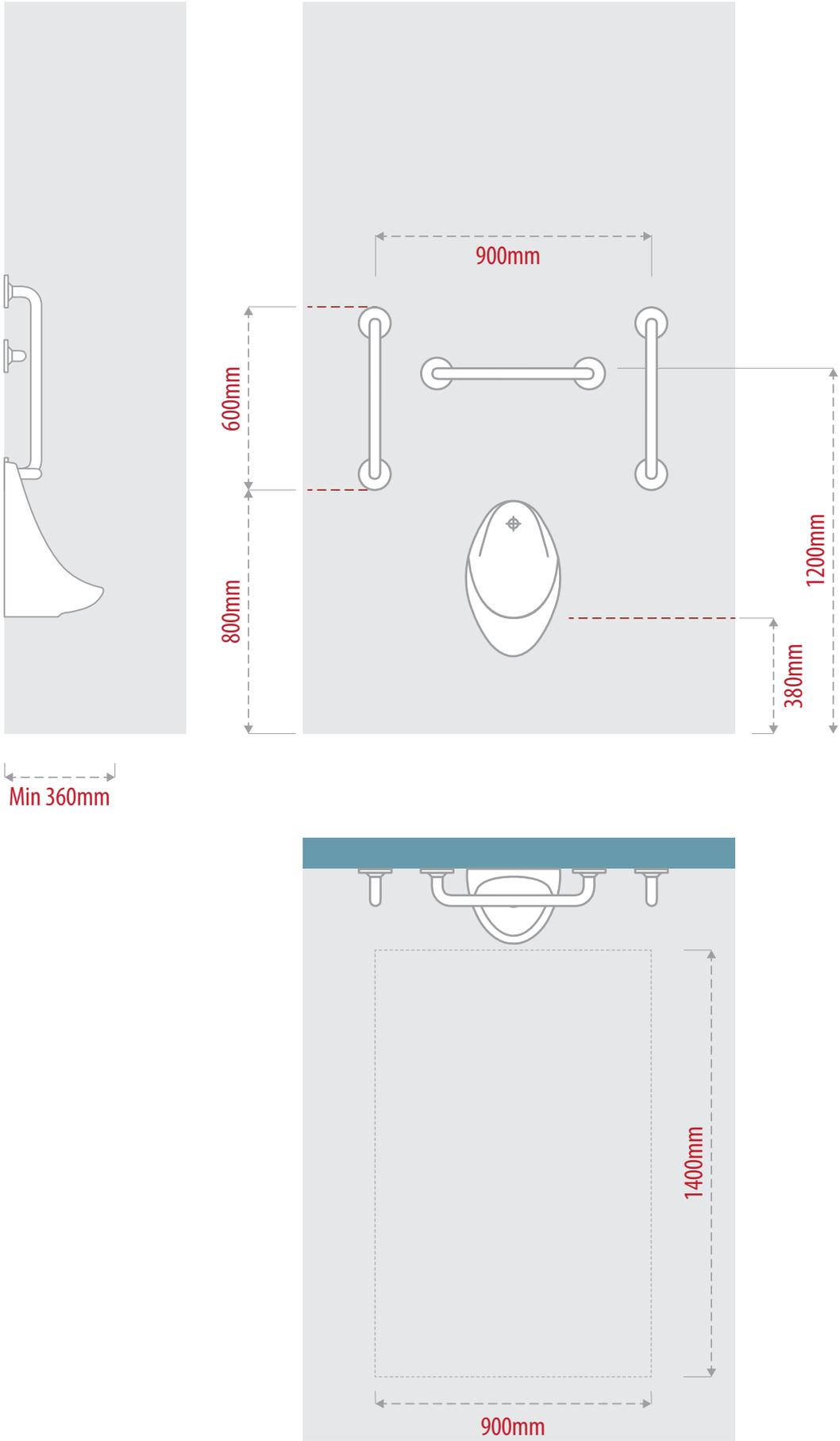
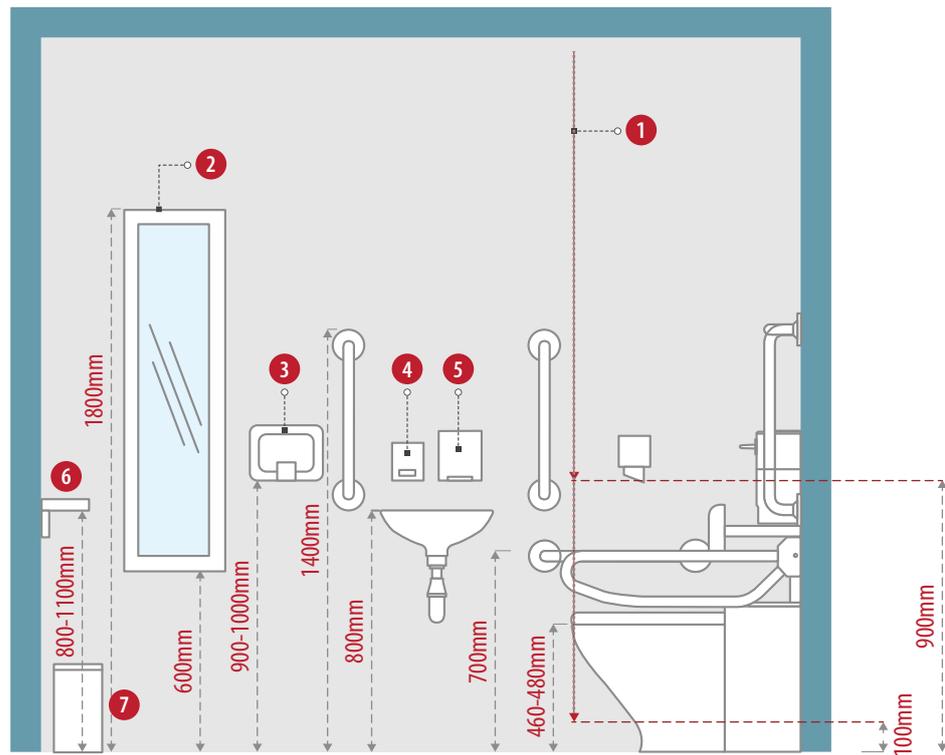


Figure 22 - Unisex Wheelchair Accessible WC Cubicle



- ① Alarm cord
- ② Mirror
- ③ Hand dryer
- ④ Soap dispenser
- ⑤ Paper towel dispenser
- ⑥ Colostomy shelf 850mm from floor
- ⑦ Disposal bin

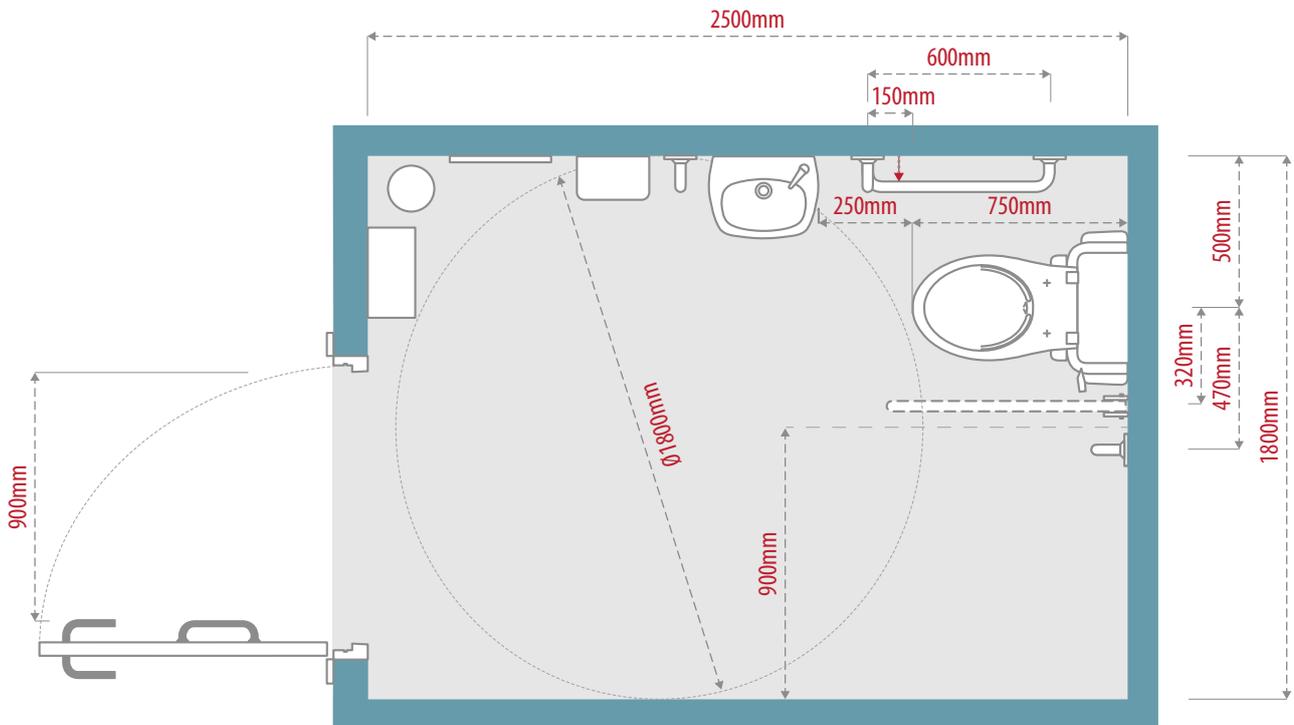
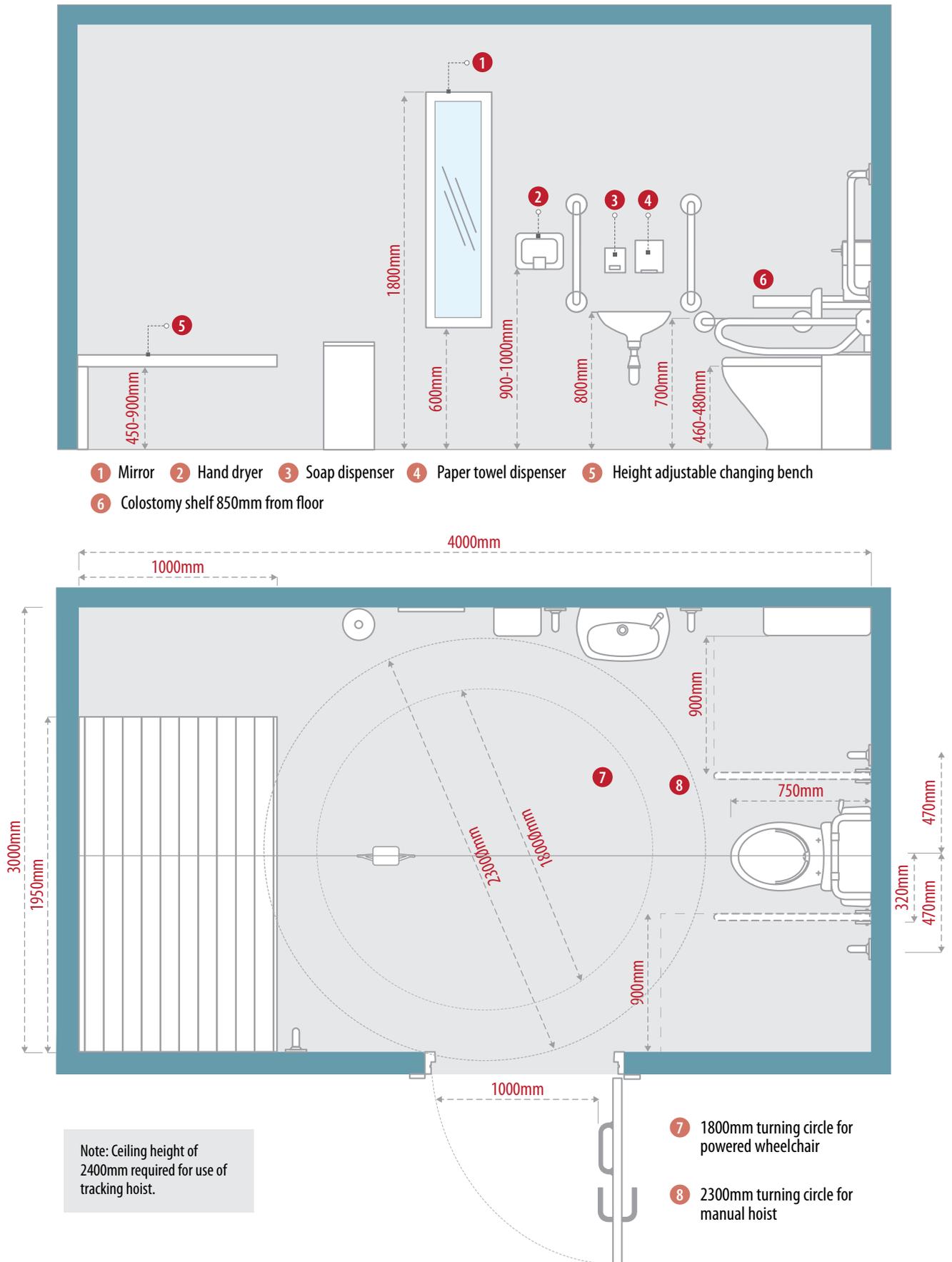


Figure 23 - Changing Places Bathroom with Hoist and Changing Bench



6.4.6 Design of Wash-Hand Basin

In a unisex wheelchair accessible WC cubicle or in an accessible WC cubicle within a toilet block, the top rim of the wash-hand basin should be situated at a height of 800mm from floor level, with clear space beneath. The basin edge should be 250mm from the leading edge of the WC bowl in the wheelchair accessible toilet for independent use. The basin should provide a clear internal basin space of 450mm in length x 300mm in depth, with no surplus space on the basin surround. A 'finger basin' is not suitable. The edges on the wash-hand basin should be rounded. The basin should be fixed to the wall with no pedestal.



Accessible Wash-Hand Basin

Lever-type mixer taps, or automatically controlled sensor taps, should be used on basins. The mixer tap should be located on the side of the basin close to the WC bowl.

Vertical grab rails should be located to both sides of the basin with their lower ends at a height of 800mm from floor level. The outer grab rail should be set at 100mm from the basin edge, while the grab rail adjacent to the WC bowl should be 150mm forward from the front edge of the bowl.

Wash-hand basins provided in the communal area of male and female toilet blocks should include at least one basin, with the rim height at 800mm above floor level with knee clearance of 700mm underneath.

The lower edge of the paper towel/soap dispenser and hand dryer should be located between 900-1000mm from floor level. Where an electric hand dryer is provided, it should operate by movement rather than a push button.

In a Changing Places bathroom, the wash-hand basin should be full sized and ideally it should be an electronically height-adjustable basin within a 450mm height range and with clear space beneath. Should a height-adjustable wash-hand basin not be possible, the basin provided should have the rim of the basin located at 850mm from floor level and with clear space beneath. Grab rails should be provided on either side of the basin, located 100mm from the basin edges and with their lower ends at a height of 800mm from floor level.



“Business owners are of the opinion that once there are handrails in toilets, they are accessible, but they are far from being accessible.”

IWA member, Co Meath

6.4.7 Mirrors, Hooks, Shelving and Switches

Mirrors should be situated away from a wash basin to allow access to hand dryers and paper towel/ soap dispensers. A mirror should be at least 400mm wide and should be positioned with its lower edge at 600mm from the floor, extending to 1600mm from floor level. There must be a minimum gap of 300mm between the mirror and the corner of the room. Careful placing of the mirror should be considered to avoid glare for people with a visual impairment.

Coat hooks should be provided at both at 1200mm and 1700mm above the floor level.

A colostomy changing shelf (125mm deep x 400mm wide) should be located close to the WC bowl at 950mm above floor level. Additional shelving should be provided for personal belongings at a height of 800mm from floor level.

6.4.8 Disposal Bins

Slimline easy-to-operate push-button (not pedal) or, ideally, sensor-controlled rubbish and sanitary disposal bins that have large openings to accommodate disposable items should be provided. In a Changing Places bathroom, a large disposal bin is required. These bins should be located away from the transfer space beside the WC bowl.

6.4.9 Surface Finish in WCs

The general finish of all surfaces in WCs should be matt. Floors should be non-slip with a minimum anti-slip PTV grading of 51-70, with a PTV grading of 70-100 offering the best protection. WC pans, basins, and other fixtures should have colour and tonal contrast with the surrounding wall and floor surfaces.

6.4.10 Emergency Alarm Systems

There are different options to consider when choosing emergency alarm systems for a unisex accessible WC and changing places bathroom. One option is the provision of emergency pull cords. Emergency cords should be provided in accessible WCs and Changing Places bathrooms and they should be easily distinguishable, eg with a bold triangle/bell/ball attached to a red pull cord. It is recommended that two red bangles be sited on the cord. One should be set at the bottom of the cord, and the other at 800-1000mm above floor level. The emergency cord should be situated so that it can be reached from the WC bowl and from the floor. The cord should extend 100mm from finished floor level. A clearly marked reset button, installed between 750-1000mm, should be reachable from the WC bowl and from a seated position in a wheelchair. A reset button cancels an activated alarm.

Another option is to run the alarm cord along the wall or to provide a dado panic strip alarm, both at 200mm from ground level. Careful consideration is required to determine which type of system is best suited to the individual location and use of the bathroom.

All alarm cords must have a connection to a security desk or information point. Alarms must have a visual and auditory alert system that shows the alarm has been activated. Considerations should be

given to the location of the activated alarm (outside the WC cubicle) to ensure that it can be seen and heard by the people who will provide the assistance.

Both visual and audible fire alarms should be installed in an accessible WC, with clearly written procedures should the alarm be activated.

6.4.11 Hoist and Slings

Hoists are mechanical lifting devices designed to move an individual from one position to another. These eliminate the need to lift a person manually, thereby minimising the risk of injury to the person or the assistant.

Where a hoist is provided as in a changing places bathroom, it should be an overhead full room cover ceiling track hoist as these hoists are easy to charge, maximize transfer space, and reduce the need for an extra assistant.

A mobile hoist should only be used where it is not possible to install an overhead tracking hoist. A mobile hoist is a moveable piece of equipment designed to transfer a person between two points using fabric slings. The lifting mechanism is usually battery operated; however, moving the hoist with the person – for example, across the room between a changing bench and toilet – requires manual effort.

Hoist slings are required to use with either a mobile or tracking hoist in a changing places bathroom. As slings are not provided for hygiene and safety reasons, the practice is for people to bring their own slings. There are two main ways of attaching slings to a hoist: clip or loop attachment. In general, loop attachment slings are most commonly used and provide the greatest compatibility with different hoist types. People are advised to check the compatibility of their personal use slings if possible when intending to use a Changing Places bathroom.

Clear and concise instructions on proper use of this equipment, including instructions to leave the hoist charging when the task is completed, should be provided. These instructions should be prominently displayed for all users. Through various means of information (signage, website, etc) potential users should be clearly advised to bring their own slings for health and safety reasons.



Manual Hoist with Loop Attachment Style Sling

① For additional information on use and types of hoist see Ceiling Hoist Users Club at <https://www.chuc.org.uk/>

6.4.12 Emergency Lighting

Wheelchair accessible and any multiple WC closet facilities without borrowed or overflow lighting, should have the facility for emergency illumination from at least one lighting source.

6.4.13 WC Doors - Universal Lock and Key

IWA strongly recommends that doors to accessible WCs should remain unlocked when the WC is not in use. For safety and security purposes, on-site security staff and the use of external closed-circuit TV can be a way of monitoring the use of the accessible WC.

If leaving the accessible WC unlocked is completely unavoidable and a decision has to be made to lock an accessible WC door when the WC is not in use, then the use of a universal lock and key is recommended. There is an Irish version of a universal lock and key which is supplied by Williams Locksmiths Ltd, located at Whitefriars, Aungier Street, Dublin 2. This Irish universal lock and key was originally introduced by the National Rehabilitation Board (NRB) in the 1970's and is still available and in use, though no longer widely used. In the UK and in Northern Ireland a Radar key is used where accessible WCs have to be unavoidably locked. Radar keys are not presently in use in the Republic except in one Dublin location ie the Changing Places bathroom in Dundrum shopping centre in Dublin.

Where a universal lock system is in place for accessible WCs, notification on how to obtain a key should be displayed at information points and customer services desks to facilitate visitors/customers who do not possess a universal key. Complementary universal keys should be given where there are regular users of the centre or facility wherever the accessible WC is located.



"It drives me crazy when places use accessible bathrooms as storerooms."

IWA member, Co Leitrim

Quick Summary of: 6. Access To and Use of Facilities within the Built Environment

Reception Area – Fixtures/Fittings

- Reception area should be easily identifiable from the main building entrance, with a direct and unobstructed approach.
- Provide 1800mm diameter of clear turning space on both sides of reception counter.
- Counter height should be 760mm, with 700mm high clear space underneath to accommodate a wheelchair user. A higher section of 1050mm is required if standing persons are required to write. Consider 850mm compromise height to suit both people standing and seated.
- Lighting level 250 lux.
- Install Loop System and signage to indicate its presence.
- Seating should allow suitable wheelchair spaces alongside fixed seating.
- Information should be available in alternative formats (large print, Braille on request, audiotape, sign interpreter on request, accessible website, etc).
- Light switches and commonly used sockets to be mounted between 750-1000mm.

Interior Design

- Create colour, tonal and textural contrast between surfaces (flooring, doorways, light switches, etc).
- Avoid shiny surfaces to minimize glare and reflection. Create good lighting levels and avoid creating shadows.
- Floor surfaces should be non-slip, Avoid deep-pile carpet flooring. No door saddles or thresholds.
- The choice of soft furnishings and the use of noise-absorbing panels can reduce echo and absorb reflected noise.
- Windowsills no higher than 850mm. No transoms between 850-1200mm. Window opening mechanism between 750-1000mm.

Public Facilities

- All public access terminal controls to be between 900-1200mm high, with an 1800 x 1800mm space in front.
- Accessible public telephone controls between 750-1000mm; provide induction coupler within handset and text display.
- Storage locker height between 750-1250mm, with 900 x 1400mm clear area in front.
- In a low usage communal kitchen: consider 850mm height as a compromise height for both seated and standing users in low-usage kitchen with 700mm high 'knee clearance' under preparation area, sink, hob etc, and accessible storage options. In a full-use communal kitchen consider duplicating provision of hob, sink, worktop areas ie 900-1050mm height for standing users and 760mm height for seated users. Oven to be located at worktop height.

Toilet Provision

- In each male and female block, provide at least one Ambulant WC Cubicle, size 1500 x 900mm.
- In each male and female block, provide at least one Enlarged WC Cubicle, size 1500 x 1200mm.
- In male blocks provide low urinal at 380mm height, with clear space in front and grab rails on the wall.
- Provide at least one Unisex Accessible WC, size 1800 x 2500mm with door opening out.
- In toilet blocks with more than six cubicles, provide one wheelchair accessible WC cubicle in each block, in addition to the single unisex accessible WC.
- In large public facilities provide at least one Changing Place bathroom with full room cover ceiling track hoist and an adult changing bench; room size 12m².
- There should be no boxed-in or open pipes behind the WC bowl in a wheelchair accessible cubicle or changing places bathroom.
- Toilet seat height should be between 460-480mm, with 900mm clear transfer space beside toilet bowl. Spatula-shaped flush handle on the transfer side.
- In a wheelchair accessible WC, recommended wash-hand basin height is 800mm. 'Finger Basin' not recommended. Provide small wash hand basin with a 450 x 300mm internal size. and lever-type mixer tap.
- Changing places bathroom, provide full sized wash-hand basin preferably electronically height adjustable.
- Flooring material should be non-slip and should have an anti-slip minimum PTV grading of 51-70 with a PTV grading of 70-100 offering the best protection.
- Install a mirror at least 400mm wide, extending between 600-1600mm height. Provide dual-height coat hooks.
- Emergency alarm system to be installed and connected to the security desk or information point.
- Provide emergency lighting where there is no borrowed or overflow lighting.



SECTION 7

Specific Building and Site Types

Irish Wheelchair Association Best Practice Access Guidelines

Section Contents

7 Specific Building and Site Types

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Specific Building and Site Types

United Nations Convention on the Rights of Persons with Disabilities (UNCRPD).

Articles 24, 25 and 30 of the UNCRPD concern the right to work, to participation in political and public life and to participation in cultural life, recreation leisure and sport.

Countries that ratify the UNCRPD commit to *“promote the employment of persons with disabilities in the private sector through appropriate policies and measures [...] to ensure that persons with disabilities can effectively and fully participate in political and public life on an equal basis with others and [...] to encourage and support the participation to the fullest extent possible of persons with disabilities in mainstream sporting activities at all levels.*

United Nations Convention on the Rights of Persons with Disabilities (2006).

How to Use this Section

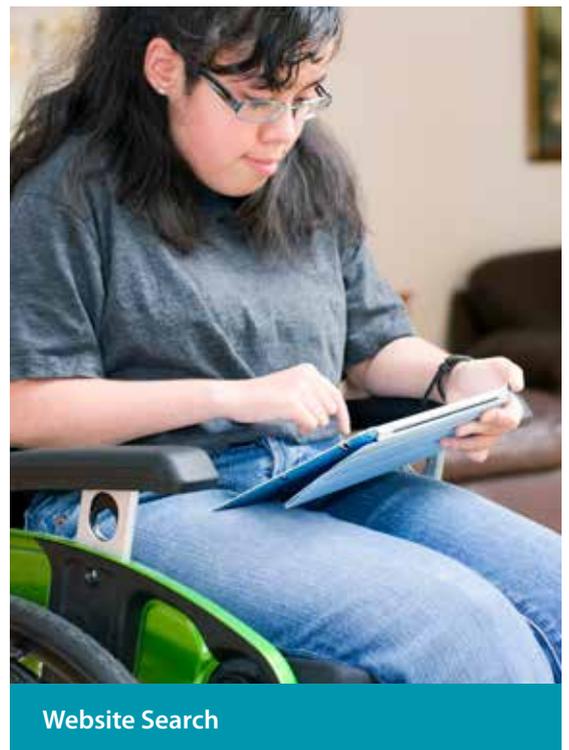
The guidance given in this section covers the critical access dimensions specific to the named building and site types that are not covered in the earlier sections of this document. In some instances, the information given is general – intended as guidance only – and further research and consultation is advised. There will be limited repetition of instruction for parking, pedestrian approach routes, signage, reception areas, internal circulation and design, acoustics, WCs, etc.

① For information on these and other areas, please refer to sections 4, 5, and 6 of this publication.

Guidance related to hotel and guest accommodation, restaurants, shop fit-outs, audience and spectator facilities, office accommodation, student accommodation, places of worship, hair and beauty salons, sport and leisure facilities, outdoor and heritage environments follow later in this section.

Online Information

Websites, social media and access apps offer invaluable means of communication regarding the accessibility of buildings, locations and services. Well planned and managed online information, with photos that showcase good accessibility, supports people who have a disability to anticipate and plan for the levels of accessibility they will encounter within any building or location. IWA recommends providing a clearly identifiable section on any website where all accessibility-related information is held



Website Search

and easily navigated, particularly including photos regarding the location, the facilities and amenities. All online information should be compatible with screen reader technology, and the font should be capable of being increased in size and colour contrasted as required.

7.1 Hotel/Guest Accommodation

7.1.1 Background

The design of all public areas within hotel and guest accommodation should follow the guidance in sections 4, 5 and 6 of this publication and later in this section where restaurants, sport and leisure facilities and shop fit-outs are referenced. The following guidance focuses on guest accommodation, ie bedrooms/en-suite bathrooms.

Accommodation in hotels and guest houses should be universally accessible to all potential guests. Ideally, all guest rooms should follow the principles of Universal Design, ie doors with a 900mm clear opening width, and 1800mm diameter turning spaces within bedrooms and bathrooms. In the absence of Universal Design principles, a number of rooms should be designed to accommodate the differing access requirements of guests who have limited mobility and of guests who are wheelchair users.

7.1.2 Provision of Accessible Guest Rooms

The bedroom/bathroom provision in hotel and other guest facilities should accommodate both independent use by an individual wheelchair user and assisted use where the individual requires personal assistance with the tasks of daily living. Accessible guest rooms should be located to suit individual guest preferences, both close to the lifts and reception areas to minimise the travel distance and the number of doors to be negotiated in order to reach the rooms, and also in locations away from the lifts which might be considered quieter locations. There should be a choice of shower or bath in the associated en suite bathrooms.



Hotel Bedroom 1

7.1.3 Independent-Use Guest Room

One guest bedroom/bathroom in every 15 guest bedrooms should be suitable in size, layout and facilities for independent use by a wheelchair user. The space within the bedroom should incorporate a 900mm access zone around the bed/s and two 1800mm diameter turning circles, one adjacent

to the bedside. The bed height should be 450-500mm from the floor to the top of the mattress; and the mattress should be firm to give traction so that a person can move themselves across the mattress. A clear space of 300mm height is required under the bed to allow space for wheelchair footrests and hoist feet.



Hotel Bedroom 2

Sufficient storage space should be provided for equipment, eg wheelchairs, shower chairs, walkers, etc.

① For guidance on the furnishing of accessible guest rooms, please see Section 7.1.6 on page 165.

7.1.3.1 Independent-Use Shower/Bathroom Provision

The en-suite shower/bathroom dimensions in independent use bedrooms should be a minimum of 2500 x 2500mm with a level deck shower, or 2700 x 3000mm with a bathtub. The level deck shower should be completely flush with the surrounding floor; any slope in the floor should not exceed 1:50 gradient. Consider providing two waste outlets or a larger than usual waste outlet within the shower area to prevent water pooling.



Independent-Use Bathroom

Where there is more than one accessible guest room provided, the location of the WC bowl and shower/bath should be on alternate sides within the bathrooms to allow for a choice of transfer side. The direction of transfer to both the WC and shower/bath should be consistent within each bathroom.

➔ See Figure 24 Hotel Room with En Suite Bathroom with Shower for Independent-Use on page 159 and Figure 25 Hotel Room with En Suite Bathroom with Bath for Independent-Use on page 160.

7.1.4 Assisted-Use Guest Room

One guestroom out of every 20 accessible rooms should be suitable for a guest receiving personal assistance and for the use of a lifting hoist, if required. The assisted-use guest bedroom and en suite bathroom should be fitted with a full room cover ceiling track hoist which runs between the guest bedroom and the en suite bathroom, giving access to the shower/bath and WC. The space within the bedroom should incorporate a 900mm access zone around the bed and two 1800mm turning circles; one 1800mm turning circle should be adjacent to the bed. If a ceiling track hoist is not provided, and a guest is bringing or the hotel is providing a manually-operated hoist, then one larger turning circle of 2300mm is required beside the bed and within the bathroom. This larger size turning circle will allow for the use of a manual hoist.

→ See Figure 26 Hotel Room with En Suite Bathroom with Shower for Assisted-Use on page 161 and Figure 27 Hotel Room with En Suite Bathroom with Bath for Assisted-Use on page 162.

The bed height should be 450-500mm from the floor to the top of the mattress; and the mattress should be firm to give traction so that a person can move themselves across the mattress. A clear space of 300mm is required beneath all beds to allow space for hoist feet and/or wheelchair footrests.

Sufficient storage space should be provided for equipment, eg wheelchairs, shower chairs, commode, walkers, etc.

This assisted-use guest room should interconnect with an adjoining room which could be available to a personal assistant, if required. A portable intercom system should be available between the two rooms.

7.1.4.1 Assisted-Use Shower/Bathroom Provision

The size of the en suite bathroom in an assisted-use bedroom should be 2700 x 3000mm. There should be a full room cover ceiling track hoist fitted, giving access from the bedroom into the bathroom and over the toilet bowl and bath/shower. This larger size shower/bathroom will also allow a 2300mm turning circle for an attendant-operated mobile hoist if that is the guest's preference, or if a tracking hoist is not provided.

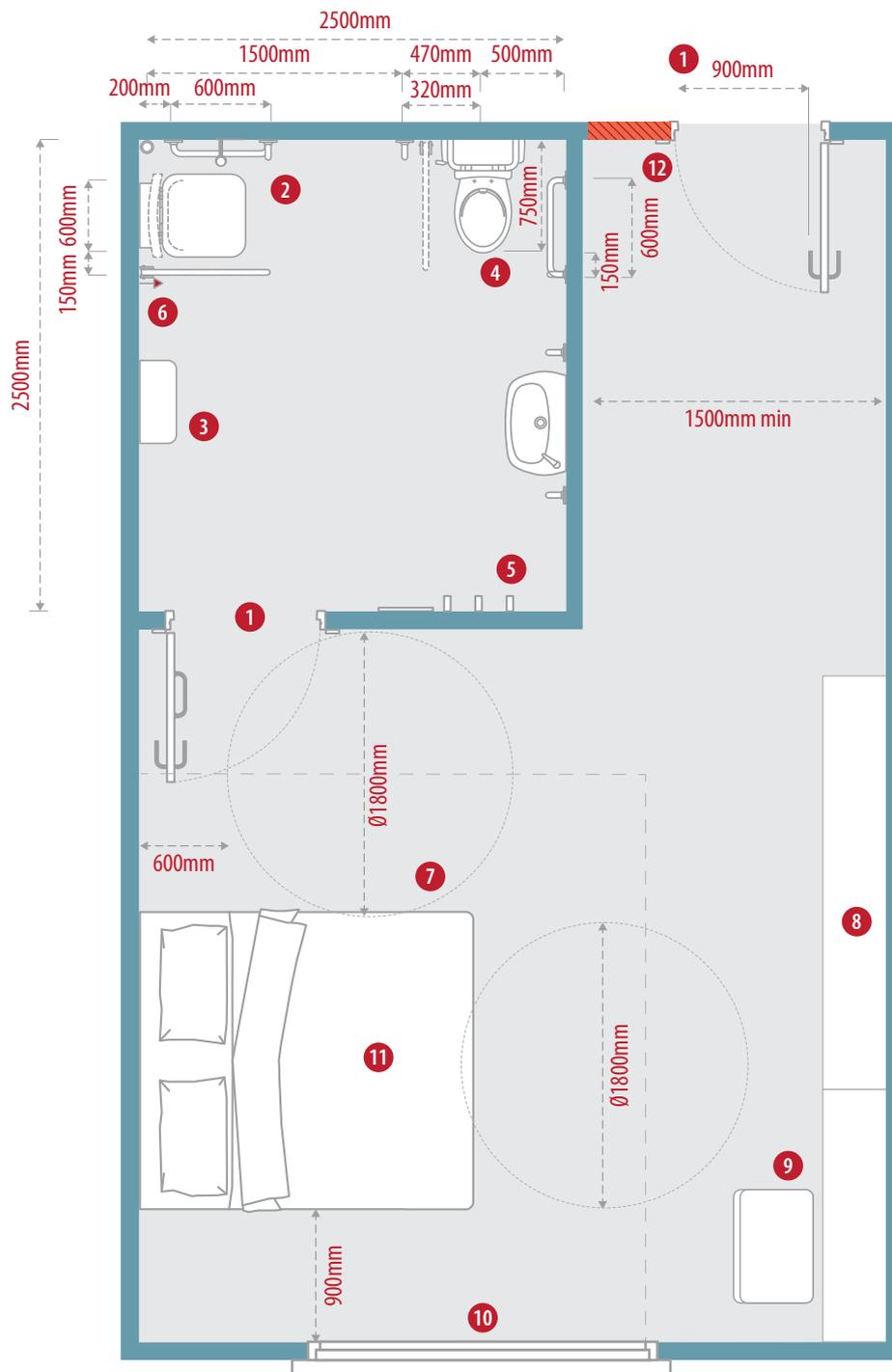
A 150mm clear gap is required under the bathtub to accommodate the hoist feet.

→ See Figure 26 Hotel Room with En Suite Bathroom with Shower for Assisted-Use on page 161 and Figure 27 Hotel Room with En Suite Bathroom with Bath for Assisted-Use on page 162.

“*Many hotels advertise themselves as accessible, but in reality, they are far from it! The general social areas may be accessible, however the bedrooms are often a disappointment*”

IWA member, Co Waterford

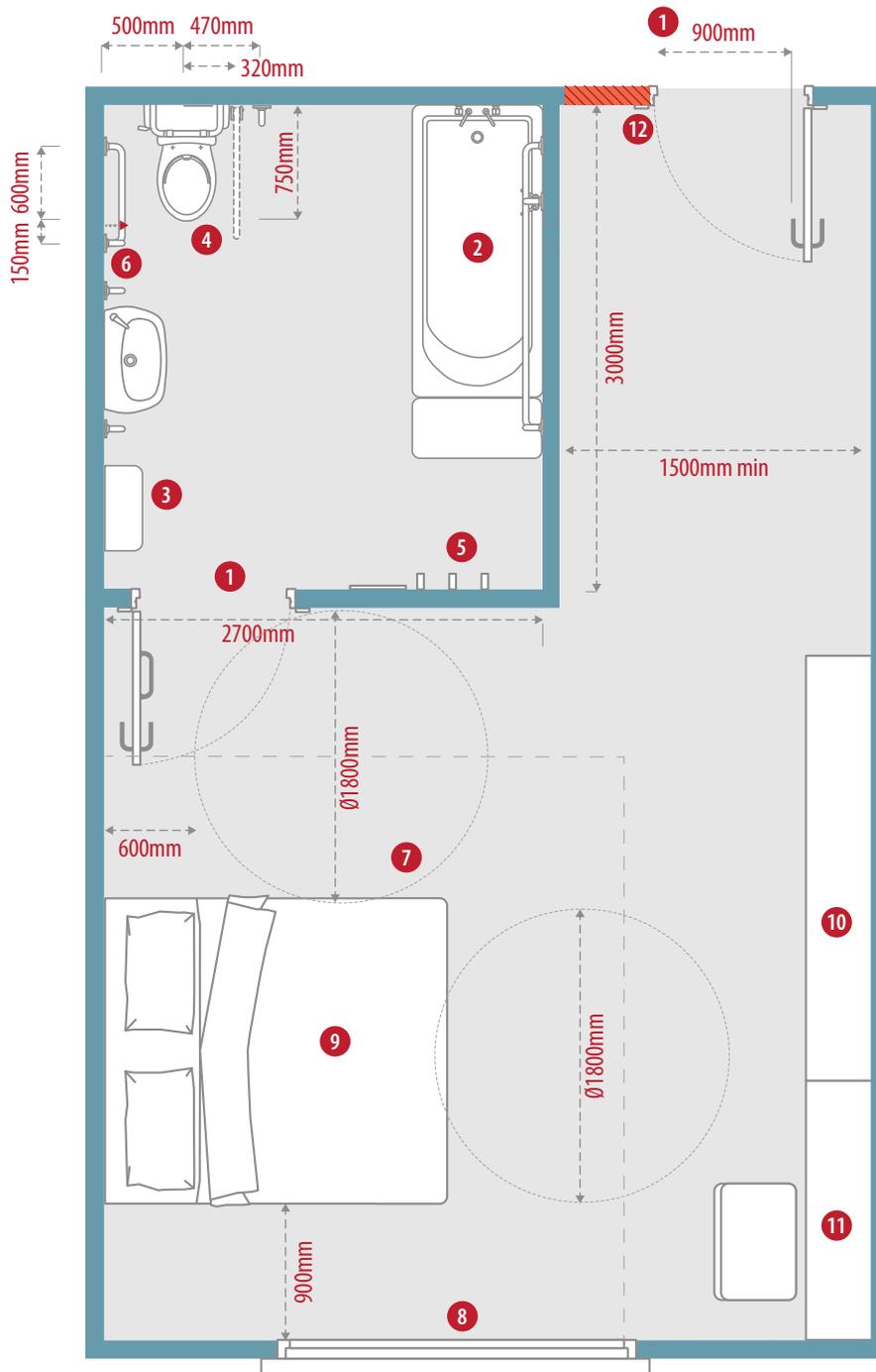
Figure 24 - Hotel Room with En Suite Bathroom with Shower for Independent Use



Note: See guidance document for electrical fitting & additional details.

- 1 Doors with 900mm clear opening, 1800mm diameter turning space in the bedroom area and in the bathroom
- 2 Shower
- 3 Colostomy shelf 850mm from ground.
- 4 The front of the toilet bowl 750mm from the back wall
- 5 Provide coat hooks both at 1200mm and 1700mm over floor level
- 6 Pull cord with two red rings placed at 100mm and 900mm over floor level. It should be activated in the event of emergency
- 7 Space in the bedroom to incorporate 900mm access zone around the bed and 2 x 1800mm turning circles.
- 8 Wardrobe
- 9 Work desk
- 10 Windows and blinds to be easily opened with one hand. Any window opening handle or switch located between 750mm - 1000mm. Window sill no higher than 850mm.
- 11 Bed height to top of mattress to be between 450mm and 500mm and a clearance of 300mm beneath all beds; At least one sleeping area shall provide a clear floor space of 900mm x 1400mm positioned for parallel approach to the side of the bed
- 12 Clear space of preferably 500mm (minimum 300mm) on the leading edge of the door.

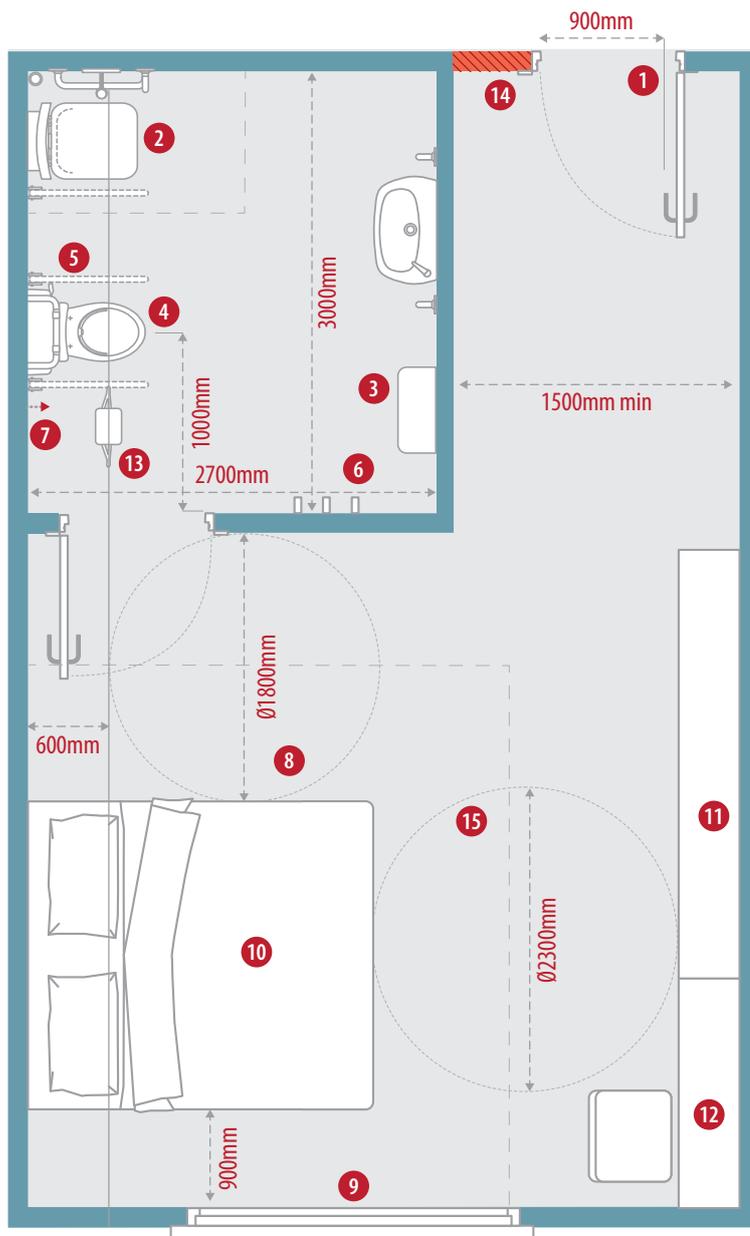
Figure 25 - Hotel Room with En Suite Bathroom with Bath for Independent Use



- 1 Doors with 900mm clear opening, 1800mm diameter turning space in the bedroom area and in the bathroom
- 2 Bath tub height to be 480mm
- 3 Colostomy shelf 850mm from ground.
- 4 The front of the toilet bowl 750mm from the back wall
- 5 Provide coat hooks both at 1200mm and 1700mm over floor level
- 6 Pull cord with two red rings placed at 100mm and 900mm over floor level. It should be activated in the event of emergency
- 7 Space in the bedroom to incorporate 900mm access zone around the bed and 2 x 1800mm turning circles
- 8 Windows and blinds to be easily opened with one hand. Any window opening handle or switch located between 750mm - 1000mm. Window sill no higher than 850mm.
- 9 Bed height to top of mattress to be between 450mm and 500mm and a clearance of 300mm beneath all beds; At least one sleeping area shall provide a clear floor space of 900mm x 1400mm positioned for parallel approach to the side of the bed
- 10 Wardrobe
- 11 Work desk
- 12 Clear space of preferably 500mm (minimum 300mm) on the leading edge of the door.

Note: See guidance document for electrical fitting & additional details.

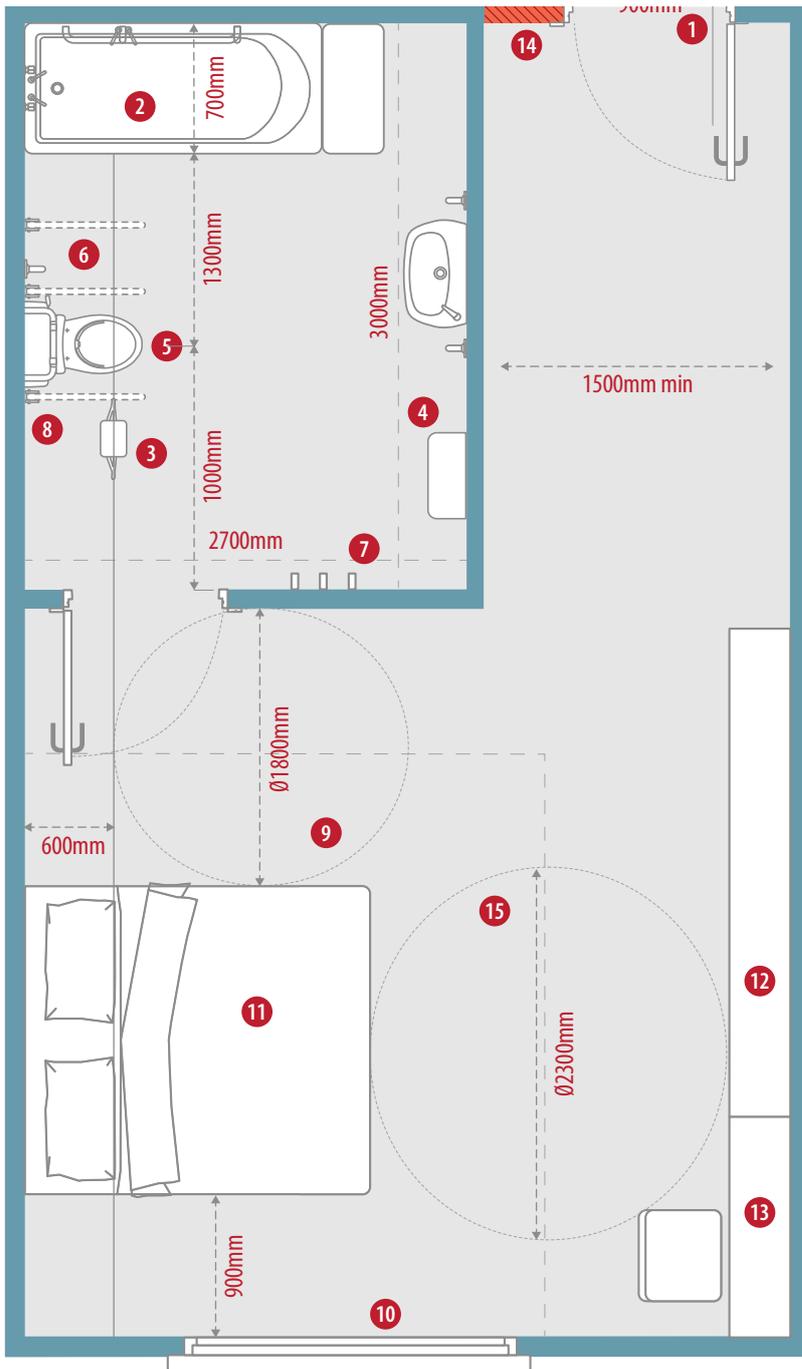
Figure 26 - Hotel Room with En Suite Bathroom with Shower for Assisted-Use



Note: See guidance document for electrical fitting & additional details.

- 1 Doors with 900mm clear opening, 1800mm diameter turning space in the bedroom area and in the bathroom
- 2 Shower
- 3 Colostomy shelf 850mm from ground.
- 4 The front of the toilet bowl 750mm from the back wall
- 5 On the rear wall, a folding horizontal grab rail and a vertical grab rail, 320mm and 470mm respectively from the centreline of the toilet bowl, both at 700mm from floor level should be provided
- 6 Provide coat hooks both at 1200mm and 1700mm over floor level
- 7 Pull cord with two red rings placed at 100mm and 900mm over floor level. It should be activated in the event of emergency
- 8 Space in the bedroom to incorporate 900mm access zone around the bed and 1800mm turning circle on one side of the bed
- 9 Windows and blinds to be easily opened with one hand. Any window opening handle or switch located between 750mm - 1000mm. Window sill no higher than 850mm.
- 10 Bed height to be between 450mm and 500mm to top of mattress and a clearance of 300mm beneath all beds; At least one sleeping area shall provide a clear floor space of 900mm x 1400mm positioned for parallel approach to the side of the bed.
- 11 Wardrobe
- 12 Work desk
- 13 Hoist
- 14 Clear space of preferably 500mm (minimum 300mm) on the leading edge of the door.
- 15 2300mm turning area for manual hoist if track hoist not provided. If track hoist provided, 1800mm turning area is sufficient.

Figure 27 - Hotel Room with En Suite Bathroom with Bath for Assisted-Use



Note: See guidance document for electrical fitting & additional details.

- 1 Doors with 900mm clear opening, 1800mm diameter turning space in the bedroom area and in the bathroom
- 2 Height of bath tub 480mm
- 3 Hoist
- 4 Colostomy shelf 850mm from ground.
- 5 The front of the toilet bowl 750mm from the back wall
- 6 On the rear wall, a folding horizontal grab rail and a vertical grab rail, 320mm and 470mm respectively from the centreline of the toilet bowl, both at 700mm from floor level should be provided
- 7 Provide coat hooks both at 1200mm and 1700mm over floor level
- 8 Pull cord with two red rings placed at 100mm and 900mm over floor level. It should be activated in the event of emergency
- 9 Space in the bedroom to incorporate 900mm access zone around the bed and 1800mm turning circle on one side of the bed
- 10 Windows and blinds to be easily opened with one hand. Any window opening handle or switch located between 750mm - 1000mm. Window sill no higher than 850mm
- 11 Bed height to be between 450mm and 500mm to top of mattress and a clearance of 300mm beneath all beds; At least one sleeping area shall provide a clear floor space of 900mm x 1400mm positioned for parallel approach to the side of the bed
- 12 Wardrobe
- 13 Work desk
- 14 Clear space of preferably 500mm (minimum 300mm) on the leading edge of the door.
- 15 2300mm turning area for manual hoist if track hoist not provided. If track hoist provided, 1800mm turning area is sufficient.

7.1.5 Shower Room and Bathroom – Common Provisions

In all new or substantially renovated hotels and guest houses, there should be provision for an equal number of en suite shower rooms and en suite bathrooms installed in the accessible guestrooms. Where there is more than one accessible guest room provided, the location of the WC bowl and shower/bath should be on alternate sides within the bathrooms to allow for a choice of transfer side. The direction of transfer to both the WC and shower/bath should be consistent within each bathroom.

7.1.5.1 Shower Fixtures and Fittings

The shower floor area should have minimum dimensions of 1500 x 1500mm. The slope of the floor in the shower recess should have a gradient of between 1:50 and 1:60. The outside area of the shower floor should have a gradient of between 1:70 and 1:80, draining into the shower recess. Transition into the shower recess should be level, without a step down, a raised step or even a slight shower tray kerb/lip at the entry to the recess. The waste outlet should be located in the corner. Consider providing a larger than usual waste outlet or two waste outlets to prevent water pooling, which can be an issue.

The shower head should be adjustable and detachable and within the height range of 1200- 2200mm above the floor level. A flexible hose, 1500mm long, is required for the shower head. Lever controls for temperature and flow should be placed at 900mm from the floor. The shower head and controls should be placed at 500mm from the corner and on the wall adjacent/at right angles to the shower seat.

A full-sized-wall mounted flip-up shower seat with drop-down arm rests and front legs should be located on the wall adjoining the wall with the shower controls. The width of this seat should be 500mm, finishing at a height of 480mm from the floor level. The centreline of the seat should be 500mm from the corner and the front edge of the seat should be 650mm from the back wall.

A drop-down grab bar should be placed at 320mm from the centreline of the seat, at a height of 700mm from the floor on the open side of the seat. On the side wall, where the shower controls are located, a 600mm-long horizontal grab rail should be located, starting at 200mm from the corner and at a height of 700mm. A 600mm-long vertical grab rail should be placed at 800mm from the corner, with its lower end fixed at 800mm height from floor level.

A recessed shelf should be located within the shower area, 700mm from floor level, to hold shampoos/soaps, etc.

7.1.5.2 Bath Fixtures and Fittings

The height of the bathtub should be 480mm. The bathtub should maintain a lip on the side adjacent to the wall to facilitate the use of a bath seat. A 400mm-wide ledge/bath transfer space at the end of the bath should also be provided across the full width of the bath. The taps used on the bath should be lever type and easy to operate for people with limited dexterity and strength. If a bath is provided in the assisted use bathroom, there should be a space allowance of 150mm to allow for a clear gap under the bathtub to accommodate the hoist feet.

There should be a 35mm diameter horizontal grab rail fitted at 100mm height from the top level of the bath. It should start at 200mm from the corner and should continue 250mm beyond the head end of

the bath. In addition to this, there should be a 600mm-long vertical grab rail placed at 600mm from the corner, with its lower end at 200mm from the top level of the bath.

7.1.5.3 Flooring

Flooring material in the bathrooms should be non-slip and should have an anti-slip minimum PTV grading of 51-70, with a PTV grading of 70-100 offering the best protection. Where a shower is provided, a slope in the flooring should facilitate effective drainage of water and should allow no accumulation. Consider providing a larger than usual waste outlet or two waste outlets to prevent water pooling.

7.1.5.4 WC Fixtures and Fittings

The toilet seat, fitted with seat stabilisers, should finish at between 460-480mm in height from floor level.

A clear space of 900mm is required on one side adjacent to the toilet bowl to accommodate the wheelchair space for transfers. The front of the toilet bowl should be 750mm from the back wall. The centreline of the toilet bowl should be 500mm from the side wall. There should be no open or boxed in pipes behind the WC bowl. Where the WC cistern is unavoidably boxed out, the 750mm dimension required from the back wall to the front of the WC bowl must then be taken from the front of the boxed area in order to facilitate the space for side transfers from a wheelchair to the WC bowl.

A spatula-shaped flush handle should be placed on the transfer side of the toilet bowl. A toilet paper dispenser should be within easy reach while sitting on the toilet seat.

7.1.5.5 WC Grab Rails

All grab rails should be 35mm in diameter and 600mm in length. The distance between the grab rail and wall should be between 50 -60mm. The grab rails should be located on solid or reinforced walls and should be installed to resist a force of at least 1.3 kN from any direction.

On the rear wall, a drop-down horizontal grab rail and a vertical grab rail should be provided on the transfer side of the WC. This should be positioned at 320mm and 470mm respectively from the centreline of the toilet bowl, both at 700mm from floor level.

Two grab rails should also be provided on the side wall. The first one should be horizontal, 700mm above the floor level, with its near edge protruding 150mm from the front edge of the WC bowl. The other should be vertical, with its lower end at 800mm above floor level and placed at 150mm from the front edge of the WC bowl.

7.1.5.6 Wash-Hand Basins

The wash-hand basin should be located away from the WC bowl on the wall adjacent to the door opening. Within this domestic-style guest room, the wash-hand basin should be a standard full-sized basin with rounded edges and with 700mm knee clearance space beneath. The taps should be lever-type and easily operated with minimum dexterity and strength.

The wash basin height should be 800mm from floor to wash basin rim. A pedestal-style or boxed/built-in wash basin is not acceptable. The wash-hand basin in the assisted use guest rooms should preferably be electronically height-adjustable.

Vertical grab rails, at 100mm from the wash basin edges, should be situated on both sides of the wash basin, with their lower ends situated at a height of 800mm.

The wall mirror should start at 600mm and finish at 1800mm above floor level.

7.1.5.7 Emergency Alarms

Emergency cords should be provided in accessible bathrooms and should be easily distinguishable, with a bold triangle/bell/ball attached to a red pull cord. It is recommended that two red bangles be sited on the cord, one set at the bottom of the cord and the other at 800-1000mm above floor level. The emergency cord should be situated so that it can be reached from the WC bowl and from the floor. The cord should extend 100mm from finished floor level. Another option is to run the alarm cord along the wall or to provide a dado panic strip alarm, both at 200mm from ground level. Careful consideration is required to determine which type of system is best suited to the individual location and use of the bathroom.

A clearly marked reset button should be reachable from the WC bowl and from a seated position in a wheelchair.

Cords must have a connection to a security desk or information point. Alarms should have a visual and auditory alert system that shows the alarm has been activated. Considerations should be given to the location of the activated alarm (outside the guest room) to ensure that it can be seen and heard by the people who will provide the assistance.

Both visual and audible fire alarms (with vibrating alarms also available to guests) should be installed in accessible guest rooms, with clearly written procedures should the alarm be activated.

7.1.6 Guest Rooms – Common Provision

7.1.6.1 Signage

Room numbers, signs and names should be raised 15mm and consistently placed at a height of 1400mm, 25mm from the door frame on the wall nearest the door handle. Signs should contrast in colour with the background and have tactile information.

7.1.6.2 Door Entry

The door entry to the room should provide a clear door width of 900mm, with 500mm (minimum 300mm) of clear space on the leading edge of the door and 400mm of clear space at the leading edge on the push side of the door; the clear space on either side should be maintained with no obstruction for 1800mm. The clear space at the leading edge (latch) side of any door allows a person using a wheelchair to pull into that space to reach and operate the door handle.

Powered opening of entrance doors is desirable. Door locking should be operated by key or card device. A key card holder, which activates the door lock and electricity, should be installed between 800-1050 mm above floor level. If there is a doorbell or intercom system that is connected to a security release door opener, there should be a visual and audible signal at the entrance to indicate 'go ahead'. If the door lock is operated by using a key, then the door handle should not need to be operated at the same time as locking/unlocking a door.

Where wide angle viewers are provided in the entrance door, these should be situated at 1050mm and 1500mm above the floor level to enable viewing by persons in a seated or standing position.

7.1.6.3 Fixtures and Fittings

All door handles should be easily gripped and visually contrasting with the door surface. The windows in the guest rooms should be easily opened with one hand and with the lower sills sited no higher than 850mm from ground level.

The telephone and television should be situated at a height of between 400-1000mm. To facilitate the use of a minicom, telephones should be served by an electrical outlet located within 1200mm of the telephone. Extra electrical points should be provided close to the bed on both sides to facilitate charging battery-powered wheelchairs.

Permanently wired electrical equipment should be situated at a height of between 400-1200mm. Switches and power points in frequent use should contrast with the background and be located at a height of between 750-1000mm, and 500mm from any corner.

Two-way switches are recommended so that one does not have to cross the room in the dark to turn the light on or off. Night lights should be provided in circulation areas. Rooms should have visual indication of telephone ringing, door knocking, etc.

Bedroom heating, ventilation, light, curtains, TV, and radio controls are all to be situated at a height of 750-1000mm, and 500mm from any corner. Controls should contrast with the background in tone and colour.

7.1.6.4 Furnishings and Floor Coverings

Furnishings within accessible guest rooms should be limited to essential requirements to maximise the availability of clear floor space, and furnishings should not encroach into circulation areas. Any console-type table or full-sized desk provided should have 700mm of clear space beneath with a surface height between 760- 800mm from floor level. The tea/coffee-making facility should be located within the same height range and with clear space beneath the surface where it is located; it should be easily reached and used.

→ See Figure 2 Space Requirements on page 44, Figure 3 Common Reach Zones on page 45 and Figure 4 Forward and Side Cross Reach Distances on page 46.

A fridge, for the purpose of storing medication, should be provided within each accessible guest room, with its base at a raised height of 200mm from floor level.

Clothing and storage closets provided should have an 800 x 1300mm clear floor area to the front. The height of a clothes rail in a closet should not be more than 1200mm from floor level. A drop-down powered clothes rail is recommended. Sliding doors on wardrobes and storage presses are recommended. Alternatively, swing doors that open through 180° can also be used on wardrobes and storage presses.

The bed/mattress height should be between 450mm and 500mm to the top of the mattress, with a firm mattress surface. A clear space of 300mm is required beneath all beds to accommodate the footplates of a wheelchair and/or the feet of a hoist used for lifting purposes. Carpets, where used, should be of a shallow and dense pile to facilitate a wheelchair user moving throughout the room.

7.1.6.5 Support Services

Support services should be available to guests on request. Suggested services include:

- Text phone.
- Induction loop coupler system for all phones.
- Video caption reader.
- Visual auditory and vibrating alert system for emergency notification.
- Self-propelling shower chair, as preferred by some wheelchair users.
- Mobile hoist, if a tracking hoist is not installed in the assisted-use bedroom.
- A charging point for re-charging motorised wheelchairs.
- A choice of bed size and heights.
- Information on facilities in rooms in guesthouses and hotels in visual, written and auditory format.



“I miss out on some family occasions because I can’t access the venue, or toilets are not accessible”

IWA member, Co Limerick

7.2 Shops

7.2.1 Background

The design of retail outlets should provide for ease of use by all people as customers or as staff. The counter design, the aisle widths, the positioning and maintaining of merchandise, the use and type of display cabinets, and the customer facilities provided should accommodate all users, including those with limited mobility.

7.2.2 Counter Provision

Counter provisions should accommodate both people who are standing and also wheelchair users. A counter height of 850mm is recommended as a compromise height to suit both people standing and people who are using a wheelchair. If a person is required to write, then a section of the counter at a height of 1050mm from floor level can be considered to accommodate people who are standing. However, if the requirement for writing is minimal, the counter height at 850mm should suffice. The counter should be 900mm deep by 900mm long, with a clearance of 700mm underneath. The counter should have a clear approach route of at least 1200mm and an 1800mm diameter clear turning circle on both sides. The approach to the counter and the counter itself should be kept clear of unnecessary clutter to facilitate personal interactions and transactions.

Consider including an induction Loop System at the sales counter, to facilitate customers who have hearing loss.

In supermarkets, the minimum width between checkouts should be 1200mm, with space to turn at either end of the checkout. In supermarkets and shopping centres there should be provision for wheelchair accessible shopping trolleys, trolleys designed to seat an older child, manual wheelchairs, and powered scooters for occasional use by shoppers.



Accessible Shopping Trolley

① See also Section 6.1 Facilities, Fixtures and Fittings on page 115 and 6.2 Reception Areas on page 120.

7.2.3 Access to Products

A vertical stacking approach to displaying goods, whereby a proportion of every item for sale is placed on a number of shelves at different heights, is desirable. Shelf heights between 400-1200mm can be reached by a person who is using a wheelchair.

→ See Figure 3 Common Reach Zones on page 45 and Figure 4 Forward and Side Cross Reach Distances on page 46.

Supermarket aisles should be at least 1800mm in width. In supermarkets, one checkout with a minimum aisle width of 1200mm should be placed close to the exit.

Self-service weighing facilities should be situated at a height of 750mm and be 750mm wide x 400mm deep, with underside knee clearance of 700mm to facilitate access. Keypads should have both tactile and visual symbols.

Freezer and fridge units with front door openings, preferably sliding doors, provide better access for people with limited mobility than chest-type units.

7.2.4 Changing Rooms

In clothes shops, there should be a minimum of one designated changing room with minimum dimensions of 1800mm in width x 2500mm in depth, with the door opening out, or 1800mm in width x 2800mm in depth when the door opens inwards. The changing room should have a seat with armrests that can be raised at 480mm in height from floor level, with its centreline 500mm from the corner. The seat should project 650mm from the wall.

On the rear wall, a drop-down horizontal grab rail and a vertical grab rail should be provided on the transfer side of the changing seat at 320mm and 470mm respectively from the centreline of the changing seat, both at a height of 700mm from floor level.



Clothes Shopping



Clothes Shopping

Two grab rails should also be provided on the side wall. The first should be horizontal, 700mm above the floor level, starting 200mm from the rear wall. The second should be vertical, with its lower end at 800mm above the floor level and placed at 150mm from the front edge of the seat. All grab rails should be 35mm in diameter, 600mm long, slip-resistant and contrast in colour with the background.

Clothes hooks should be situated at heights of 1400mm and 1050mm from floor level.

A mirror should be placed on the wall opposite to the changing seat with its top and bottom end at 1800mm and 450mm respectively. A call bell to request staff assistance should be located no higher than 1200mm from floor level.

If only one changing room is provided within a shop, it should be an accessible changing room as outlined above.

7.3 Restaurants

7.3.1 Background

Restaurant types include cafes, snack bars, canteens, etc. The access provided should accommodate all people, and particular attention should be given to the type and layout of seating used, as well as to access routes to the facilities provided.

7.3.2 Seating

Choice of seating areas should be provided in order to give full accessibility in all refreshment and dining areas frequented by the general public. Where seating is provided on different levels, ideally it should be accessible to all customers. Access to different levels can be achieved by means of a ramp or platform lift. Where access to all levels cannot be achieved, there must always be a level access section of seating with full access to all facilities, ie counter area and WCs at entry level.



Seating, some with and some without armrests, should be at a height of between 450-520mm, and minimum backrest height of 455mm should be provided on all seating. Fixed seating can be difficult to access and is not recommended. Where fixed seating is used, an area with movable seating should always be provided. Where used, fixed seating should not impede access to service locations within a restaurant. A range of table heights between 760-800mm and with a knee space clearance of 700mm beneath is required to enable access for wheelchair users.

A minimum clear access route of 900mm should be maintained throughout all seating areas, giving clear access to individual tables and to facilities, such as WCs and the pay point. Where there is a lobby area within the route to the accessible WC, there must be an area within the lobby, 900 x 1700mm, that is clear of door swing.

Where counter provisions are made for eating purposes, a section of counter 900mm in depth, at a height of 760mm from floor level, with a knee height clearance of 700mm, is required.



Coffee Break

Background noise can cause difficulty for people who have a hearing impairment or who have a heightened sensitivity to noise. In locations where background music is played, it is advantageous if a quiet area can be provided.

7.3.3 Self-Service Counters and Facilities

Wheelchair access should be provided the full length of all self-service counters at a height of 850mm, with 700mm knee height clearance from the floor along the length of the counter. This height of 850mm is a compromise height suited to both a seated and a standing person. Clear space along the full length of the countertop and at pay points should be maintained to allow the customers to slide their trays the full length of the counter. Queuing lines at self-service counters should be at least 1200mm wide.

Thoughtful consideration is required in providing access to goods stored within coolers/fridges, to any cutlery, or condiment locations, to water/tea/coffee self-service locations and to any microwave ovens or hot water dispensers, etc. Within coolers and fridges, an array of different products should be located to the front and on shelving within the comfortable reach zones. The same principle applies to the location and storage of condiments and cutlery. To ensure easy and safe use of drink dispensers and microwave ovens etc, they should be located on surfaces 850mm high from floor level, with 700mm clear knee space beneath; and associated mugs/jugs etc, should also be positioned within easy reach zones.

→ See Figure 3 Common Reach Zones on page 45 and Figure 4 Forward and Side Cross Reach Distances on page 46.

7.3.4 Outdoor Smoking Area

Where provided, outdoor smoking areas should have level access, clear door width of 900mm and a clear manoeuvring space of 1800 x 1800mm.

7.4 Auditorium and Stadium Facilities

7.4.1 Background

Provision should be made for all people to avail of performance, audience and spectator facilities as performers and/or as audience members. As audience members, everyone should have a choice of seating location. Consideration should be given at the design stage to the different needs of people with disabilities. A choice of wheelchair accessible and ambulant accessible seating should be provided on all levels and at all vantage points where standard seating is provided. This should include access to and within private boxes, where these are provided. Wheelchair accessible seating consists of spaces specifically designed throughout a venue to



Accessible Seating in the Cinema or Theatre

accommodate people who are wheelchair users and include features such as an accessible approach, location on level ground, clear floor space, and larger dimensions. Ambulant accessible seating is seating that is located within general seating and situated at the ends of rows and close to exits with minimal steps to negotiate. This seating is intended for people with reduced mobility but who may not be regular wheelchair users.

In some locations where the seating is not raked, removable standard seating can allow additional wheelchair accessible spaces to be made available as required.

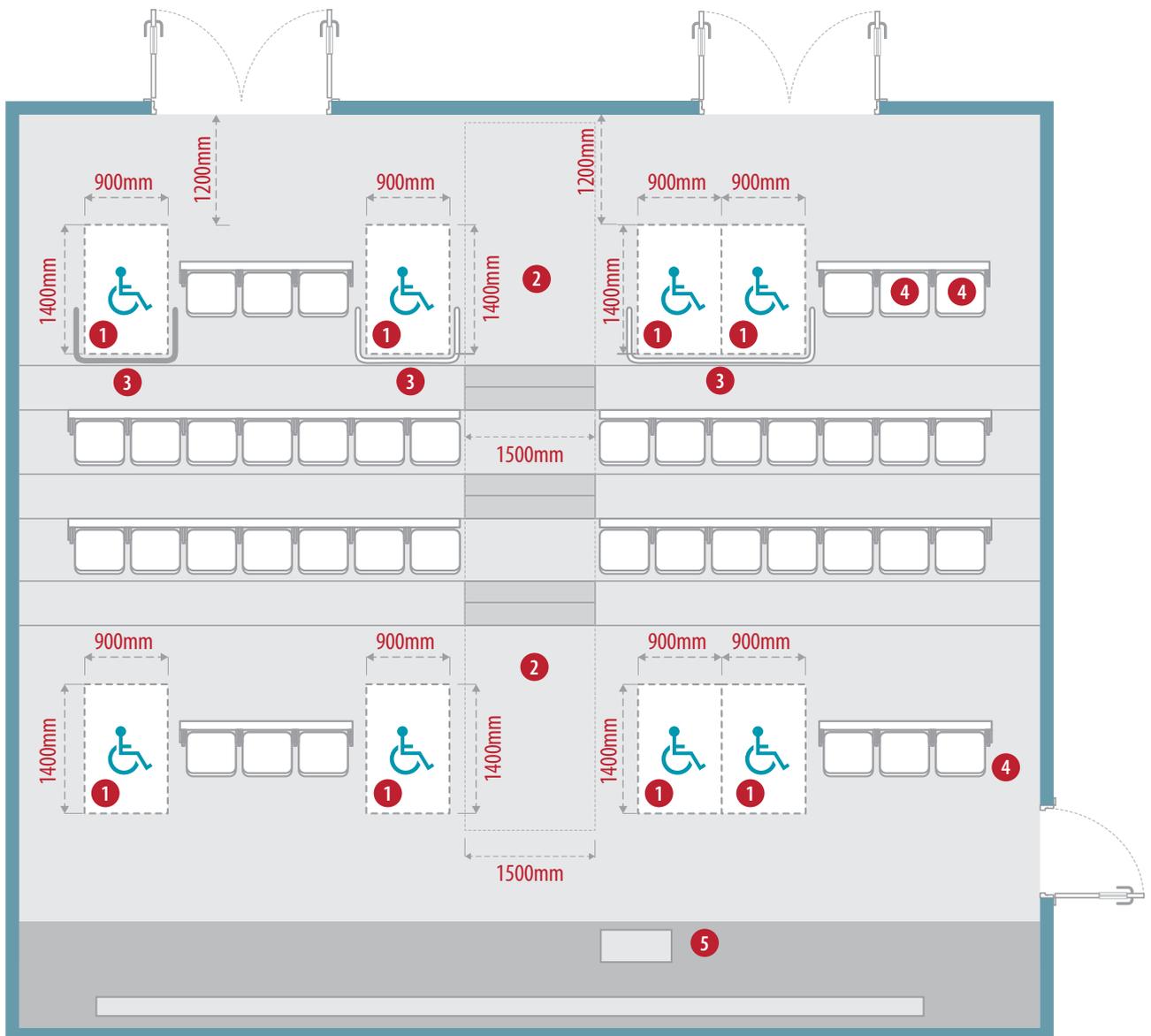
Front-row seating in cinemas, theatres, etc is not a suitable location for wheelchair users, as front row positioning is problematic and generally uncomfortable for all, including wheelchair users. However front-row seating may be preferred where people require close access for lip reading purposes. There should be good illumination available to support lip reading and sign language interpreting.



“Businesses forget people with disabilities like to go to matches, shows and concerts”

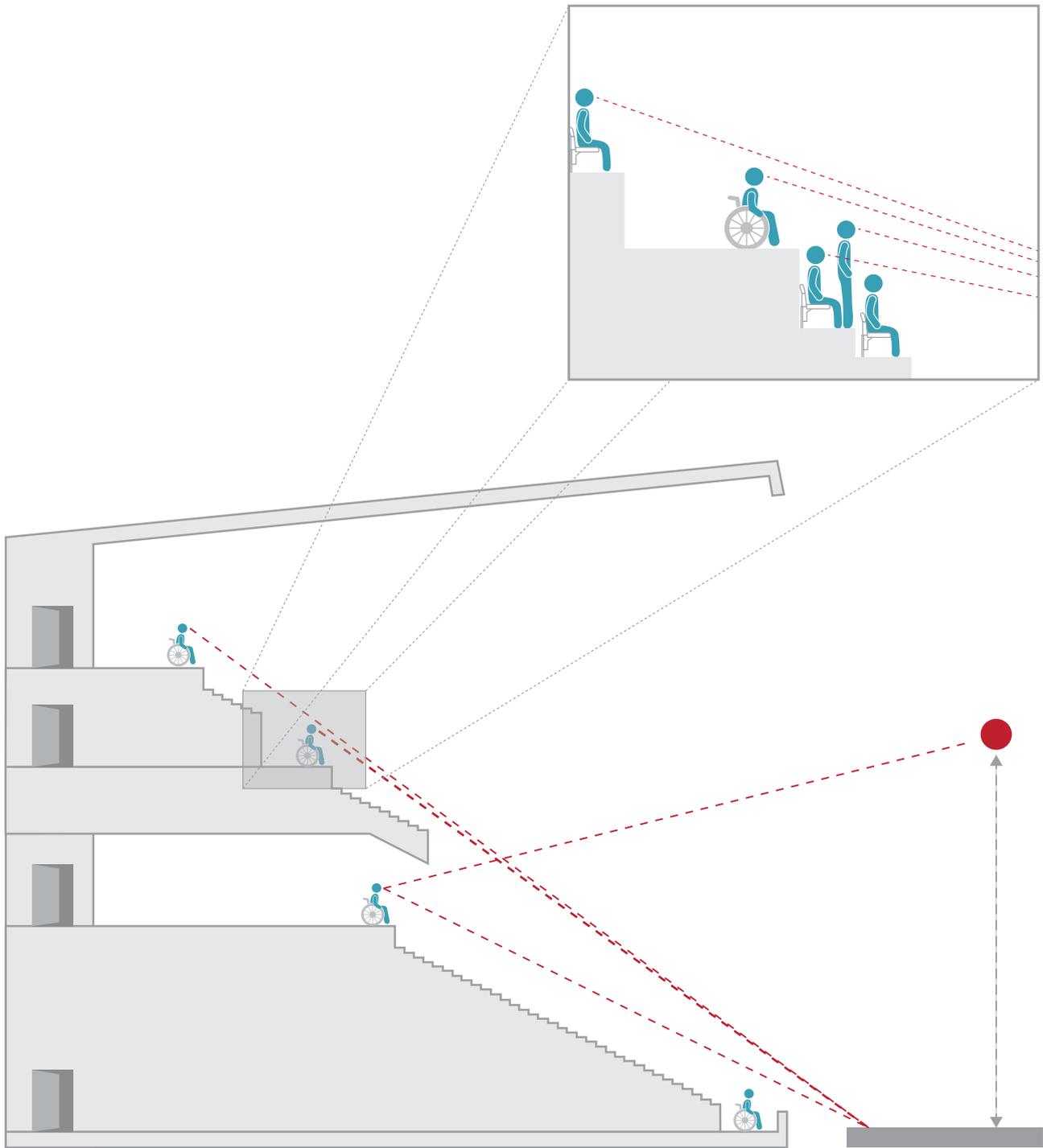
IWA member, Cavan

Figure 28 - Wheelchair Spaces in Spectator/Audience Facility



- 1 Dedicated wheelchair spaces
- 2 Unobstructed access from aisles & access routes min. 1500mm
- 3 Guardrails
- 4 Seating with additional space for people using walking aids, assistance dogs etc.
- 5 Lectern/Screen/Stage

Figure 29 - Sightlines in Stadium Facility



7.4.2 Number of Spaces Required - Wheelchair Accessible and Ambulant Accessible

The number of wheelchair accessible spaces provided should be¹²:

- At least 10, or one for every 50 spaces, (whichever is greater), where the seating capacity is not more than 10,000.
- At least 100, or five for every 1000 spaces, (whichever is greater), where the seating capacity is more than 10,000.
- At least 150, or three for every 1000 spaces, (whichever is greater), where the seating capacity is more than 20,000.
- At least 210, or two for every 1000 spaces, (whichever is greater), where the seating capacity is more than 40,000.

The number of ambulant accessible seating spaces should be provided on the same basis as for wheelchair accessible spaces.

Where a building contains several auditoria, eg a multi-screen cinema, the minimum requirement applies to each auditorium.

7.4.3 Dimensions and Design of Seating Spaces - Wheelchair Accessible and Ambulant Accessible

Wheelchair accessible spaces should always be provided on a level surface. A wheelchair space must have a minimum dimension of 900mm in width x 1400mm in depth, with clear unobstructed access from the aisle or access route that is a minimum of 1200mm in width. Wheelchair spaces should have a toe-board, 160mm above floor level where there is no other barrier. The use of fixed but removable seating in some locations, where the seating



Lower Level Accessible Seating in the Cinema or Theatre

is not raked, allows for additional wheelchair accessible spaces to be created as required. Designated wheelchair spaces should be paired to allow a wheelchair user to be accompanied by another wheelchair user. Spaces should also be located next to standard seating to allow a companion who is

12 The scale of recommended wheelchair accessible spaces and ambulant accessible spaces is informed by the *Guide to Safety at Sports Grounds The Green Guide* <https://www.sgsa.org.uk/greenguide/>

not a wheelchair user to sit beside a wheelchair user. The use of stepped or raked floors can impede full access by wheelchair users. Where stepped or raked floors are unavoidable, wheelchair spaces should have handrails and a guardrail located at a change of level if no other barrier is provided. The height of any guardrail should be 700mm from floor level. To ensure uninterrupted viewing, the guardrail should be made of clear toughened glass. Where retractable seating is provided in a theatre, the seating should incorporate a 'built in' recess to create an accessible space or spaces in the front row.

→ See Figure 28 Wheelchair Spaces in Spectator/Audience Facility on page 173.

Ambulant accessible seating with removable armrests and increased leg room should be provided at the edge of aisles to accommodate people who have a mobility impairment who are not wheelchair users and, in some locations where the seating is not raked, to allow wheelchair users the choice to transfer from their wheelchair to the standard seat provided. Ambulant accessible seating should be located at the ends of rows and within the general seating areas where there is level access or fewer steps to negotiate and close to entry points. Seating should have arm rests and additional leg room for comfort and where a guide dog could locate. Seats should fold up to maximise available passing space, providing minimum 400mm clearway. Seating should contrast visually with the surroundings. Steps and changes in level should be highlighted by the use of colour contrast and illumination at floor level.

Space beside some seats should be large enough to accommodate an assistance dog seated away from the main access route.

Safe and secure wheelchair storage should be made available where a person chooses to transfer from their wheelchair to a standard seat.



Wheelchair Accessible Area in the Aviva Stadium

7.4.3.1 Entry Point to Accessible Seating

Where there are internal steps within the auditorium/cinema/hall, the entry point to the accessible seating should be located away from the stairs/raked floor. This will minimise the risk of the front wheels of a wheelchair accidentally tipping over the edge of the steps while the person is manoeuvring the wheelchair into the designated space. Intermittent handrails at a height of 800mm from ground level should be provided on stepped approaches within raked seating.

7.4.4 Sight Lines

Special consideration should be given to sight lines for wheelchair users. People standing during an event should not obstruct the clear view of a wheelchair user, nor should pillars or columns obstruct clear sight lines. Where pillars or columns are already in place, they should be painted in a different colour from the walls so that they are visible to those with impaired sight. Staggered seating offers more opportunity for positions with better sight lines.

Wheelchair seating areas should be designed so that wheelchair users have a clear line of sight when situated behind standing accommodation or where people in front may stand up. During a concert or a sports event, people may remain seated for the majority of the event, but stand up during exciting times, eg when a goal is scored, and thereby block the sight lines of the wheelchair users.

→ See Figure 29 Sightlines in Stadium Facility on page 174.

7.4.5 Acoustic and Audio Provisions

For people with hearing and sight loss, the following enhancement systems should be considered, as appropriate:

- Loop or infra-red hearing systems which transmit sound to hearing aids and cochlear implants to enhance hearing for people who use these devices.
- Captioned performance and speech-to-text subtitles and on-screen display to give people who are deaf or hard of hearing access to a live performance or presentation. The speaker's words appear on display units placed within a set or next to a stage at the same time as they are spoken or sung.
- Audio Described Performances which provide a verbal commentary that tells a person who is visually impaired what is happening on a stage during the parts of the performance where there is no dialogue. Visually impaired audience members are equipped with a headset or earpiece to hear the information.
- Irish Sign Language (ISL) interpretation for individual or group settings, which can be made available on request.

The availability of these facilities should be clearly signposted, with procedures in place for distribution and reclamation of audio description and portable loop packs.

7.4.6 Stage Access

Access to a raised stage should be considered early in the design process as this may require an innovative design or installation of a platform lift.

The stage should be accessible from both the auditorium and backstage, to accommodate both performers and audience members. The provision of a ramp with a gentle gradient, preferably 1:20, is always the preferred option. Where the available space does not allow the option of a ramp, a lifting platform or alternatively a FlexStep or Sesame Lift is another option, which allows steps to be electronically folded back to change into a lifting platform. Any lifting platform should be screened so that it can be used discreetly.

i For information on platform lifts, see Section 5.5.5 on page 106.

All backstage facilities, such as circulation areas, dressing rooms and WCs, should be fully accessible to all people.

7.4.7 Speaker Facilities

Speaker facilities should accommodate people standing and seated. Lecterns should have a height-adjustable inclined reading surface with a height range between 760-1100mm at the speaker side and 700mm knee clearance beneath. A table for laptops and overhead projectors should be no higher than 760-800mm from the floor, with 700mm height clearance underneath the table. The height of the surface of a laptop projector or keyboard should preferably be no higher than 850mm from floor level.

7.4.8 Additional Reading

For further information on performance, audience and spectator facilities, refer to:

- *Accessible Sports Facilities Design Guidance Note* (2010), Sport England.
- *Accessible Sports Facilities Design Guidelines, Guide 1* (2016), Disability Sport Northern Ireland.
- *Accessible Sports Facilities Management Guidelines, Guide 2* (2016), Disability Sport, Northern Ireland.
- *Accessible Sport Stadia Design Guidelines, Guide 3* (2016), Disability Sport Northern Ireland.
- *Accessible Sport Stadia Management Guidelines, Guide 4* (2016), Disability Sport Northern Ireland.
- *Accessible Stadia*, Sports Ground Safety Authority and the Football Stadia Improvement Fund & Football Licensing Authority.
- *Guide to Safety at Sports Grounds "Green Guide"* (2018), Sports Ground Safety Authority formerly the Football Licensing Authority.

7.5 Sports and Leisure Facilities

7.5.1 Background

Article 30 of the UN Convention on the Rights of Person with Disabilities focuses on the right to participation in cultural life, recreation, leisure and sport on an equal basis with others. The Convention requires providers to take all appropriate measures to ensure that persons with disabilities can achieve equal participation through promoting and supporting access to all types of cultural and recreational activities and facilities.

Everyone can benefit from physical activity and recreation, either as participants or as spectators. In order to provide equal opportunity for people with disabilities to take part in sporting and recreational activities, sports and leisure facilities must have policies and practices in place that create and develop opportunities for everyone to participate at their level of choice.

The design of sports and leisure facilities should give particular attention to the widths of doorways in order to accommodate sports wheelchairs in locations where they will be used, ie in basketball and tennis courts and associated changing facilities. Some sports wheelchairs require a clear door width of 1200mm. Consultation with local sports groups is advised.

7.5.2 Shower Provision

People with disability have different access needs with regard to showering facilities. To ensure shower access for all potential users of a leisure facility, the provision of the following types of shower facilities is recommended:

Independent-Use WC with Shower Room. A minimum of one unisex independent-use wheelchair accessible WC cum shower room should be provided. The WC/shower room dimensions for independent use should be a minimum of 2500 x 2500mm, with a level deck shower.

① For further information on shower and bathroom - common provisions see also 7.1.5 on page 163.

➔ See Figure 30 Independent-Use Wheelchair Accessible WC with Shower on page 182.

Safe and secure wheelchair storage that can accommodate several wheelchairs should be available nearby as a person will often transfer into a poolside chair within the shower or changing room before heading towards the pool.

Assisted-Use WC with Shower Room. A minimum of one unisex assisted-use wheelchair accessible WC cum shower room, also referenced as a Changing Places bathroom, should be provided, including a height-adjustable changing bench facility and a full room cover ceiling track hoist. A ceiling height of minimum 2400mm is required for the use of an overhead ceiling track hoist. The size of an assisted-use WC cum shower room should be 4000mm in width x 3000mm in depth (12m²). This size room will

allow for the use of a mobile or tracking hoist. The changing bench facility should be 1000mm in width and 1950mm in length, with a height-adjustable range between 450-900mm. The changing bench should be wall-mounted or freestanding with free space underneath. There should be a vertical grab rail placed close to the changing bench, with its lower end at 800mm in height from floor level, placed at 150mm from the front edge of the changing bench on the available side wall.

The wash-hand basin in an assisted-use WC with shower room should preferably be electronically height-adjustable.

① See also 6.4.2.2. Changing Places Bathroom on page 135 and 6.4.11 Hoists and Slings on page 148 for additional information on the full room cover tracking hoist and height-adjustable changing bench.

→ See Figure 31 Assisted-Use Wheelchair Accessible WC with Shower, Hoist and Changing Bench on page 183.

Safe and secure wheelchair storage that can accommodate several wheelchairs should be available nearby as a person will transfer into a poolside chair within the shower or changing room before heading towards the pool.

Independent-Use Shower Cubicle. Where independent-use open shower cubicles are provided, one in four cubicles within the shower cubicle run should be designed to accommodate a wheelchair user or a person with limited mobility. The shower cubicle size should be at least 1000mm deep x 1500mm wide, with a 1200 x 1500mm clear area for manoeuvring right in front of the cubicle. This cubicle should be planned in such a way that this manoeuvring space does not interfere with the circulation route.

These dimensions are suitable for the use of shower curtains. If shower doors are installed, a bigger cubicle area would be required.

→ See figure 32 Independent-Use Wheelchair Accessible Shower Cubicle on page 184.

Communal Shower Bank. This is usually located on the approach to the pool between the changing area and the poolside. The showers at either end of the row within the shower bank should have flip-up shower seats installed with a seat height of between 460-480mm from floor level. Shower controls, which are often of a push-button type, within a communal shower bank should be sited 800-1200mm from ground level. These ended shower areas are suited for use by people who have a mobility impairment but who are not wheelchair users.

→ See figure 33 Shower Bank with Ambulant Accessible Shower Seating on page 185.

7.5.2.1 Dimensions of a Shower Area

The shower area within the independent-use and assisted-use shower rooms should be designed so that a wheelchair user can transfer to a seat or bench within the wet area, without getting the wheelchair wet, and so that the wheelchair remains within reach. Consider the use of a shower curtain to enclose the shower area for privacy and also for water containment.

The shower area should have minimum dimensions of 1500 x 1500mm. The slope of the floor in the shower recess should have a gradient of between 1:50 and 1:60. The outside area of the shower floor should have a gradient of between 1:70 and 1:80, draining into the shower recess. Transition into the shower recess should be level without a step down, a raised step, or kerb at the entry to the recess. The waste outlet should be located in the corner. Consider providing a larger than usual or a second waste outlet to avoid water pooling which can be a problem.

7.5.2.2 Floor Covering

Flooring material in the shower room should be non-slip and should have an anti-slip minimum PTV grading of 51-70, with a PTV grading of 70-100 offering the best protection. The slope in the flooring should facilitate effective drainage of water and should allow no accumulation. Consider providing a second waste outlet or a larger than usual waste outlet to prevent water pooling.

7.5.2.3 Shower Fixtures and Fittings

The shower head should be detachable and adjustable within the height range of 1200-2200mm from the floor level. A 1500mm-long flexible hose is required for the shower head. The lever controls for temperature and flow should be situated at 900mm from the floor level on the wall adjacent to the shower seat. The water temperature should not exceed 40° Celsius.

A flip-up shower seat with drop-down arm rests and front legs approximately 500 x 500mm in size, should be situated on the wall adjoining the wall where the shower controls are positioned. The height of the shower seat should be 480mm from floor level. The centreline of the seat should be 500mm from the corner and the front edge of the seat should be 650mm from the back wall.

Drop-down grab rails should be placed at 320mm from the centreline of the seat, at a height of 700mm from the floor on the open side of the seat. On the side wall, where the shower fixtures are located, a 600mm-long horizontal grab bar should be placed, starting at 200mm from the corner and at a height of 700mm. A second 600mm-long vertical grab rail should be placed at 800mm from the corner, with its lower end fixed at a height of 800mm from floor level.

Figure 30 - Independent-Use Wheelchair Accessible WC with Shower

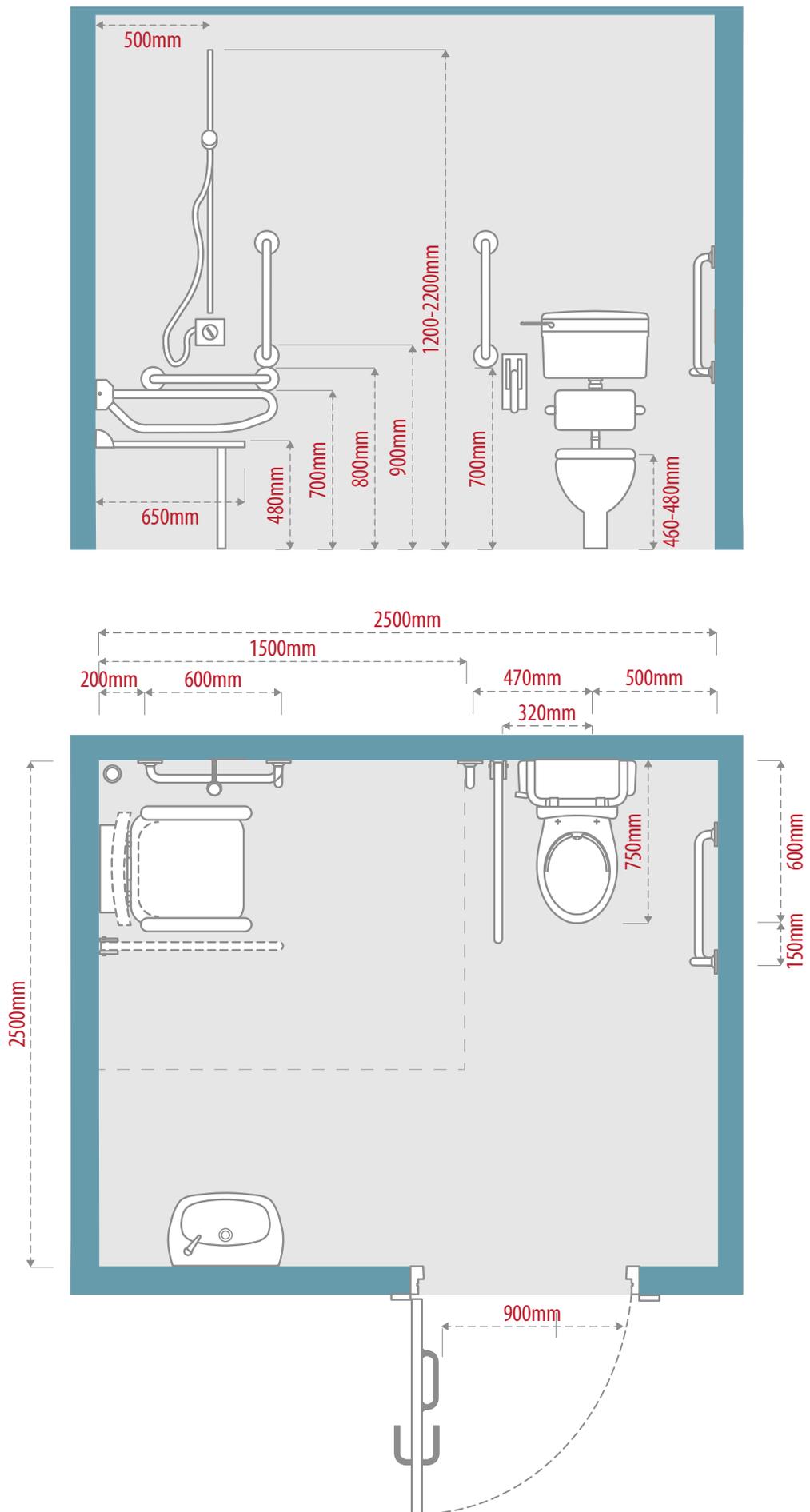


Figure 31 - Assisted-Use Wheelchair Accessible WC with Shower, Hoist and Changing Bench

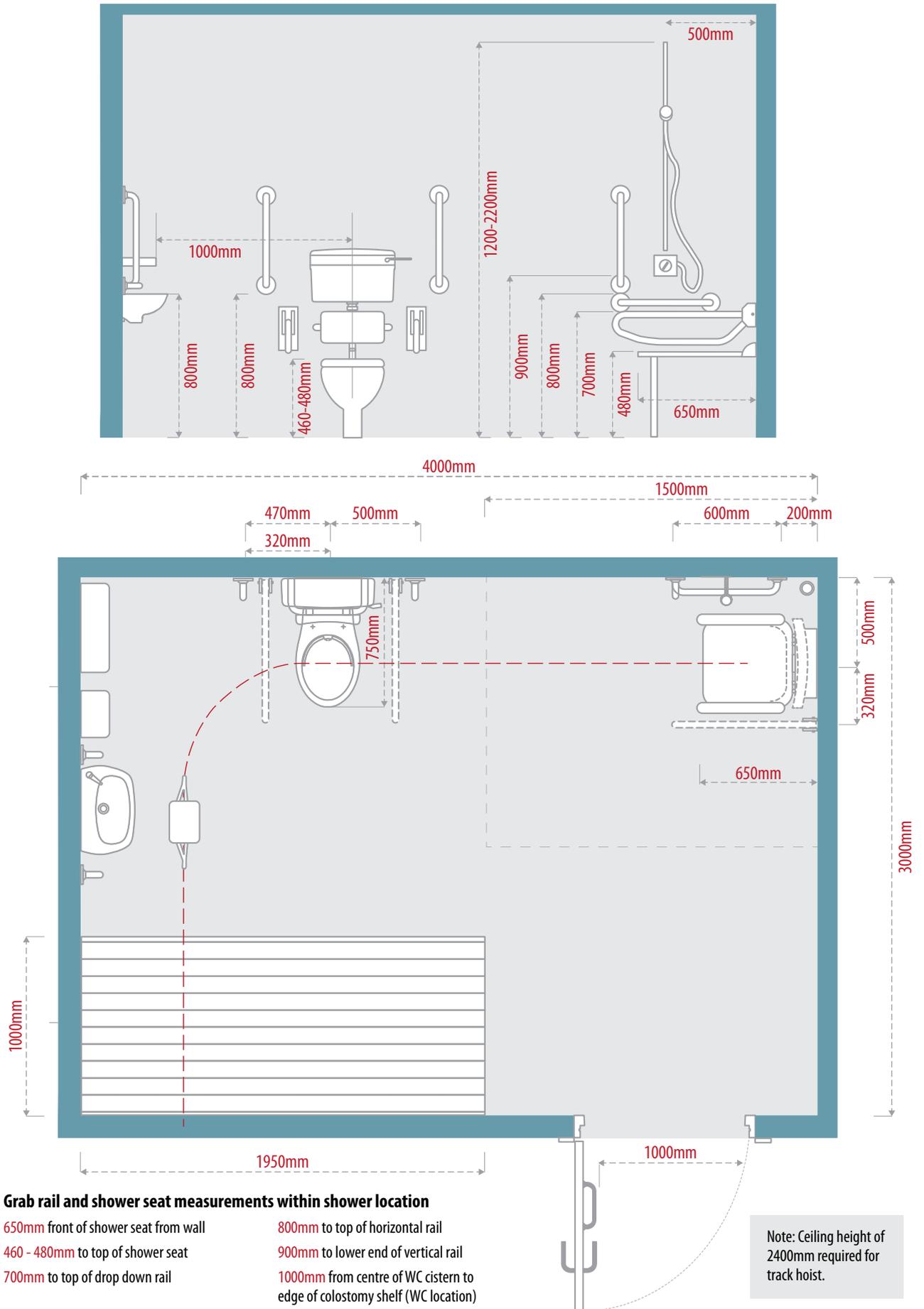
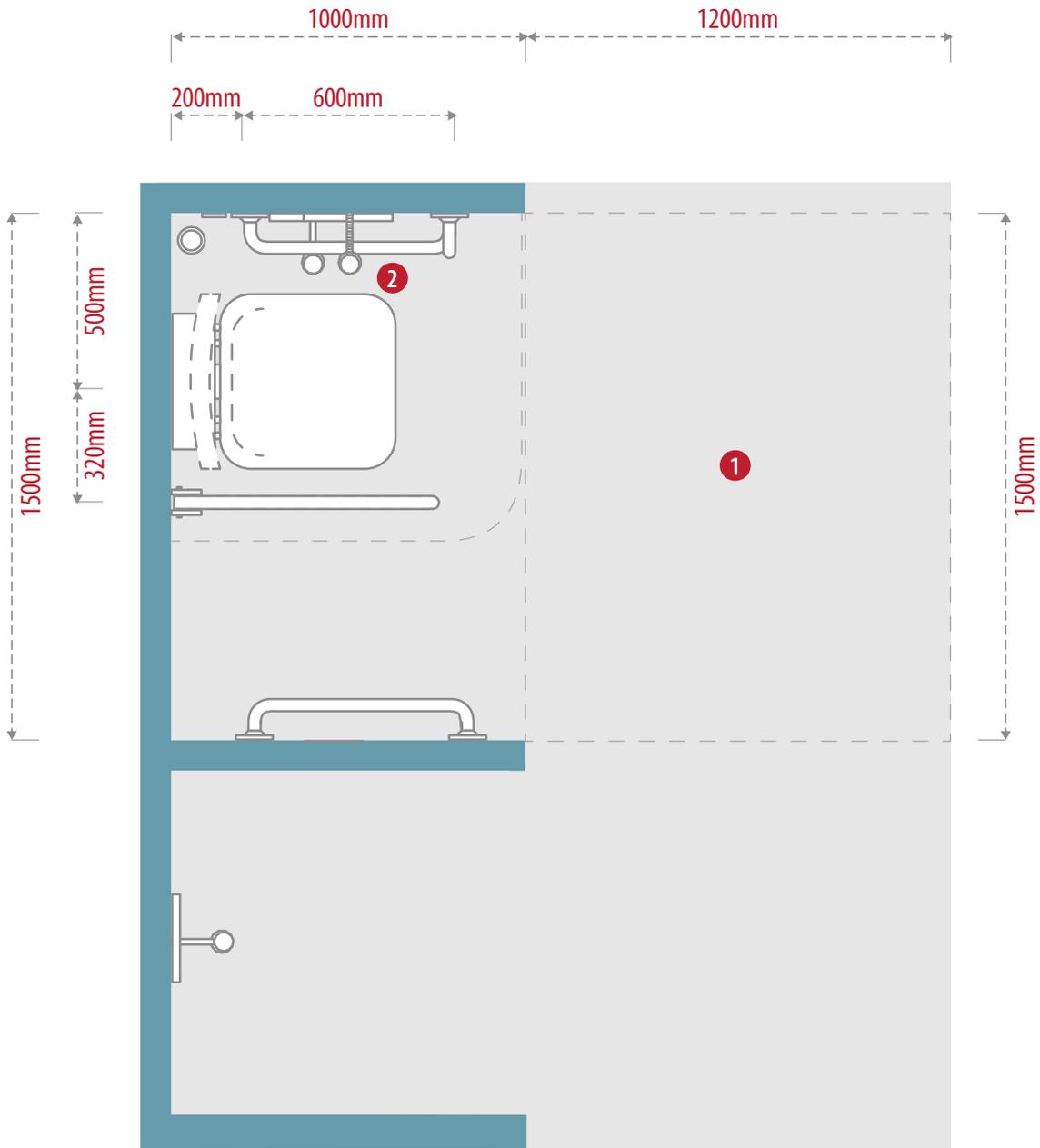
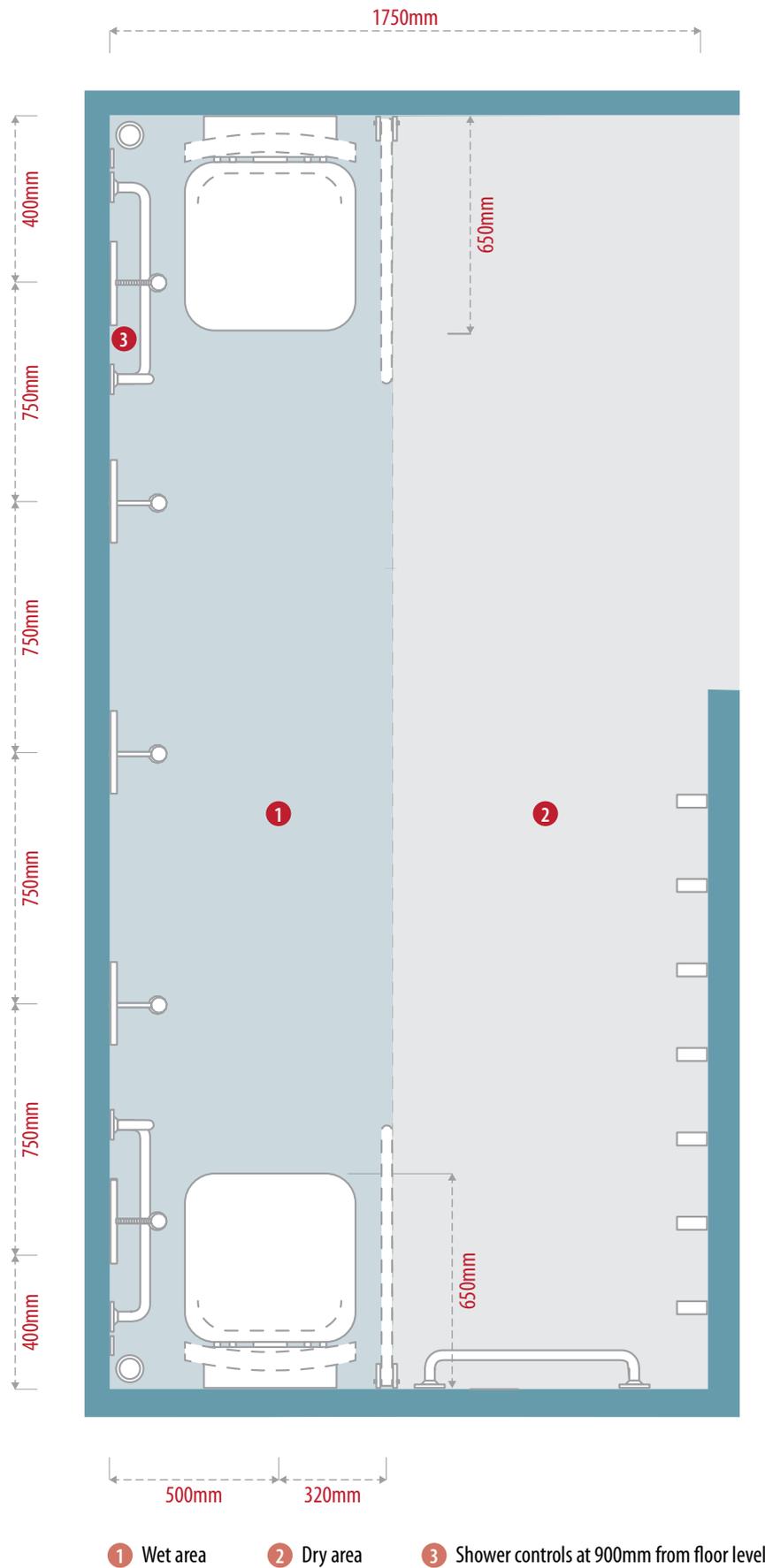


Figure 32 - Independent-Use Wheelchair Accessible Shower Cubicle



- 1 1200mm x 1500mm manoeuvring space directly in front of cubicle
- 2 Shower controls at 900mm from floor level.

Figure 33 - Shower Bank with Ambulant Accessible Shower Seating



7.5.3 Changing Facilities

People with disability have different changing room needs depending upon their individual situation. Changing facilities provided in leisure and sporting facilities should accommodate people with disabilities in using communal areas and also provide privacy within designated WC cum shower changing rooms, as recommended above.

→ See Figure 30 Independent-Use Wheelchair Accessible WC with Shower on page 182.

7.5.3.1 Communal Changing Areas

All communal changing areas must be designed so that people with disabilities can easily move around the area, safely use the changing bench, and access storage facilities.

At least one changing bench should be a minimum of 1950mm in length and 600mm in depth, with a waterproof cushion provided.

① For information on Hoists and Slings see Section 6.4.11 on page 148.

7.5.3.2 Lockers

Where storage facilities are available for use by the general public, provision should also be included for fully accessible storage units. Some storage units should include knee access space to allow either frontal or side access from a seated position for a wheelchair user.

Lockers should be provided close to the toilets, shower and changing facilities.

Accessible lockers should be a minimum of 300mm in width and not more than 600mm in depth. Storage units accessible from the front from a seated position are best positioned with their bottom end height no lower than 750mm and their top end height no more than 1250mm. This bottom end height of 750mm allows for a half locker with knee recess provided at a height of 700mm, so a wheelchair user can gain frontal access to the locker.

Storage accessible from the side from a seated position should have the bottom end height of the locker no lower than 665mm and the top end height of the locker no more than 1060mm.

There should also be at least four full-height lockers provided for storing crutches, calipers, artificial limbs, etc.

Accessible storage units should have a 900 x 1400mm clear floor area to the front.

Aisle width between lockers should be a minimum of 1500mm.

Provide seating adjacent to the lockers for use by people with restricted mobility.

7.5.4 Swimming Pools

There should be level access from changing areas to the pool side. If doors into the swimming pool area are present, electronic doors with a touch button control located on the adjacent wall are recommended. If the doors are manual, push-bars or lever-type handles are recommended on the doors. The door width should provide a minimum of 900mm clear entrance.

Handrails should be provided between the changing rooms and the pool side to assist ambulant disabled people and people who are blind or have a visual impairment.

The width of the walkway around the pool should be no less than 3000mm and be distinguished in colour and tone from the surrounding areas. Wet floor areas should have a non-slip surface. Poolside waterproof self-propelling chairs, suited to the pool entry system, should be available for transfer between the pool and changing areas. Some pool entry systems require their own customised chairs.

7.5.4.1 Access into the Swimming Pool

Whatever the type and scale of the swimming pool, there should be a variety of means of access to the water to accommodate all users. Access to the water can be provided by means of ramp, steps, ladder, portable slide and hoist. A common misconception is that a shelving 'beach', often incorporated in leisure pools, is the best solution. This arrangement means that the swimmer has to wade into the pool for a considerable distance without the support of the water. As a result, some users will require assistance, although for others a handrail will suffice.

The following entry systems apply:

- A Poolpod is a submersible platform lift, which is located on the pool side, enables people who are wheelchair users and people with any mobility restriction to safely, easily and discreetly access the water. The Poolpod provides a very dignified and independent means of access to a swimming pool. See: <https://wexfordswimmingpool.ie/pool/accessibility/>
- Fully integrated ramp and steps can provide good access to the water. The gradient of the ramp should preferably be 1:20, and no steeper than 1:15. The ramp/steps should be slip-resistant and contrast with the surroundings. Steps should be fitted with handrails with good grip quality. The maximum height of the risers should be 140mm and the treads should be a minimum of 300mm deep. The steps should be located at the shallow end of the pool with high definition at the edge of steps to facilitate people who are blind or have a visual impairment.
- Poolside hoists can be available to provide access to the water at various depths in the pool and to the Jacuzzi.

A minimum of two waterproof self-propelling poolside wheelchairs (suitable for pre-and post-swim showering) should be provided. Some pool entry systems such as the Poolpod and hoist incorporate their own customised chairs, including chairs for both independent and assisted use.

7.5.5 Sauna/Steam/Salt Rooms

Where a sauna/steam/salt room is provided in a sports and leisure facility, the room should be accessible for wheelchair users.

Sauna/steam/salt room facilities should include doors with suitable widths, ie a 900mm clear opening width. The sauna/steam/salt room should have level access and it should be large enough to have a 1800mm diameter clear floor area, with additional space to fold and safely store a wheelchair either within or external to the room. There should also be sufficient space for a wheelchair user to remain seated in an appropriate type of wheelchair while using the facility. Within a sauna where the heat can be extreme, it may not be safe to use either a wheelchair or a shower wet room type wheelchair. The safest and most suitable option within a sauna may be to allow for a transfer space whereby the person can transfer independently or with assistance onto one of the wooden benches while their wheelchair/shower chair is safely stored outside. This can be achieved by providing a cut-out or recessed area of 900 x 1400mm within the lower level seating which could be used either as a position for a wheelchair user to locate within a steam or salt room or as a location to position in order to achieve a side transfer to a wooden bench within a sauna/steam or salt room. The layout of the wooden seating bench should be designed in such a way that it facilitates a side transfer from a wheelchair to the seat; drop down arm rests are advised on either side of the accessible seating position within the wooden bench. The height of the lowest level seat in the sauna room should be between 450-500mm. The seat depth should be a minimum of 500mm.

Contrasting clothes/towel hooks should be at 1050mm and 1400mm above ground level. Accessible controls with clear instruction signage should be provided 900-1200mm from floor level and 500mm from any corner, with a clear approach route maintained.

Consideration should be given to a two-way communication system between the sauna room and reception area and external signage should inform of any specific safety issues.

7.5.6 Fitness/Gym Suite

Fitness suites can have increased accessibility for people who have a disability by providing a range of cardiovascular and resistance equipment. Designers and gym operators are encouraged to select dual-purpose exercise equipment that provides fitness opportunities that can be used by all people.

Gym equipment should be placed evenly around the gym area. A clear aisle width of minimum 1200mm is required to provide access routes for easy circulation between pieces of gym equipment. Colour contrast should be provided between the access routes and the equipment areas.



Accessible Gym Equipment

A clear floor space must be positioned adjacent to pieces of gym equipment to allow a person to transfer from a wheelchair or to use the equipment while seated in a wheelchair. For example, to make a shoulder press accessible, the clear floor space should be next to the seat. However, the clear floor space for a bench press designed for use by a person using a wheelchair would be centered on the operating mechanisms. The reason being that with dual-purpose equipment, the person remains seated in their wheelchair while using this piece of equipment.

Clear floor spaces for more than one piece of equipment may overlap. For example, where different types of exercise equipment and machines are located next to other pieces of equipment, the clear space may be shared.

① For more information on accessible fitness equipment, see Cara sport inclusion Ireland's guidelines for accessible equipment at <https://caracentre.ie/wp-content/uploads/2019/03/Accessible-Fitness-Equipment-Factsheet.pdf>

To support people who have a hearing impairment to receive instruction and to hear any music related to an exercise, activity fitness studios and gym suites should provide sound enhancement systems eg loop systems or other related equipment.

① For further guidance, contact Chime - The National Charity for Deafness and Hearing Loss at <https://www.chime.ie/>

“There was no changing bench in the swimming pool area and no accessible gym equipment – it made it impossible for me to participate”

IWA member, Dublin Youth Group

7.5.7 Bowling Lanes

At least five percent of each type of bowling lane, and not less than one lane, must be accessible for all users, including wheelchair users. There should be accessible routes from the reception and communal areas to the accessible bowling lanes. Spectator seating in bowling facilities will require wheelchair spaces, companion seating, and designated aisle seats. The rolling ball equipment preferred by some wheelchair users should be easily available on site.



Bowling

7.6 Hair and Beauty Salons

7.6.1 Background

The design of hair and beauty salons requires particular attention to ensure that all customers can have an enjoyable and relaxing experience, including people with disabilities. Premises should be accessible to both therapist and customer.

7.6.2 Car Parking

Where carparking is provided for employees/customers, accessible parking should also be provided.

① For information on the design criteria for car parking please refer to Section 4.1 on page 53.

7.6.3 Entrances

Main entrance doors should provide a minimum clear opening width of not less than 1000mm. Double doors should include at least one door leaf which provides a minimum clear opening width of 1000mm. It is preferable that main entrance doors are automated.

① For further information on all doors, including powered and automated doors, please refer to Section 5.1.4 on page 92.

7.6.4 Reception Areas

The reception area/desk should be easily identifiable from the main building entrance with direct, unobstructed approach. There should be clear space of 1800 x 1800mm to the front of the reception desk, so that a person using a wheelchair can easily turn.

The reception desk should be at a compromise height of 850mm, which is suitable for both a person standing and for a person seated.

Information at reception areas should be available in a variety of formats to accommodate the needs of as wide a range of users as possible.

① For further information on reception areas please refer to Section 6.1.2 on page 115.

7.6.5 Waiting Areas

Seating provided in reception/waiting areas should be at a height of between 450-520mm, including some with armrests. The seating provided should include suitable spaces for wheelchair users to position themselves alongside the seating.

A clear access route of 1200mm should be maintained from the waiting area and throughout the salon area/s.

① For further information on seating please see Section 6.1.2.3 on page 118.

7.6.6 Beauty Treatment Table

A beauty treatment table, eg manicure station, should be suitable for use by all, including wheelchair users. The manicure station should be 760-780mm in height with knee clearance of 700mm beneath. Ideally manicure stations should have a length of 900mm and a width of 510mm; this narrow width is customarily used at a manicure station to facilitate hand and nail treatments. A length of 1800mm, which can be achieved with two manicure stations combined, enables two people who are both wheelchair users to be positioned diagonally opposite each other. Height-adjustable tables are recommended.

7.6.7 Hair-Wash Basins

A height-adjustable, stand-alone hair-wash basin with no attached seat and preferably with a tilt function, within a bank of basins is recommended. This basin will accommodate a variety of wheelchair users and enable the client to remain seated in their wheelchair while having their hair washed. This system will negate the need for a wheelchair user to transfer into a standard salon chair, which is not always suitable for transfer purposes.

A front-wash hair-wash basin would also be a useful addition where people cannot recline backwards but a forward bend movement is possible. Additionally, a hair-wash extension tray could be a useful accessory in some circumstances.

In addition to a stand-alone basin, where there is fixed seating in front of a hair wash basin/s, these seats should have flexible armrests that can be raised to allow for a side transfer by a client from a wheelchair in the absence of a height-adjustable stand-alone hair wash basin, or if this is the client's preference.

7.6.8 Hair Styling Station

There should be ample room provided to allow a wheelchair user position in front of a styling mirror. There should be knee clearance of 700mm beneath the styling shelf which allows space to accommodate the footplates of the wheelchair. If there is a footrest present within the styling station, it should be capable of being flipped upwards to allow space for the footplates of a wheelchair to gain access underneath, thus allowing the wheelchair user position close to the styling station.



7.6.9 Pedicure Area

Where a pedicure area is provided, there should be at least one pedicure area that is accessible to wheelchair users. An accessible pedicure chair should be located on level ground, without any step up or down to reach the chair. The chair seat should be 460-480mm height from ground level. The arm rest should be removable so that a person who is a wheelchair user can transfer onto the pedicure chair from their wheelchair. A shallow foot basin should be available and possibly movable to allow access for transfer purposes.

7.6.10 WC Facilities

Where WC facilities are provided within hair and beauty salons, these should be universally designed.

Where there is only one WC in a building, it should be a wheelchair accessible unisex type. This facility should be sufficiently large to accommodate all users, including wheelchair users. This can be achieved by increasing the width of the accessible WC size to 2300mm width x 2500mm length, with the door opening outward and including an additional standing height wash-hand basin (no pedestal) with a rim height of 850mm above floor level.

① For further information on WC provisions, see Section 6.4 page 133.

7.7 Health/Medical Facilities and Treatment Rooms

7.7.1 Background

People with disabilities represent a significant sector of the population requiring healthcare services (The Census 2016 recorded 13.5 percent of the population as having a disability). Everyone, regardless

of ability, benefits from Universal Design. Meeting the needs of people with disabilities means the provision of enhanced facilities and services for all. It is often the case that healthcare facilities are not accessible or do not have the equipment needed to accommodate people with disabilities. Good access includes accessible parking, set-down facilities, weather-protected level entry, accessible paths of travel into and throughout the building, open-plan waiting and treatment areas with sufficient space for a wheelchair user to position and turn with ease, as well as the availability of any required equipment to effect a successful consultation, eg a hoist and height-adjustable examination/treatment table. Staff should be trained and competent in the use of any on-site equipment.

7.7.2 Treatment Rooms and Equipment

Treatment rooms should be of sufficient size to accommodate the use of a lifting hoist. This hoist would be used by trained staff or a personal assistant to transfer an individual wheelchair user from a wheelchair to a treatment table or examination chair. The space required for the use of a hoist would be a clear turning circle area of 2300mm adjacent to the treatment table. An automated height-adjustable barrier-free treatment and examination table located centrally is recommended in order to accommodate access from either the right or left sides. A movable screen can accommodate individual space requirements while affording privacy.

Height-adjustable equipment is recommended so that examinations may be carried out while people are in a seated/lying position as well as in a standing position. Scales with handgrips are recommended to accommodate those who need support while standing, as well as scales that allow individuals to be weighed while seated in a wheelchair.

The provision of differing height chairs in waiting and treatment rooms that may be used by children and adults is recommended. Some chairs should have arm rests to accommodate those who require them.

The ability to produce key documents in different formats, if required by people with visual and other impairments, should be available.

7.7.2.1 Dental Practices and Equipment

Access to dental care can be especially difficult for wheelchair users and consequently is often an area of health care that is neglected. Difficulties associated with treating individuals seated in wheelchairs can be overcome through the use of specialised adapted chair equipment which holds and appropriately positions an individual while they remain seated in their wheelchair. These adapted dental chairs are mobile and eliminate all manual handling, lifting and hoisting.

An adapted dental chair allows the dentist to attain the correct working position while ensuring a more dignified experience for the patient, and it can be used alongside traditional dental chairs, sharing equipment and supplies. The chairs can be stored when not in use and can be used in existing surgeries without the need for refurbishment work.

A number of models of adapted chairs are available and individual practices are advised to research the type of dental chair that would most suit their patients' needs.

7.7.3 Dressing Room Provisions

Dressing room provisions in health and treatment facilities should include at least one room that is accessible to wheelchair users and people with limited mobility. This designated changing room should have a clear door width of 900mm, with dimensions of 2000mm in width by 2500mm in depth, with the door opening outwards. The changing room should have a seat at 480mm in height, with its centreline 500mm from the corner. The seat should project 650mm from the wall.

On the rear wall, a drop-down horizontal grab rail and a vertical grab rail should be provided on the transfer side of the changing seat, at 320mm and 470mm respectively from the centreline of the changing seat and both at 700mm in height above the floor level.

Two grab rails should also be provided on the side wall. The first rail should be horizontal, 700mm above the floor level, starting 200mm from the rear wall; the second rail, vertical, with its lower end at 800mm above the floor level and placed at 150mm from the front edge of the changing seat. All grab rails should be 35mm in diameter, 600mm long, slip-resistant and contrast in colour with the background.

Clothes hooks should be situated at 1400mm and 1050mm from the floor level. A mirror should be placed on the wall opposite to the changing seat with its top and bottom end at 1800mm and 450mm respectively.

7.8 Student Accommodation

7.8.1 Background

Student accommodation, where provided should aim to be accessible to all, including students with disabilities. Generally, IWA recommends purpose-built adapted and adaptable facilities for students with disabilities should be provided at an overall ratio of 1:15 in any development. It is unnecessary and undesirable to group accessible rooms in a single block or to locate all accessible rooms on the ground floor.

The following guidance is based on an integrated student accommodation model whereby students have their individual bedroom with en-suite bathroom with shared kitchen and living room facilities.

7.8.2 Car Parking

Where car parking is provided for students/visitors, accessible parking should also be provided. Setting-down and picking-up points should be provided adjacent to the accessible entrance and these points should be clearly signposted.

① For information on the number and design criteria for accessible car parking, please refer to Section 4.1 page 53.

7.8.3 Pedestrian Routes

Pedestrian routes should be designed to be accessible, easily identifiable, predictable and direct.

① For further information on pavements, crossings and approach routes, please see Section 4.2 on page 62.

7.8.4 Building Approach

The approach to the main entrance of the student accommodation building from an adjacent road or car park should be level and have a smooth non-slip surface. Where it is not possible to provide a level approach, both steps and ramps should be provided.

① For further information on approach routes, including external ramps and steps, please refer to Sections 4.2.5, 4.3 and 4.4 on pages 72 and 74.

7.8.5 Main Entrance Door

Main entrance doorways to the student accommodation building should provide a minimum clear opening width of not less than 1000mm. Double doors should include at least one door leaf which provides a minimum clear opening of 1000mm. It is preferable that main entrance doors are automated.

① For further information on all doors, including powered and automated doors, please refer to Section 5.1.4 on page 92.

7.8.6 Reception Area

The reception area should be easily identifiable from the main building entrance with a direct, unobstructed approach. In order to facilitate face-to-face interactions, the reception desk should not be cluttered with computer screens or literature stands. The reception desk should be at a compromised height of 850mm, which is a suitable height to facilitate both a person standing or seated. If there is a requirement for people who are standing to use the reception counter to write, then a section of the counter should be positioned at 1050mm height from floor level to facilitate a person standing. There should be sufficient space to the front of the reception desk to allow a person using a wheelchair to easily turn.

Consider the installation of a hearing Loop System to assist a person with limited hearing, and appropriate signage to indicate the availability of same.

① For further information on reception areas, please see Section 6.1.2 on page 115.

7.8.7 Approach Route to Accessible Unit of Student Accommodation

All internal corridors should be 1800mm wide. A minimum acceptable clear, unobstructed corridor width is 1500mm, with a width of 1200mm acceptable only when there is no alternative possible. Fire doors within corridors should be on a magnetised hold-open system that will automatically close in the event of a fire alarm activation.

A minimum clear manoeuvring space of 1800 x 1800mm, clear of door swing, should be provided at the entrance to the accessible student accommodation.

① For further information on corridor design, please see Section 5.3 on page 96.

7.8.8 Internal Doors

Internal doors within corridors or externally leading into and within accessible student accommodation should provide a minimum clear opening width of 900mm. There should be 500mm of clear space at the leading edge on the pull side of the door and 400mm of clear space at the leading edge on the push side of the door; the clear space on either side should be maintained with no obstruction for 1800mm. The clear space at the leading edge (latch) side of any door allows a person using a wheelchair to pull into that space to reach and operate the door handle. Door handles should be of the lever type, with a return at the end of the handle. It should not be necessary to turn a handle while unlocking the door.

Fire doors within corridors should be on a magnetised hold-open system, where doors will automatically close in the event of a fire alarm activation.

Wide-angle viewers should be provided on entrance doors to student rooms, located at 1050mm and 1500mm from floor level to enable viewing by people who are seated or standing.

① For further information on internal door design and door furnishings, please see Section 5.2.4 on page 94.

7.8.9 Accessible Student Bedrooms

One student bedroom in every 15 should be suitable in size, layout and facilities for independent use by a wheelchair user.

One student bedroom in every 20 accessible bedrooms should be suitable for a student receiving personal assistance. This assisted-use bedroom and the en suite bathroom should be fitted with a full room cover ceiling track hoist which runs from the bedroom to the en suite bathroom, giving access to the shower/bath and WC.

A wheelchair accessible student bedroom should allow sufficient space for a wheelchair user to move around the room and access all facilities, including the study area contained within the room. Additional space to what is set out in the guidance below will be required within the room to accommodate the study area and associated storage. There should be a clear approach to the study and surrounding area that is not blocked or encumbered.

The space within the bedroom should incorporate a 900mm access zone around the bed and two 1800mm turning circles; one of the 1800mm turning circle should be adjacent to the bed. If a ceiling track hoist is not provided and a student is utilising a manually operated hoist, then one larger turning circle of 2300mm is required beside the bed and within the bathroom. This larger size turning circle will allow the use of a manual hoist.

The bed height should be 450-500mm from the floor to the top of the mattress and the mattress should be firm to give traction so that a person can pull themselves across the mattress. A clear space of 300mm height is required under the bed to allow space for wheelchair footrests and hoist feet.

Adequate storage space should be provided for equipment, eg wheelchairs, mobility aids, etc.

A charging point space of 1600 x 900mm should be provided for the charging of powered wheelchairs.

① Accessible bedrooms within student accommodation should reference the guidance given in Section 7.1.3 on pages 156 and 157 for Independent-Use Guest Bedroom and in Section 7.1.4 on page 158 for Assisted-Use Guest Bedroom.

➔ See Figure 24 Hotel Room with En Suite Bathroom with Shower for Independent-Use, Figure 25 Hotel Room with En Suite Bathroom with Bath for Independent-Use, Figure 26 Hotel Room with En Suite Bathroom with Shower for Assisted-Use and Figure 27 Hotel Room with En Suite Bathroom with Bath for Assisted-Use on pages 159, 160, 161 and 162.

7.8.9.1 Bedroom Furnishings

Furniture should be designed and carefully located to maximise accessibility. A wheelchair accessible study desk should be provided at a height between 760-780mm, with knee clearance of 700 beneath. An armchair should also be provided.

Wardrobes should be fitted with pull-down or powered clothes rails to assist a wheelchair user to fully utilise this furniture. Swing doors on wardrobes or storage presses should open through 180°. Handles on hinged or sliding doors should be easy to grip and operate. Shelving should be of pull-out design.

➔ See Figure 2 Space Requirements, Figures 3 Common Reach Zones and Figure 4 Forward and Side Cross Reach Distances on pages 44, 45 and 46.

Windowsills/glazing should commence no higher than 850mm from floor level. Window-openers should be reachable from a seated position and located between 800-1000mm from floor level and should be capable of being operated with one hand using a closed fist.

The pull cord to operate blinds/curtains should be within reach of a person seated. It would be an advantage if curtains/blinds were provided with automatic or remotely controlled opening devices.

All bedrooms should have a visual fire alarm signal. Consider the use of a vibrating pillow alarm to alert a person who has a hearing impairment when the fire alarm is activated.

7.8.10 Accessible Bathroom Facilities

Accessible student bedroom accommodation should include en suite bathroom facilities. The size of the en suite bathroom suitable for independent use should be a minimum of 2500 x 2500mm, with a level deck shower or 2700 x 3000mm when a bathtub is provided. Within the shower area a wall-mounted flip-down shower seat with movable arm rests and front legs to give stability should be provided. An emergency alarm cord should be located adjacent to the shower and WC bowl and connected to a security desk or central control point and the re-set button should be easily reached from a wheelchair. Within this domestic situation, a full-sized wash-hand basin should be located away from the WC bowl, with 700 knee clearance beneath.

Where there is more than one accessible student room for independent use provided, the location of the WC bowl and shower/bath should be on alternate sides within the different bed/bathrooms, to allow for a choice of transfer side. The side location of WC bowl and shower/bath should be consistent within each bathroom to facilitate side preferences for transferring from a wheelchair.

The size of the en suite bathroom suitable for a student receiving personal assistance should be 2700 x 3000mm. There should be a full room cover ceiling track hoist fitted, giving access from the bedroom into the bathroom and over the toilet bowl and bath/shower. This larger size shower/bathroom will also allow a 2300mm turning circle for an attendant-operated mobile hoist if that is the student's preference, or if a tracking hoist is not provided.

A 150mm clear gap is required under the bathtub to accommodate the hoist feet.

① For guidance on the design of accessible en suite bathroom facilities, please refer to Section 7.1.5 on page 163 and to Figures 24-27 on pages 159, 160, 161 and 162.

Individual consultation with the occupant and their access consultant/OT is advised regarding the design and lay-out of an accessible bathroom within any student accommodation.

7.8.11 Shared Kitchen/Living Room

When planning a communal kitchen, due consideration must be given to the approach route to the kitchen and the layout and design of the kitchen.

Within a full-use kitchen in shared student accommodation, the main consideration is the profile and numbers of people who may use the kitchen at any one time. To facilitate use of the kitchen by several people, potentially at the same time and including a person who is a wheelchair user, it is recommended that critical kitchen facilities such as sink, hob and food preparation area are duplicated within a shared student kitchen and designed to wheelchair accessible heights at 760mm from floor level, with clear space beneath.



Shared Kitchen

To be accessible to a person who is using a wheelchair, a kitchen area should have an unobstructed minimum floor space of at least 1800 x 1800mm between units and facing walls. The layout of the kitchen and the use of all kitchen facilities should be carefully planned to maximise available space and to minimise the need to reach and to lift or move hot pots/pans from one work area to another. Key work areas should be in close proximity, with easy access to the fridge.

The depth of a kitchen work surface should be a minimum of 600mm. Key task areas such as hobs, sinks and food preparation areas should have knee clearance provided below them. The dimensions required for knee clearance are a height of 700mm and a width of 800mm. The underside of the sink and hob should be insulated to provide heat protection.

High kitchen presses located above worktops have limited usage to a person who is a wheelchair user. Any shelving located above a worktop area should have the lower shelf no higher than 1150mm. While pull-down baskets can make higher presses usable to an extent, the baskets can be heavy to pull down and are best suited to storing light-weight grocery items. Higher presses can also be automated to drop down by using an electronic control; again, usability is limited to relatively light-weight grocery items. Other storage options to consider include: a tall pull out narrow larder that can be accessed from both sides; pull-out baskets or carousels in the lower and corner presses; deep drawers within the base units that can store crockery; a storage



Shared Kitchen

press with the shelving indented to allow a wheelchair user closer access to the back of the shelving and pull out units for waste/recycling, etc. Doors on all kitchen cupboards should swing through 180° to give full access to the cupboard space within.

Appliances such as washing machines, dishwashers and refrigerators should be installed on a 200mm high plinth. A drawer-type dishwasher is another option to consider, giving easy access for filling and emptying the appliance. Refrigerators and freezers of 'over and under type' are difficult to access for wheelchair users. Consideration should be given to the use of separate refrigerator and freezer units fitted on a 200mm high plinth. Where the fridge/freezer is combined, locating the fridge section within the lower half of the appliance gives most accessibility on a day-to-day basis. The fridge door should always open away from the approach route to the fridge.

Any furniture located with a communal or shared kitchen area should not encroach into the kitchen area workspace in front of the worktop/sink/hob/oven locations. An access route of minimum 900mm width should be maintained from the door, and around any kitchen furniture, with a turning area of 1800mm available in front of the kitchen workspace area/s. Any table provided should have clear space of 700mm beneath, with legs at the four corners of the table or of a pod-type with one central support. High counters with perch-type stools are not suitable.

① For further information on a shared full use kitchen, please Section 6.3.5 on page 128.

Seating in the living room area should be configured to allow space for a wheelchair user gain access to position alongside the sofa/chairs. Seating provided should be stable, some with and some without armrests, and at a range of heights from 450-580mm. A minimum backrest height of 455mm should be provided on all seating.

7.8.12 Communal Areas

Communal areas used by students should be accessible to all, including people with disabilities. An on-site gymnasium should provide a clear access route throughout of 1200mm and have dual-purpose exercise equipment available.

Study areas and library facilities should be accessible, with access routes of 1200mm throughout and turning spaces within and at the ends of access routes. Tables and desks should provide knee clearance of 700mm.



Laundry facilities, utility rooms and caretaker/security rooms and refuse collection areas should be accessible to all, including students with disabilities, again with access routes of 1200mm throughout and turning spaces within and at the end of access routes.

Outdoor communal areas, such as gardens and civic spaces, should be accessible to all students with wide pathways and steps/ramps with gentle gradient provided at all level changes.

① Please refer to Section 4.2 on page 62 for information on pavements, crossings and approach routes and for information on outdoor environments see Section 7.11 on page 218.

At reception and in communal areas within student accommodation, it is advisable to have a wheelchair accessible toilet available for use by visitors with disabilities.

Where there is only one WC in a building, it should be a wheelchair accessible unisex type. This facility should be sufficiently large to accommodate all users, including wheelchair users. This can be achieved by increasing the width of the accessible WC size to 2300mm in width x 2500mm in length, with the door opening outward, and including an additional standing height wash-hand basin (no pedestal) with a rim height of 850mm above floor level.

7.8.13 Lifts

Lifts throughout student accommodation should be accessible to people with limited mobility.

Internal passenger lifts are the usual means of moving from one storey to another within a building. Single door lifts should ideally provide sufficient internal cabin space to accommodate a turning circle with a diameter of 1800mm. Passenger lifts should be located adjacent to stairs to offer an alternative option. Many people, when possible, will still prefer to use stairs rather than enter a lift.

IWA recommends that lifts in all new buildings should be fire-protected and capable of being used for evacuation purposes; this is the most effective means of emergency evacuation for people with disabilities. Evacuation lifts should be enclosed in a fire-resisting shaft and have an independent electrical supply. Existing lifts can be upgraded to be usable as the means of emergency evacuation.

① For further information on passenger lifts, please refer to Section 5.5.4 on page 104.

7.8.14 Fire Safety, Evacuation and Refuge Areas

Fire extinguishers/kitchen fire blankets should be located at heights that are reachable by a wheelchair user or a person of small stature. Fire extinguishers should be placed so as not to cause obstruction or in a location where they are at risk of being accidentally engaged. Locate fire extinguishers out of the circulation routes.

Many people with disabilities cannot use stairs unassisted, so it is necessary in the event of an evacuation to ensure that people requiring assistance can remain in a place of relative safety until help arrives. This provision must be forward-planned and provided. One solution is to provide a refuge area or area of rescue assistance. The refuge area is for the use of people who cannot use the stairs when the lift is not in use, such as in an emergency. People are instructed to wait within the refuge area/s until

the evacuation plan is operated and assistance arrives. A refuge area must contain a sufficient number of spaces to accommodate the number of people likely to require assistance to evacuate from the building. The dimensions of a refuge space should be 900 x 1400mm for a single space and be situated clear of the escape route.

Refuge areas or areas of rescue assistance should be provided on any floor where egress from the building is not level with the external environment and they should be located within designated fire-protected areas of student accommodation, usually within a stairwell. Refuge areas should be located either within, or be a space with direct access to, each protected stairway or internal fire-protected lift. Refuge areas should be clearly designated as such and contain an evacuation chair and a communication link to a security post, with clear instructions, including the identification of the floor level on which the refuge area is located.

Personal Emergency Evacuation Plans (PEEPS) should be developed for students with disabilities who may need assistance to evacuate the building in the event of a fire.

IWA recommends that lifts in all new buildings should be fire-protected and capable of being used for evacuation purposes; fire protected evacuation lifts are the most effective means of emergency evacuation for people with disabilities. Where evacuation lifts are provided, refuge areas are still required as people must wait within a fire-protected area for the evacuation of the building, using the fire-protected lifts managed by designated staff/fire services.

Fire doors leading to the external environment should have level access to the exterior (no threshold upstand) or have gently sloped ramp access, preferably a gradient of 1:20. Any external pavement should have dished access to any adjoining roadway and a clear access route to the designated assembly location.

① For further information on emergency evacuation, please refer to Section 8 on page 239. See also Trinity College Dublin Personal Emergency Evacuation Plan (PEEP): <https://www.tcd.ie/disability/physical-access/evacuation-plans.php>

7.9 Office Accommodation

7.9.1 Background

All office accommodation, both public and private, should be designed to be accessible to all, including people with disabilities.

7.9.2 Car Parking

Where car parking is provided for employees/visitors, accessible parking should also be provided.

The designated accessible parking spaces should be located at the same level as, and no more than 25m from, the principal entrance to the building or buildings served by the car park.

Where parking serves more than one accessible entrance, accessible parking bays should be dispersed and located adjacent to each accessible entrance.

Setting-down and picking-up points should be provided adjacent to the accessible entrances; these points should be clearly signposted and should be located on firm and level ground.

① For information on the number and design criteria for accessible car parking, please refer to Section 4.1 page 53.

7.9.3 Pedestrian Routes

Pedestrian routes should be designed to be accessible, easily identifiable, predictable and direct.

① For further information on pavements, crossings and approach routes, please see Section 4.2 on page 62.

7.9.4 Building Approach

Appropriate signage should indicate the location of the entrance to office accommodation.

The approach to the main entrance from an adjacent road or car park should be level and have a smooth non-slip surface. Where it is not possible to provide a level approach, both steps and ramps should be provided.

① For further information on approach routes, including external ramps and steps, please refer to Sections 4.3 and 4.4 on pages 72 and 74.

7.9.5 Entrances

Main entrance doors to office buildings should provide a minimum clear opening width of not less than 1000mm. Double doors should include at least one door leaf which provides a minimum clear opening of 1000mm. It is preferable that the main entrance door/s are automated. Revolving doors are not accessible to a person using a wheelchair or mobility aid, and a secondary accessible entrance, adjacent to the revolving door, should be provided. This secondary entrance should be capable of being used independently by a person using a wheelchair, without having to summon assistance.

① For further information on all doors, including powered and automated doors, please refer to Section 5.1.4 on page 92.

7.9.6 Reception Areas

The reception area should be easily identifiable from the main building entrance with a direct, unobstructed approach. In order to facilitate face-to-face interactions, the reception desk should not be cluttered with computer screens or literature stands.

The reception desk should be at a compromised height of 850mm, which is a suitable height to facilitate both a person standing or seated. If there is a requirement for people who are standing to use the reception counter to write, then a section of the counter should be positioned at 1050mm height from floor level to facilitate a person standing.

Enhancement systems for people with limited hearing should be installed. A portable Loop System should be available for use in meeting/interview rooms. Appropriate signage should be provided to indicate the presence of a Loop System.

Information at reception areas should be available in a variety of formats to accommodate the needs of as wide a range of users as possible.

① For further information on reception areas, please see Section 6.1.2 on page 115.

7.9.7 Seating

Seating provided in reception areas should be at a height of between 450-520mm, including some seating with armrests. The seating provided should include suitable spaces for wheelchair users to position themselves alongside the seating.

Seating in reception areas should be configured to allow space for a wheelchair user to gain access to position alongside standard seating. Seating provided should be stable, some with and some without arm rests and at a range of heights from 450-580 mm. A minimum backrest height of 455mm should be provided on all seating.

① For further information on seating, please see Section 6.1.2.3 on page 118.

7.9.8 Turnstiles and Security Gates

Where turnstiles and security gates are used to allow entry into work area locations, they should operate on a proximity type card system rather than a swipe or insertion type card system to insure universal access. A clear turnstile width of 900mm is recommended. Revolving or tripod turnstiles are not suitable for use by people using a wheelchair or other mobility aid. Where turnstiles are necessary, bi-parting or folding type installations should be provided.

7.9.9 Internal Doors

Internal doors throughout office buildings should provide a minimum clear opening width of 900mm. There should be 500mm of clear space at the leading edge on the pull side of the door and 400mm of clear space at the leading edge on the push side of the door; the clear space on either side should be maintained with no obstruction for 1800mm. The clear space at the leading edge (latch) side of any door allows a person using a wheelchair to pull into that space to reach and operate the door handle. The door handle should have a return at the end of the handle.

Fire doors within corridors should be on a magnetised hold open system that will automatically close doors in the event of the fire alarm activation.

① For further information on internal door design and door furnishings, please see Section 5.2.4 on page 94.

7.9.10 Internal Circulation

All circulation routes within an office building should be well maintained and free of obstacles. In open-plan offices, circulation routes should be clearly defined, for example, by using floor surfaces of contrasting colours, a change in texture of floor coverings, or the careful placement of furniture.

Clear access routes of 1200mm wide should be maintained throughout all floor spaces in office open-plan areas, and turning spaces provided within and at the end of access routes.

Wider circulation routes will be required in main corridors and in high-usage locations, where a clear width of 1800mm is recommended.

7.9.11 Open-Plan Office Areas

Workstations within open-plan office areas should be adaptable to meet the needs and preferences of employees, including employees with disabilities. The arrangement of furniture and the provision of height-adjustable desks should be an option. L-shaped desks are generally preferred as they enable people to reach both sides of the desk more easily. Chairs should be stable, and some should have armrests and be height adjustable.

A minimum of 1800mm diameter of clear manoeuvring space should be provided between workstations, with knee clearance of 700mm in height beneath any desk. The desk should be 760-780mm in height from floor level. Desks at the end of a row may be suitable to allocate to wheelchair users as they allow for more circulation space.



Office Desk

Consideration should be given to individual preference and the provision of height-adjustable desks or sit-to-stand desks may be the preferred option.

An ergonomic assessment is recommended within an office environment to identify any specific needs of an individual employee. Height-adjustable desks may be the preferred option.

Storage facilities, such as filing cabinets and shelving, should be accessible from a seated position and are best placed with the bottom end height no lower than 750mm and the top height no higher than 1250mm. Office shelving should be positioned so that items can be reached independently by wheelchair users. Bookshelves or drawer pulls should be at least 400mm from floor level.

The preferred height for operation of a photocopying machine by a person seated is 760mm from floor level.

Dual-height coat stands should be considered, and coat hooks should be provided at both 1200mm and 1700mm from floor level.

7.9.12 Meeting Rooms

Space management is necessary for all meeting rooms to ensure there is an adequate access route to facilitate a wheelchair user to enter, move throughout the room, position at the meeting table, and use facilities such as lights, heating, computer systems, etc. A minimum clear access route of 900mm should be maintained through all seating areas, with clear access to table/s and facilities within the room. There should be space within the room for a person using a wheelchair to turn 360°, ie a turning circle of minimum 1500mm but preferably 1800mm. Tables should have legs that do not protrude into the circulation area or block access for a person using a wheelchair to position beneath the table. There should be a choice of seating, including some chairs without wheels and with arm rests with a seat height of 450-520mm.

White boards in office spaces and meeting rooms should be reachable by a person seated, with the usable section located a height between 850-1200mm. Using a complete wall as a white board is a possible solution to ensure people of all heights have good access.



Office Desk



Office Shelving Location

All switches and controls should be located 500mm from any corner. Switches and controls that are in frequent use should be 750-1000mm from floor level.

→ See Figure 2 Space Requirements on page 44, Figure 3 Common Reach Zones on page 45 and Figure 4 Forward and Side Cross Reach Distances on page 46.

7.9.13 Internal Changes in Floor Level

Changes of levels are usually accommodated by the provision of stairs, ramps, platform and car lifts. Where steps are provided, these should be accompanied by an adjacent ramp.

Ideally, flights and landings of stairways should have an unobstructed width of at least 1500mm.

① For further information on internal stair and ramp design, please see Sections 5.5.2 and 5.5.3 on pages 102 and 104.

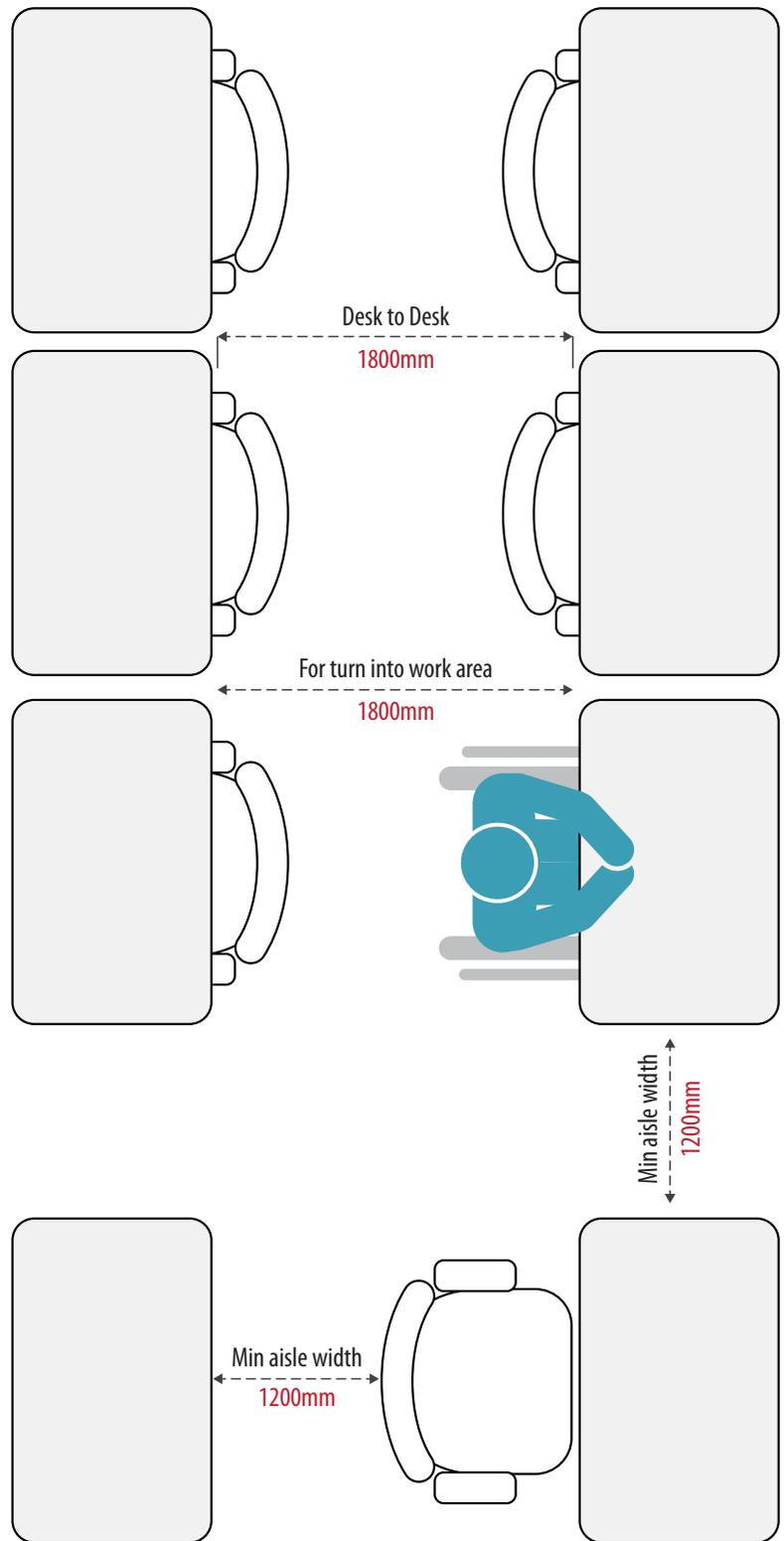
Lifts throughout office accommodation should be accessible to people with limited mobility.

Internal passenger lifts are the usual means of moving from one storey to another within a building. Single door lifts should ideally provide sufficient internal cabin space to accommodate a turning circle with a diameter of 1800mm. Passenger lifts should be located adjacent to stairs to offer an alternative option. Many people, when possible, will still prefer to use stairs rather than enter a lift.

Lifts in all new buildings should be fire-protected and capable of being used for evacuation purposes; this is the most effective means of emergency evacuation for people with disabilities. Evacuation lifts should be enclosed in a fire-resisting shaft and have an independent electrical supply. Existing lifts can be upgraded to be usable as the means of emergency evacuation.

① For further information on passenger lifts, please refer to Section 5.5.4 on page 104.

Figure 34 - Aisle Space Between Desks Within an Office Environment



7.9.14 WC Provision

The design of WC facilities should incorporate ease of access and use for all people. Where sanitary conveniences are provided in a building, provision should be made for universal access, and so facilitate the needs of as wide a range of users as possible, ie people who have impaired mobility and people who are using a mobility aid such as a walker or a manual or powered wheelchair. A correctly designed wheelchair accessible WC facility requires the provision of a WC cubicle with adequate turning space to accommodate a person using a manual or powered wheelchair. Where there is more than one wheelchair accessible WC cubicle, the WC bowls should be positioned to allow for right and left sided transfers within the different cubicles.

Additionally, the provision of a WC cubicle with adequate space for an assistant and the use of a hoist should be considered.

Particular attention to the correct location of fixtures and fittings is also very important. All walls within bathrooms and WC cubicles should be capable of immediate firm fixing and support for adaptations within 300-1800mm from ground level.

Where there is only one WC in a building, it should be sufficiently large to accommodate all users, including wheelchair users. This can be achieved by increasing the width of the accessible WC size to 2300mm in width x 2500mm in length, with the door opening outward and including an additional standing height wash-hand basin (no pedestal) with a rim height of 850mm above floor level.

① For complete information on WC provisions, please see Section 6.4 on page 133.
For information on independent-use and assisted-use WC with shower provision, please see Section 7.5.2 on page 179.

7.9.15 Communal Kitchen Facilities

When planning a communal kitchen due consideration must be given to: the approach route to the kitchen; the communal kitchen layout and design; and the number and profile of people it is intended to accommodate. For example, will the kitchen in the office situation be intended for low or occasional use for coffee/tea/lunch preparation or will the kitchen be intended for full use including meal preparation, and provide full cooking facilities?

For a low-use kitchen within an office environment, it may not be necessary to include an oven or hob within the kitchen, with the provision of a microwave and tea/coffee making facilities alongside sink, fridge and dishwasher being sufficient. Within an occasional low-usage kitchen, including where a hob/oven is present, providing compromise worktop heights of 850mm that can be used both by people standing and by people seated in a wheelchair, at key work areas (hob, sink and prep worktop area), may be a satisfactory kitchen design. To be suitable to a person using a wheelchair, these key work areas must have clear space beneath, with the oven located so that the floor of the oven is at the same height as the work top and with a heat-insulated pull-out shelf beneath the oven.

Storage locations for utensils, crockery and food should always be accessible to both people standing and seated and this requires thoughtful location of shelving. Accessible storage options that include a choice of drawer type storage within the base units is recommended; pull-out deep drawers being more accessible than hinged door presses.

If the kitchen is intended as a full-use kitchen with full meal preparation facilities it may be necessary to consider replicating key work areas such as the hob, sink, and food preparation areas, at wheelchair accessible heights, ie 760mm from floor level and with clear space beneath. A height-adjustable worktop area, comprising hob, sink and food preparation area, and including drop down overhead storage, is also a possible consideration within a shared full-use kitchen.

Tea/coffee making facilities need to be located within the common reach zone to suit both a person seated and standing.

→ See Figure 18 Wheelchair Accessible Kitchen on page 132, Figure 3 Common Reach Zones on page 45 and Figure 4 Forward and Side Cross Reach Distances on page 46.

① See also Section 6.3.5 Communal Kitchen Facilities on page 128.

7.9.16 Canteen Café Facilities

In self-service canteens and cafes, food display cabinets, tray slide shelves and cashier areas should be universally designed. Food and drink displays should be located no higher than 1200mm above floor level. Wheelchair access should be provided the full length of any self-service counters at a height of 850mm with 700mm knee clearance underneath. This counter height of 850mm is a compromise height suited to both a seated and a standing person. Clear space on the countertop should be maintained to allow the customer to slide their tray the full length of the counter, and to the pay point. Queuing lines at self-service counters should be at least 1200mm wide.

Thoughtful consideration is required in providing easy access to goods stored within coolers/fridges and to the location and container heights for any cutlery/condiment/water/tea/coffee self-service facilities and also microwave oven/s or hot water dispensers. Within coolers and fridges, an array of different products should be located to the front and on shelving within the comfortable reach zones, as demonstrated in Figures 3, 4, and 5 Common Reach Zones on **pages 45, 46 and 47**. The same principle applies to the location and storage of condiments and cutlery. To ensure easy and safe use of drink dispensers and microwave ovens, etc, they should be located on surfaces 850mm high from floor level, with 700mm clear knee space beneath; associated mugs/jugs, etc should also be positioned within easy-reach zones.

A choice of seating should be provided in canteen and café facilities. Table heights should be between 760-800mm from floor level and have knee clearance of 700mm to enable access for wheelchair users. A minimum distance of 1550mm in width should be maintained between opposing rows of tables to allow a wheelchair user to position at the table.

Preferably allocate a space at the end of each row of tables for a wheelchair user. Pedestal-style dining tables are also suitable for use by people who are wheelchair users; avoid the use of bench-style seating.

① For further information on communal kitchen facilities, please see Section 6.3.5 page 128.

7.9.17 Staff/Storage Lockers

Accessible lockers should be a minimum of 300mm in width and not more than 600mm in depth. Storage accessible from the front, from a seated position, is best placed with the bottom end height no lower than 750mm and the top end height no higher than 1250mm. The bottom end height of 750mm allows for a half locker with knee recess of 700mm high, so a wheelchair user can gain frontal access to the locker.

Storage accessible from the side, from a seated position, should have the bottom end height of the locker no lower than 665mm and the top end height no higher than 1060mm.

Accessible storage units should have a 900 x 1400mm of clear floor area to the front. The distance between opposing banks of storage lockers should be 1800mm. Consider allocating locker space for wheelchair users in the mid-range of the present locker system.

Provide seating adjacent to lockers for use by people with restricted mobility.

① For further information on staff/storage lockers, please see Section 6.3.4 page 128.

7.9.18 Fire Safety Refuge Areas and Evacuation

Fire extinguishers/kitchen fire blankets should be located at heights that are reachable by a wheelchair user or a person of small stature. Fire extinguishers should be placed so as not to cause obstruction or being at risk of becoming accidentally engaged. Locate fire extinguishers out of the circulation route.

Many people with disabilities cannot use stairs unassisted, so it is necessary, in the event of an evacuation, to ensure that people requiring assistance to evacuate the building can remain in a place of relative safety until help arrives. This provision must be forward-planned and provided. One solution is to provide a fire safety refuge area/s or area/s of rescue assistance. Refuge areas should be provided on any floor where egress from the building is not level with the external environment and they should be located within designated fire-protected areas of an office building, usually within a stairwell. Refuge areas are locations above or below ground level where one or more people requiring assistance to evacuate the building can position while awaiting the evacuation plan to be operated and assistance to arrive.

A refuge area must contain a sufficient number of spaces to accommodate the number of people likely to require assistance to evacuate from the building. The dimensions of a refuge space should be 900 x

1400mm for a single space and be situated clear of the escape route. Refuge areas should be located either within or be an area with direct access to each protected stairway or internal fire-protected lift. Each refuge area should be clearly designated and contain an appropriate evacuation chair, intercom access to a security point, with clear instructions regarding the expected procedure in the event of an emergency evacuation and including identification of the floor level where the refuge area is located.

→ See Figure 36 Refuge Area on page 247.

IWA recommends that lifts in all new buildings should be fire-protected and capable of being used for evacuation purposes; fire protected evacuation lifts are the most effective means of emergency evacuation for people with disabilities. Where evacuation lifts are provided, refuge areas are still required as people must wait within a fire-protected area for the evacuation of the building using the fire-protected lifts managed by designated staff/fire services.

Fire doors leading to the external environment should have level access to the exterior (no threshold upstand) or have gently sloped ramp access, preferably a gradient of 1:20. Any external pavement should have dished access to any adjoining roadway and a clear access route to the designated assembly location.

Personal Emergency Evacuation Plans (PEEPS) should be developed for office accommodation occupants who may need assistance to evacuate the building in the event of a fire.

① For further information on Emergency Evacuation, see Section 8 page 239.
See also Trinity College Dublin Personal Emergency Evacuation Plan (PEEP): <https://www.tcd.ie/disability/physical-access/evacuation-plans.php>

7.10 Places of Worship

7.10.1 Background

Access to and within all religious buildings and places of worship should facilitate full participation by everyone, including people with disabilities.

Adopting a flexible approach to the way in which services are planned and arranged will result in greater inclusion of the whole congregation.



Places of Worship

7.10.2 Car Parking

For religious buildings such as places of worship and crematoria, etc, designated accessible parking spaces should be located at the same level as and no more than 25m from the principal entrance to the building served by the car park. Where parking serves more than one accessible entrance, accessible parking bays should be dispersed and located adjacent to each accessible entrance.

Setting-down and picking-up points should be provided adjacent to the accessible entrance/s; these points should be clearly signposted and should be located on firm and level ground.

① For information on the number of spaces required and design criteria for accessible car parking, please refer to Section 4.1 page 53.

7.10.3 Pedestrian Routes

Pedestrian routes should be designed to be accessible, easily identifiable, predictable and direct. Pedestrian paths should have a demarcation which can be followed by people with sight impairments, for example, a wall, building line, kerb edge, grass verge or clearly detectable change in texture of the surface underfoot.

The recommended clear pavement width is 2000mm. Where this pathway width is not possible, the pathway, where there is an open kerb adjoining a carriageway, should have a clear minimum width of 1700mm.

① For further information on pavements, crossings and approach routes, please see Section 4.2 on page 62.

7.10.4 Building Approach

The approach to religious building's main entrance from an adjacent road or car park should be level and have a smooth non-slip surface. Where it is not possible to provide a level approach, both steps and ramps should be provided.

Where there is a change of level of two steps or more, it should be treated as a stair and should include handrails on each side.

Appropriate signage should indicate the location of all entrances.

① For further information on the design of external ramps and steps, please refer to Sections 4.3 and 4.4 on pages 72 and 74.

7.10.5 Main Entrances

Main entrance doorways to places of worship, including any associated lobby doors, should provide a minimum clear opening width of not less than 1000mm. Double doors should include at least one door leaf which provides a minimum clear opening width of 1000mm. It is preferable that the main entrance and any associated lobby doors are automated.

① For further information on all doors, including powered and automated doors, please refer to Section 5.1.4 on page 92.

7.10.6 Entrance Lobbies

Entrance lobbies should not be used as storage or display areas as this practice reduces the manoeuvring space and may cause an obstruction for a person using a wheelchair or mobility aid. Columns, ducts and similar full-height elements should not protrude more than 100mm into the access route within a lobby; if this is unavoidable, a guardrail or hazard protection should be put in place. Matwells within entrance lobbies should be designed to be flush with the surrounding surface to avoid the risk of tripping.

The minimum clear door widths leading into and from a lobby/foyer area should be 900mm, with a clear space of 500mm next to the leading edge on the pull side of the door and 400mm clear space at the leading edge on the push side of the door.

Entrance lobbies should be designed in such a way that there is sufficient space to enable all people, including a wheelchair user and a person accompanying a wheelchair user, to move clear of one door before using the next door. The clear space enclosed by a lobby area must be at least 1700mm in depth and 900mm in width, free of door swing into that space.

① For further information on lobby design, please refer to Section 5.2.2 on page 94.

7.10.7 Internal Doors

Internal doors throughout places of worship should provide a minimum clear opening width of 900mm. There should be 500mm of clear space at the leading edge on the pull side of the door and 400mm of clear space at the leading edge on the push side of the door; the clear space on either side should be maintained with no obstruction for 1800mm. The clear space at the leading edge (latch) side of any door allows a person using a wheelchair to pull into that space to reach and operate the door handle.

① For further information on internal door design and door furnishings, please refer to Section 5.2.4 on page 94.

7.10.8 Corridors/Aisles

Ideally, a corridor or aisle should have a clear unobstructed width of 1800mm, and any corridors/aisles less than 1800mm wide should have a turning space of 1800 x 1800mm at each end. A minimum acceptable clear unobstructed corridor/aisle width is 1500mm, with a width of 1200mm acceptable only when there is no alternative.

① For further information on corridor design, please see Section 5.3 on page 96.

7.10.9 Seating

Where permanent or removable seating is provided as part of the design, people with disabilities should have a choice of seating location. Both wheelchair accessible seating areas and ambulant accessible seating should be provided in a choice of locations and with good viewing. Special consideration should be given to sight lines. People standing during a service or event should not obstruct the clear view of a wheelchair user or of a person who has a mobility impairment; nor should pillars or columns obstruct clear sight lines. Staggered seating offers more opportunity for positions with better sight lines. Wheelchair seating areas should be designed so that wheelchair users have a clear line of sight when situated behind standing accommodation or where people in front may stand up.

Spaces for wheelchair users and people using mobility aids should be available throughout the seating area; flexibility to modify the seating arrangement for each occasion will facilitate inclusion in a natural way.

7.10.9.1 Wheelchair Accessible Seating Areas

Wheelchair accessible spaces should always be provided on a level surface. A wheelchair space must have a minimum dimension of 900mm in width x 1400mm in depth, with clear unobstructed access from the aisle or access route that is a minimum of 1200mm in width.

Wheelchair spaces should be positioned in different locations, not just at the front and back, to provide a choice of seating positions. Spaces should not be positioned where a person is segregated from the rest of the congregation. However front row seating may be preferred where people require close access for lip reading or other purposes. There should be good illumination available to support lip reading and sign language interpreting.

Designated wheelchair spaces should accommodate two wheelchair users seated side by side, these spaces should have a fixed seat to one side for a companion.

7.10.9.2 Ambulant Accessible Seating

Ambulant accessible seating provided should be stable, some with and some without arm rests and at a range of heights from 450-580 mm. A minimum backrest height of 455mm should be provided on all seating.

Ambulant accessible seating with removable armrests and increased leg room should be provided at the edge of aisles to accommodate people who have a mobility impairment who are not wheelchair users and, in some locations where the seating is not raked, to allow wheelchair users the choice to transfer from their wheelchair to the standard seat provided. Ambulant accessible seating should be located at the ends of rows and within the general seating areas where there is level access. Seating should have arm rests and additional leg room for comfort. Space for an assistance dog to rest alongside their companion should be provided adjacent to some seats away from access aisles and emergency escape routes. Seating should contrast visually with the surroundings

 For further information on seating, please see Section 6.1.2.3 on page 118.

7.10.9.3 Number of Spaces Required – Wheelchair Accessible and Ambulant Accessible

The number of wheelchair accessible spaces provided should be:

At least 10, or one for every 50 spaces of the seating capacity (whichever is the greater), where the seating capacity is not more than 10,000.

At least 100, or five for every 1000 spaces (whichever is the greater), where the seating capacity is more than 10,000.

At least 150, or three for every 1000 spaces (whichever is the greater), where the seating capacity is more than 20,000.

At least 210, or two for every 1000 spaces (whichever is the greater), where the seating capacity is more than 40,000.

The number of ambulant accessible seating spaces required should be provided on the same basis as for wheelchair accessible spaces.

7.10.10 Confessional Areas

Confessional areas should be easily identifiable and accessible. An accessible confessional box requires a 900mm clear door opening width, with 500mm of clear space to the latch side of the door, level access and preferably an 1800mm turning area within. Where possible, locate one confessional area close to the main entrance. While open confessional areas have become more common in recent times, some people still prefer the more traditional enclosed confession box.



“Some churches have no Loop System for those with hearing difficulties”

IWA member, Co Limerick

7.10.11 Lectern and Speaker Facilities

Speaker facilities should accommodate people standing and seated. Lecterns should have a height-adjustable inclined reading surface, with a height range between 760-1100mm at the speaker side, and 700mm knee clearance beneath. The lectern surface should be inclined to an angle of 30° from a horizontal position.

A table for laptops and overhead projectors should be no higher than 760-800mm from the floor with 700mm height clearance underneath the table. The height of the surface of a laptop projector or keyboard should preferably be no higher than 850mm from floor level.

Where a raised podium or altar is provided within a religious building, wheelchair users should have equal access. The provision of a ramp with a gentle gradient, preferably 1:20, is always the preferred option. Where the available space does not allow the option of a ramp, a lifting platform or alternatively a FlexStep or Sesame Lift is another option whereby steps can be electronically folded back to change into a lifting platform. The platform lift should be screened so that it can be used discretely.

① For further information on platform lifts please see Section 5.5.5 on page 106.

7.10.12 Hearing and Visual Enhancement Systems

The provision of a hearing enhancement system such as a permanent induction loop should be provided to enable full participation by people with hearing impairments. People with a sensory impairment may need to view or listen from a particular side or sit in the front for lip reading or to read sign interpreters.

Acoustic and Audio Provisions

For people with hearing and sight loss, the following enhancement systems should be considered, as appropriate:

- Loop or infra-red hearing systems which transmit sound to hearing aids and cochlear implants to enhance hearing for people who use these devices.
- Captioned performance and speech-to-text subtitles and on-screen display to give people who are deaf or hard of hearing access to a live performance or presentation. The speaker's words appear on display units placed within a set or next to a stage at the same time as they are spoken or sung.
- Audio Described Performances which provide a verbal commentary that tells a person who is visually impaired what is happening on a stage during the parts of the performance where there is no dialogue. Visually impaired audience members are equipped with a headset or earpiece to hear the information.
- Irish Sign Language (ISL) interpretation for individual or group settings, which can be made available on request.

The availability of these facilities should be clearly signposted, with procedures in place for distribution and reclamation of audio description and portable loop packs.

① For further information on acoustics and hearing/visual enhancement systems, please see Sections 6.2.6 and 6 2.7 on pages 122 and 123.

7.10.13 WC Facilities

Toilets that are universally designed should be provided in all religious buildings, meeting houses, crematoria, and cemetery chapels.

Where there is only one WC in a building, it should be a wheelchair accessible unisex type. This facility should be sufficiently large to accommodate all users including wheelchair users. This can be achieved by increasing the width of the accessible WC size to 2300mm in width x 2500mm in length, with the door opening outward and including an additional standing height wash-hand basin (no pedestal) with a rim height of 850mm above floor level.

Where there is more than one wheelchair accessible WC, the WC bowl within the different bathrooms should be positioned to allow for right and left sided transfers.

① For further information on WC provisions, please see Section 6.4 on page 133.

① For information on emergency evacuation, see Section 8 on page 239.

7.11 Outdoor Environments

7.11.1 Background

To promote equal participation within outdoor environments by everyone regardless of levels of ability, Irish Wheelchair Association Sport in collaboration with Sport Ireland produced *Great Outdoors A guide for accessibility* (2018), which is available to download on <https://www.iwa.ie/great-outdoors-access-guidelines/> This guide supports agencies involved in the provision of outdoor amenities to plan and develop recreation areas and amenities that are universally accessible to everyone, regardless of age, ability or disability.

The following guidance can be complemented by referencing IWA Sport and Sport Ireland's *Great Outdoors A guide for accessibility 2018*.

7.11.2 Entry to Parks, Gardens and Playgrounds

The guiding principle of 'access for all' is to choose the least restrictive option so that access through entrance and exit points is as easy as possible for everyone, including for people with limited

strength and restricted manual dexterity. All gates/gaps should be sufficiently wide to allow a person using a wheelchair/mobility scooter to easily gain entry. Consider quick fix options of replacing an inappropriate gate or stile with a more suitable gate type or creating an open entrance. Always provide an alternate entrance where vehicle barrier poles are located. The access gates and entrances to parks, gardens and playgrounds should provide a clear entry route of 1000mm. There should be 500mm of clear space at the leading edge on the pull side of any gate and 400mm of clear space at the leading edge on the push side of any gate; the clear space on either side should be maintained with no obstruction for 1800mm. The use of 'kissing gates' is not recommended as they can be complicated to negotiate for people with limited mobility. However, if used, the design should allow access for people using mobility scooters.

An information map should include details in different formats of optional routes, details of pathway surfacing, widths, gradients, cross slopes and locations of bench/picnic facilities and accessible toilets. Clear visibility of signs and walkways, especially from overhanging vegetation, must be maintained, with a clear headroom height of 2300mm.

① For information on signage and wayfinding, please see Section 5.4 on page 100.

7.11.3 Picnic Areas

Picnic benches and resting areas should be adjacent to accessible routes, with easy access from these routes to the picnic/resting areas. Route information display boards should provide information and signage showing the locations of accessible picnic areas. Picnic tables should be located in a safe, pleasant area with convenient access to any nearby car park. Picnic tables should be placed on level sheltered ground that is served by accessible paths.



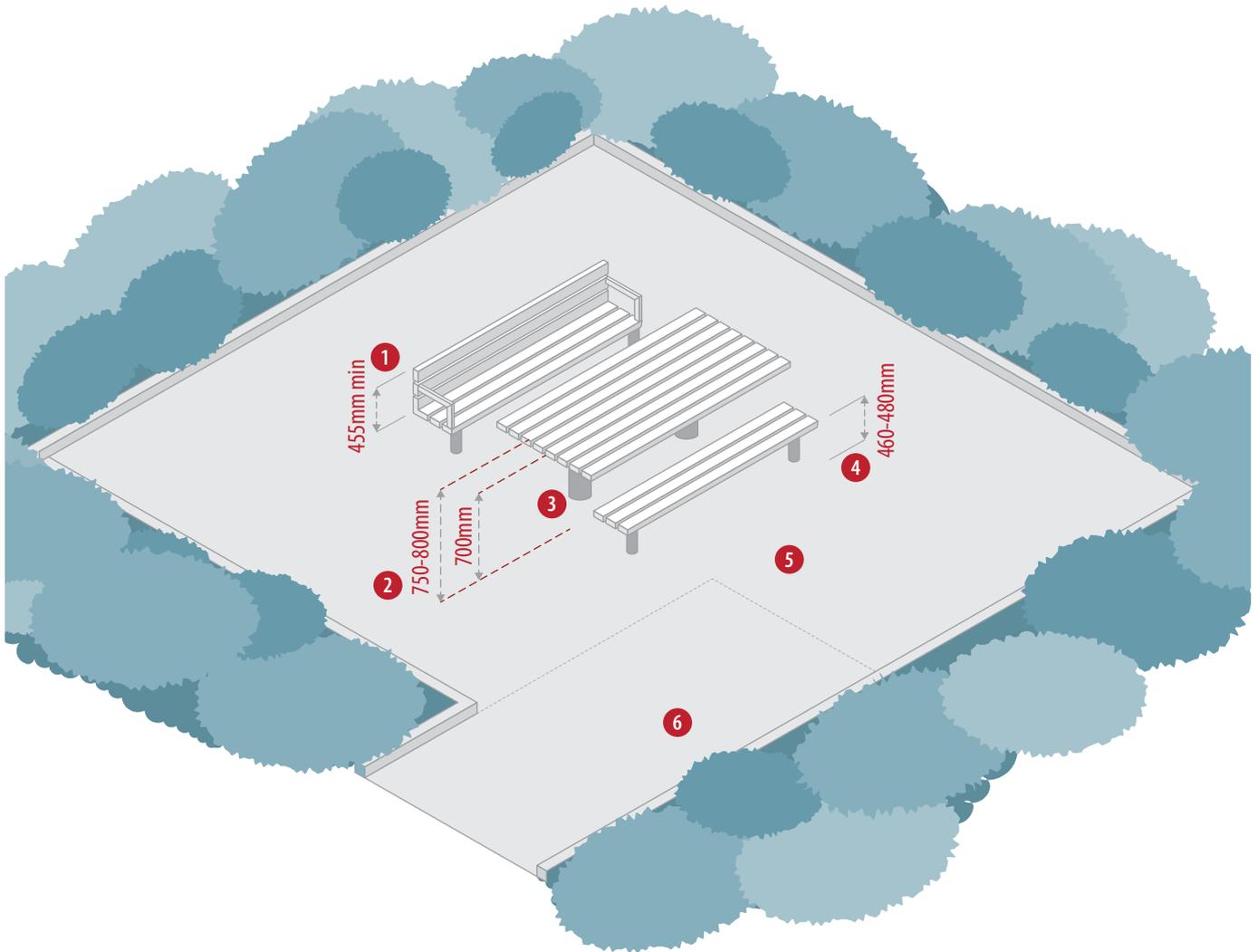
Accessible Picnic Area

The picnic table/bench should be located on a firm and level surface and have a clear, smooth non-slip accessibility zone of 1800mm around all sides of the table/bench unit. Unsuitable surfaces such as cobbles or loose gravel should be avoided. The height of the picnic table should be between 760-800mm, with a clear knee space area of 700mm in height, 800mm in width and 480mm in depth. Cantilevered ends on tables facilitate wheelchair users.

The seat height should be within 420-580mm from the ground level and the minimum depth of the seat should be 450mm. The seating areas should provide a mix of seating options, eg some with backrests, some with arm rests, and some with both. The back support of the seat should be a minimum of 455mm in height.

➔ See Figure 35 Picnic Area on page 220.

Figure 35 - Picnic Area



- 1 Back support min 455mm
- 2 Height of picnic table 750-800mm with 700mm clearance beneath
- 3 Cantilevered table legs
- 4 460-480mm seat height
- 5 Firm level surface
- 6 Accessibility zone of 1800mm around all sides of the table/bench unit

7.11.4 Pathways

Paths and pavements in a park should have smooth, regular, firm, non-slip surfaces. Loose gravel is difficult to navigate for a wheelchair user. A 75mm raised edge helps to keep the path clear from soil wash-off; it also guides people who are blind or have a visual impairment, when using a cane, and prevents wheelchair users from going off the path. Accessible routes from the entry/ car parking area to various locations and facilities should be clearly signposted at the appropriate levels. Paths and pavements should be free from severe erosion or damage; good drainage should prevent paths from becoming waterlogged or muddy. Suitable pathway materials include concrete, tarmac, resin -bonded aggregate, recycled plastic, etc.

Level surface and guard rails should be provided at viewing points. Where viewing equipment/ telescopes are provided, at least one should be provided at a height of 1100mm from the surface level.

When planning pathways consider the following:

- A 1200mm pathway width accommodates a wheelchair user.
- A 1500mm pathway width accommodates a wheelchair user and a person walking alongside.
- A 1800mm pathway width accommodates two wheelchair users passing safely in an external environment where there is no raised kerb open to an adjoining carriageway.
- A 2000mm pathway width accommodates two wheelchair users passing safely in an external environment when there is a raised kerb open to an adjoining carriageway.

① For information on pathways, routes, seating and crossings, see Section 4.2 on page 62.

➔ See Figure 2 Space requirements on page 44.



Outdoor Activity



Outdoor Activity

7.11.5 Sensory Gardens

A sensory garden is a self-contained garden area that allows visitors to enjoy a wide variety of sensory experiences. Sensory gardens are designed to provide opportunities to stimulate the senses, both individually and in combination, in ways that users may not usually encounter. To get the maximum use from a sensory garden, it is important to take into account for whom the garden is primarily intended. It is also important to understand what plants and features will best achieve the atmosphere that is desired. When planning a sensory garden, it is important to feature elements that appeal to all five senses.

For visual stimulation, or sight, colour is an important consideration. Designers can be creative in their use of colour stimulation. Colours may be seasonal, placed for maximum contrast, or grouped in clusters. Colour can also be brought into the garden in the use of brick, gravel, or stone. Additions such as wind chimes and water fountains add to the sounds of the garden. Smells and scents come directly from the plants chosen, some released when the leaves or petals are crushed by hand. A combination of scents that range from subtle to more intense produce the greatest variety and interest. Taste can be provided by planting edible herbs and other plants. Fruit trees and plants that produce vegetables are also a natural and obvious choice when it comes to taste in the sensory garden. When planting edible flowers, care should be taken to differentiate them from other non-edible flowers.

① For additional information on sensory gardens, see: <https://www.planetnatural.com/sensory-gardens/> and <http://deltasensorygardens.com/>

7.11.6 Raised Flower Beds

Within a sensory garden, and generally for people who are wheelchair users, raised flower beds provide a useful function in supporting gardening and the enjoyment of the outdoors. Raised flower beds are typically contained within a wooden or sometimes a recycled material or brick structure, and they can be of different types. Where a person who is a wheelchair user intends to use the raised flower bed on a regular basis, it is preferable that the raised flower bed allows the person to position beneath the bed. The raised bed in this situation should be approx. 850mm in height with 700mm of clear space beneath to a depth of approximately 500mm and with 300mm toe/footplate clearance.

The raised bed should be a maximum of 650mm in depth if accessed from only one side, and deeper if accessed from both sides. The raised bed can be of a semi-circular design allowing the position for the wheelchair user to be located within the semi-circle. This design will allow a person using a wheelchair to have front-on access to the raised bed allowing space to work to the front and to both sides. A raised



Gardening

bed that is not in frequent use by a wheelchair user may not require the clear space beneath; in this situation a wheelchair user will only have side-on access, which may be acceptable within a public sensory garden, for example, where the activity will be to touch and smell the planting rather than to actively garden.

7.11.7 Play Areas

Playgrounds provide all children with an opportunity to engage in safe risk-taking. The challenge and thrill factor of playground experience is crucial for motivating all children, including children with a disability. An inclusive play space¹³ offers play opportunities to children of all abilities. Providing more than accessibility, inclusive play spaces encourage and enable all children – able-bodied children and children with physical conditions or different sensory conditions – to engage with each other on the equipment, albeit in different ways. For example, an inclusive playground will use different routes to access the same pieces of equipment. This works not only for children with restricted ability, but also for children at different ages and stages. In building inclusive play spaces, some of the key considerations are:



Play Swing



Accessible Merry-go-round

- Inclusive play space layout. A few of the layout factors that need to be considered are access to and around the play space, parental supervision, facilities for parents and carers, traffic flow, and appropriate under-surfacing.
- Sensory experiences. Having a variety of materials (including timber, steel and rope) offers more interest, more scope for imaginative play, and provides for children with sensory conditions. For example, a visually impaired child might appreciate the texture of timber or rope, or a variety of textures in the under-surfacing material used.
- Play richness. Having a wide range of play components is important to provide a rich play experience. In designs, we include a variety of elements that provide for spinning, sliding, rocking, swinging, climbing and balancing, so children can challenge themselves whatever their level of ability.

Playground equipment should be chosen with due regard to children of differing abilities and should provide various options of swinging, climbing, rocking, sliding and balancing, as well as

13 The text outlining inclusive play spaces has been taken from Adventure +, an Australian company website. See: <https://www.adventureplus.net.au/whats-difference-inclusive-accessible-play-areas/>

sensory activities. Supported swing seats with harnesses, wheelchair accessible roundabouts, wide/ embankment slides, basket hoops, sand and water tables, etc, are some good examples of ways in which a playground can be made inclusive for children with different abilities.

The surface of the playground must be soft enough to limit injury from falls, but always firm and stable enough for a wheelchair user or person using a walking aid to move freely and to manoeuvre. Loose surfacing of any type is not suitable. A minimum access zone of 1200mm in width is required to move around any playground structure. Additionally, a play area should provide:



Sensory Play



Pedestal-style Accessible sandpit

- Clear access routes from the wider area/surrounding neighbourhood to the playground location.
- Nearby accessible parking spaces.
- Nearby availability of accessible WC facilities.
- Seating within an observation area whereby parents or carers can maintain close contact with and oversee children as they play.
- Entry/exit gates that cannot be operated by small children.
- Dynamic play equipment within easy reach for a range of users – seated, standing and of differing heights.
- Opportunities for sand and water play for a range of users – seated, standing and of differing heights.
- Wide, smooth and level paths around and to play equipment.

Recommended reach ranges for a young person seated in a wheelchair are:

- 500-910mm for 3-4 year olds.
- 460-1010mm for 5-8 year olds.
- 400-1115mm for 9-12 year olds.

7.12 Outdoor Events and Festivals

7.12.1 Background

This section covers unique, one-off entertainment events, such as concerts, festivals, fairs, markets, shows, etc. These are events taking place at a temporary location such as a parkland, sports stadia, public and private parks.

Irish Wheelchair Association Sport and Sport Ireland publication *Great Outdoors A guide for accessibility* (2018), complements the following guidance with additional information.

① See: <https://www.iwa.ie/great-outdoors-access-guidelines/lead-great-outdoors-download/>

7.12.2 Arriving at the Event

People with limited mobility who travel to events and festivals by car need to be able to park, have sufficient space to enter and leave their vehicle, on occasions move to the rear of their vehicle, then walk or travel in a wheelchair to the main entrance. Accessible car parking involves the appropriate designation and location of both car and multi-purpose vehicle parking bays and the provision of set-down/pick-up points.

The design of the parking bay should also plan for the safe transfer (dished kerbs, level approach routes, adequate lighting, etc) from the bay to the access route to the event, without undue effort, barriers to the use of wheelchairs, or hazards that could cause tripping. The size of the bay should allow for the safe transfer of a passenger or driver to a wheelchair, including a space allowance or accessibility zone for the use of a transfer hoist or ramp which may be attached to some vehicles.

If using a temporary car park area, the bays should be clearly signposted with an upright sign sited out of the circulation space. It is important that the car park attendants responsible for this area receive disability awareness training and understand the importance of maintaining adequate space between cars. The accessible route from the car park to the outdoor event should be clearly marked.

Set-down points should be positioned as close as possible to the main entrances and should be clearly identified in an online Accessibility Guide to your event. If it is not possible to provide a set-down/pick-up point within close proximity to the main entrance, then accessible transport should be provided to 'ferry' people with limited mobility from this point to the main entrance.

① For information on accessible parking, please see Section 4.1 on page 53.

➔ See Figures 5 Accessible Parking Showing Different Sized Bays, Figure 6 Accessible Parking Showing Shared Access Zone and Figure 7 Accessible Parallel Parking Bay on pages 55, 56 and 57.

Provision should also be made for people with limited mobility arriving by public transport. Please check with your local transport provider to ensure that accessible transport is available on this route. This information should be included in an online an Accessibility Guide.

7.12.3 Wayfinding and Signage at the Event

Accessible routes from the entry/car parking area and bus set down areas to various locations and facilities should be clearly signposted at the appropriate levels. Clearly defined logical routes can be identified with the use of colour contrasts and textural changes in paving. Planting can assist in defining routes or identifying hazards through scent and colour, but should not obstruct or present an overhead hazard.

An information map should include details in different formats of the following key areas: pathway surfacing, widths, gradients and cross slopes; locations of bench/picnic facilities; and accessible toilets. This information should be included an online Accessibility Guide for the event. Clear visibility of signs and walkways, especially from overhanging vegetation, must be maintained, with a clear headroom height of 2300mm.

7.12.4 Circulation at the Event

Pavements and approach routes to the main event areas should be designed to give easy and safe access to all. The pathway should be sufficiently wide for all users to move freely and to pass each other. The surface of the pathway should be level, smooth and slip-resistant, with no obstacles located within the circulation route. IWA recommends providing a tracking route throughout the site that can be independently used by wheelchair user. This route should provide a flush surface with no breaks or joins to pathways, and ramps leading to marquees and service areas.

All the major routes to the entertainment, food, and services areas should be linked with a level and firm pathway.

7.12.5 Marquees and Exhibition Tents

Marquees and tents are used for a variety of purposes at outdoor events. IWA recommends the following:

- Marquees and tents should be sited at lower levels to allow ramped access with a gentle gradient, preferably 1:20.
- Ramps into marquees and tents should have gentle slopes.
- There should be no upstands at the end of ramps where ramps transition to another surface.
- There should be handrails on ramps.
- Doors into marquees and tents should be held open to provide level landing platforms.
- Metal ramps can be slippery when wet; providing a covering on ramps works well.
- Level flooring should be provided inside the marquees.

7.12.6 Seating at Temporary Events

Integrated seating options for people who are wheelchair users and for people with a mobility impairment who are not wheelchair users should be available in a variety of locations with clear sight lines to the performance stage. Often at outdoor concerts, a temporary raised platform is constructed in the main 'standing' spectator area. Great care must be taken in the positioning of this platform. It should be placed at a reasonable and safe distance from the main stage and should be at a height that allows an uninterrupted view. Special consideration should be given to sight lines for wheelchair users so that their view is not blocked if people in front of them stand up. People standing during an event should not obstruct the clear view of a wheelchair user, nor should pillars or columns obstruct clear sight lines. Staggered seating offers more opportunity for positions with better sight lines.



Outdoor Event

It is recommended that at least one companion/personal assistant should be allowed to sit beside the person with limited mobility, and seating should be provided for them.

7.12.7 Facilities – Toilets, Showers and Camping

Accessible WC and showering facilities should be provided. Where portaloos are required, they should be of the larger size, preferably of a portacabin type, with running water, with transfer space to one side of the bowl and sufficiently large to accommodate a 1800mm diameter turning space. Moulded plastic type accessible WCs are generally not up to an acceptable standard for independent use by a person who is a wheelchair user. There should be an accessible WC cubicle provided at all toilet locations. An accessible WC cubicle should be provided within close proximity to the main wheelchair spectator stand if one is provided. Where there is more than one accessible WC cubicle provided, the location of the WC bowls should be located on alternate sides of the cubicles to allow for a choice of left or right transfer side.

Standard accessible WCs do not meet the needs of all people as some people require extra facilities and personal assistance. Changing Places bathrooms provide more space and additional equipment, including a changing bench, shower and full room cover overhead tracking hoist. Another option would be the availability of a Mobiloo. A Mobiloo is a demountable WC that provides additional space and facilities required by some people who have complex needs. The Mobiloo should be provided at outdoor events in addition to the usual accessible WC and showering facilities.

① For further information on Mobiloo, please see: <https://www.mobiloo.org.uk/> and <https://changingplaces.ie/>

For events and festivals where overnight camping facilities are provided, there should also be accessible showering facilities. IWA recommends a minimum size of 2500 x 2500mm for a WC and shower room combined. Where glamping and Yurt type facilities are provided some should be designed to be suitable to a person using a wheelchair, ie level entry, sufficient space to move about, space to store a wheelchair, and a bed height of 450-500mm with a firm mattress. Any associated ancillary services should also be accessible to everyone.

A designated area should be reserved for people with limited mobility who are wishing to use the camping facilities. It is recommended that this area should be located close to the services area. A level pathway should link this area with the main entrance, all the services areas, and the entertainment stages and venues.

7.12.8 Departing from the Event

In the case of a large concert where the entertainment finishes at a scheduled time, it may be advisable to request people with limited mobility to wait until the main part of the audience has departed to allow for a safer exit.

7.12.9 Disability Awareness and Staff Training

Disability Awareness training for staff should be carried out prior to any outdoor event. Individual on-site staff members should be designated to offer guidance and assistance to people attending the outdoor event, with easily recognisable clothing to identify this role.

A Disability Liaison Officer should be appointed to the event. Prior to the event, the Event Promoter should conduct an audit to determine the accessibility requirements.

7.12.10 Accessibility Guide for the Event

An Accessibility Guide to the event, in both a printed version and an online version, should be made available. This should include information about the following:

- Pre-event ticket sales, including information on concessionary pricing
- Choice of seating areas and tickets prices
- Travelling to the event
- Set-down and drop areas
- Accessible entrances
- Parking facilities
- Services map
- Accessible routes
- Accessible toilets
- Accessible ancillary services

- Disability Liaison contact information
- Accessible showers
- Accessible camping
- Departing from the event
- Contact telephone numbers and email details for queries and for on-site support staff and services.



“Disabled people are unable to attend many outdoor events because of inaccessible facilities”

IWA member, Dublin.

7.13 Built and Natural Heritage Sites

7.13.1 Background

The Irish Government made a commitment in the Disability Act (2005) to make built and natural heritage sites visitable with ease and dignity by people with disabilities.¹⁴ While the goal of improving access to the built and natural environments is to give independent access to all, there is an innate tension to be managed between improving access and maintaining the essential and unique fabric of a heritage site and/or building. The policy of universal, equal and integrated access for all must be balanced with the conservation and preservation policy, requiring minimum intervention and reversible solutions. An ideal solution would give physical access while minimising the long-term impact of any adaptation or alteration to the original structure. Within this context, and in order to devise a solution which meets minimum intervention policy while improving physical access, bespoke solutions are required for each individual situation. Such solutions would typically be developed through in-depth consultation between conservationists, heritage architects, access consultants and people with disabilities.

The National Disability Authority has developed a *Code of Practice on Accessible Heritage Sites*. Compliance with this NDA Code of Practice¹⁵ implies compliance with the Disability Act (2005). The core elements of the NDA Code are access planning; pre-visit information; approach and entry; way-finding; external landscaping; internal circulation; interpretative information; programmes; facilities; and emergency egress.

① For further information, please see: http://nda.ie/File-upload/Heritage_Code_of_Practice.pdf

Refer also to the Department of Arts, Heritage and the Gaeltacht's guidance document **Access - Improving the Accessibility of Historic Building and Places**.

See: <https://www.buildingsofireland.ie/app/uploads/2019/10/Access-Improving-the-Accessibility-of-Historic-Buildings-and-Places-2011.pdf>

7.13.2 Devising Access Solutions

Access solutions should be devised through access auditing, consultation and collaboration with people with disabilities, and access planning. Ideally, a bespoke solution to providing full and easy access for all to a historic building or site would commence with pre-visitor information at the site entrance. It would then progress to create greater access to the building, within the building, and to any public facilities provided. Where architectural barriers to equal and integrated access are identified, the principles of removal, alteration, addition, avoidance or alternative provisions will apply as

14 under the Disability Act (2005) the Government aims to "ensure that heritage sites in its ownership are, as far as practicable, accessible to people with disabilities, subject to the National Monuments Act and in compliance with the terms of Part V of the Planning and Development Act."

15 NDA Code of Practice on Accessible Heritage Sites

appropriate. In developing plans to provide access, the ability of the building and site to incorporate the required access provisions with minimum intervention to the historic fabric must be carefully considered.

Solutions that are in keeping with the existing design, incorporated within existing structures, or reversible are ideal, though permanent integrated adaptations or additions of a sympathetic design are also possible. Each individual aspect of access provision may require its own considered and unique solution.



Trinity College, Dublin

7.13.2.1 Pre-Visit Information

Pre-visit information should be provided in alternative formats, ie brochure, webpage, audio, etc. The information given should include specifics on the level of access provisions throughout the visiting experience and any areas where access is not possible for people with different impairments. Contact numbers for information and assistance in planning a visit should be easily available.

7.13.2.2 Car Parking

Ideally, public car parking should be provided at a location adjacent to the main site/building entrance. If this is not possible due to the character and setting of a protected structure, it is recommended that there should be dedicated parking for drivers and passengers with disabilities close to the entrance. If this is also not possible, set-down areas or accessible mini-bus transport from the main car park area may be a solution.

① For further information on car parking, please refer to Section 4.1 on page 53.

7.13.2.3 Walkways

Walkways must avoid surfaces which are difficult to walk on or impede wheelchair movement. Slip-resistant hard surfaces such as brick or stone paving are more suitable than gravel, chippings, cobbles and decking. Careful consideration is required to ensure that the surface is in keeping with the colour and texture of the site.

① For further information on paths, routes and seating, please refer to Section 4.2 on page 62 and Section 7.11.4 on page 221.

7.13.2.4 Building Entrance

The principal entrance should be accessible to everyone. If a barrier exists, solutions can be devised involving the use of the following means:

- Well-designed ramps, steps and handrails, which respect the existing ambience of the building, can be used at the main entrance. Ramps which use existing ground slopes and planting can be less obtrusive. New walls should be constructed with materials that harmonise with the existing walls and buildings.
- Platform lifts, which when positioned at the main entrance may sometimes be incorporated within an existing porch and in this way be visually less intrusive.
- Temporary ramps, where all other options have failed. Though not compatible with independent access, temporary ramps can occasionally be a necessary solution.
- Alternative entrances, where a ramp or platform lift is not an option. It may be possible to create an alternative entrance by reorganisation of the internal space. It is important that this new point of entry is available to all, and not exclusive to visitors with limited mobility.
- Doors which, where heavy, are fitted with automatic door-opening devices.

7.13.2.5 Vertical Internal Circulation

Access to changes of level within a historic building must be managed sensitively and the solutions must be in keeping with the historic fabric of the building. Minor changes of level can be overcome by sensitive design in the location of steps, ramps and handrails. Gently sloped ramps that are provided alongside steps are always the preferred option, requiring little or no maintenance. Other solutions include:

- Platform Lifts. Positioned in a sensitive manner with minimal structural disturbance, platform lifts can be a solution where the level change is relatively large or where a ramp is not possible. Doors on platform lifts should always be automated, with external controls located within easy reach on approach to the lift. Consideration should be given to the use of platform lifts that are built into steps to maintain the character of a building, eg Sesame Lift or FlexStep.

① For further information on built-in platform lifts, please see: <https://sesame-access.com/> and <https://www.liftup.dk/en/products/flexstep/>

- Passenger Lifts. The installation of a passenger lift provides the most effective means of vertical movement. The installation of internal lifts that meet evacuation standards is recommended, ie with fire-resistant properties and suitable for use in an emergency evacuation. These lifts reduce reliance on assisted evacuation for people with disabilities.
- Platform Stair Lifts. Where the installation of a passenger lift is not possible, the installation of a platform stair lift on a secondary staircase may be an option.

① For further information on passenger lifts, see Sections 5.5.4 and 5.5.5 respectively on pages 104 and 106.

7.13.2.6 Alternative Experiences

Where it is genuinely impossible to provide access to all or some parts of a building or site due to special historic features, an alternative experience of that part of the site or building should be provided. Alternative experiences could include:

- Audio Visual presentation
- Viewing points
- Reconstructions
- Virtual representative tours, mock-ups, etc.

All presentations and experiential mock-ups should be accessible to all people.

7.13.2.7 Access to All On-Site Public Facilities

Access to public facilities includes access to reception areas and desks, WCs, restaurant and shop facilities, etc. Preferably, these facilities should be located close to the main thoroughfare of the site/building.

① For further information, please see the relevant sections on WCs and use of restaurant and other public facilities in the earlier part of Section 7.

Quick Summary of: 7. Specific Building and Site Types

Hotels

- Provide one in every 15 guest bedrooms for independent use and one in every 20 accessible rooms for assisted use by a wheelchair user.
- Doors should have a clear opening width of 900mm with two 1800mm diameter turning spaces in bedrooms.
- Bedroom to incorporate 900mm access zone around bed.
- Bed height to top of mattress should be 450-500mm.
- Clear space of 300mm required underneath bed for footrests and hoist feet.
- Level deck shower room dimensions are 2500 x 2500mm for independent-use.
- Assisted-use bedroom should have a larger turning circle of 2300mm adjacent to the bed if mobile hoist is used.
- Bathroom dimensions for assisted-use should be 2700 x 3000mm.
- Clear space of 900mm is required on transfer side of WC.

Restaurants

- Seating provided on different levels should be accessible to all.
- Table heights of 760-800mm, with knee clearance of 700mm.
- Clear access route of 900mm maintained throughout all seating areas.
- Access to self-service counters should be 850mm high, with 700mm knee clearance.
- Queuing lines should be at least 1200mm wide.

Auditoriums and Stadiums

- A choice of wheelchair accessible and ambulant accessible seating on all levels and vantage points.
- At least 10 and then a further one in every 50 spaces should be provided for wheelchair users, with the same provision for people with mobility impairment where a capacity is not more than 10,000.
- Dimensions for a wheelchair space are 900mm wide by 1400mm deep.
- Access aisles/routes should have a minimum width of 1200mm.
- Entry point to accessible seating should be located away from stairs/raked floor.
- Acoustic and audio systems should be provided.
- Consideration should be given to sight lines for wheelchair users.

Sports and Leisure Facilities

- Assisted-use WC cum shower room should be 4000mm wide by 3000mm deep and include a height-adjustable changing bench, 1000mm wide x 1950mm long, and a full room cover ceiling track hoist.
- Independent-use WC cum shower room should be 2500 x 2500mm.
- One in four open shower cubicles should be 1000mm deep x 1500mm wide to accommodate a wheelchair user.
- Floor material in shower area should be non-slip with anti-slip minimum PTV grading of 51-70.

- Width of walkway around a swimming pool area should be no less than 3000mm.
- Sauna/steam room should have a clear floor area of 1800mm diameter.
- Dual-purpose exercise equipment should be provided with a clear access route of 1200mm between each piece.
- Preferably provide Poolpod entry to swimming pool.

Hair and Beauty Salons

- Manicure stations should be 760-780mm in height, with knee clearance of 700mm beneath. Stations should have a length of 900mm and a width of 510mm. A length of 1800mm, enables two wheelchair users to be positioned diagonally opposite each other. Height-adjustable tables are recommended.
- Within a bank of basins, provide also a height-adjustable, stand-alone hair-wash basin with no attached seat, and preferably with a tilt function.
- Additionally, a front-wash hair-wash basin is also recommended.
- Fixed seating in front of wash-hand basins should have detachable armrests to allow a wheelchair user to transfer to seating.
- A knee clearance of 700mm beneath a styling shelf with a flip-up footrest to allow for space for wheelchair footplates, is recommended.
- Pedicure areas should be accessible to wheelchair users.
- WC facilities should be universally designed.

Health Facilities and Treatment Rooms

- Treatment rooms should be of sufficient size to accommodate the use of a hoist, with a clear turning circle area of 2300mm.
- A height-adjustable examination table should be provided.
- Provide at least one accessible dressing room, 2000mm wide x 2500mm deep (door opening out) and door width of 900mm.

Student Accommodation

- Purpose-built adapted and adaptable facilities for students with disabilities should be provided at an overall ratio of 1:15 in any development.
- One student bedroom in every 15 should be suitable in size, layout and facilities for independent use by a wheelchair user.
- One student bedroom in every 20 of accessible rooms should be suitable for a student receiving personal assistance.
- The size of the en suite bathroom suitable for independent use should be a minimum of 2500 x 2500mm, with a level deck shower or 2700 x 3000mm with a bathtub.
- The size of the en suite bathroom suitable for a student receiving personal assistance should be 2700 x 3000mm. A full room cover ceiling track hoist giving access from the bedroom into the bathroom should be provided.
- Shared kitchen area should have an unobstructed minimum floor space of at least 1800 x 1800mm between units and facing walls.
- Critical kitchen work areas, ie sink, hob and food prep area, are to be replicated at wheelchair accessible heights of 760mm with 700 clear space beneath.

- Communal study areas and library facilities should have access routes of 1200mm throughout and turning spaces within and at the ends of access routes; tables and desks should provide knee clearance of 700mm.
- Personal Emergency Evacuation Plans (PEEPS) should be developed for students who require assistance to evacuate the building.
- Lifts should be usable for evacuation purposes.

Office Accommodation

- Main entrance doors to office buildings should provide a minimum clear opening width of not less than 1000mm.
- Reception desks should be at a compromised height of 850mm.
- Clear access routes of 1200mm wide should be maintained throughout all floor spaces within office open-plan areas, and turning spaces provided within and at the end of access routes.
- A minimum of 1800mm diameter of clear manoeuvring space should be provided between workstations, with knee clearance of 700mm in height beneath any desk; the desk should be 760-780mm in height from floor level or as per individual requirements.
- WC facilities should be universally designed to accommodate wheelchair users, including people who use powered wheelchairs.
- Food and drink displays should be located no higher than 1200mm above floor level. Self-service counters should be at a height of 850mm, with 700mm knee clearance underneath.
- Canteen/Café counters should be at a compromise height of 850mm. Clear space on the countertop should be maintained. Queuing lines at self-service counters should be at least 1200mm wide.
- Accessible lockers should be a minimum of 300mm in width and not more than 600mm in depth.
- Personal Emergency Evacuation Plans (PEEPS) should be developed for office accommodation occupants who require assistance to evacuate the building.
- Lifts should be usable for evacuation purposes.

Places of Worship

- Religious buildings should have designated accessible parking spaces located at the same level as and no more than 25m from principal entrances, including setting-down/pick-up points.
- Main entrance doorways, including any associated lobby doors, should provide a minimum clear opening width of not less than 1000mm.
- Corridors or aisles should have a clear unobstructed width of 1800mm.
- Both wheelchair accessible seating areas and ambulant accessible seating should be provided in a choice of locations and with good viewing.
- A wheelchair space must have a minimum dimension of 900mm in width x 1400mm in depth, with clear unobstructed access from the aisle or access route that is a minimum of 1200mm in width.
- Enclosed confessional areas should be easily identifiable and accessible, with space for a person using a wheelchair to enter, to use the facility and to turn around to leave.
- Lecterns should have a height-adjustable inclined reading surface with a height range between 760-1100mm at the speaker side, and 700mm knee clearance beneath.
- Raised podiums or altars should be accessible to wheelchair users.

- Toilets that are universally designed should be provided in all religious buildings, meeting houses, crematoria, and cemetery chapels.

Outdoor Events

- All event accessibility information should be available both in print and online.
- Accessible car parking, setting-down point and public transport options should be available for arrival at the event.
- Level pathways should be provided to all event facilities as well as accessible marquees and exhibition tents, with level or gentle gradient access: 1:20.
- Demountable large size accessible WC cubicles, size 1800 x 2500mm with door opening out should be provided.
- Raised viewing platforms to be provided.
- Disability awareness training should be provided for staff and volunteers.

Heritage Sites

- Car parking should be provided adjacent to the main site/building entrance.
- Ramps or platform lifts should be in place if the principal entrance is not accessible.
- Doors that are heavy should be fitted with automatic door opening devices.
- Where access to a building is not possible, an alternative experience such as audio-visual presentation, viewing points or virtual tours should be provided.
- Access to all public facilities such as reception, WCs, restaurant, and shop should be provided.



SECTION 8

Emergency Evacuation

Irish Wheelchair Association Best Practice Access Guidelines

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8 Emergency Evacuation

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United Nations Convention on the Rights of Persons with Disabilities (UNCRPD).

Article 11 of the UNCRPD concerns situations of Risk and Humanitarian Emergencies.

Countries that ratify the UNCRPD commit *“to take, in accordance with their obligations under international law, including international humanitarian law and international human rights law, all necessary measures to ensure the protection and safety of persons with disabilities in situations of risk, including situations of armed conflict, humanitarian emergencies and the occurrence of natural disasters.”*

United Nations Convention on the Rights of Persons with Disabilities (2006).

8.1 The Requirements

8.1.1 Background

The matter of building evacuation is a key element to be addressed in any organisational health and safety management plan. Organisations using and managing a building are required by various pieces of Irish legislation¹⁶ to ensure that all users of a building, including people with disabilities, can escape safely from the building in the event of an emergency. It is the responsibility of the premises' management to ensure that all people can make a safe evacuation.

Part B of the Irish Building Regulations on fire safety requires that:

“A building shall be so designed and constructed that there are adequate means of escape in case of fire from the building to a place of safety outside the building, capable of being safely and effectively used”.

The design provisions set out in the Building Regulations Technical Guidance Document Part B Fire Safety (2006), reprinted (2020), are provided as a guide to minimum standards required for compliance with these regulations. They are largely based on the assumption that all people evacuating from the building will be fit and well, moving at the same speed and independently of each other. The guidance in Part B in relation to the safe evacuation of people with disabilities is extremely limited and refers the reader onto a British Standards document BS: 9999 (latest edition BS 9999:2020) for further guidance. This British Standards document considers the concepts of horizontal and vertical escape. It advises that people with disabilities escape, either independently or with assistance, to a place of safety outside the building, or by moving to a designated fire-protected 'refuge space' within the building on the same level. This refuge space should be on, or close to, the escape stairs on any level of the building

¹⁶ Building Regulations, Part M Access and Use (2010); Part B Fire Safety (2006), reprinted (2020); Health and Welfare at Work Acts (2005 & 2010); Safety, Health & Welfare at Work Regulations - General Application (2007-2020); Irish Disability Act (2005); The Equal Status Acts (2000-2018); The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) (2006).

where the egress is not level with the external surface. The person can then be evacuated from the building vertically from this designated refuge space. Escape assistance can be provided either by designated staff or others, as outlined in the building emergency evacuation plan, developed by the management of the building.

The achievement of an effective emergency evacuation plan from a building for people with disabilities requires planning, management and regular review as part of an overall evacuation policy and plan. Good practice would dictate that an evacuation policy and plan be developed that includes consideration of both structural and management provisions. The evacuation plan from a building for people with disabilities should not rely on the assistance of the fire and rescue service. This is an important factor that should be taken into account in building design. It should not be assumed that facilities provided in a building to make it accessible will be usable in the event of a fire, eg lifts that are not appropriately designed for use in emergency evacuation might not be usable for evacuation. At the design stage, it is relatively easy to incorporate accessible escape features that will make evacuation planning more effective and evacuation easier to manage, while also preserving the dignity of people with disabilities in the evacuation process.

8.1.2 Structural Provisions

At the design stage of the building, decisions regarding the fire-resistant properties of the building structure and components of the building will have been made, that determine or influence the evacuation strategy for that building.

Principal evacuation strategies include:

- Total evacuation - when everyone in a building leaves at the same time.
- Phased evacuation - when a pre-alarm stage in remote areas of a building is activated shortly before a general alarm.
- Zoned evacuation - where the building is evacuated progressively as the emergency develops and people are moved progressively away from the area of danger.

Knowledge of the structural and fire-resistant properties of a particular building, including those of any internal lifts, and the ensuing evacuation strategies will be essential in developing any evacuation plan. This knowledge can be obtained by consultation with the designers and management of a particular building.

8.1.2.1 Evacuation Plans

At lobbies and reception areas on all floors of a building, location plans showing the direct route for exit from any location within the building should be replicated at heights of 1000-1100mm, and 1400-1700mm from the floor. The plans should be designed in easy-read format, colour contrasted with the background, and include Braille. It should also be provided in the form of a tactile map, which is capable of being read by touch by people who are blind or have a visual impairment but are not Braille readers.

These plans should be accompanied by operational procedures for fire safety evacuation, including details of refuge spaces and signposting of their locations. Alongside text, consideration should be given to the use of pictograms which can give information in a simple, coherent and consistent manner. Pictograms should include clear information relating to people with disabilities.

8.1.2.2 Provision of Fire Alarms

It is important that people who have a visual or hearing impairment or who are blind, can be alerted in case of emergency. Fire alarms therefore need to be in both visual and auditory format. Visual alarms which use strobe lighting should operate at a frequency of 2-4 hertz and should be placed so that the signal is visible throughout the enclosed space. Visual alarms should also be installed in washrooms where someone who has a hearing impairment may be alone. Consideration should also be given to vibrating pager systems as a means of alerting people who have a hearing impairment, particularly in buildings where there is sleeping accommodation and/or where people are isolated or remote from others.

8.1.2.3 Signage and Wayfinding

The presence of suitable escape, refuge signage and aids to wayfinding is essential to the quick and safe evacuation of a building. Evacuation routes should have consistent layouts and be easy to locate and follow intuitively.

Signage needs to be simple, short, consistent and easily understood. Alongside text, consideration should be given to the use of pictograms which give information in a simple, coherent and consistent manner. Pictograms should include clear information relating to people with disabilities. Additional wayfinding aids on corridors and staircases can include the use of colour-contrasted handrails on horizontal circulation routes, emergency escape lighting, and the use of photo-luminescent wayfinding guidance systems which become visible in low light conditions.

① For further information on signage, please see Section 5.4 on page 100.

8.1.2.4 Doors and Door Fittings

Doors on escape routes should be hung so that they open in the direction of escape. All doors on escape routes should open not less than 90°. The total force required to open a door in a pressurised escape route should not exceed 1.6kg at the handle. All doors for use as exit doors in case of emergency should open outwards. Internal fire doors located within corridors/access routes should be held open on a magnetised system that is connected to the fire alarm system. When the alarm is activated, the magnetised system will automatically release the doors.

8.1.2.5 Internal Corridor Dimensions

To facilitate horizontal movement, escape routes should have minimum corridor widths of 1800mm. Ramps, if required, should comply with recommendations.

Fire exits should have level thresholds to the outside and outward-opening doors. Final fire exit doors should be easy and intuitive to operate. The pavement outside the fire door should be level with the surrounding area or dished to give access down from the pavement.

① For further information on corridor design, please see Section 5.3 on page 96.

8.1.2.6 Stairwell Design

Flights and landings of stairways should have an unobstructed minimum width of 1500mm. A central handrail should be provided when the width of the stairs exceeds two metres.

This stair width of 1500mm is recommended to facilitate the assisted escape of people with disabilities and accommodate contra flow in circulation spaces during emergency evacuation. Step nosings that are distinguishable in colour, along with highlighted step edges for the first and last step, will enhance the safety of the stairway.

① For further information on step or stair design, please see Section 4.4 on page 74.

8.1.2.7 Lifts

The installation of internal lifts that meet evacuation standards is recommended as the primary means of escape, ie with fire-resistant properties and suitable for use in an emergency evacuation. Existing lifts can be upgraded to be usable for evacuation purposes. Fire-protected lifts reduce reliance on assisted evacuation from the building for people with disabilities and are the most effective means of evacuation. Manual handling of people who are wheelchair users and people with any mobility impairment from a fire evacuation staircase, even with training, is hazardous for the person in the wheelchair or for the person with any mobility impairment, and for those people giving assistance.

Where lifts with fire-resistant properties are installed, there is still the need for manual evacuation equipment to be present within refuge areas in the event of internal lift failure.

8.1.2.8 Refuges or Areas of Rescue Assistance

Many people with disabilities cannot use stairs unassisted, so it is necessary to ensure that they can remain in a place of relative safety until help arrives. This provision must be forward-planned and provided. One solution is to provide a refuge area or area of rescue assistance. The refuge area should be provided within a designated fire-protected area of a building, often located within a stairwell landing, on any floor where the egress from the building is not level with the external surface. A refuge area must contain a sufficient number of spaces to accommodate the number of people likely

to require assistance to evacuate from the building. Refuge spaces are locations within a refuge area where one or more people who are wheelchair users, or people who have any mobility impairment, can position while awaiting assistance.

→ See Figure 36 Refuge Area on page 247.

A refuge area, as a minimum requirement, should be constructed as indicated in *Building Regulations Technical Guidance Document Part B Fire Safety* (2006), reprinted (2020).

“Refuge areas are areas within a building separated by fire-resisting construction and provided with a safe route to a storey exit where people with disabilities can await assistance for evacuation. Refuge areas may be within the enclosure of an escape stairway, within a protected lobby or corridor leading to an escape stairway or in a compartmented part of a storey which contains an escape stairway.”

The location and design of a refuge area should:

- Be clearly and consistently signposted.
- Be situated clear of the escape route.
- Contain a sufficient number of refuge spaces to accommodate the possible number of people requiring assistance to evacuate.
- Each refuge space, within a refuge area, should be sized 900 x 1400mm for a single refuge space.
- The refuge spaces provided within a refuge area in leisure centres/sports halls should be sized 1200 x 1500mm to accommodate the larger type sports wheelchairs.
- Be located either within, or be an area with direct access to, each protected stairway or internal fire-protected lift provided for means of escape.
- Be equipped with a two-way communications system linked to a management control point and situated 900-1100mm above floor level.
- Contain instructions as to the procedures to be followed in the event of an emergency and the expected response.
- Contain a manually operated evacuation lift/chair to assist in the egress of people for whom such a lift/chair is advised. As most evacuation equipment requires a wheelchair user to transfer from their wheelchair, there must be another wheelchair available in the area to where the person is evacuated.

The number of refuge spaces required within a refuge area in a building will be determined by an assessment of the number of people likely to require the use of such a space. A minimum of two spaces on each level in any building is desirable.



“Unless a person can get out of a building in an emergency, then it’s not truly accessible at all”

IWA member, Dublin

8.1.3 Evacuation Aids/Equipment

At each refuge location there should be manual evacuation equipment conveniently located with clear instruction as to its use. Evacuation equipment is used to transport people with limited mobility up/down the stairwell by people who are trained in its use and also trained in manual handling techniques. Not all evacuation equipment can go both up and down stairs. Careful research and consultation is required to ensure the choice of the most effective equipment for a particular situation.

As most evacuation equipment requires a wheelchair user to transfer from their wheelchair, there must be another wheelchair available in the area to where the person is evacuated.

Not all wheelchair users will be able to transfer or be transferred onto standard evacuation equipment in order for the building to be evacuated. If it is not possible to evacuate a person from a building using standard evacuation equipment, then careful research is required to determine alternative provisions. There is manual evacuation equipment available onto which a wheelchair user can manoeuvre while remaining seated in their wheelchair. The storage and use of this type of equipment is cumbersome and may have associated building design implications and should be considered at planning stage. However, reliance on managed self-evacuation from a building using a fire-protected lift is by far the best option.

Where a fire-protected lift is installed, there is still the requirement for manually operated evacuation equipment to be present in the event of unforeseen difficulty with, or failure of, the lift.

8.1.4 Routes to Assembly Locations

Escape doors leading from the building should have level access, with no threshold upstand, and leading from the building to a pavement or platform area at the top of a ramp and with an 1800mm turning area. The door should always open away from the escape route so that a person using a wheelchair does not have to negotiate around the door in order to position onto the escape route. The escape routes from the building leading to all assembly locations should be minimum 1500mm in width, preferably 1800mm, with a firm and level surface along the full length. If the route crosses a carriageway, the opposing pavements should be dished with a shallow slope and with appropriate tactile paving. There should not be a steep incline on the route to assembly locations.

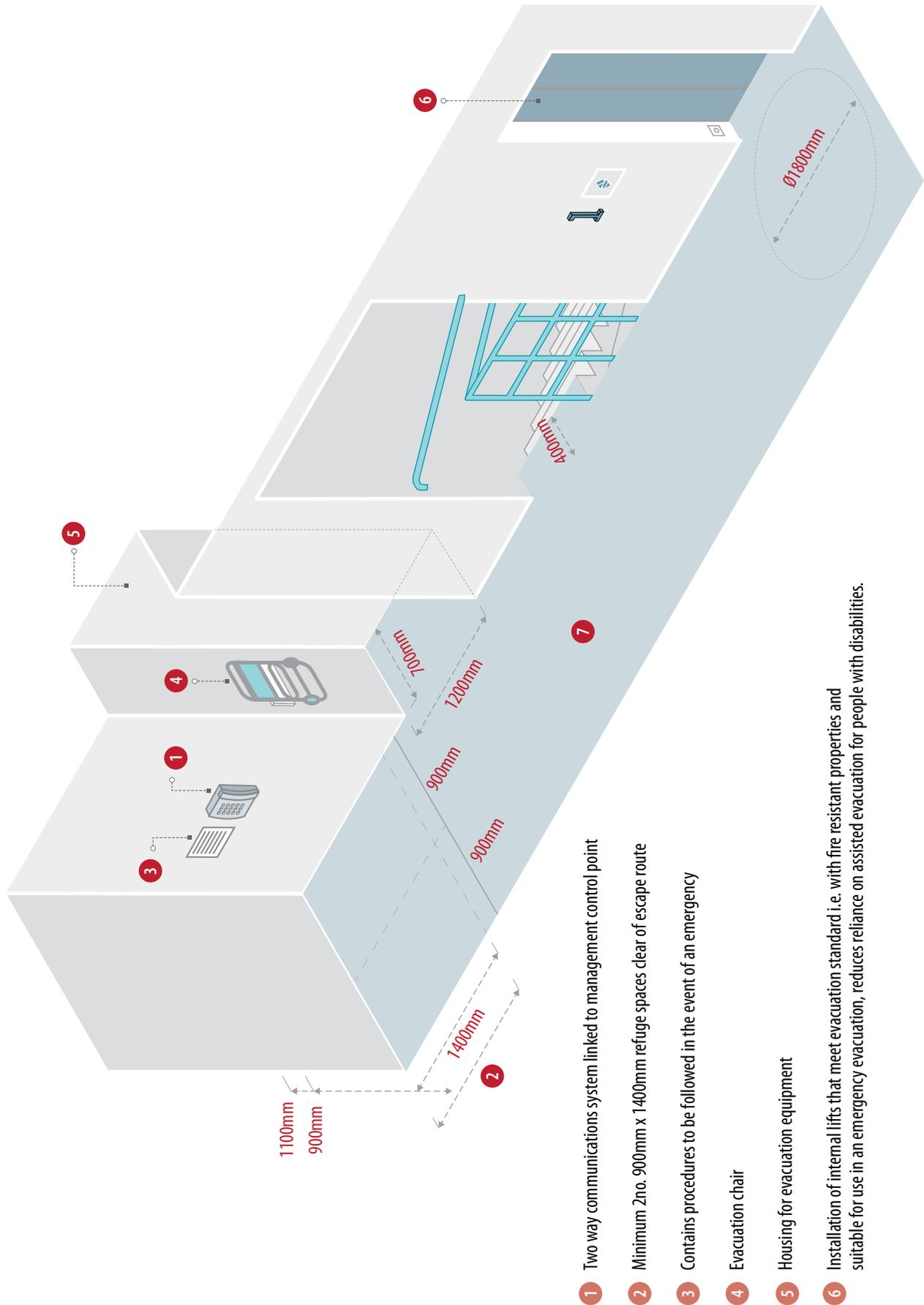
8.2 Management Provisions

8.2.1 Background

It is the responsibility of the building management to ensure that in the event of emergency all people can safely escape to a designated place of safety. Good management procedures, staff knowledge and training are essential for the safe evacuation of a building in the event of an emergency. Building management should develop an egress policy and action plan which is recorded in a building evacuation handbook.

Where people can visit buildings unannounced, such as to some public buildings ie libraries, art galleries, museums, etc visitors should be encouraged to seek information about evacuation procedures and to alert staff if they are likely to require any form of assistance.

Figure 36 - Refuge Area



8.2.2 Evacuation Plan

The needs of people who visit a building, or attend for a meeting or conference, may vary on a daily basis and should be constantly reviewed so that the requirements of everyone can be accommodated safely and efficiently.

The development of a building evacuation plan for both users and visitors to a building is essential to the safe evacuation of all people in the event of an emergency. The needs of all people will have to be anticipated in planning for emergencies. Consultation with disability organisations is advised in relation to the needs of people with disabilities. Where appropriate, signing in and out procedures for visitors are recommended. The essential elements of an evacuation plan are as follows:

- Knowledge of the fire safety features of a building and the ensuing evacuation strategy.
- The identification of staff members with responsibility for ensuring the safe evacuation of all from the building, including one single person with ultimate responsibility.
- Regular staff training in: manual handling; fire safety and evacuation procedures (eg total, phased or zoned, horizontal and vertical); and the use of any equipment provided, eg evacuation lift/chair.
- The identification of persons regularly using the building and who would require assistance to evacuate from the building in the event of an emergency.
- The development of Personal Emergency Evacuation Plans (PEEPs), with persons who are regularly using the building and requiring assistance to escape.
- The identification of persons using the building and who would require the use of vibrating pager/alarm systems, and the development of a distribution and return system.
- The development of a system to ensure that, in the event of an emergency, should some people not be able to escape or be evacuated from the building, there is a system to ensure immediate and clear identification to the fire services of the locations and numbers of these people.
- Clear communication of the emergency evacuation plan to all those who have a role to play, including outside agencies, eg the fire services.
- Regular practice and review of the emergency evacuation plan and procedure.
- Regular maintenance and good management of fire-resistant building properties, equipment and egress areas of the building.

8.2.2.1 PEEPs - Personal Emergency Evacuation Plans

It is essential to develop Personal Emergency Evacuation Plans (PEEPs), in consultation with regular users of a building who have an impairment that would impede their egress (either horizontally or vertically), from the building. The PEEP essentially matches the needs of the person with a disability to the capabilities of the egress design and should be regularly reviewed and updated. A PEEP may involve:

- The use of a buddy system, whereby other trained staff members will, moving horizontally, accompany the individual to a designated fire assembly point located outside the building perimeter.
- Where vertical or horizontal movement poses a difficulty, accompanying the person to a refuge area.

- Using a lift/chair evacuation system to transport the person vertically to the outside.
- Staying with the person within a refuge area until the fire services have been alerted and arrive to assist the person to safety.

In all of the above matters, consultation with relevant local authority fire officers, fire consultants, users of a building and disability organisations is critical to the development and implementation of an evacuation policy and plan that is effective and gives confidence to the users of a building.

① For information, see sample Personal Emergency Evacuation Plan (PEEP) from Trinity College Dublin <https://www.tcd.ie/disability/physical-access/evacuation-plans.php>

8.2.3 Additional Reading

For further information please refer to *Safe Evacuation for All*, published by the National Disability Authority at <http://nda.ie/Publications/Environment-Housing/Environment-Publications/Safe-Evacuation-for-All-a-planning-and-management-guide/>

Refer also to the Building Regulations *Technical Guidance Document Part B Fire Safety* (2006), reprinted (2020) published by the Department of Housing, Planning and Local Government.

Quick summary of: 8. Emergency Evacuation

- Building evacuation is a key element in any organisational health and safety management plan.
- Building Regulations *Technical Guidance Document Part B Fire Safety* (2006), reprinted (2020) and British Standards BS: 9999:2020 relate to the safe evacuation of people with disabilities.
- Principal evacuation strategies include: total evacuation, phased evacuation and zoned evacuation.
- Evacuation plans should be displayed at heights of 1000-1100mm and 1400-1700mm from floor level.
- Fire alarms should be both visual and audible.
- Suitable escape and refuge signage is essential to the safe evacuation of a building.
- Signage should be easily understood, ie in easy-read format, and use of pictograms can be helpful.
- Internal escape routes should have minimum corridor widths of 1800mm.
- Stair width of 1500mm is recommended to facilitate the assisted evacuation of people with disabilities.
- All doors for use as emergency exits should open outwards with level access, ie no threshold upstand.
- External escape route should be a minimum 1500mm in width, preferably 1800mm, with a firm and level surface. If the route crosses a carriageway, the opposing pavements should be dished with appropriate tactile paving.
- Internal refuge areas should be clearly signposted and located within a protected stairway, equipped with a two-way communications system, with controls at 900-1100mm from floor level and contain an evacuation chair.
- Refuge areas should contain a sufficient number of refuge spaces, sized 900 x 1400mm for a single refuge space, for the numbers of people likely to require use of this location. In leisure centres/sports halls the refuge spaces should be sized 1200 x 1500mm to accommodate the larger type sports wheelchairs.
- Internal lifts should be fire-resistant. Existing lifts can be upgraded to be usable in an emergency evacuation.
- Good management procedures and staff training are essential for safe evacuation of a building in an emergency.
- Develop a building egress policy and action plan which is recorded in a building evacuation handbook.
- Develop a Personal Emergency Evacuation Plan (PEEP) for people regularly visiting/using the building and needing assistance to evacuate the building.
- Identify trained staff members with responsibility for ensuring the safe evacuation of all.
- Regular practice and review of emergency evacuation plan is required.
- Maintenance of fire equipment and egress areas of the building is essential.



SECTION 9

Building Management and Maintenance

Irish Wheelchair Association Best Practice Access Guidelines

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Building Management and Maintenance

United Nations Convention on the Rights of Persons with Disabilities (UNCRPD).

Article 9 of the UNCRPD concerns Accessibility

Countries that ratify the UNCRPD commit “to ensure that private entities that offer facilities and services which are open or provided to the public take into account all aspects of accessibility for persons with disabilities; to provide training for stakeholders on accessibility issues facing persons with disabilities; to provide in buildings and other facilities open to the public signage in Braille and in easy to read and understand forms; to provide forms of live assistance and intermediaries, including guides, readers and professional sign language interpreters, to facilitate accessibility to buildings and other facilities open to the public.”

United Nations Convention on the Rights of Persons with Disabilities (2006).

9.1 Maintaining High Levels of Access

9.1.1 Background

Access to the built environment and to services and facilities cannot be guaranteed by good design alone. An integral part of ensuring good access for all involves the constant and ongoing maintenance and management of the building, the surrounding areas, and the services and facilities provided within.

In order to achieve good practice in maintaining high levels of access, both management and maintenance issues should be addressed.

9.1.2 Access Management Programme

Management and frontline staff who deliver a service are key to making their service/facility accessible. Service providers who understand users’ needs and know how to meet and greet a person with a disability will make that person feel more comfortable and at ease. It is important that staff are given the opportunity to take part in disability awareness /equality training and that staff have a positive attitude towards disability and accessibility.

An effective management programme will:

- Provide regular staff training in all matters pertaining to understanding access provisions, and in maintaining high levels of access.
- Support staff in providing assistance to customers/service users as required.
- Establish and manage the provision of a high standard and efficient maintenance programme.

- Ensure that any refit/refurbishment does not diminish existing levels of access, but builds on what is present, and improves access for all.
- Plan strategically, including regular reviews of access provisions take place in consultation with people with disabilities. These reviews should identify areas where access may be poor, and where opportunities exist for change and improvement.
- Highlight notifications of alternative arrangements/assistance where access is not readily available, and provide signage as appropriate.

9.1.2.1 Access Audit

An access audit is a useful way of taking stock of access provisions within the built environment at a point in time. Access audits are a useful starting point in assessing the current state of accessibility and usability of existing buildings and of draft outline plans.

“The purpose of an access audit is to establish how well a particular building or environment performs in terms of access and ease of use by a wide range of potential users, including people with disabilities and to recommend access improvements”¹⁷. An access audit rates the access to and within a building, including to all fixtures and facilities provided, against given access standards, eg the current and relevant building regulations¹⁸, to ensure baseline compliance. Audits of the built environment need to consider the day-to-day running of the building, the building type, management issues, maintenance and safety, as well as the checklist of building design criteria against the agreed legislation and/or best practice standard as agreed. An access audit should also encompass egress, and needs to consider access and safety in emergency situations, eg safety zones, routes, signage, emergency equipment.

The access audit of a building and its setting is the starting point for a planned programme of access improvements. An access audit will review and comment on the levels of access provided and any upgrading required to bring access provisions to required legislative requirement, and preferably beyond legislative requirements to best practice design standards. An access audit should also include assessment of issues such as communications, information, customer service and staff training. An access audit should be carried out by trained access consultants prior to any building work being undertaken. It is recommended that people with disabilities be directly involved in any access auditing process.

9.1.2.2 Building Manual

It is recommended that the management and occupiers of a building develop and maintain a building manual which combines information handbooks containing the required information on pertinent areas, ie evacuation, health and safety, and access provisions.

¹⁷ The Access Manual - auditing and managing inclusive built environments, (2004) Bright and Sawyer.

¹⁸ Building Regulations, Part M Access and Use, (2010) Department of Housing Planning and Local Government. Building Regulations, Part B Fire Safety, 2006, reprinted (2020), Department of Housing Planning and Local Government.

A building manual is a simple way of listing and explaining the features and facilities of a building, which must be maintained in order to ensure proper access, evacuation and safety for everyone. It should include a set of plans of the building, indicating all the locations where clear dimensions and equipment must be maintained for access, evacuation and safety purposes. The manual should be readily available to staff and be promoted through training within the organisation.

9.1.2.3 Alternative Provision of Service

An easily available and alternative optional method of service provision should be in place in situations where self-service is the usual operational mode. This provision should be clearly signposted with instruction as to how this service can be accessed.

9.1.3 Access Maintenance Programme

An efficient and high standard maintenance programme will include regular scheduled inspections, tests, servicing, replacements, repairs and other tasks intended to help reduce the impact and frequency of any equipment failures. Such a programme will establish procedures to address the following issues on a regular basis:

- The regular maintenance of parking bays and approach routes to ensure that they are unobstructed, free of debris, and that non-disabled drivers do not occupy disabled parking bays.
- Keeping circulation areas within buildings clear of all obstruction and, where there is movable furniture, as in restaurants/refreshment areas, maintaining the required width of an access route.
- The regular maintenance of doors and door entry systems, including intercom facilities, to ensure that they remain in good working order and that the opening force at the leading edge of a door remains no more than 20 newtons.
- Ensuring that WCs, refuge areas and lifts are never used as storage areas for supplies or furniture, and that transfer spaces adjacent to the toilet bowl are kept clear of refuse bins.
- Ensuring that all facilities are kept clean and well stocked, as in the case of WCs.
- Maintaining alarm systems regularly to ensure systems in WCs, lifts, etc, are always in working order and particularly that the alarm cord is reachable by a person seated in a wheelchair and/or from the WC bowl.
- Ensuring regularly that the required alarm response is provided swiftly, as outlined in the building emergency protocol document.
- Maintaining floor surfaces that are level, unobstructed and not made slippery by the use of unsuitable cleaning and polishing products.
- Ensure that redecoration of a building, or part of a building, does not compromise or diminish a colour scheme designed to assist people with a visual impairment to orient themselves and identify fixtures and fittings.
- The swift replacement of blown light bulbs, at the appropriate lux or illuminations level, along circulation routes, in lobbies, in WC compartments, etc.
- Ensure that light switches, particularly those located in accessible WC cubicles, are of the on/off type and not timed light switches

- Signage replacement that ensures new signage is consistent with access specifications, that it integrates with existing signage, and that signs are replaced correctly following removal.
- Regular review of the efficiency of the systems in place to distribute and recall any equipment available to users of the building, eg vibrating fire alarms, audio description units, hoists, etc.
- The clear advertisement of the availability of communication enhancement equipment within the building, eg Loop Systems, text phone, etc.
- The clear advertisement of the availability of supports to users of a building in relation to access to the building and services and facilities within, eg use of mobility aids, personal assistance to and from the car parking facilities, sign language interpreter, etc.

9.1.4 Additional Reading

For further information, please refer to the National Disability Authority *Guidelines for Access Auditing of the Built Environment* at www.nda.ie

Please also refer to Technical Guidance Document *Part B Fire Safety*, (2006), reprinted (2020) Department of Housing, Planning and Local Government.

Quick Summary of: 9. Building Management and Maintenance

Access Management

- Constant maintenance of building and approach areas is required.
- Provide regular staff training regarding access provision and disability awareness.
- Maintain high levels of access.
- Any refurbishment/refit should not reduce existing access levels.
- Refurbishments and building refits provide opportunities to upgrade access.
- Carry out access reviews in consultation with people with disabilities.

Access Audits

- An access audit rates access provision against stated access standards. Aspire to best practice and not just building regulation requirements.
- Access audits review and provide recommendations on upgrades needed to meet legislative requirements and to achieve best practice in accessible design.
- Access audits also include assessment of issues such as communications, information, customer service and staff training.
- Access audits should be carried out by a trained access consultant prior to any building work being undertaken. Real consultation with people who have a disability and their representative organisations should also be carried out.

Access Maintenance Programme

- Ensure regular maintenance of parking bays and approach routes.
- Keep circulation areas within the building clear of obstruction and maintain clear access routes.
- Ensure regular maintenance of all fittings and equipment throughout the building.
- Ensure WCs are not used for storage and are always free of clutter.
- Ensure open space beside WC bowl is kept clear; this is not a location for bins.
- Maintain alarm systems.
- Keep all floor surfaces clean and ensure they are non-slip.
- All signage should be consistent throughout the building. Provide signage as appropriate indicating any alternative optional arrangements.
- There should be clear advertisement of the availability of communication enhancement equipment within the building.



An Fraoch

SECTION 10

Housing

Irish Wheelchair Association Best Practice Access Guidelines

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10 Housing

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United Nations Convention on the Rights of Persons with Disabilities (UNCRPD).

Article 19 of the UNCRPD concern the Right to Independent Living and Being Included in the Community.

Countries that ratify the UNCRPD “recognize the equal right of all persons with disabilities to live in the community, with choices equal to others and [...] shall take effective and appropriate measures to facilitate full enjoyment by persons with disabilities of this right and their full inclusion and participation in the community.”

United Nations Convention on the Rights of Persons with Disabilities (2006).



Side View of House

10.1 Housing and Disability

Irish Wheelchair Association (IWA) regards the availability of accommodation for people with a disability that is of a suitable design and type, in a location of a person’s choosing and with the required personal supports, as a basic right that should be written into the Constitution. The availability of such accommodation and any required personal supports directly facilitates people with a disability to participate in and to contribute to the life of the community in which they live. The Irish State has signed and ratified several international human rights treaties that acknowledge to some extent a right to housing, including the International Covenant on Economic, Social and Cultural Rights (ICESCR) and the UN Convention on the Rights of Persons with a Disability (UNCRPD).

The UN Convention on the Rights of Persons with Disabilities states that people with disabilities should have the opportunity to choose their place of residence and where and with whom they live on an

equal basis with others, and not be obliged to live in a particular living arrangement. In addition, people with disabilities should have access to a range of in-home, residential and other community support services, including the personal assistance necessary to support them to live and be included in their community, and to prevent their isolation or segregation from the community.

In IWA's long-standing experience, the housing need of people with a disability, and particularly of people who are wheelchair users, is the most invisible, hidden and unmet housing need within the Irish State. The lack of an appropriate housing supply in response to the recorded housing needs¹⁹ of people with a disability illustrates a failure to deliver an adequate standard of living and to progressively realise the right to housing for people with a disability. A rights-based housing strategy focused on people with a disability would recognise the importance of the legal right to appropriate housing by requiring time limited strategies to set in place a robust housing supply chain that would eliminate housing poverty amongst people with a disability.

Time limited strategies would require the allocation of maximum available resources to confirm a clear and comprehensive housing needs analysis, as well as imbedding measures to address inequalities and injustices within the current housing planning, design and delivery systems. Establishing a right to housing would oblige Government to produce policies and procedures which would in time ensure that everyone, including people with a disability, has an appropriate and affordable house to live in.

In direct response to the housing requirements of IWA members, IWA, since its foundation, has always and continues to lobby local and national Government to change building regulation as it applies to housing, to better support housing adaptation, and to strategically plan and design for the delivery of fully wheelchair accessible housing within all mainstream housing tenures and housing types. IWA is a member of the advisory group to the roll out of the National Housing Strategy for People with a Disability and is represented on local council Housing and Disability Steering Groups where the local responsibility for the implementation of the National Housing Strategy lies. While IWA is a Housing Association, with housing located in several areas across the country. IWA's primary approach has always been to advocate for and to support the delivery of wheelchair accessible accommodation within mainstream environments and across all tenures and housing types.

In addition, IWA as a service provider, advocate, and approved Housing Association, has consistently developed and managed various housing initiatives and services to support people towards achieving their own homes.

The main body of text within this section focuses on housing design by setting out IWA requirements for both 'Wheelchair Accessible Housing' and 'Life Time Adaptable Housing'. Both housing design types being future proofed to lessen any requirement for adaptation as needs change over time. Guidelines given are based on only one person with a disability, primarily a person using a wheelchair, living within the home. If more than one wheelchair user is sharing accommodation, the design will need to

19 *Social Housing Needs Assessments*, (2019) Department of Housing Planning and Local Government.
Time to Move on From Congregated Settings A Strategy for Community Inclusion, (2011), Health Service Executive.
The situation of younger people with disabilities living in nursing homes in Ireland Phase 1, (2018), Disability Federation of Ireland.
A Vision for Change Mental Health and Suicide Prevention, (2011), Health Service Executive.
National Housing Strategy for People with a Disability, (2011-2016 – extended to 2020), Department of Housing, Planning and Local Government.
Social Housing and People with Mental Health Difficulties, (2013), National Disability Authority.

be altered to allow everyone free and easy access within the home and to all facilities without people having to always defer.

If the home meets the criteria of a 'community dwelling house', ie with up to six people with a disability sharing the home and supported by a service provider, then the design of the home must meet certain criteria as set out by Government in, *Fire Safety in Community Dwelling Houses*, (2017), Department of Housing, Planning and Local Government²⁰.

10.1.1 Housing Design and Disability

People with disabilities often have very specific housing and accommodation requirements and find it difficult, and sometimes impossible, to gain access to their preferred living situation. Standard housing design, compliant with current Building Regulations Part M Access and Use (2010), is not wheelchair accessible housing and is not suitable for a person living with a mobility impairment, particularly where the person is or may become a full-time wheelchair user. The Building Regulations²¹ require housing to be 'visitable' but not wheelchair accessible. People who have a mobility impairment and who are or who may become full-time wheelchair users require appropriately designed and future-proofed housing that is located within mixed tenure sustainable housing developments, that are perceived to be safe, in locations of peoples' choosing, and situated in close proximity to services, transport and family/friends.

In addition to the importance of housing being located within sustainable communities, people who are or who may become wheelchair users require all areas of a house/home to be wheelchair accessible, meaning the person can independently and easily access and use all areas and facilities within the house. Where a person requires assistance with their activities of daily living and/or personal care, the design of the house/home must accommodate that need, including the necessary space, equipment and any assistive technology to enable the person to achieve maximum independence, and to enable personal assistance (PA) to be provided as required.

Typically a house that is wheelchair accessible will support personal independence by having: level access at all entrances; greater room areas to allow a person using a wheelchair to easily move about and access all areas and facilities; a wet room type bathroom (though some people will have a preference for a bath); and a kitchen designed to be fully usable from a seated position when the person who is the wheelchair user is the main user of the kitchen. A height-adjustable kitchen, allowing the kitchen to be used by both people standing and by people seated, is often recommended, particularly in rented, social housing or student accommodation where it is known that the tenants will change over time, or where the kitchen may be shared by both people standing and seated including within a home/school/training environment.

20 *Fire Safety in Community Dwelling Houses - Code of Practice for Safety in New and Existing Community Dwelling Houses*, (2017), Department of Housing, Planning and Local Government. https://www.housing.gov.ie/sites/default/files/publications/files/code_of_practice_for_fire_safety_in_community_dwelling_houses_2017_0.pdf

21 Building Regulation, *Part M Access and Use*, (2010), Department of Housing, Planning and Local Government

A height-adjustable kitchen will require less or no adaptation when tenancies change or are shared and where access needs vary with different tenants/users. People will require an additional bedroom where a family member or PA (personal assistant) is staying overnight.

Wheelchair accessible housing is required across all housing sizes, including one and two bed units, and family housing of varying sizes. Apartment buildings are particularly challenging for a person who has mobility issues, as approach routes from the public pavement to the building, through the entrance into the building, and throughout the building to an individual apartment, are generally through several very heavy gates/doors that are extremely difficult for a person using a mobility aid or wheelchair to manage. Entrance gates and doors need to be automated and internal fire doors within hallways on a hold-open magnetic system whereby the doors will automatically close in the event of the fire alarm being activated.

① For additional information on wheelchair accessible housing design, see video *My Home Housing Options and Issues* on <http://housingforall.ie/>

The IWA design guidance for fully wheelchair accessible housing starting **on page 265** addresses the above design requirements.

10.1.1.1 IWA Housing Initiatives

Irish Wheelchair Association in its day-to-day work provides direct housing-related supports to its members through a range of initiatives and services which include: direct provision of housing in several areas throughout the country (IWA is an Approved Housing Association); actively lobbying national and local Government on housing-related issues that affect IWA members; and support to IWA members through IWA's 'Operation Sign Up' campaigns, in making and following through on social housing applications.

IWA Housing Initiatives:

- IWA as a Voluntary Housing Association provides accessible and affordable housing units to its members in various locations throughout Ireland. IWA has been an Approved Housing Association since 1984. As a housing association approved by the Department of Housing, Planning and Local Government, IWA can avail of funding from the Department to provide social housing. The majority of IWA's housing units are purchased through the Department's Capital Assistance Scheme (CAS) which currently provides Housing Associations with 100% funding to either purchase existing properties or to build new properties, depending on the conditions of the funding from year to year. Housing Association tenants must be registered on local council Housing Lists. Currently IWA provides a range of accessible and affordable social housing units to people who cannot afford to build or purchase a house of their own from their personal resources. Tenants lease the housing units at affordable rates, relative to the private rental market. The houses are designed or adapted to meet the varying and complex needs of individual tenants to support people in living more independent lives in their local community. The installation of specific aids and appliances at design stage supports the tenant's independence, in addition to adhering to IWA fully wheelchair accessible design specifications.
- As of 2020, IWA has a housing stock of 50 fully wheelchair accessible and affordable one and two-bedroomed housing units available to its members.

- Lobbying and Advocacy. IWA actively lobbies and works with the Department of Housing, Planning and Local Government, local authorities, the Housing Agency, and other disability representative groups and voluntary housing providers to promote the inclusion of good wheelchair accessible design within all housing projects, including the delivery of an annual supply of wheelchair accessible housing designed to the requirements of IWA members.
- Operation Sign-Up is an IWA initiative which encourages and supports people with disabilities who wish to live in their own homes but are unable to do so from their own resources, to apply for social housing through local authorities. Being registered on a local authority social housing list can act as a gateway to a variety of social housing opportunities. By hosting events in partnership with local authorities, through various local and national media outlets, by viral email, through community and youth groups, and in various other ways, IWA has publicised Operation Sign-Up and encouraged people with disabilities to make contact with the Housing Department of their local authority and to complete a social housing application.

10.2 Wheelchair Accessible Housing

10.2.1 Background

In developing design guidance for accessible housing, IWA has taken the approach of recommending two levels of design: fully Wheelchair Accessible Housing and Lifetime Adaptable Housing. IWA's two-level design approach is intended to future-proof both standard housing design and housing design that is specific to people who are full time wheelchair users, so that minimum or no further adaptation is required as the needs and the people living within the home change.

IWA recommends that a proportion, 10%, of all housing projects be designed to be fully wheelchair accessible, and the remaining houses in any project be designed to be Lifetime Adaptable. While it would of course be desirable that all housing be fully wheelchair accessible, IWA recognises that the greater floor area and out-fitting of a wheelchair accessible home does incur some additional cost, though not a significant cost once the wheelchair accessible design is incorporated into the building design from the outset. However, given that the current Building Regulation *Part M Access and Use* (2010)²² requires only 'visitable' housing design, IWA considers it unlikely that there is, at this point in time, an appetite from Government to extend Building Regulation to require the design of all housing to be fully wheelchair accessible to IWA requirements. In this regard IWA has taken the pragmatic approach of recommending two levels of accessible design: fully Wheelchair Accessible Housing and Lifetime Adaptable Housing.



“Fully wheelchair accessible social and private homes need to be built!”

IWA member, Co Cork

22 Building Regulation *Part M Access and Use*, (2010) <https://www.housing.gov.ie/housing/building-standards/tgd-part-m-access-and-use/technical-guidance-document-m-access-and-use>

10.2.2 IWA Design Guidance for Wheelchair Accessible Housing

Wheelchair accessible houses are purpose-designed considering the specific space and access requirements of a person using a wheelchair. These houses are larger in floor area than standard housing, to provide sufficient circulation space and to accommodate personal assistance if required. Every area of the house, the household facilities, and the equipment therein, is specifically designed to be accessible for the person who is using a wheelchair. Forward-planning, which considers the internal home design alongside the preferential siting of wheelchair accessible units, both within a development and within an apartment building, is critical to a successful outcome for the occupant.

As a general design approach IWA considers that a wheelchair accessible home should always be designed to meet the requirements of a person using a large powered wheelchair and requiring personal assistance. In this way, the home has been future-proofed should the needs of people living in the home change over time, either through the aging process or as a medical condition progresses or as a person's personal circumstances change. The need for any further adaptation is thus minimised or eliminated altogether. Additionally, with a unit of social housing or any other type of accommodation where tenancies will change over time, eg private rental/student and hostel accommodation, this approach minimises or eliminates the need for carrying out any adaptation as tenants/residents change. IWA considers that a template design based on the above design approach can be customised during the build, particularly in relation to any individual requirements in the bathroom and kitchen fit-outs, and including any environmental controls and/or equipment requirements.

The Wheelchair Accessible Housing design guidance in this document, while informed by many recent publications²³, has been devised by IWA to meet the access requirements of its members. The room sizes required will depend on the accessible clear space requirements, in conjunction with the furnishings to be placed within the room. The guidance specifications given in this document relate to accessible clear space requirements. These specifications are general and intended to accommodate the majority of wheelchair users, including people using powered wheelchairs and requiring personal assistance. Overall room sizes can be determined by combining the space required by the furnishings the room will accommodate along with the clear space requirements of a person who is using a wheelchair and any related equipment requirements the person may have now or into the future.

The space requirements and interior design of a unit of accommodation may need to be customised to the individual home occupant's needs. When the individual housing occupant is known or can be identified, preferably before or during the build, then his/her specific access requirements must be designed into the plan from the outset or during the build at the earliest possible stage. This inclusive design process is generally achieved by direct consultation with the person with a disability, their advising access consultant, (often an occupational therapist), and the architect.

IWA recommends that ten percent of houses in new housing developments should be fully wheelchair accessible.

23 See reference section at the end of *Irish Wheelchair Association Best Practice Access Guidelines*, (2020) publication for a list of all publications that were consulted.

The guidance given in this section concerning Wheelchair Accessible Housing is for both apartments and for individual houses. The guidance for the approach routes, for car parking, for entry and for shared/common circulation areas within apartment buildings and to individual houses is dealt with under these separate headings.

To achieve good wheelchair accessibility the design of the approach routes, entry points and internal shared/common circulation areas is as critical as the interior design of the living space.

① IWA guidance for fully Wheelchair Accessible Housing design commences on page 265.

① IWA guidance for Lifetime Adaptable Housing is located on pages 296 to 299.

10.2.3 Apartment Buildings

10.2.3.1 Approach Route to an Apartment Building

Any external call buttons/intercom systems situated on approach routes at the apartment building entry gates, at the public path/roadway should have both auditory and visual displays and be situated at a height between 900-1050mm above level ground level and at least 500mm from any corner.

The connection points between the public path/roadway and the environs of the apartment building should be seamless, with level access joining these connection points. Any approach route to an apartment building from a public path/roadway, from a boundary wall, from a set-down location, or from a car parking area should be sufficiently wide, preferably 2000mm in width and minimum of 1500mm on lesser routes, and be on firm, level non-slip ground to give ease of access to all. Any external gates, doorways, or openings on the approach route should have a clear width of 1000mm, with 500mm of clear space to the leading edge side of the gate/doorway on the pull side and 400mm of clear space on the latch side of the gate/doorway on the push side; and the clear space on either side should be maintained with no obstruction for 1800mm. The clear space at the leading edge (latch) side of any gate/doorway allows a person using a wheelchair to pull into that space to reach and operate the gate/doorway. Any gate/doorway handle should not need to be operated at the same time as locking/unlocking a gate or doorway.

Any latches or opening mechanisms on the gate/doorway should be easily usable with minimum strength and dexterity, preferably using only one hand in a closed fist position. The latch or opening mechanism should be no higher than 1000mm from ground level.

All approach routes should be level or have a slope of not more than 1:50. Where the plot gradient does not allow a level approach, both stepped and ramp access must be provided. A ramp should be gently sloping with a gradient not exceeding 1:20. A slope gradient of 1:15 is a minimum acceptable slope in exceptional circumstances.

① For further information on external ramps and steps, see Section 4.3 on page 72 and Section 4.4 on page 74.

A stepped approach should be suitable for use by ambulant disabled persons.

All pedestrian approach routes/footpaths should be free of projecting hazards and preferably have a minimum clear width of 2000mm. Localised obstructions should be set back so that they do not narrow the route or occur within 1800mm either side of a doorway or change of direction. In exceptional circumstances where there is known to be low usage of the footpath, a minimum acceptable approach route width is 1500mm. Where the pathway reduces to 1500mm in width, passing spaces of 2000mm in depth x 2000mm in width should be provided at intervals of 25m.

Where there are road crossing points on the approach routes/footpaths, these should be dished flush with the roadway, always on opposing sides, and the appropriate tactile paving should be provided at the crossing points.

① For more information on approach routes and on tactile paving, see Section 4.2. on page 62.

Sensory-activated lighting should be provided on approach routes, at car parking areas and at the entry points to the apartment building. The illumination should be 150 lux on the general grounds and 200 lux on ramps/ steps.

10.2.3.2 Car Parking and Setting Down Points – Apartment Buildings

Where car parking for both residents and visitors is provided, it should include a proportion of accessible parking bays.

As the demand for accessible parking from residents in apartment buildings is likely to change over time, the management company should devise a system of monitoring need and allocating accessible bays as the demand changes. Each wheelchair accessible house should have the option of a designated accessible parking bay. In addition, there should also be a priority accessible parking bay allocation given to holders of disabled parking badges. The design of standard parking bays could include the future option of some standard bays being increased in size, should additional accessible parking bays be required and where parking for multi-purpose vehicle/s is required.

Accessible parking bays should be situated close to the apartment building entry points, preferably within a distance of 25m. Access from the car parking areas to approach routes and to building entry points should be level and seamless, and should comply with the general guidance on approach routes in the referenced sections above.

If parking is provided within an enclosed area, there is a height requirement of 2600mm to accommodate high top adapted vehicles and vehicles with roof-top boxes that store a wheelchair.

A drop-off or setting-down point should be provided close to the communal entrance to an apartment building.

① For information on the design of accessible parking bays, including for multi-purpose vehicles and for setting down points see Section 4.1 on page 53.

➔ See Figure 5 Accessible Parking Showing Different Sized Bays, Figure 6 Accessible Parking Showing Shared Access Zone and Figure 7 Accessible Parallel Parking Bay on pages 55, 56 and 57.

10.2.3.3 Entrances to Apartment Buildings

There should be sensor-activated lighting and level entry at all apartment building entry points. The entrance should have a level external landing area of 1800 x 1800mm, clear of door swing and weather-protected. Weather protection can be achieved either by enclosing the space within a recessed area, or by the provision of a canopy, or a combination of both. Any canopy should extend 700mm either side of the entrance. A person using any mobility aid, including a wheelchair, should be able to independently operate and negotiate all entrance/exit doors.

The main entrance door to an apartment building should have level access (no threshold upstand) and provide a 1000mm clear opening width. There should be 500mm of clear space to the leading-edge side of the door on the pull side and 400mm of clear space at the leading edge on the push side. The clear space on either side of the door should be maintained with no obstruction for 1800mm. The clear space at the leading edge (latch) side of any door allows a person using a wheelchair to pull into that space to reach and operate the door handle/lock. The main entrance door should be located reasonably centrally within the thickness of the wall to minimise the depth of the reveal to both sides. Where the door has to be unavoidably recessed, then the surrounding structure should be enlarged to create the required leading-edge clear space/s on either side.

The entry and locking system on the main door should be usable with minimum strength and dexterity. Lever-type handles that have a return at the end of the handle are recommended and should be placed at a height of 900-1000mm from the floor level. Any door handle should not need to be operated at the same time as locking/unlocking a door. Door closers make doors heavy and difficult to operate, and result in doors closing in on people using mobility aids or wheelchairs as they try to negotiate through the door. IWA recommends the use of doors that are automated as automated doors are significantly more usable where people have mobility and/or strength issues. Main entrance doors that are automated can be operated in a variety of ways. IWA considers the use of push pads, proximity cards or key fobs as being most useful, as people with limited hand function or upper body strength can find key-pads difficult to engage and use.

The main entry door should have a door-release intercom communication system and power-assisted or automated doors. The door call/entry systems should be located on the latch side of the door on the adjacent wall, at a height of between 900mm and 1050mm from floor level.

The system provided should contain an LED (Light Emitting Diode) display to facilitate people who are deaf or hard of hearing. The communication system and door release indicator should be both visual and audible.

There should be a level space of 1800 x 1800mm inside the entrance door that is clear of the door swing. The clear space on the leading edge of the inside of the main entrance door should be maintained for 1800mm which can be incorporated into the 1800 x 1800mm level area inside the entrance door. Glazed vision panels are useful to allow a view of any approaching person on either side of the doorway.

10.2.3.4 Lobbies and Internal Doors within Apartment Buildings

Lobbies within apartment buildings should be designed and constructed so there is sufficient space to enable a wheelchair user and a person assisting the wheelchair user to move clear of one door before using the next door, while also allowing space for a person to pass in the opposite direction.

The minimum clear door widths leading into and from a lobby/foyer area and throughout the apartment building should be 900mm, with preferably 500mm of clear space to the leading edge on the pull side of the door and 400mm of clear space at the leading edge on the push side of the door; this clear space on either side should be maintained with no obstruction for 1800mm. The clear space at the leading edge (latch) side of any door allows a person using a wheelchair to pull into that space to reach and operate the door.

The size of the lobby/foyer area will be determined by the size of the door opening into and from the lobby area, and by whether the doors are opening in the same or opposite directions. A lobby must have a clear zone between doors. The clear zone enclosed by the lobby area must be maintained at a clear internal footprint of 900mm in width x 1700mm in depth. This area must remain free of door swing. Ideally the recommended lobby width is 1800mm; however, a minimum lobby width of 1500mm is acceptable.

→ See Figure 12 Internal Lobbies with Doors Opening in the Same Direction and Figure 13 Internal Lobbies with Doors Opening in the Opposite Direction on pages 98 and 99.

Negotiation of heavy doors presents a barrier to many people (wheelchair users, people carrying parcels, people with buggies, etc). Doors leading into and from lobbies, and all internal doors within communal areas of an apartment building, should be power-assisted or automated. Fire doors should be held open with a magnetised release system that will automatically close the doors in the event of a fire alarm being activated.

At the entrance doors to individual apartments there should be a clear external space of 1800 x 1800mm. The individual apartment number/name should be large, in strong contrast with the background and located in a prominent place for ease of identification. The entrance to individual apartments should have level access (no threshold) and a clear door width of 900mm. There should be 500mm of clear space at the leading edge on the pull side of the door and 400mm of clear space at the leading edge on the push side of the door; this clear space on either side should be maintained with

no obstruction for 1800mm. The main entrance door should be located reasonably centrally within the thickness of the wall to minimise the depth of the reveal to both sides. Where the door has to be unavoidably recessed, the surrounding structure should be enlarged to create the required leading-edge clear space/s on either side.

The entry and locking system on the individual apartment door should be usable with minimum strength and dexterity. Lever-type handles that have a return at the end of the handle are recommended and should be placed at a height of 900-1000mm from the floor level. Any door handle should not need to be operated at the same time as locking/unlocking a door.

A view of callers for all people, including children and people in a seated position, can be achieved from within the apartment with the use of wide-angled or spy hole viewers located in the door. Where wide angle viewers are provided in the entrance door, these should be situated at 1050mm and 1500mm above floor level to enable viewing by persons in a seated or standing position.

10.2.3.5 Communal Corridors

Communal corridors should ideally have a minimum clear unobstructed width of 1800mm. Any corridors less than 1800mm in width should have a turning space of 1800 x 1800mm at the end of the corridor and at corridor junctions. This turning space should be repeated at intervals of 25 metres as the length of the corridor continues. Any corners on a corridor should be rounded.

The minimum acceptable clear unobstructed corridor width is 1500mm. Where the communal corridor is reduced in width to 1500mm, there should be a clear space of 1800 x 1800mm provided external to each individual apartment entry point. To facilitate horizontal movement in emergency evacuation, designated escape routes should always have minimum corridor widths of 1800mm.

10.2.3.6 Vertical Circulation within Apartment Buildings – Stairs

Straight flights of stairs are recommended as they are easier to negotiate than curved ones. Ideally, the unobstructed width of the flights of steps should be no less than 1500mm. A stair width of 1200mm is acceptable where the flight of stairs is not part of an evacuation route. Handrails should be continuous across flights and landings and provided at a height of 900mm from the pitch line on both sides of the steps, and they should extend 300mm beyond the top and bottom step, and finish in a closed end. The handrail should contrast with the background in tone and colour. Flights should contain no more than 12 risers between landings, and the number of risers in successive flights should be uniform. Level landings, at least 1500mm in length and free of cross door swings, should be provided.

Where possible, internal stairs should not be directly in line with an access route.

When the stairs form part of an evacuation route the unobstructed clear width should always be 1500mm.

10.2.3.6.1 Steps

The rise of each step should be consistent and between 150-180mm. The going or tread depth of each step should be consistent and between 300mm-450mm. Nosings or projecting front edges of

steps should be integral with each step, and distinguishable in colour and tone. The nosing or strip should extend the full width of the step, and be 50mm to 70mm deep measured from the leading edge of the step. Nosings should be used on the front face and the top of each step to be visible while ascending or descending. The practice of marking the first and last step in each flight with a different distinguishing colour, often yellow, is recommended.

Open risers should not be used, and single steps are also to be avoided.

① For more information on the design of external and internal steps and stairs, see Section 4.4 on page 74 and Section 5.5 on page 101.

10.2.3.6.2 Tactile Surfaces

Where possible, depending on the surfaces used, top and bottom landings should be provided with a tactile surface in a ridged pattern to give advanced tactile warning of the change in level. This tactile surface should comprise of rounded bars running transversely to the direction of pedestrian travel. The ridged surface should start 400mm from the nosing of the first step. When steps are in the direct line of travel, a depth of 800mm is required for the tactile surface. The tactile bars should be 6mm (+/- 0.5 mm) high, 20mm wide, and spaced 50mm from the centre of one bar to the centre of the next.

Hazard-warning surfaces must also be installed at intermediate landings where there is access onto the landing, other than from the steps themselves.

Where it may not be possible to use a tactile hazard-warning surface indoors – which can be problematic with different frictional qualities of indoor surfaces – then floor finishes that contrast visually and in texture and sound should be used to highlight and to warn of the top and bottom of the stairs. There is no guidance on hazard-warning type surfaces at the head or foot of internal stairs that can be successfully used in all indoor situations.

10.2.3.6.3 Lighting

Lighting should be even and consistent along the flight of stairs and should not cause anyone to negotiate the stairs in their own shadow, with a non-glare minimum illumination of 200 lux.

10.2.3.7 Vertical Circulation within Apartment Buildings – Lifts

Lift access is required in all apartment buildings. Lifts should be conveniently located in relation to the lobby, be clearly signposted and be visible from the entrance. The landing in front of a lift should be a minimum of 1800 x 1800mm.

Where wheelchair accessible units are above ground floor, these should ideally be accessed by two lifts in different locations to create alternative evacuation routes.

As the use of lifts is the most effective means of evacuation for people with disabilities, all lifts in apartment buildings should be fire-protected and capable of being used for evacuation purposes.

❗ For further information on emergency evacuation, please see Section 8 on page 239.

10.2.3.7.1 Lift Landings

There should be a clear unobstructed space of 1800 x 1800mm in front of the lift entrance, and this area should be well lit with a minimum illumination of 150 lux. A change of floor surface and texture should be present to indicate the approach to the lift. Lift controls at each landing should be embossed to enable tactile reading as well as visual, and at a height of not less than 900mm and not more than 1100mm. The controls should be visually contrasting with the colour of the surrounding face plate.

A sign indicating the floor level should be provided in each lift lobby on the wall opposite the lift landing doors.

10.2.3.7.2 Lift Door Design

The lift doors should have a minimum clear opening width of 900mm. The lift doors should be clearly distinguishable from the background by tone and colour contrast. The lift doors should be fitted with a reacting device which relies on infra-red or photo-eye systems to ensure no person can become trapped in the doors. The lift door should stay open for a minimum of 20 seconds. A control button to keep the doors open should be situated on both the inside and outside of the lift. Both visual and auditory warning should be given before the lift doors open and close.

10.2.3.7.3 Lift Car Design

Single door lifts should provide sufficient internal cabin space to accommodate a turning circle of 1800 x 1800mm. In lifts where a front-on alternative exit door is present, an internal turning circle of 1800 x 1800mm is not necessary. In this situation, a minimum clear space of 1200mm in width and 1700mm in depth within the lift car is required.

In smaller buildings it may not be possible to provide a lift with the above internal dimensions. In such situations, as a minimum lift size, a Class 3 lift, 1400mm in width x 2000mm in depth, is recommended in order to comfortably accommodate a wheelchair user and other person. The larger lift car size enclosing an 1800mm turning circle is always the recommended option.

Where a lift car is not square, it is always preferable that the lift car be deeper rather than wider, to facilitate the entrance and exit of mobility scooters.

➔ See Figure 14 Passenger Lift on page 109.

10.2.3.7.4 Lift Controls and Fixtures and Fittings

In the lift, the control pad should be situated at a height of between 900-1100mm and located 750mm from the door opening. Control pad buttons should be well spread, and accessible to wheelchair users by parallel approach. Lift control buttons should not be flush with the surrounding panel. Control buttons should be embossed and contrast in tone/colour with their background. It is helpful for people with vision impairment if buttons light up when pushed. Braille, as well as tactile letters/numbers, should be provided beside each of the control buttons, to enable people with impaired vision to identify them. Tactile indicators should contrast with the background design of the lift car.

Audible, visual and tactile notification of the floor level reached, and notice of door opening/closing should be provided at each lift landing.

The internal lighting within the lift car should be uniformly distributed at approximately 150 lux at floor level. The internal walls of the lift car should be covered with a non-reflective matt material. Light coloured walls provide contrast with a darker floor shade, but not black as a very dark colour can create the illusion, for people with vision impairments, of stepping into an open shaft.

The floor should have frictional qualities similar to or higher than the floor of the landing. A handrail should be situated at a height of 900mm above the floor level, and along both the side and back walls.

In lifts with one door, a mirror at the rear of the lift cabin is required to assist wheelchair users to reverse out of the lift. To avoid causing confusion to people with a visual impairment, this mirror should not extend the full height of the cabin but should start at 400mm above floor level and continue to the top of the lift car.

10.2.3.7.5 Lift Emergency Service Notification

Passenger lifts should be fitted with emergency instructions in visual and tactile format at a height of between 900-1100mm. A push-button control with tactile indicator should activate an emergency communication system situated within the lift car. A visual and auditory response indicator should also be fitted. The function of this response indicator is to confirm receipt of an emergency call, to detail the expected response action and time, and to allow on-going communication. The communication system should incorporate an induction coupler for the benefit of people who use hearing aids.

10.2.3.7.6 Refuge Areas in Apartment Buildings

As many people with a disability cannot use stairs unassisted, it is necessary to ensure that people can remain in a place of relative safety until help arrives. One solution is to provide a refuge area or area of rescue assistance. The refuge area is for people who cannot use the stairs when the lift is not usable, such as in an emergency. People are instructed to wait within the refuge area/s until the evacuation plan is operated and assistance arrives. A refuge area must contain a sufficient number of spaces to accommodate the number of people likely to require assistance to evacuate from the building. The dimensions of a refuge space should be 900 x 1400mm for a single space, and be situated clear of the escape route.

The refuge area should be provided within a designated location with a fire-resistant construction, often within a stair enclosure, and on every landing above or below ground floor level where there is not level access to an external place of safety.

The refuge area should have clear accessible signage indicating that the area is designated as a refuge, including identification of the floor level. The refuge should contain a two-way communication system linked to a management control point, clear instructions on procedures to be followed, and appropriate evacuation equipment.

The use of evacuation lifts is IWA's recommended option for evacuating people requiring assistance. In this situation, where an evacuation lift is provided, refuge areas are still required as people will await within the refuge area for the phased lift evacuation to be managed by the fire services.

① For more information on refuge areas, please see Section 8 on page 239.

10.2.4 Individual Dwellings – House and Apartment

10.2.4.1 Approach to the House

At least one point of access at the boundary of the house site should have a minimum clear opening width of 1000mm.

The approach to the main house entrance from the site boundary and from the car parking space should have a clear unobstructed width of preferably 1500mm and minimum 1200mm, and have a firm surface, suitable for wheelchair users, which minimises the risk of slipping. There should be a turning area of preferably 1800 x 1800mm at the top of the approach route.

Both the approach from the exterior pathway to the site boundary access point and the approach to the house entrance from the plot boundary should be level or have a slope of not more than 1:50. Where the plot gradient does not allow a level approach, both stepped and ramped access must be provided. A ramp should be gently sloping with a gradient not exceeding 1:20.

A stepped approach should be suitable for use by ambulant disabled persons.

① For information on a stepped approach, see Section 4.4 on page 74.



“I built my house in 2005 and never noticed how inaccessible it was until I became a wheelchair user”

IWA member, Co Mayo

10.2.4.2 Car Parking

A car parking space should be provided adjacent to or within the boundaries of the house and should be 3600mm in width and 6000mm in length. This size will allow a 1200mm 'Access Zone' to the rear and to one side of the vehicle. The car parking space will need to be larger if a multi-purpose vehicle is to be accommodated, ie with a 3000mm access zone to the side or rear of the vehicle depending on the access point to the vehicle. The car parking space should be on level and firm ground and preferably have covered access to the main house entry.

Where car parking is required for a high-top adapted vehicle or a vehicle with a roof-top box used for storing a wheelchair, a clear height of 2600mm is required.

- ① For information on communal car parking within apartment complexes, see Section 10.2.3.2. on page 268. For more general information on accessible car parking bays, see also Section 4.1 on page 53.

10.2.4.3 Main Entrance to House or Apartment

There should be level entry to the house. The main house entrance should have an inward opening door with a clear width of 900mm and with an unobstructed space of at least 500mm on the side next to the leading edge of the door on the pull side of the door, and 400mm of clear space at the leading edge on the push side of the door; this clear space on either side should be maintained with no obstruction for 1800mm. The main entrance door should be located reasonably centrally within the thickness of the wall to minimise the depth of the reveal to both sides. Where the door has to be unavoidably recessed then the surrounding structure should be enlarged to create the required leading-edge clear space/s on either side. There should be no threshold upstand at any entrance/exit door within the home, including patio doors.

The entrance should be protected by the provision of a canopy or recess. The recessed area or area enclosed by the canopy should be a minimum size of 1800 x 1800mm, clear of door swing, extending beyond the door on the lock side by 550mm, and with a maximum height of 2300mm. A place to put packages while opening the main entrance door is useful. This could be provided by the use of a built-in shelf, bench or table, with knee recess space below, located preferably on the leading-edge side of the door.

Porches or lobbies are only useful if there is sufficient space to clear one door swing before negotiating the second door. A lobby needs to have an enclosed area of 900 x 1700mm that is clear of door swing, to allow one door to close before a person using a wheelchair approaches the second door. In general,



having to negotiate a series of lobby doors to enter a dwelling is cumbersome and will present a barrier for many people with a mobility impairment.

Lighting should be provided to/from the entrance and along the route to/from the car parking space. Passive Infra-Red (PIR) sensor and internal switching is recommended.

An additional level access entrance/exit should be provided at the rear of a ground-level house. Consideration should also be given to a patio entrance/exit door within the ground-level accessible bedroom. Where the house is located above ground level, the access to an outside/external location can be achieved with the provision of well-designed and sized balcony space.

10.2.4.3.1 Door Fixtures

The house number/name should be large, in strong contrast with the background, and located in a prominent place for ease of identification.

The entry and locking system on the main door should be usable with minimum strength and dexterity. Lever-type handles that have a return at the end of the handle are recommended and should be placed at a height of 900-1000mm from the floor level. Any door handle should not need to be operated at the same time as locking/unlocking a door.

Where the main entrance door has a letter box for delivering letters, the letter box should be situated between 700-1200mm from the floor level. The door and hallway design should be such that if a letter catch basket is used on the rear of the door, it should not affect the clear door opening width of 900mm.

Where letter boxes are provided externally, including within communal banks in an apartment building, the height of the accessible letter box should remain as above, 700-1200mm, and have clear access from an adjoining access route that has a minimum clear width of 1500mm. Preferably an accessible post box should have clear space beneath to allow front-on access for a person who is a wheelchair user. Within an apartment building, where there may be a row of letter boxes, the letter boxes to the bottom of the row should be allocated appropriately to people requiring the lower height boxes.

10.2.4.3.2 Door Entry System

Any door entry or intercom system, if connected to a security release door opener, should have a visual and audible signal at the entrance to indicate that the door has opened. In addition, the doorbell should have a visual indicator inside each area of the house. The various provisions for visitors to communicate with residents, such as a lighted doorbell, an intercom with portable telephone and visual link, and/or a hardwired intercom should all be situated at a height between 900-1000mm, and 500mm from any corner. A view of callers for all



Automated Door Control

people, including children and people in a seated position, can be achieved with the use of wide-angle viewers, TV monitors, windows in doors, and/or windows placed nearby. Where wide-angle viewers are provided in the entrance door, these should be situated at 1050mm and 1500mm above floor level to enable viewing by persons in a seated or standing position.

Automated or power-assisted doors are recommended. A push and go power-assisted door will swing fully open from a closed position when the user begins opening it, taking at least three seconds to open and remaining open for a minimum of five seconds. Automated doors are operated by a variety of means, including a coded key-pad, a push pad or proximity card or fob. IWA considers the use of push pads, proximity cards or key fobs as being most useful, as people with limited hand function or upper body strength can find key-pads difficult to engage and use.

10.2.4.3.3 Smart Homes – Present Need and Future-Proofing

While technology can be retrofitted into a home, it is preferable to forward-plan for the use of technology and to install any wiring or electrical connections when a new house or retrofit is being planned and designed. Environmental controls can enable a person to live more independently and safely by using technology to manage and control activities and equipment within the home environment. Technology can be wired into living spaces and used to control and manage such activities as: opening and closing doors/windows/curtains; turning on and controlling TV, radio, music systems and heating and providing intercom connections between bedrooms and living areas.



Kitchen Door and Window Automated Control

When considering any present and future technology or equipment requirements, the possible future need for a hoist should also be considered and an electrical connection at ceiling height provided in an appropriate location. The required ceiling height for use of a tracking hoist is 2400mm.

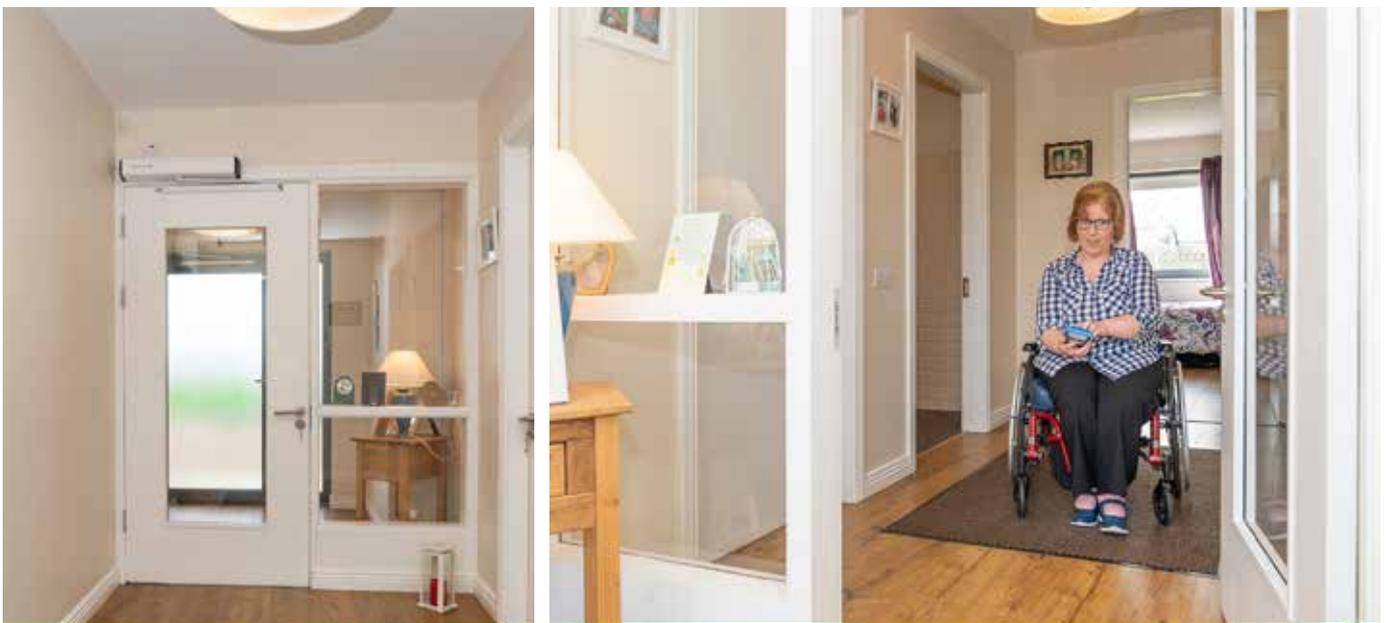
For full information on the range of SMART home technology, a consultation with an expert in the area is recommended. Such expertise can be accessed in consultation with an Occupational therapist or other accessible design advisory service.

Controls to operate intercoms, door release, heating, ventilation, etc should all be situated at a height of between 700-1200mm, and 500mm from any corner, with clear front-on access. Intercoms incorporating a front door release system should be located within the main living room, the main bedroom adjacent to the bed, and in any other desired location.

10.2.4.4 Interior Circulation and Design of Houses and Apartments

An open-plan interior design that minimises hall and doorways while maximising sight lines is recommended. A square hallway, minimum size 1800 x 1800mm, with doors opening off the hallway works well. A long narrow hallway can make turning into rooms difficult, as can doorways that are positioned too close to each other or too close to corners.

Corridors, passageways and doors to habitable rooms, on every level, should be sufficiently wide and free of any stepped changes so as to allow for convenient circulation by all. There should be no obstruction (radiator or other) in places opposite doorways or at a change of direction within a hallway for a minimum distance of 1500mm from the centre of any doorway. The recommended width of any corridor is 1500mm with a minimum acceptable width of 1200mm. An 1800mm turning circle should be provided at both the main entrance door, and at the far end of a long hallway.



Hallway (Internal and external perspective)

Where two doors are positioned on adjacent walls in an internal corner situation, the combined length of the two nibs between doors should be at least 800mm, to allow for turning from room to room.

Internal lobbies are not recommended as the additional doors caused by lobbies create barriers to ease of movement. Lobbies require considerable internal space, 900 x 1700mm, to accommodate a person using a wheelchair to move into and through the lobby.

Consideration should be given to the provision of storage space for additional equipment such as exercise equipment, an additional wheelchair, a powered wheelchair charging location, etc. One large storage area capable of being accessed by a wheelchair user is preferable to several smaller areas.

A space of 1100 x 1700mm in length, outside of any access route and supplied with power sockets, is required for a wheelchair charging location. This space should be fire-protected and should preferably be incorporated into the hallway close to the main entrance. In this location a person could transfer into a manual wheelchair while putting their powered chair on charge.

Alternatively, the space could be provided elsewhere in another agreed position within the home. Consider the need for wall and corner protection within the hallway and/or in other locations.

→ See Figure 37 Floor Plan for a Typical Wheelchair Accessible House 1 and Figure 38 Floor Plan for a Typical Wheelchair Accessible House 2 on pages 285 and 286.

10.2.4.5 Internal Doors

The doors to all rooms should have a minimum clear opening width of 900mm. There should be 500mm of clear space at the leading edge on the pull side of the door and 400mm of clear space at the leading edge on the push side of the door; this clear space on either side should be maintained with no obstruction for 1800mm. Doors that open beyond 90° are useful in giving greater access through the doorway. In a bathroom situation, a thumb lock door opening mechanism is recommended as it enables the door to be opened from the outside. The door in a bathroom should preferably be an outward opening door; if this is not possible, consider using door hinges that allow the door to be easily taken off the hinges if required.

All door handles should be easily gripped, and visually contrast with door surfaces. Lever-type door handles that are easy to use, requiring little strength and flexibility, are recommended. Door handles should have a return at the end of the handle and be operable with one hand/closed fist. Where two doors are positioned on adjacent walls in an internal corner situation, the combined length of the two nibs between doors should be at least 800mm to allow for turning from room to room. Doors should open into a room and against the internal wall.

Internal fire doors can be particularly problematic for people with a mobility impairment due to their weight and self-closing mechanism. Consideration should be given to the use of electronically operated or internal swing doors which can be useful to persons who have limited manual dexterity. Hold-open door systems that close in the event of a fire could also be considered. Fire door retainers hold the doors in the open position (against the pressure from the door closer) and release the door in the case of a fire, allowing the door closer to shut the door.

Sliding or pocket doors can assist where circulation space is limited on either or both sides of a door; there should be no raised tracking or upstand on the floor and the sliding door mechanism should be smooth. A sliding door requires the same clear space at the leading edge/s as a standard door.

The use of pull handles and kick plates could be considered, depending on individual need and preference.

① For more information on pull handles and kick plates, please see Section 5.1.2.3 on page 91 and Section 5.1.2.4 on page 91.

10.2.4.6 Windows

Window glazing should begin no higher than 850mm from floor level and should have lever-type low-level catches and handles that are easy to operate with one hand and with limited strength. Window catches or handles should be situated at or below 1000mm from floor level. Top-hung windows can work well; however for the safety of children windows will require a restrictor to limit the extent to which the window can open. Windows when open should not protrude into external circulation routes.

No transoms should be placed between 850-1200mm to allow a clear view through the window. Environmental control devices to operate windows, curtains, blinds and doors may be useful for some individuals. Relevant professional advice should be sought beforehand, as the installation of these controls may have design implications.

10.2.4.7 Living Room Design

Circulation space within each room should be large enough to accommodate access to all facilities in that room when furnished. At least two turning circles of 1800mm diameter should be provided within all living areas. These turning circles should not be overlapping. There should be a clear access route at least 900mm wide from the door to the windows, and to any critical use/task areas with the room.

There should be space provision for a workstation within the living areas, placed at a height of 760mm from the floor level, with a clear knee space underneath of 700mm in height and 800mm in width. There should be several electrical points serving this area.



Open Plan Sitting Room and Kitchen

Consider using low surface temperature radiators throughout the home, or in various locations as appropriate, or alternatively consider underfloor heating throughout.

→ See Figure 37 Floor Plan for a Typical Wheelchair Accessible House 1 and Figure 38 Floor Plan for a Typical Wheelchair Accessible House 2 on pages 285 and 286.

10.2.4.8 Electrical Switches and Sockets

Switches, sockets, TV points and all controls should be located at heights of 400-1000mm, and always 500mm from any corner. Electrical wall sockets should be located at a minimum of 400mm above floor level, and 500mm from any corner. Light switches and socket outlets that are in frequent use should be placed higher, between 750-1000mm, and 500mm from any corner. Light switches should be of the large rocker type. Easy visual identification of switches, power points and heating or other controls should be achieved by having a visual contrast with the background and surroundings.

Switch and socket outlets should clearly indicate whether they are on or off. Electrical sockets should have the on/off control switch located to the outside of the surrounding mount.

All switches and control pads should be operational with the use of a closed fist.

10.2.4.9 Wheelchair Accessible Kitchens

Wheelchair accessible kitchens should have a minimum unobstructed floor space of 1800 x 1800mm between facing units and between any units and an opposing wall. All appliances, work surfaces and electrical sockets should be easily accessible to the wheelchair user. A split-level oven and hob is recommended. A knee clearance space of 700mm in height and 800mm in width under the sink, hob and preparation areas allows easy access from a seated position. The underside of the sink and hob should be insulated to avoid the possibility of a burn injury.



A 600mm worktop depth is recommended. The worktop height should be 760mm from floor level. A height-adjustable worktop area incorporating the sink, hob and preparation area, can also be considered to accommodate different users over the lifetime of the home and where people with differing abilities, some seated, some standing, are using the kitchen on a regular basis.

Note: When the individual housing occupant is known, his/her needs must be incorporated into the kitchen plans from the outset. An inclusive design process is generally achieved by direct consultation with the occupant with a disability, the architect, and an access consultant, typically an occupational therapist (OT).

→ See Figure 39 Wheelchair Accessible Kitchen on page 287.

10.2.4.9.1 Cooker

The controls of the cooker and hob should be positioned to the front of the appliance and should not require overreaching across burners to operate. The controls should be no higher than 1050mm and no lower than 700mm. The hob should be situated preferably within the worktop at a height of 760mm and with an insulated clear knee space of 700mm beneath.

A ceramic or induction hob is preferable as heavy pots can be moved by sliding them across the hob. The hob/cooker top should have an adjacent work surface of at least 400mm wide.

The oven should be located so that the level of the drop-down door or the pull-out oven board is at 760mm in height. There should be a worktop area adjacent to the oven.

The oven door can be side-hung or drop-down type. Where a side-hung door is used, a pull-out board of a minimum 250mm in depth should be provided directly beneath the oven. This pull-out board should be heat resistant and strong enough to support a heavy cooking vessel. The side-hung door must open away from the approach route.

10.2.4.9.2 Storage Presses

High kitchen presses located above worktops have limited usage to a person who is a wheelchair user. Any shelving located above a worktop area should have the lower shelf no higher than 1150mm. The depth of the shelves in storage presses should not be more than 250mm. While pull-down baskets can make higher presses usable to an extent, the baskets can be heavy to pull down and are best suited to storing light-weight grocery items. Higher presses can also be automated to drop down by using an electronic control, again usability is limited to relatively light-weight grocery items. Other storage options to consider include: a tall pull-out narrow larder that can be accessed from both sides; pull-out baskets or carousels in the lower and corner presses; deep drawers within the base units that can store crockery; a storage press with the shelving indented to allow a wheelchair user closer access to the back of the shelving; and pull out units for waste/recycling, etc. Doors on all kitchen cupboards should swing through 180° to give full access to the cupboard space within.



Kitchen Presses

Additional storage can be achieved with the use of portable trolleys on wheels that are stored beneath open worktop surfaces and can be moved around as required.

10.2.4.9.3 Kitchen Appliances

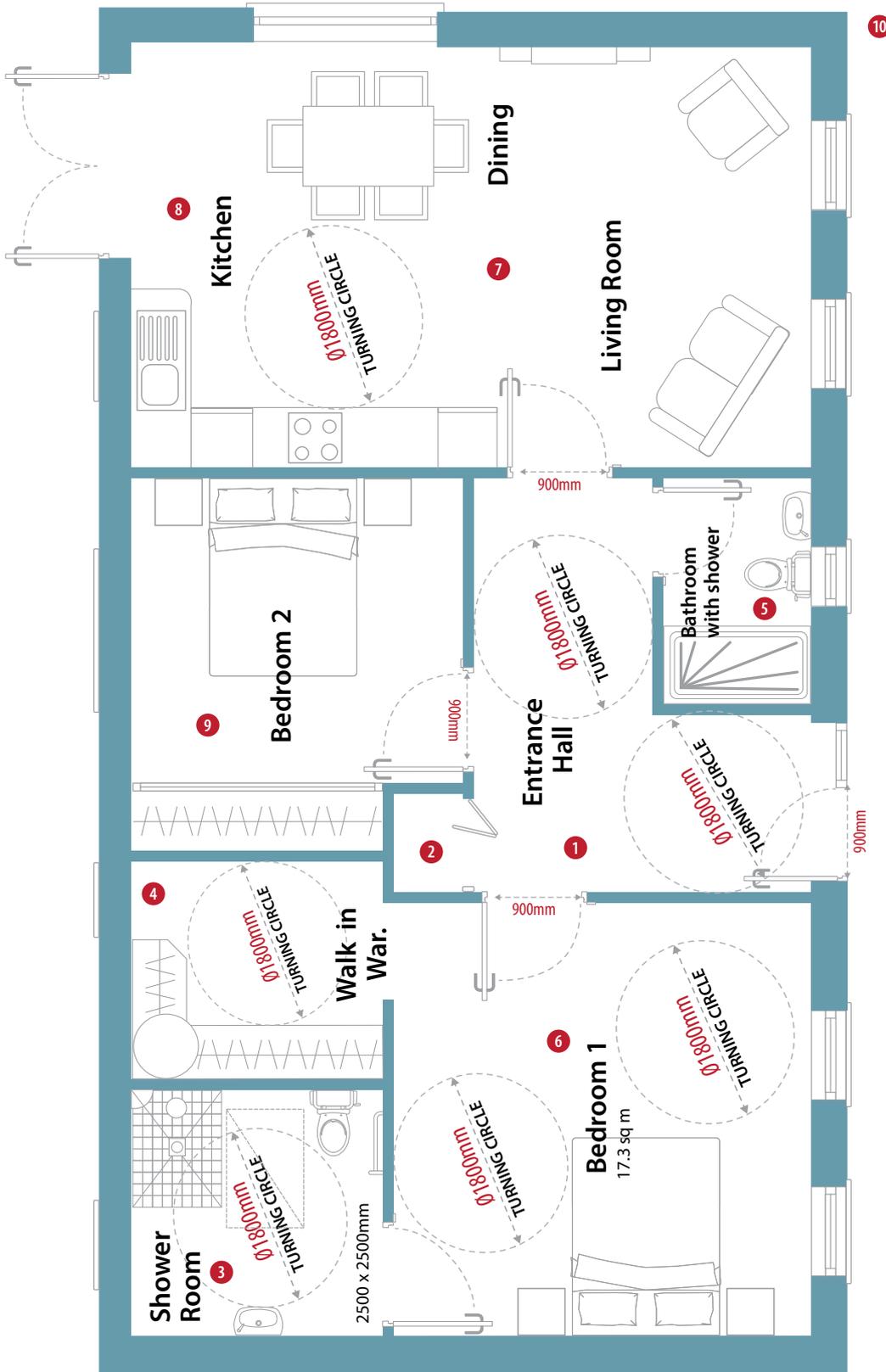
Dishwashers and washing machines should be installed on a plinth with their base set at 200mm from floor level. A drawer type dishwasher is an option to consider, allowing easy filling and emptying of the appliance.

Refrigerators and freezers of 'over and under type' are difficult to access for wheelchair users. Separate refrigerator and freezer units should be fitted on a 200mm high plinth. Where the fridge/freezer is combined, locating the fridge section within the lower half of the appliance gives most accessibility on a day-to-day basis. The doors of the refrigerator and freezer must open away from the approach route.

10.2.4.9.4 Location of Kitchen Electrical Sockets and Switches

All switches and sockets, including those for appliances, ie cooker hoods, kettles, etc, should be accessible for a wheelchair user, and placed between 900-1000mm from the floor level. Where a clear space is provided under the worktop, switches and sockets should be on the wall at the back of the worktop at 1000mm from floor level, and positioned 500mm from any corner. Where there is no clear space under the worktop, switches should be positioned on a return wall at the end of the worktop, at 100mm above and 150mm back from the front edge of the worktop. Alternatively, an isolator switch for all counter- top plug sockets could be positioned to the front of the worktop. Consideration should be given as to how a person using a wheelchair can operate the extractor fan from a seated position when the controls are often located on the extractor hood out of reach to a person in a seated position. Use of a remote control is an option, or relocating a connection down onto or adjacent to the worktop.

Figure 37 - Floor Plan for a Typical Wheelchair Accessible House 1



- 1 Hall
- 2 Storage
- 3 Shower Room - Level access Shower
- 4 Walk-in Wardrobe/Storage.
- 5 Bathroom with shower
- 6 Bedroom 1
- 7 Living Room
- 8 Kitchen - 600mm worktop depth with 700mm clearance beneath sink, hob, work area. Oven at mid-height with pull-out shelf beneath.
- 9 Bedroom 2
- 10 Overall House Size 76 sq m

Figure 38 - Floor Plan for a Typical Wheelchair Accessible House 2

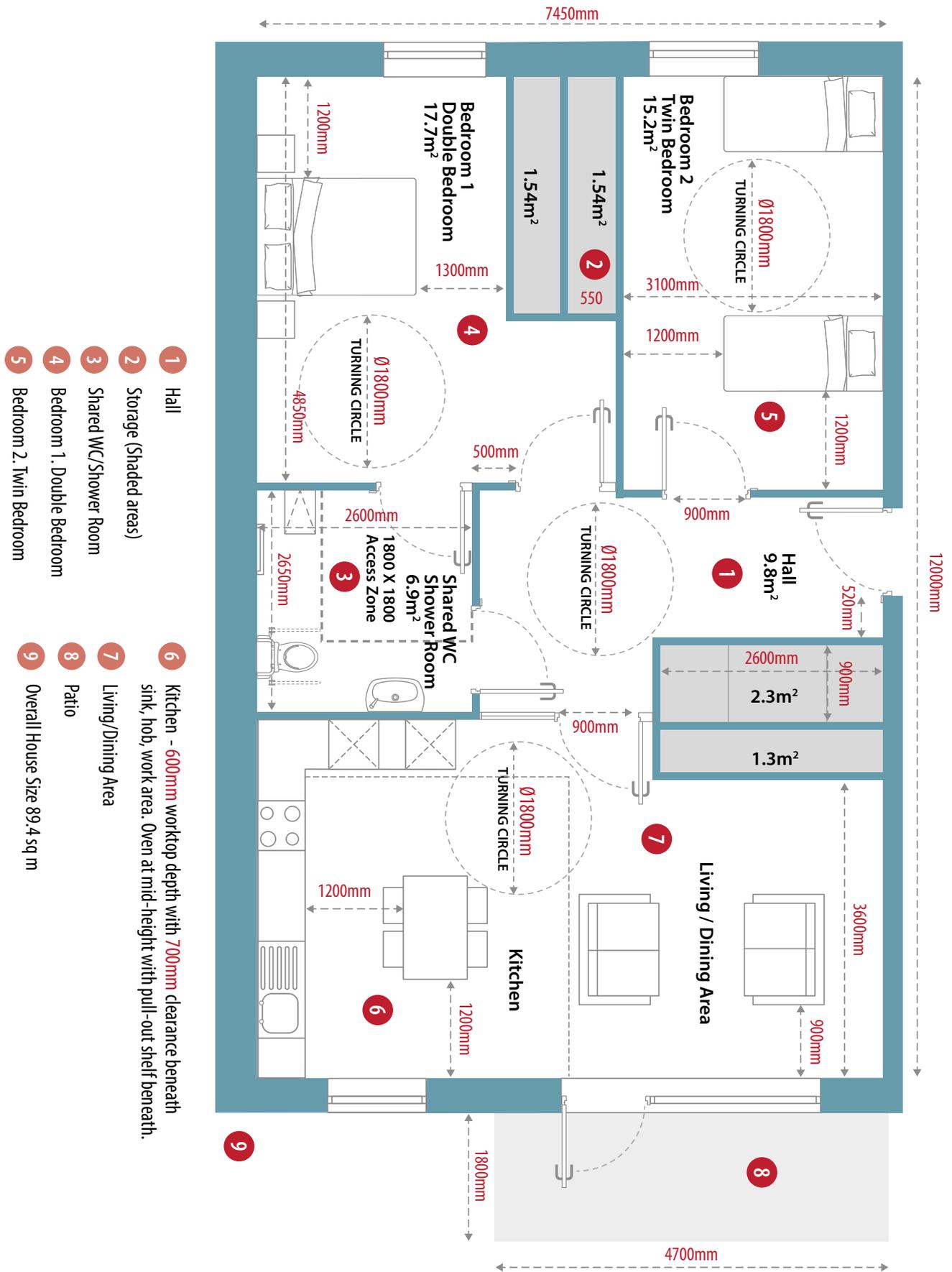
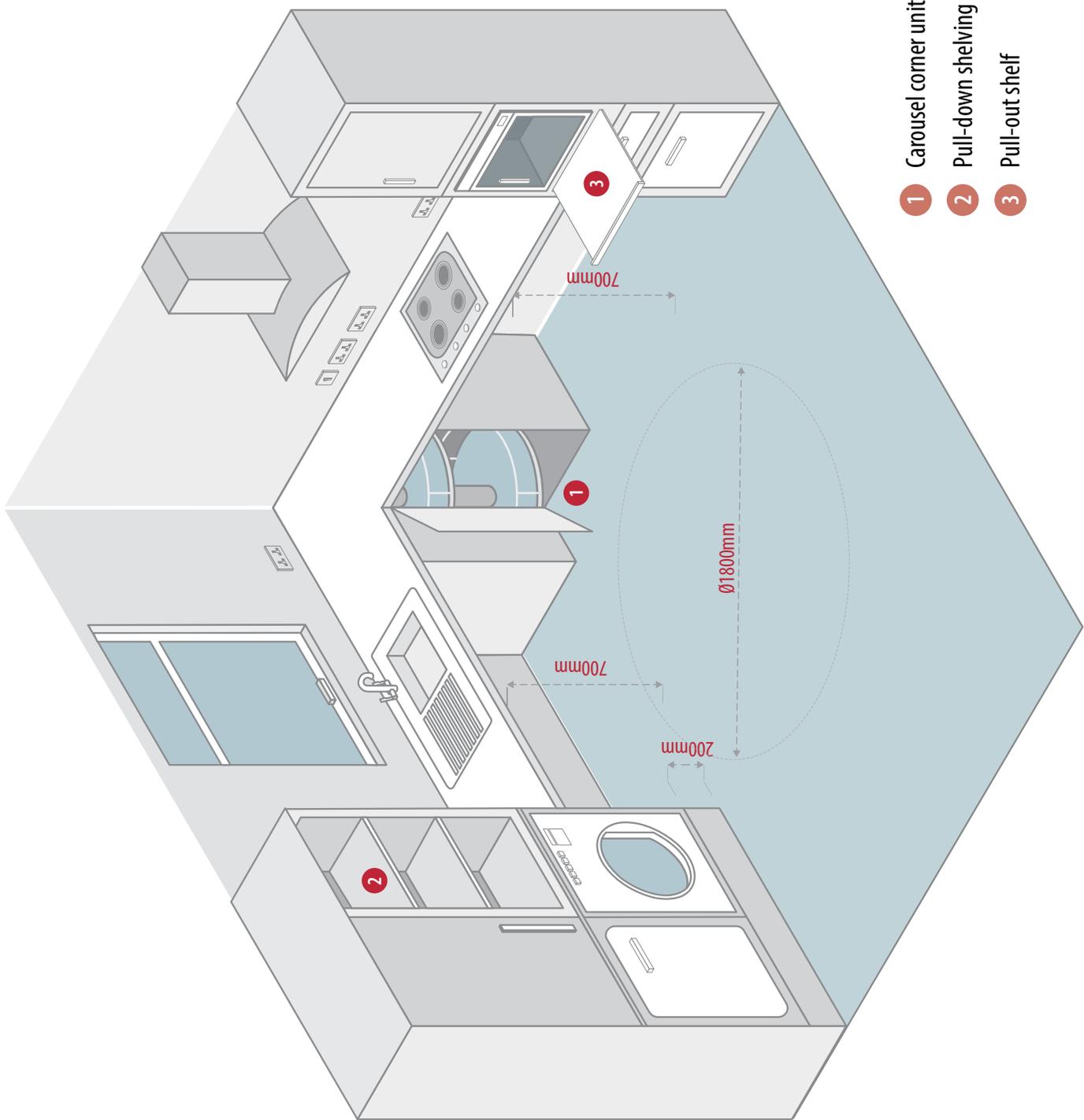


Figure 39 - Wheelchair Accessible Kitchen



10.2.4.9.5 Kitchen Sinks

Kitchen sinks should be shallow, with 700mm clear space beneath. Kitchen sinks should be insulated on the underside to provide heat protection. A swivel-head mixer tap that can be operated by one hand, and with clear indications of hot and cold, is recommended. Sinks should be no more than 150mm deep to maximise reach.

Note: Windows positioned above sinks and worktops should be fitted with remote control window openers.

10.2.4.10 Bedroom Design

The bedroom design should incorporate an en suite bathroom. The bedroom size should be large enough to accommodate parking spaces for any equipment used, eg wheelchairs, shower chairs, hoist, walkers, etc. There should be an 1800mm diameter clear manoeuvring space within the bedroom clear of the door swing, a 900mm clear access zone around the bed, and a clear access route at least 900mm wide from the door to the window. Storage closets should have an 800mm x 1300mm of clear floor area in front of them.

If a manual hoist is to be used within the bedroom, then the turning circle on one side of the bed, most likely the bathroom side, will need to be 2300mm.

The ceiling of the bedroom should be sufficiently strong to hold a ceiling hoist, if presently required, or to allow for future installation. A ceiling height of 2400mm is required for the installation of a tracking hoist. An electrical connection at ceiling height is also required for the hoist charging dock connection. A section of panelling above the door entry to the en-suite bathroom should be designed to be removable, to facilitate the future use of a tracking hoist if required.

10.2.4.10.1 Fixtures and Fittings

Extra electrical points may need to be provided close to the bed for charging a battery-powered wheelchair. In addition, light, heating, ventilation, TV, internet, phone, door entry, curtain and all other controls, could be grouped and situated adjacent to the bed head at a height of 900mm. The controls should contrast with the background colour.

Storage closets should have an 800 x 1300mm clear floor area in front of them. Use pull handles (not knobs) on drawers and cabinet doors. Sliding-type doors are recommended for the wardrobes, as they save space within a room.



Wardrobe Rail Remote Control

Power-operated or pull-down clothing carousels are also recommended. Pull-out shelving and baskets can work well as storage options.

10.2.4.10.2 Wheelchair Accessible Bedroom Sizes

The following bedroom template sizes have been advised by the Association of Occupational Therapists of Ireland (AOTI) in '*Housing Design Guidelines for Occupational Therapists*'.²⁴

<i>Single or Double Bedroom</i>	<i>Independent or Assisted Use</i>	<i>Bedroom Size</i>
Single bedroom	Independent-use wheelchair user	3300 x 3000mm 12.87m ²
Double bedroom	Independent-use wheelchair user	3900 x 3900mm 15.1m ²
Double bedroom	Independent-use for two wheelchair users	4200 x 4100mm 17.64m ²
Single bedroom	Assisted-use wheelchair user	3900 x 4000mm 15.6m ²
Double bedroom	Assisted-use wheelchair user	4800 x 3900mm 18.72m ²

Note: Sizes for additional room types are listed in the AOTI *Housing Design Guidelines for Occupational Therapists*.²⁵

10.2.4.11 Wheelchair Accessible Bathroom

There should be a wheelchair accessible toilet and shower room on the level used by the wheelchair user, and preferably en suite to their bedroom. The provision of a second bathroom or WC for other family members, visitors or personal assistants may require consideration.

The ceiling in the bathroom should be sufficiently strong to hold a ceiling hoist if presently required, or to allow for future installation. The walls in the bathroom should be capable of holding adaptations, such as grab rails and shower seats. Where walls are not solid, the wall reinforcements for grab rails should be located between 300-1500mm from the floor level. Flooring material in the bathroom should be non-slip with an anti-slip minimum PTV grading of 51-70, with a PTV grading of 70-100 offering the best protection.

→ See Figure 40 Independent-Use Wheelchair Accessible Bathroom with Shower on page 291 and Figure 41 Independent-Use Wheelchair Accessible Bathroom with Bath on page 292.

24 AOTI *Housing Design for Occupational therapists*, (2019), Association of Occupational Therapists of Ireland.

25 AOTI *Housing Design for Occupational Therapists*, (2019), Association of Occupational Therapists of Ireland.

Note: When the individual housing occupant is known, his/her needs must be incorporated into the bathroom plans from the outset. An inclusive design process is generally achieved by direct consultation with the occupant with a disability, the architect, and an access consultant, eg an occupational therapist (OT).

10.2.4.11.1 Bathroom Size

The size of a wheelchair accessible bath/shower room should be a minimum of 2500 x 2500mm. If a bath is provided, the room size should be 2700 x 3000mm. These dimensions will allow for an 1800mm turning circle.

If the person uses an assistant-operated mobile hoist for transfers, then the bath/shower room size should be 2700 x 3000mm, which will allow for a 2300mm turning circle. This size will also accommodate the use of a shower trolley.



Bedroom/Bathroom Tracking Hoist

Figure 40 - Independent-Use Wheelchair Accessible Bathroom with Shower

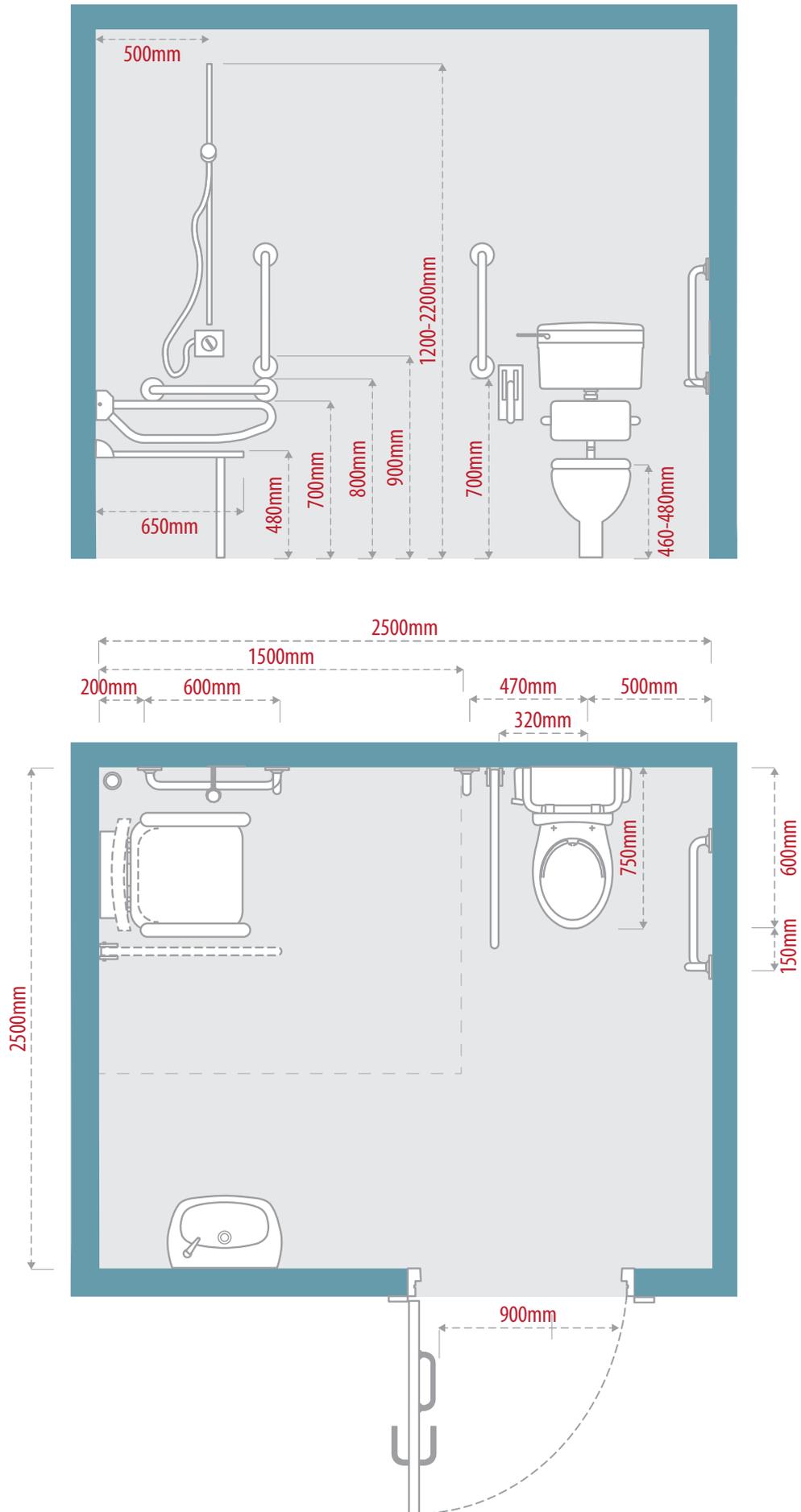
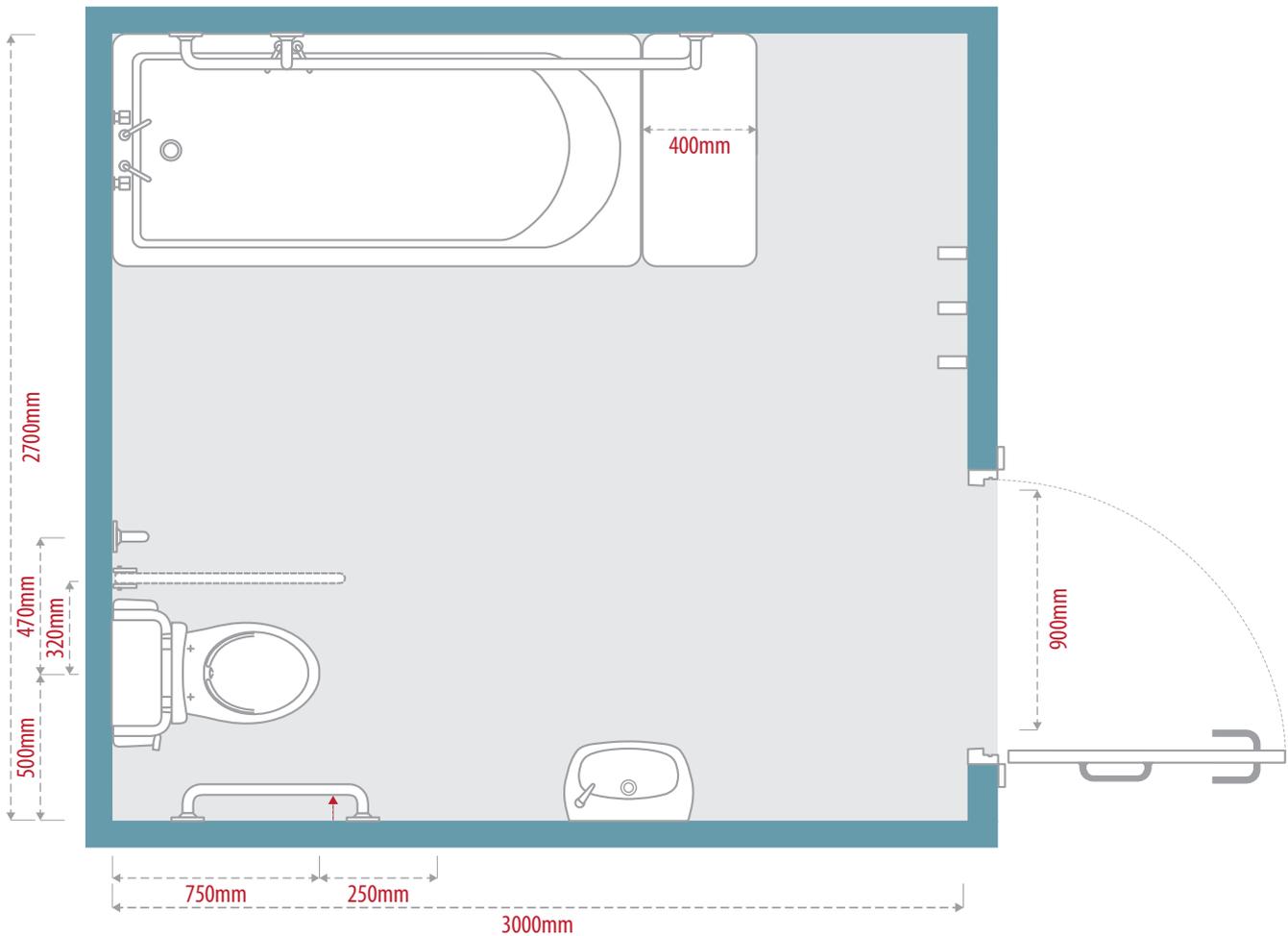
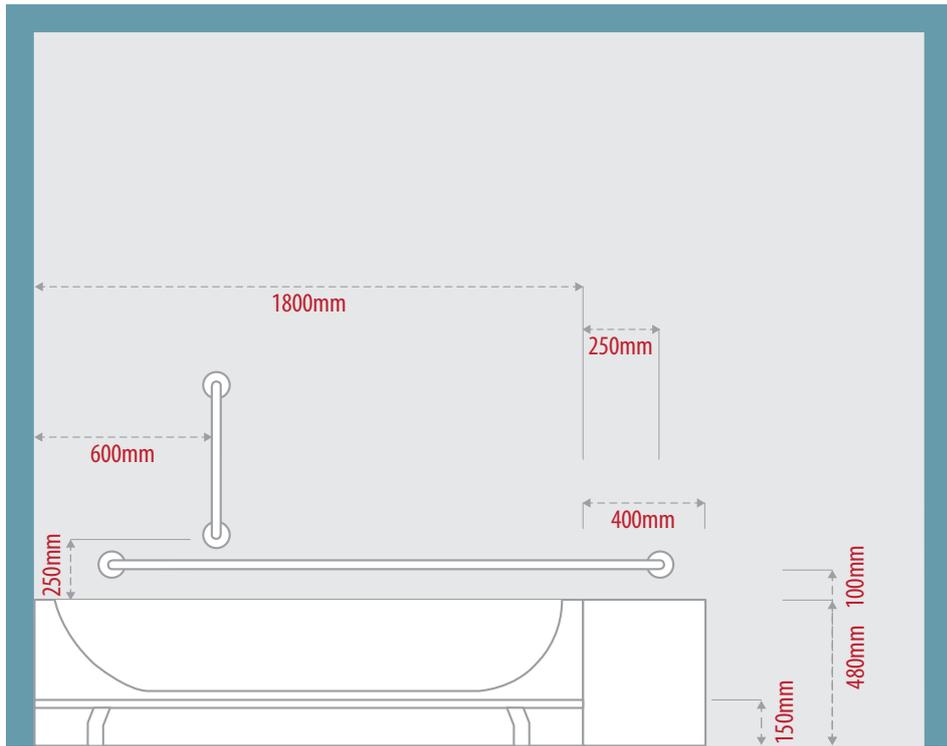


Figure 41 - Independent-Use Wheelchair Accessible Bathroom with Bath



10.2.4.11.2 Shower Area

The shower area should have minimum floor area dimensions of 1500 x 1500mm. The slope of the floor in the shower recess should have a gradient of between 1:50-1:60. The outside area of the shower floor should have a gradient of between 1:70-1:80, draining into the shower recess. Transition into the shower recess should be level without a step down, a raised step or kerb at the entry to the recess. The waste outlet should be located in the corner; consider providing a second or larger than usual waste outlet to avoid any water pooling from the shower.

The shower head should be detachable and adjustable within the height range of 1200-2200mm above the floor level. A 1500mm long flexible hose is required for the shower head. Lever controls for temperature and flow should be placed at 900mm from the floor. Consideration should be given to the most suitable means of water containment at the shower area. Options for water containment include half-height folding doors which can be difficult to manage independently, a weighted shower curtain, or alternatively making the shower room into a full wet room not requiring any specific water containment.

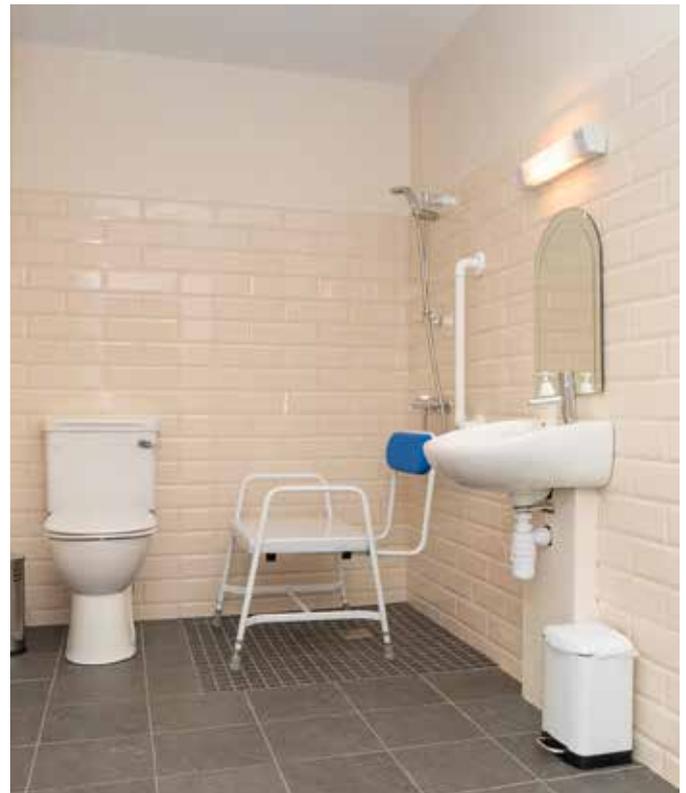
Consideration should be given to the use of a flip-up seat (with legs), located on the shower wall, or the use of a self-propelling shower chair, depending on individual preference.

If a flip-up seat is to be used, it should be located on the wall adjoining the wall with the shower controls. The width of this seat should be 500mm, finishing at a height of 480mm from the floor level. The centreline of the seat should be 500mm from the corner, and the front edge of the seat should be 650mm from the back wall.

A drop-down grab rail should be placed at 320mm from the centreline of the seat, at a height of 700mm from the floor on the open side of the seat. On the side wall, where the shower controls are located, a 600mm-long horizontal grab rail should be located, starting at 200mm from the corner and at a height of 700mm. A second 600mm-long vertical grab rail should be placed at 800mm from the corner, with its lower end fixed at 800mm in height from floor level.

10.2.4.11.3 Bath Provision

When a bath is the preferred option, the height of the bathtub should be 480mm. The bathtub should maintain a lip on the side adjacent to the wall to facilitate the use of a bath seat. A 400mm ledge at the end of the bath should also be maintained.



Wetroom with Level Access Shower

The taps used on the bath should be lever-type and easy to operate for people with limited dexterity and strength. In order to facilitate the use of a hoist, a space allowance of 150mm under the bathtub is required.

10.2.4.11.4 WC Provision

The centreline of the toilet bowl should be 500mm from the adjacent side wall, and finish at between 460mm to 480mm height from the floor level. The height should be suited to the individual user and will require discussion. The front of the toilet bowl should be 750mm from the back wall. There should be no boxed-in or exposed pipes on the open side of the WC bowl, as the presence of these pipes would block a person making a side transfer from a wheelchair to the WC bowl.

A clear space of 900mm is required on the transfer side of the toilet bowl to accommodate space for the wheelchair to be positioned. The decision as to whether this transfer space will be to the right or the left will require discussion as individual users may have a preference.

A spatula-shaped flush handle should be placed on the transfer side of the toilet bowl. A toilet paper dispenser should be within easy reach while sitting on the toilet seat.

The need for grab rails may be specific to the individual and will require individual consultation with the existing or intended resident. There may not be the need for the usual drop-down grab rail that is commonly seen in public WCs.

Individual consultation with the occupant and their advising access consultant is advised regarding the type and location of any grab rails.

Note: It is not correct to use the 'DOC M Kit' within the home environment. This kit, which contains a high toilet bowl, finger-rinse basin and grab rails, is used by many building professionals while fitting public WCs but is not suited to a domestic situation.

10.2.4.11.5 Wash-Hand Basin

The wash basin should be of the usual domestic type. The full-sized wash basin does not need to be located in close proximity to the WC bowl as is required in an accessible public WC cubicle. The wash-hand basin should be situated on the wall adjacent to the door opening or adjacent to the level-floor shower, so long as it does not block access to the shower or WC transfer areas. The wash basin should be fixed to the wall with no pedestal underneath. The rim of the wash basin should be 800mm from floor level with clear space beneath the basin that is not compromised by the presence of any pipes or water heater. The tap/s should be lever type and easily operated with minimum dexterity and strength.

A bathroom mirror should start at a height of 600mm and finish at 1800mm above floor level.

10.2.4.12 Vertical Circulation Within a House

Handrails should be provided on both sides of the stairs at a height of 900mm from the pitch line. A minimum 900mm clear distance should be maintained between the stair wall and the edge of the opposite handrail, to allow for the present/future installation of a stair lift.

In a two-storey house, the design should also give consideration to the provision of a stair lift or through-floor lift as an alternative to ground-floor bed/bathroom accommodation. The through-floor lift would go from ground floor to a bedroom on the first floor, with an adjacent en suite bathroom.

10.2.4.13 Outdoor Spaces

There should be level access with no threshold upstand, provided to and from all outdoor spaces, including balconies, gardens, clothes lines and refuse collection points. All gates and entrances should provide 900mm clear opening width with 500mm of clear space to the leading- edge side on the pull side of the gate and 400mm of clear space on the latch side of the gate/doorway on the push side. This clear space on either side should be maintained with no obstruction for 1800mm. The clear space at the leading edge (latch) side of any gate/doorway allows a person using a wheelchair to pull into that space to reach and operate the gate/doorway. Any gate/doorway handle should be easily operated with limited strength and dexterity. The handle should not need to be operated at the same time as locking/unlocking a gate or doorway.

Provide a pathway with edge protection, which is preferably 1800mm in width; the minimum acceptable pathway width is 1500mm. A pathway should be provided to any clothesline, shed, garden or to external storage area. There should be a turning area of 1800 x 1800mm at both ends of a pathway that is less than 1800mm in width. The pathway should be level and slip resistant.

A patio area 2m deep and not less than 8m² will suffice as a seating area.

Provide a paved area against the house of at least 1800mm in depth for the full width of the home.

10.2.4.14 Balconies

Apartments, above ground floor level with balconies, should have a balcony that provides sufficient space for a person using a wheelchair or mobility aid.

Door/s leading to a balcony should have a clear unobstructed width of 900mm. Door swing ought not to obstruct the general approach to entry/exit points. The height of centre rails or transoms incorporated into balcony access doors should not obstruct the view of a wheelchair user. Doors to balconies that open outwards should open back against the adjacent wall to provide unimpeded access to the balcony space.

The balcony should have level access from inside, with no upstand. Balconies should be a minimum of 1500mm in depth, but preferably 1800mm deep. Provide a light to the balcony which can be switched on from the inside. The floor surface of the balcony should be slip resistant and should have effective drainage to avoid water pooling.

Balconies should have secure railings located at 1100mm from ground level.

① For additional information on wheelchair accessible housing design, see video *My Home Housing Options and Issues*, on <http://housingforall.ie/>

10.3 Lifetime Adaptable Housing

10.3.1 Background

The concept of Lifetime Adaptable Housing design is about future-proofing the home environment to meet the needs of a wide range of people. It is about making the home more readily adaptable to the changing needs of its residents over the lifetime of the home. When a house is designed with level access, wide hallways, good door widths, a generously sized main bathroom and expandable space adjacent to the ground-floor WC, then the house will be able to accommodate many of the accessibility requirements that occur as people age and/or acquire some level of mobility impairment, which can be age related or caused by a medical condition, illness or trauma.

A Lifetime Adaptable House can safely and easily accommodate, or potentially accommodate, the space, access and bathroom requirements of a variety of people, including young children, people with short-term limited mobility, elderly people with age-related limited mobility, and some people with a minimal long-term limited mobility who may occasionally use a wheelchair or other mobility aid but who are not full-time wheelchair users.

Lifetime Adaptable houses are designed and constructed so that all people, including people who are occasional but not full-time wheelchair users can:

- Safely and conveniently approach a house.
- Gain access to and use the rooms provided at entry level.
- Safely use the WC provided at entry level.
- Safely use the main bathroom.

Within a Lifetime Adaptable house, adaptations can be done to increase available access and space at minimum cost and with minimum disruption. Significant home adaptation and extension will only be required in a minority of situations. The design and layout of a Lifetime Adaptable home will be capable of accommodating the changing space and access requirements of a majority of people over their lifetimes.

The design guidelines given here have been informed by other guidance documents, particularly the *Lifetime Homes Standards* of the Joseph Rowntree Foundation, the *UK Housing Standards Review*, the UK Building Regulations *Access and Use Volume 1: Dwellings*, (2010) and the BS: 9266:2013 'Design of Accessible and Adaptable General Needs Housing – Code of Practice'. However, given the increased prevalence of apartment living, where space is not expandable, IWA has expanded somewhat on the Joseph Rowntree Standards, particularly regarding communal areas within apartment complexes and buildings, and also regarding bathroom provision.

To provide the full diversity of space and access requirements, as required by people with varying levels of limited mobility, IWA recommends that 10% of all houses should be built to be fully wheelchair accessible, while the remaining 90% of new houses should be designed and constructed so that they follow and apply Lifetime Adaptable design criteria.

10.3.2 IWA Lifetime Adaptable Housing – 15 Design Criteria

Lifetime Adaptable Housing design as recommended by IWA will incorporate the following 15 design criteria:

1 Car Parking

Car parking that is adjacent to the home should be capable of enlargement to attain 3600 x 6000mm. This size will allow a 1200mm access zone to the rear and to one side of vehicle. The distance from the car parking space to the home should be kept to a minimum, and it should be level or gently sloping, and preferably covered.

Where communal parking is provided then 1:15 spaces should be designated for drivers and passengers with disabilities. There should be a minimum of one accessible space provided for van/multi-purpose vehicle use.

→ See Figure 5 Accessible Parking Showing Different Sized Bays on page 55.

2 Approach and Entrance

The approach to the main house or apartment building entrance/s should be level or gently sloping, with a slope of not more than 1:50 gradient and a minimum width of 1200mm, but preferably 1500-1800mm particularly in an apartment building situation. The provision of a level approach eliminates the need for any ramp provision.

Where the plot gradient does not allow a level approach, both stepped and ramped access must be provided. A ramp gradient should be gently sloping, with a gradient preferably not exceeding 1:20 and no steeper than 1:15. A stepped approach should be suitable for use by ambulant disabled persons.

All entrances should provide a minimum clear entrance width of 900mm. There should be an unobstructed space of 500mm to the leading edge (latch side) of the door on the pull side and 400mm of clear space on the latch side of the doorway on the push side; the clear space on either side should be maintained with no obstruction for 1800mm. The entrance should be illuminated, covered, and have level access across the threshold.

① For information on external ramps and steps, see Section 4.3 and Section 4.4 on pages 72 and 74

3 Communal Approach Routes, Entrances, and Circulation within Apartment Buildings.

All approach routes to and from apartment buildings, communal car parking areas above or below ground, entrances to apartment buildings, internal doors, and circulation within apartment buildings should comply with the guidance set out in Section 10.2.3 on [page 267](#) and Section 10.2.4 on [page 275](#) as appropriate.

4 Communal Lifts and Stairs within Apartment Buildings

Where homes are located above ground level, lift access, in addition to communal stairs, should be provided. The stairs and lift should provide safe and easy access to all homes above ground level. Refuge areas should be provided on all floors above or below ground level. Refuge areas should be located within or adjacent to protected stairwells and include an evacuation chair/s, a two-way communication system and clear instructions.

Preferably all lifts should be fire-protected and capable of being used for evacuation purposes.

① For further information on stairs and lifts within apartment buildings, see Sections 10.2.3.6 and 10.2.3.7 on pages 271 and 272.

5 Internal Hallways and Doors

Inside the home, the minimum hall/corridor width should be 1200mm. Internal doors should preferably have clear entrance widths of 900mm. A minimum acceptable clear door width is 850mm when the door is approach head on. There should be 300mm but preferably 500mm of clear space on the leading edge (latch side) side of all doors on the pull side, and 400mm of clear space on the push side of all doors.

6 Interior Design

Open-plan type interior design layouts provide easy circulation and are easy to modify. The living, kitchen, bathroom and bedroom layout should all be sufficiently large to accommodate a minimum of one 1500mm turning circle. An L-shaped kitchen layout is a useful design which can be retrofitted to become a wheelchair accessible kitchen if required. Where all bedrooms are situated above ground-floor level, there should be an identifiable bed space on the ground floor that could easily be converted to use as a bedroom. The bedroom design should preferably allow for a direct access route for the future use of a ceiling hoist from the bedroom to any en-suite bathroom. In houses of two or more storeys, the living room should be on the entrance level.

7 Windows

Livingroom window glazing should begin no higher than 850mm from floor level, and the windows should be easy to open and operate. The controls for opening the windows should be located at or below 1000mm from ground level.

8 Door Ironmongery

Door handles and fittings should be lever-type, easily used and manipulated by all, including someone with restricted hand movement and/or limited strength.

9 Switches, Plug Sockets and Fuse Box

Plug sockets should be located at a minimum of 400mm above floor level. All frequently used plug sockets, switches, fuse boxes and other electrical controls, including isolating switches to frequently used appliances, should be placed at a height of between 750-1000mm from the floor level, and a minimum of 500mm from internal corners. The fuse box is to be enclosed and secured and located no higher than 1200mm.

10 Ground Floor WC

There should be a drainage provision in place in the ground floor toilet room for the future installation of a shower. The entry level WC room should be 1500 x 2000mm, with an outward opening door. The WC room should be adjacent to the required space to expand the room into a full shower room size of 2500 x 2500mm size. This space could serve as valuable storage/cloakroom until otherwise required.

11 WC and Bathroom Wall Reinforcement

All walls within bathrooms and WC compartments throughout the dwelling should be capable of immediate firm fixing and support for adaptations such as grab rails. Wall reinforcements should be placed in both the ground floor WC and main bathroom and in any other WC/bathroom location, between 300mm and 1500mm from the floor, giving an option to place grab rails at these desired heights in the future.

12 Vertical Circulation

A minimum clear distance of 900mm between the stair wall and the edge of the opposite handrail should be maintained to allow for the future installation of a stair lift.

The house design should also make provision for the future installation of a through-floor home lift from the ground floor to a bedroom with en suite bathroom on the first floor.

13 Main Bathroom

The main bathroom should be en suite or adjacent to the main bedroom, with the possibility of creating a second entrance door from the hallway or bedroom if required. The en suite door to the bathroom should be in line with the positioning of the bed to allow for the possible future use of a tracking hoist.

The bathroom size should be a minimum of 2500 x 2500mm and designed to incorporate ease of access to the bath/shower, WC and wash-hand basin. The bathroom should be plumbed for both shower and bath.

14 External Access to Patio, Balcony, Bin Storage and Drying Facilities

External access to any patio/balcony area, bin storage and drying facilities should be accessible through a level threshold doorway that is not obstructed by door swing, and with a minimum 1500 x 1500mm turning space at both ends of any pathway. A pathway with edge protection should have a minimum width of 1200mm. Balconies should have secure railings located at 1100mm from floor level.

15 Future-Proofing for Electrical Installations.

Include at the outset of the design and build any wiring that would be necessary for the future installation of environmental controls, including automated doors, intercom with visual screen at the main entrance, intercom connection between rooms, and an electrical spur located at ceiling height within the bedroom that can be used for a ceiling track if ever required, etc.

Quick summary of 10. Housing

IWA Housing Support Services

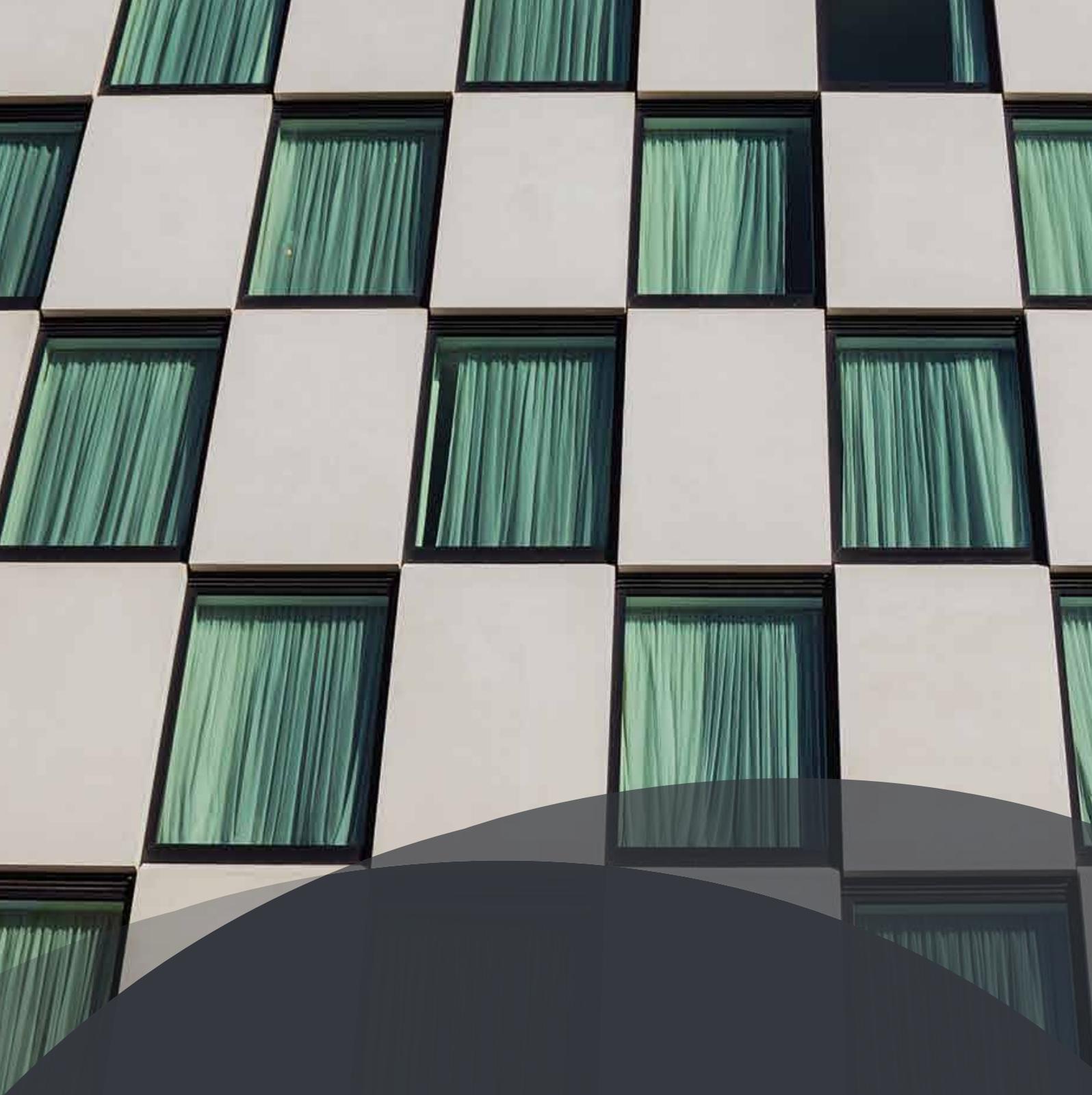
- IWA is a Voluntary Housing Association with 60 social housing units across the country.
- IWA housing tenancies can be long or short term.
- IWA encourages IWA members to apply for social housing by completing social housing application forms. IWA promotes and supports its members to complete social housing application forms through Operation Sign-Up events.
- IWA lobbies national and local Government for increased and annual supply of wheelchair accessible housing to IWA specifications.
- IWA is a member of national and local Housing Advisory groups including: the Irish Council for Social Housing (ICSH); the Department of Housing Planning and Local Government National Advisory Group; and various local authority Housing and Disability Steering Groups.

Wheelchair Accessible Housing

- When the person who will live in the house is known, the best design will be worked out between the person, the architect and the access advisor (often an occupational therapist).
- Design for both the present and future needs.
- Provide 500mm of clear space to the leading-edge side of any door on the pull side and 400mm of clear space to the leading-edge side of the door on the push side.
- Ensure clear door widths of 900mm.
- Preferable hallway/corridor width is 1800mm, with a minimum acceptable width of 1200mm. Provide a turning area of 1800mm at both ends of any hallway/corridor where the width is less than 1800mm.
- Minimum shower room size is 2500 x 2500mm.
- Provide sufficient accessible storage for mobility aids, including a charging point for powered wheelchairs.
- Consider including SMART technologies or wiring for their future installation.
- The parking, approach routes, entrances, internal doors, lifts and circulation routes in apartment buildings should all be designed to be accessible to wheelchair users.
- Internal fire doors within apartment buildings should be held open on a magnitised system whereby the doors will automatically close should the fire alarm be activated.
- Internal lifts in apartment buildings should be capable of being used for evacuation purposes.
- Provide clearly identified refuge areas with communication points, instructions and evacuation equipment on all floors that do not have direct access to the outside.

Lifetime Adaptable Housing

- Lifetime Adaptable Housing is designed to suit many needs.
- The interior is designed so that it can be altered as access requirements change.
- IWA sets out 15 design criteria for Lifetime Adaptable Housing.
- Lifetime Adaptable Housing is potentially suitable for some people who are occasional wheelchair users, but is not suitable for people who are full-time wheelchair users who are actively using and managing the home.



Appendices

Irish Wheelchair Association Best Practice Access Guidelines

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This fourth edition builds on the work of previous editions 1, 2 and 3.

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Access:

Ability to approach, enter, use any facilities provided and to safely leave a building.

Access Audit:

An access audit rates an existing building against given criteria for usability and accessibility. The purpose of an access audit is to establish how well a building or environment performs in terms of access and ease of use by a wide range of potential users, including people with disabilities. Access auditing involves an inspection of a building or environment to appraise its accessibility - judged against predetermined criteria. Access audits give a snapshot of an existing building at a point in time.

Accessible:

Capable of being independently accessed and used by people with a disability.

Access zone:

Clear, unobstructed space for access or manoeuvring purposes.

Approach route:

Internal or external pathway or corridor, usually leading to a principal or secondary entrance.

Cantilever:

A horizontal structure which is supported only at one end. This design allows for overhanging surfaces without any supporting structure beneath. Cantilevered tables allow wheelchair users to get closer to the table easily without any obstruction caused by structures underneath.

Clear opening door width:

Available width of the door, measured at 90° to the plane of the doorway, for passage through a door opening. The door width is clear of all obstructions such as door handles, pull handles and weather boards on the face of a hinged door, when a door is opened through 90° or more, or when a sliding or folding door is opened to its fullest extent. It is NOT the distance between two sides of the door frame.

Concave gullies:

Concave gullies are channels that curve inwards that facilitate the flow of surface water.

Corduroy tactile paving:

The purpose of corduroy tactile paving surface is to warn visually impaired people of the presence of specific hazards: steps, level crossings or the approach to on-street light rapid transit (LRT) platforms. It is also used where a footway joins a shared route. It conveys the message 'hazard, proceed with

caution. The profile of the corduroy surface comprises rounded bars running transversely across the direction of pedestrian travel. It is recommended that the surface be in a contrasting colour, to the surrounding area, but not in red, to assist partially sighted people.

Crossfall:

The gradient across the width of a ramp or pavement, in perpendicular to the usual direction of travel.

Disability Access Certificate (DAC):

A certificate of compliance issued by the Building Control section of local authorities with respect to requirements under the Building Regulations *Part M Access and Use* (2010).

Dished kerbs:

Lowered roadside kerbs which bring the pedestrian way down to the same height as the carriage way, with a view to providing easy access to people using wheelchairs, prams and bicycles.

Evacuation lift:

A conventional passenger lift that has structural, electrical and fire protection and is capable of use for the evacuation of persons with a disability and persons requiring assistance.

Flight:

Continuous series of steps or continuous ramp between two landings.

Going:

Horizontal distance between two consecutive step edgings (nosings) of steps measured on the walk-line, or the horizontal distance between the start and finish of the flight of a ramp.

Guidance path surface:

The purpose of the guidance path surface is to guide visually impaired people along a route when the traditional cues, such as a property line or kerb edge, are not available. It can also be used to guide people around obstacles, for example street furniture in a pedestrianised area. The surface is designed so that people can be guided along the route either by walking on the tactile surface or by maintaining contact using a long cane. The profile of the guidance path surface comprises a series of raised, flat-topped bars running in the direction of pedestrian travel. It is recommended that the guidance path be in a contrasting colour to the surrounding area, but not in red, to assist partially sighted people.

Handrail:

Component of stairs, steps or ramps that provides guidance and support at hand level.

Kissing gates:

Half-round, rectangular, trapezoidal or V-shaped enclosure with a hinged gate trapped between its arms. The gate can be pushed to give access to the small enclosure, then moved in the opposite direction to close the first opening and allow exit from the enclosure to the other side.

Landings:

A level floor or platform constructed at a location where the direction of staircase/ramp changes, between flights of the staircase/ramp, or at the top of a staircase/ramp flight, or to give access to a lift.

Leading edge of door:

The edge of a swing door which is located away from the door hinge/s and nearer to the door handle/lock side of the door.

Light Reflectance Value (LRV):

Light Reflectance Value (LRV) measures the percentage of light a paint colour reflects. LRV is measured on a scale that ranges from zero (absolute black, absorbing all light and heat) to 100 percent (pure white, reflecting all light). Building and design professionals use these measurements as guidelines to predict how light or dark a colour will appear. The values are also used by lighting designers to calculate the number and type of light fixtures needed to provide a certain amount of light for interior spaces.

Lozenge tactile paving:

Lozenge tactile paving is also known as the platform edge (on-street) warning surface. The purpose of the platform edge (on-street) warning surface is to warn vision-impaired people that they are approaching the edge of an on-street light rapid transit (LRT) platform. The profile of the lozenge tactile warning surface comprises rows of high lozenge shapes, which have rounded edges so as not to cause a trip hazard. The surface is usually buff-coloured, but can be any colour, other than red, that provides a good contrast with the surrounding area, to assist partially sighted people.

Lux:

Unit of measurement of the intensity of light. It is equal to the illumination of a surface one metre away from a single candle or equal to one lumen per square metre.

Manifestation on glass:

Permanent markings or features within areas of full-height transparent glazing, glazed walls or screens, fully glazed doors or glass doors, which help to prevent collisions by making the glazing more visible.

Minicom:

An electronic device for text communication over a line. This is designed to be used by persons with hearing or speech difficulties. This is also known as Teletypewriter (TTY) or Textphone.

Mobiloo:

Mobiloo is an attended mobile toilet service that is equipped with a hoist and an adult changing bench suitable for use at outdoor events for use by people with disabilities who have complex requirements.

Newton:

Unit of force which is equal to the force that produces an acceleration of one metre per second on a mass of one kilogram.

Nib wall:

A short section of a wall jutting out at 90° and designed like a pillar that cuts out of a wall.

Nosing:

Projecting front edge of a step tread or landing that may be rounded, chamfered or otherwise shaped.

Pendulum Test Value (PTV):

Pendulum test value (PTV) rates the slip potential of floor surfaces. The pendulum test assesses the friction offered by a floor surface when a foot comes in contact with it. It can measure the slip potential of both dry and wet flooring. The PTV equates to an approximate accident risk. There are three slip potential categories: High 0-24, Moderate 25-34, and Low 36+.

Pitch line:

The notional line connecting the nosings of all treads in a flight of stairs.

Platform lift:

Lift with a platform and low walls, which travels vertically between two levels, and is intended for use standing up, seated on a chair, or using a wheelchair.

Platform stair lift:

Lift with a horizontal platform which accommodates a wheelchair user and travels from one level to another along a line parallel with the pitch line of the staircase.

Raked seating:

Raked seating refers to seating which is positioned on an upwards slope away from the stage, in order to give those in the audience at the back a better view than if the seats were all on the same level.

Ramp:

Sloped construction, in the form of an inclined plane 1:20 or steeper from the horizontal, or a series of such planes and an intermediate landing or intermediate landings, that makes it possible to pass from one level to another without encountering a step.

Refuge:

A refuge area is a location in a **building**, separated from fire by fire-resisting construction, designed to hold occupants during a **fire** or other **emergency**, when **evacuation** may not be safe or possible. Occupants can wait within the refuge until rescued by **firefighters**

Rise:

Vertical distance between the upper horizontal surface of two consecutive treads, or of a landing and the next tread above or below it, or of a flight between two consecutive landings.

Riser:

Vertical component of a step between a tread or landing, or the tread or landing above or below it.

Tactile paving:

Surface/paving material with specific tactile properties which can warn, guide or inform a person with visual impairment about the immediate environment.

Transoms:

A transverse horizontal beam or bar in a window frame.

Tread:

Horizontal component of a step.

Turning Circle:

Clear floor space, represented by a virtual circle of a given size, that allows a wheelchair user to turn independently in a single movement.

Unisex:

A facility designed for use by persons of different gender, with or without an assistance.

Wayfinding:

Means of ensuring that someone can find their way to a location, avoid obstacles and know when they have reached their destination.

Notes

A series of horizontal dotted lines for writing notes.



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