Environment Agency

Access for **all** *design guide*

September 2012

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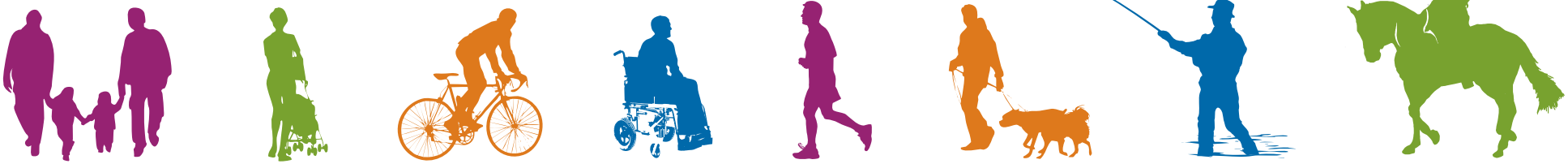


Foreword

Good quality environments *enhance* people's lives. Access to that environment makes it *part of their lives*.

The Jubilee River Scheme, near Maidenhead, includes boardwalks and footbridges which are accessible to all.

Within the Environment Agency we wish to encourage more people from all backgrounds to enjoy the natural environment and its benefits. One of our corporate commitments is to make more of our operational estate, and its green spaces, accessible to people and communities for their discovery and enjoyment.

Many of our sites not only protect people and properties from flooding but also form the backdrop to a wide range of community recreational activities, such as angling, boating and walking. Others sit within attractive landscapes, comprise important heritage assets associated with rivers and water engineering, or are surrounded by a rich and varied wildlife. With over 7,400 km of flood risk management assets, rivers, waterways, coastal structures and embankments under our care, there is a lot to enjoy and experience out there!

This Access for All Design Guide helps us towards this commitment by setting out a balance between our operational needs, the safe management of flood protection assets, rights of way and accessible environments. Enclosed within are a variety of standard approaches and design advice covering a range of features we frequently construct.

In particular, designs are adapted to fulfil the needs of all people equally, enabling safe public enjoyment of our sites. This of course needs to be compatible with operational and incident response uses, public safety, conservation and the interests of landowners.

Please feel free to share and pass on this information.

David Jordan, ***Director of Operations***

The Environment Agency - Creating a better place 2010-2015

This is our corporate strategy for the next 3 years. It sets out how we - working with others - will bring pace and ingenuity to the challenge of a changing environment.

The big picture

A changing climate, a fast growing population, a global economic downturn - combined these factors put enormous pressure on the environment. That's why this strategy is our most important yet. It sets out our aims for the period to 2015 and describes the role we will play in being part of the solution to the environmental challenges society faces.

Our strategy is grouped around five key areas;

- Act to reduce climate change and its consequences.
- Protect and improve water, land and air.
- Work with people and communities to create better places.
- Work with businesses and other organisations to use resources wisely.
- Be the best we can.

Taken as a whole this strategy is our contribution to achieving sustainable development. For more information visit http://www.environment-agency.gov.uk.

Acting as an environmental regulator, operator and advisor we are in a unique position to influence sustainable development throughout the whole of England and Wales.

How this Access for All Design Guide will help us to achieve the objectives of our corporate strategy.

Between April 2008 and April 2009 32 million people visited a river, lake or canal that we have influence over.

We can improve peoples enjoyment of these spaces by providing better and appropriate access for as many people as reasonably possible and by removing barriers that restrict both disabled and non-disabled people.

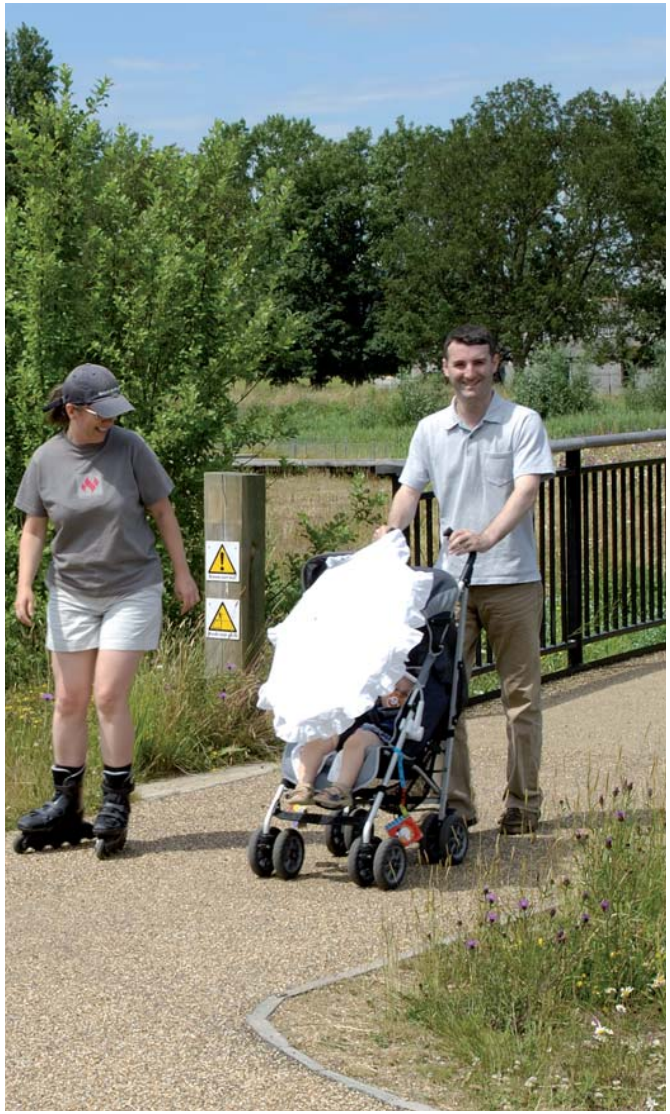
Our integrated approach means that we consider all elements of the environment including access when we plan and carry out our work. There are clear health benefits associated with fully inclusive access such as reduction in stress, increased physical activity, stronger communities and an increased awareness of the value of these assets. Physically active people have a lower risk of dying from coronary heart disease, type II diabetes and other illnesses. Stress and mental ill health are becoming more common, and the public health costs associated with these conditions are growing. Greater access opportunities will help to improve the health of the nation and reduce the public health costs.

Go on, give it a go!

The Blue Gym website, http://www.bluegym.org.uk/ an initiative supported by us, encourages everyone, young and old, to find out about new sports, activities and interests. It also gives people the chance to meet like-minded people, join groups or clubs and find and share information and ideas on the natural environment.

This same encouragement is given to designers, managers and groups involved in planning our local spaces to think,

'What can I do to provide access for everybody to enjoy this space?'



Acknowledgements

We would like to thank Ryder Landscape Consultants for producing this Access for All Design Guide and the Environment Agency staff who have supported them in its development, in particular *Julian Francis* as Project Executive and *Connor McIlwrath* as Project Manager.

This guide has been produced following consultation with a wide range of individuals and organisations that have an active interest in the development of improved access for all. Those offering their time and expertise include:

The Project Board

Ross Marshall – Head of National Environmental Assessment Service (NEAS), Environment Agency

Dermot Smith – Project Team Manager (ncpms), EA

Chris Marsh – Health and Emerging Issues Advisor, Environment Agency

Simon Robinson – Health, Safety and Wellbeing Business Partner, Environment Agency

Mike Clarke – National Diversity Manager, Environment Agency

Jackie Banks – Flood and Coastal Risk Management (FCRM) Manager, Environment Agency

Alison Pennycook – National Project Manager for Disability, Environment Agency

The Project Steering Group

Terry Moseley – President, British Disabled Angling Association

Andy Johnson – Director, Fieldfare Trust

John Briggs – Landscape Architect, Countryside Council for Wales

Andrew Chester – Senior Specialist, Coastal Access, Natural England

Jo Murphy – Technical Advisor, NEAS, Environment Agency

Russell Robson – Principal Officer, Recreation, Environment Agency

Matt Strickland – Strategic Unit Wales (SUW) Advisor, Environment Agency

Richard Bentley – Operations Manager, Midlands, Environment Agency

Andrew Powell – Innovation Manager, National Capital Programme Management Service (ncpms), Environment Agency

Brenda Puech – Director, Centre for Accessible Environments

Purpose of this Guide

Our principal aims are to protect and enhance the environment and to promote sustainable development. In order to do this we must develop the tools that will enable us and our partners to consider sustainability from the outset of any new development.

This Access for All Design Guide is one such tool that will help us to achieve this by making sure the provision of access is considered throughout the development of all new projects and in the management of existing assets.

We can influence the development of appropriate and safe access across England and Wales through our flood and coastal risk management schemes and our remit to develop recreational access to water. As a statutory consultee to a wide range of planning applications we can also influence the development of access through the use of constructive and considered comments.

The Environment Act 1995 Code of Practice on Conservation, Access and Recreation states that we have a duty to preserve freedom of public access in the countryside. It also states that we should consider the effect that any proposals relating to our own functions could have on any such freedom of access. The Act requires us to protect (within reasonable means) the water, or land in our use, so that they can be made available for recreational purposes.

The provision of access is a recurring theme and something that will need to be considered in most if not all of our construction projects. Whilst it is important that each development is considered on an individual basis, it is also important that we develop a 'common' approach to the provision of access in order to strive for more sustainable assets in the future.

It is hoped that this guide will result in a more efficient and effective approach to access design, capturing the most important elements in one document which can be used as a reference by us and our partners. This guide does not contain all the regulations and guidance that governs the provision of appropriate access. To do so would be to repeat the valued work of other organisations and result in a large and overly detailed document. Rather its function is to act as an introduction to the common access features and to direct the reader to more specific and detailed information.

The main target audience is our staff as well as partners and consultants appointed to work on our schemes. This guide will also be available to the general public on our website to further promote the development of appropriate and safe access in the external environment.

Process

1. **NEED** Identify the potential need for access.
2. **WIDER CONTEXT** Consider the wider context and how any new access could expand on existing routes and complement venacular styles.
3. **POTENTIAL CONSTRAINTS** Consider potential constraints including protected landscapes, habitats and physical limitations. Refer to Best of Both Worlds website www.bobw.co.uk for examples of access in sensitive settings. It may be preferable to deter access to protect a vulnerable location.
4. **USERS** Identify who the intended users are likely to be and what facilities they will require.
5. **INTERNAL CONSULTATION** Consult with relevant officers and staff within the EA such as NEAS, FCRM, Fisheries and Ops Delivery.
6. **EXTERNAL CONSULTATION** Contact the Local Authority Access Officer in the first instance. This will enable you to understand their expectations and identify other opportunities. They should be able to provide contact details for local access groups. Check if the proposal will need planning permission. Depending on the type of development you may want to contact specialsit organisations such as BDAA.
7. **INITIAL PROPOSALS** Prepare initial proposals (based on the information gathered during steps 1-6). Consult with both internal and external contacts to gain feedback.
8. **DETAILED PROPOSALS** Prepare detailed proposals and planning applications (if required) including a Design and Access Statement, based on feedback gained in step 7
9. **PROCUREMENT AND CONSTRUCTION** Clear site supervision will ensure the proposals are delivered fully and the intended level of access is achieved.
10. **AUDIT AND INSPECTION** Conduct site audit on completion of works and ideally on an annual basis thereafter. Seek feedback from site users.

Our Responsibilities and Legal Position in the UK

The Environment Agency was created by The Environment Act 1995. We are a Public Body responsible to the Secretary of State for Environment, Food and Rural Affairs and a Welsh Government Sponsored Body responsible to the Minister for Environment and Sustainable Development. We play a key role in delivering the environmental priorities of central government and the Welsh government. Our principal aims are to protect and improve the environment and to promote sustainable development. In order to achieve this we take an integrated approach to new projects by considering the impacts on water, land, air, natural resources and energy.

In addition we play a major role in managing the impacts of climate change through our responsibilities and powers for flood and coastal risk management and as an advisor in the land-use planning system.

Although our land ownership is low, we and our partners have permissive powers to access land and to construct and manage assets to reduce flood risk and coastal erosion. We are responsible for over 7,400km of flood defences and 42,000km of main river. We are committed to managing our assets effectively and efficiently by delivering 15 percent procurement efficiencies within our capital programme between 2011 and 2015. The development of a strategic approach to the provision of access will help us to achieve this.

Our position within England and Wales means we can influence a wide range of projects and champion the development of appropriate and safe access in the external environment. This guide will act as our point of reference when considering access opportunities.

Access Legislation

Access is covered by UK discrimination law. The Disability Discrimination Act (DDA) 1995 was the first UK discrimination law to introduce the concept of 'reasonable adjustment'. Previous legislation focused on the actions an individual or group of people could take if they have been discriminated against. Reasonable adjustment meant an active approach was required and those covered by the Act must take steps to remove barriers to disabled users. The DDA 1995 was amended in 2005 which placed a duty on all public bodies when carrying out their functions to have due regard to:

1. Promote equality of opportunity between disabled persons and others.
2. Eliminate discrimination that is unlawful under the Act.
3. Eliminate harassment of disabled persons that is related to their disabilities.
4. Promote positive attitudes towards disabled persons.
5. Encourage participation by disabled persons in public life.
6. Take steps to consider disabled persons' disabilities, even where that involves treating disabled persons more favourably than others.

In 2010 the Equality Act was passed. The purpose of this was to consolidate a number of Acts and Regulations (including DDA) which formed the anti-discrimination laws in the UK. The duties placed on public bodies detailed above now form part of the Equality Act. One of the main additions is the rights for people not to be directly discriminated against because they have an association with a disabled person or are wrongly perceived to be disabled. The provision of reasonable access which does not discriminate is a legal obligation placed on us as a public body. This Access for All Design Guide provides information on the provision of reasonable access.

Existing Guidance

Whilst producing this guide we have drawn upon the extensive library of existing access guidance. These documents are referenced throughout this guide as sources of additional information. The primary ones are listed below and a full list is included at the end of this guide.

British Disabled Angling Association: Access Guidelines for Fisheries.

DEFRA: Authorising Structures (gaps, gates and stiles) on Rights of Way, Good Practice Guidance for Local Authorities on Compliance with the Equality Act 2010 (Published October 2010).

Environment Agency: Creating and Improving Outdoor Recreation Access for Everyone.

Fieldfare Trust: Countryside for All Good Practice Guide (Published 1997, updated 2005).

Highways Agency: Design Manual for Roads and Bridges.

Natural England: By All Reasonable Means, Inclusive Access to the Outdoors for Disabled People (Published 2005).

Pittecroft Trust: Understanding the British Standard for Gaps Gates and Stiles BS5709:2006 explained (Publish August 2007, vers 3gn).

Pittecroft Trust: Understanding the DEFRA Guidance on Public Path Structures (Publish 2012, vers 3e).

Royal Yachting Association: RYA Handbook Guidance on Facilities Development for Recreational Boating in the UK (Published April 2009, 2nd edition).

Scottish Natural Heritage: Countryside Access Design Guide - including standard details (Published 2002).

SUSTRANS: Information Sheets; Shared Use Routes, People with Disabilities and the National Cycle Network, Cycle Parking in Rural Areas, Access Control, Directional Signage on the National Cycle Network.

We would like to thank the above organisations for allowing their guidance documents to be referenced in this guide.

Design Standards

There are a number of standards and regulations on the development of appropriate access. These have been considered during the development of this guide. Whilst they all have common themes their application is dependent on the locations being considered.

The statutory regulations that govern the design of access in the UK are:

- Building Regulations 2010 Part M: Access to and use of Buildings
- British Standard 8300:2009 Design of buildings and their approaches to meet the needs of disabled people – Code of Practice.

It is important to note that both of these documents govern access design on the approach to and the inside of buildings. Outside of this i.e. access in the external environment, there are no statutory guidelines. Whilst both these documents should be considered as best practice in all situations, there are a number of guides that relate specifically to rural locations which are perhaps more suited to our works. These are:

- **Natural England:** By All Reasonable Means, Inclusive Access to the Outdoors for Disabled People
- **The Fieldfare Trust:** Countryside for All Good Practice Guide
- **Scottish National Heritage:** Countryside Access Design Guide

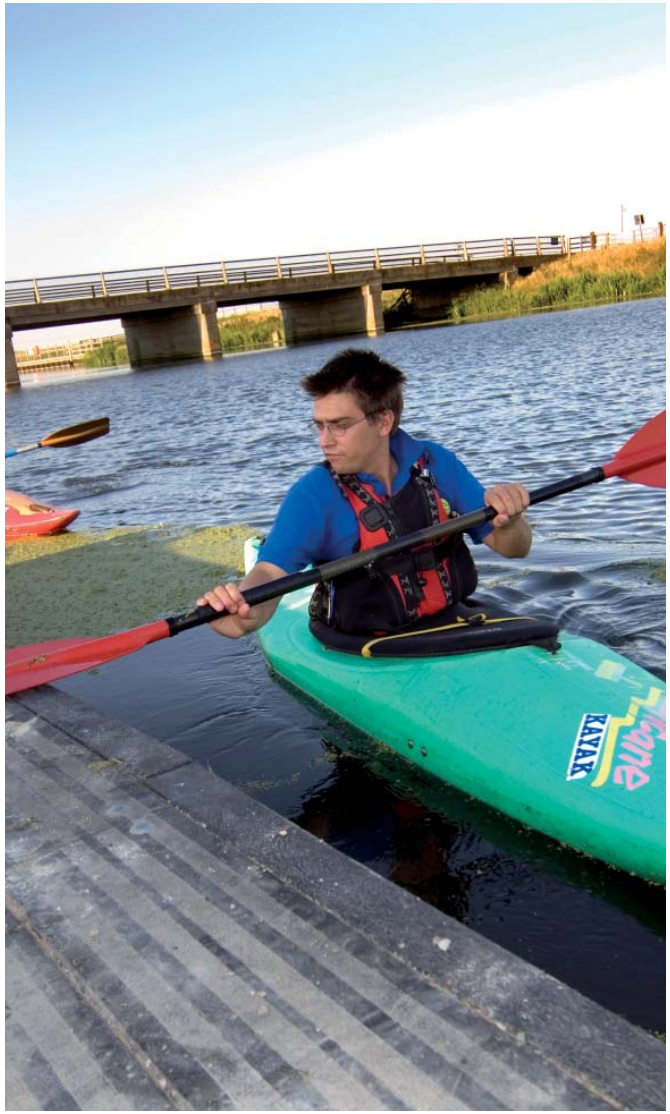
These guides are advisory only and have been developed by a number of different organisations. The information they contain specifically considers access in rural locations, something not considered in the statutory guidance. They are widely promoted as best practice by a number of access charities and organisations in the UK. It is up to the project team to determine if their use is appropriate on a scheme by scheme basis.

Least Restrictive Access

The principle of Least Restrictive Access (LRA) requires that all works, whether for the reasons of improvement, maintenance or repair meet the highest possible access standards. It does however acknowledge that this cannot always be achieved where there might be insufficient funds, lack of consent by a landowner or practical difficulties. Where the highest possible access standards cannot be achieved there should always be clear reasoning documented to justify the decision to use a lower standard. The idea of this principle is that over time it will raise the standard of access.

Defining the Level of Appropriate Access

Simply put, it is up to the project team to define what the appropriate level of access is based on the objectives of the scheme and its location. The information contained in this guide should help you to make considered and informed decisions on what the appropriate level of access is. It is recommended to record this decision making process. Your attention is also drawn to **Consultation on Access Proposals** on page 40.



Design Element Sheets

The following section of this guide is a collection of 15 'design elements' commonly associated with our developments. Each sheet focuses on one type of access feature, such as ramps or steps, and includes the information required to make an informed decision on the level of access that can be achieved.

These sheets are intended to be highly illustrative and capture the most important points in relation to each design element. They should be used as a starting point when considering the development of access proposals. Whilst each sheet describes the main points to consider they also provide links to more specific and detailed information, such as related British Standards and existing guidance. The topics covered on each sheet include:

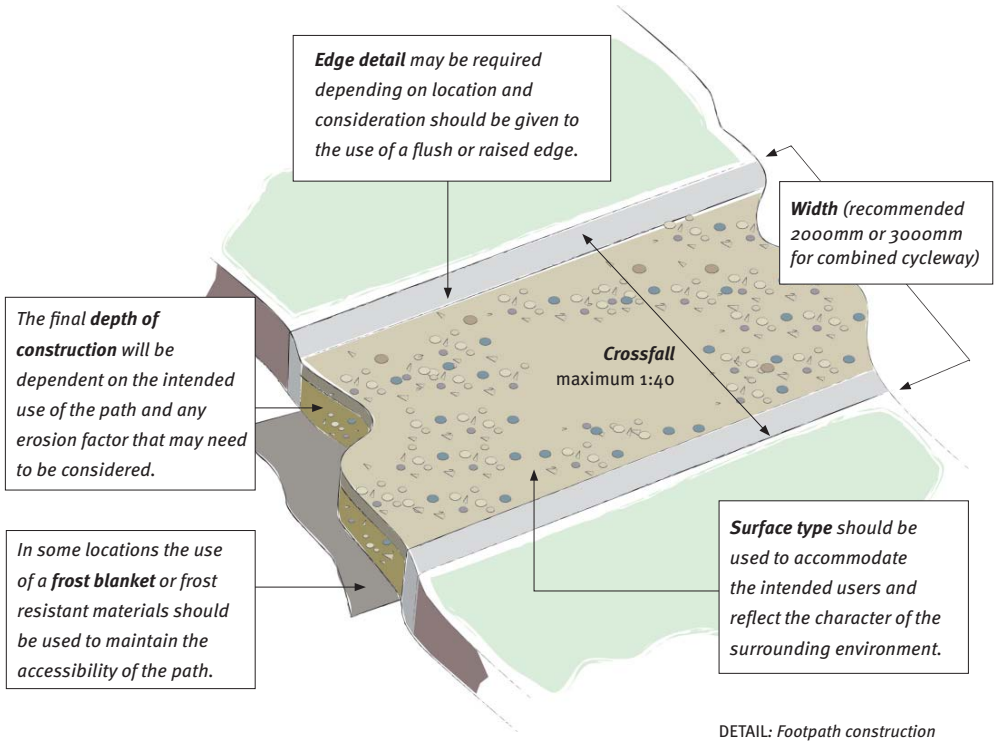
- **Background**
- **When to Use?**
- **Standards and Specifications**
- **What Should Designers Consider?**
- **Further Sources of Information**

Depending on the design element, each of these topics may then be broken down further to explain its correct use. Each sheet includes a case study, the majority of which are taken from our projects, and a number of examples (both good and bad) of how each particular design feature can be used.

Most of our projects will need to include a number of these design elements. By collating them into one document we will be able to take a strategic view of access from the start of a development. This process will ultimately lead to the development of more sustainable assets and help improve access to the external environment for all those who wish to use it.

Surfaces

WHAT SHOULD DESIGNERS CONSIDER?



DETAIL: *Footpath construction*

Background

Surface type and condition is a key consideration when somebody with mobility difficulties is planning a journey. The public's perception of the type of access that should be available in an urban setting is different to that of a rural one. Dependant on the setting, the standards that apply differ as well as the degree to which they should be adhered to.

CASE STUDY: RYE HARBOUR FARM HABITAT CREATION, EAST SUSSEX

This project involved the creation of a new footpath along the top of an existing flood embankment. The embankment was widened to accommodate a 2m wide path which is surfaced in a compacted stone material. Benches have been installed at regular intervals to provide rest points.

The Carlisle and Caldew Flood Risk Management Scheme included improvements to an existing public space including the widening and re-surfacing of a network of footpaths. Footpaths were re-surfaced in Tarmac to improve accessibility for a number of different users.

At Selsmore, Hampshire, works to reinstate failing coastal flood defences provided an opportunity to improve the footpath along the top of the embankment. Works included the re-surfacing of the footpath using a hoggin mix laid over type 1 substrate and the installation of passing places every 50m where the footpath was widened from 1.5m to 2m.

As part of the refurbishment works to Stanah embankment the existing narrow path was widened and surfaced with hoggin to provide all-weather access for a range of users.

Types of path

The below table is taken from the **Countryside for All Good Practice Guide** and should be used as an initial reference when considering what type of path will be most appropriate in a given situation.

	Path	Path Widths	Width Restrictions	Barriers	Maximum distances between passing places
URBAN AND FORMAL LANDSCAPES For example countryside areas with many man-made features.	*Hard, firm and smooth surface with very few loose stones and none bigger than 5mm*	1200mm (EA recommend 2000mm)	*At least 815mm for no more than 300mm along the path. 1000mm for no more than 1600mm along the path*	*There should be no steps, stiles and hedges or walls to restrict access*	50 metres
URBAN FRINGE AND MANAGED LANDSCAPES For example countryside areas near towns or managed recreation sites.	*Hard and firm surface with very few loose stones and none bigger than 10mm*	1200mm	*At least 815mm for no more than 300mm along the path. 1000mm for no more than 1600mm along the path*	*See urban and formal landscapes*	100 metres
RURAL AND WORKING LANDSCAPES For example farmland and woodland with public rights of way.	*Hard and firm with some loose stones and chippings not covering the whole surface. The stones should be no bigger than 10mm*	1000mm	*At least 815mm for no more than 300mm along the path. 1000mm for no more than 1600mm along the path*	*See urban and formal landscapes*	150 metres
OPEN COUNTRYSIDE, SEMI-WILD AND WILD LAND For example, mountains, moorlands and remote countryside.	*People expect to make their own way, not to have this environment changed to provide access. If paths and trails are provided in this setting, they should meet the standard for the rural and working landscapes settings (as shown in the row above).*				

Standards and Specifications

Cross-falls: Generally cross-falls to a footpath should be limited to that necessary to dispose of surface water. If the cross-fall runs towards a road it can be dangerous, as wheelchair users will tend to edge down the cross-fall.

The existing guidance on appropriate cross-falls differs. For Environment Agency schemes the recommended maximum cross-fall is 1:40.

Frost and freezing: Frost damage to a surface should be taken into account by consulting the mean annual frost index for the area. This information can be obtained from the Meteorological Advisory Services.

Grip and friction: Surfaces should be firm, obstacle free, durable, slip resistant in wet and dry conditions and not be made of reflective materials. The Department of Transport states that surfaces should have a Slip Resistance Value of between 35 and 45 based on the Health and Safety Executive's slip potential classification table. *http://www.hse.gov.uk/pubns/web/slips01.pdf*

Ease of wheeled access: The following widths should be adhered to when considering wheeled access.

- Recommended clear width: **2000mm**
- Minimum width: **1200mm**

NB: if a route is to be less than the 'recommended clear width' then an allowance for wheelchair passing places at regular intervals (minimum 50m) should be made.

Erosion and puddling

Repairing eroded paths is not the statutory duty of the Environment Agency, Highway Authority, or anyone else, as long as they are deemed 'open and fit for use'. Designing a path and its surface to withstand erosion in the first instance saves expense in the long term. The location of the path and the resulting environmental conditions will influence the need for erosion protection or choosing a more robust surfacing.

Fix the Fells is an initiative in the Lake District aiming to repair and replace up to 70 eroding footpaths. Their website *www.fixthefells.co.uk* details a number of techniques that can be used to protect the surface of footpaths from erosion. It includes a detailed list of factors that influence erosion and what should be taken into account when considering surface materials and the construction of footpaths.

Hazard warning paving on footpaths

A contrasting surface underfoot alerts visually impaired people to a nearby hazard. In certain situations hazard warning paving is a good way of informing people who are visually impaired that they are approaching a feature such as a gate, path junction, seat, or information board. If used in this way a visually impaired person should be informed in advance of what the tactile surface may mean.

Materials

The materials chosen for a path surface should be appropriate to their location and the local landscape character. These are typically from local sources.

When choosing a path surface, the following three factors should be considered:

- Durability
- Smoothness
- Appearance

DESIGNER'S QUESTIONS

What should designers consider?

1. What type of path is most appropriate for this situation? *Urban, rural, open countryside?*
2. What level of access will be expected by the public? *Urban, rural, open countryside?*
3. Who are the likely users?
4. Is there an alternative route that meets the relevant access standards if the proposed surface or route does not?
5. What is the most appropriate surface material for the users?
6. Is it in keeping with the landscape character?
7. What environmental conditions will the path have to withstand?
8. Are there any physical constraints to building a path such as services or trees?
9. Is the surface water run-off an erosion concern?
10. Is there an alternative route to better facilitate access?
11. How easy is it to repair the surface?
12. What are the maintenance implications of the surface material proposed?
13. What maintenance budget/operations exist at present for any existing paths in the area?
14. Is there a requirement for frost damage prevention measures such as a frost blanket?
15. Can recycled, site generated or locally sourced materials be used?

CASE STUDY: ST GEORGES QUAY, LANCASTER

This flood alleviation scheme included the widening and resurfacing of an existing riverside footpath to provide a combined route for pedestrians and cyclists. The new path is surfaced in a resin bound gravel which provides a smooth finish for easy access. The finish is also inkeeping with the character of the Conservation Area. The path runs along the riverward side of the wall so it has been designed to withstand the impacts of flood water. Access is restricted when water levels are high and signage is in place to warn people that the path is liable to flood.

FURTHER SOURCES OF INFORMATION

Building Regulations 2010, Access To and Use of Buildings (2004 edition incorporating 2010 amendments)

Regulations relate specifically to access to a building but should be used as a best practice guide when considering surface and footpath design in general.

Fieldfare Trust: Countryside for All Good Practice Guide.

Access guide specifically aimed at rural landscapes and open countryside situations. It can be bought from the Fieldfare Trusts website *http://www.fieldfare.org.uk/* for £61.20 inc VAT.

Highways Agency: Design Manual for Roads and Bridges

Volume 7 Pavement and Footway Design specifically relates to the design and specification of surfaces.

http://www.dft.gov.uk/ha/standards/dmrb/

Department for Transport: Inclusive Mobility, A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure.

http://www2.dft.gov.uk/transportforyou/access/peti/inclusivemobility.html

Department for Transport: Guidance on the Use of Tactile Paving Surfaces

http://www.bbsgraniteconcepts.com/wp-content/uploads/2010/06/Dft-download.pdf

Fix the Fells

Initiative considering factors that affect footpath erosion and developing techniques used to repair and prevent erosion.

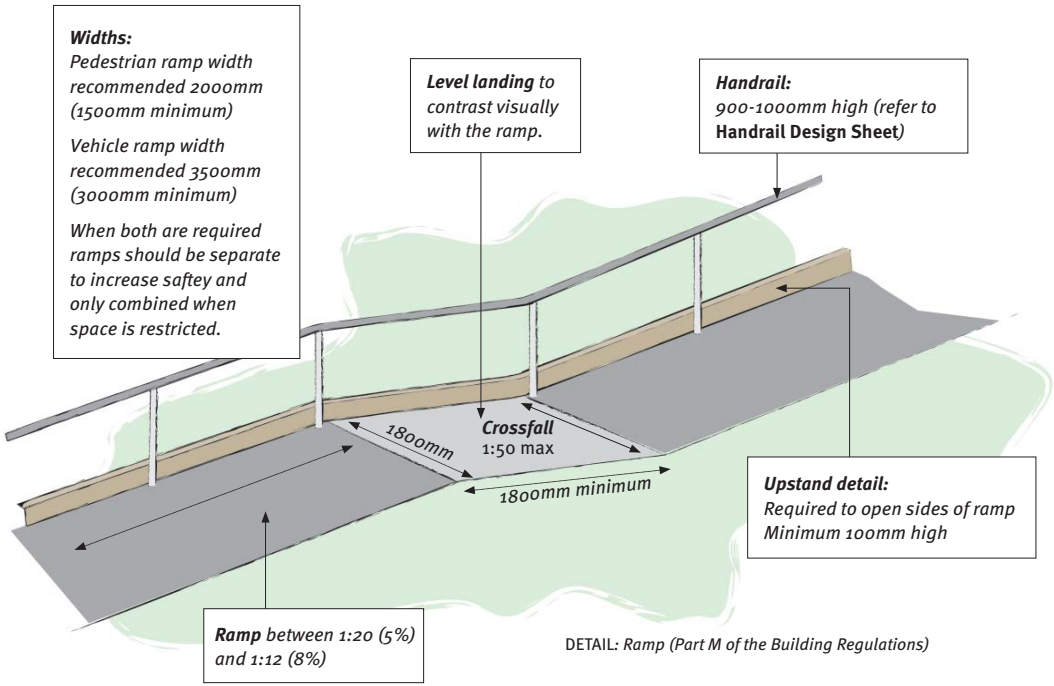
www.fixthefells.co.uk

Visitor Safety in the Countryside Group Information regarding path surfaces and recommendations as to where to use them.

http://www.vscg.co.uk/good-practice/published/external-pedestrian-path-surfaces

Ramps

WHAT SHOULD DESIGNERS CONSIDER?



DETAIL: *Ramp (Part M of the Building Regulations)*

At Teddington Lock on the River Thames, access to moorings which are set at a lower level to the riverside footpath is gained via a ramp. The singular ramp has an up-stand to both sides, is wide enough to allow a one wheelchair access and includes a handrail to one side with an upper and middle rail.

Creating a ramped access through green space can reduce the distance between destinations and aid ambulant disabled people by providing a shorter more assessible route.

West Bridgford FAS, Nottingham. Up and over ramps are common on flood embankments and should be used in situations where there is sufficient space to achieve a fully accessible solution.

Background

Ramps are mainly required to accommodate wheeled users although they also aid ambulant disabled people and people with limited stamina. Where it is possible both steps and a ramp should be provided, but if a choice has to be made then a ramp is the preferred solution.

When to use?

Part M of the Building Regulations characterises a ramp as a gradient which is more than 1:20 (5%) and less than 1:12 (8.3%). When such a situation exists level landings of at least 1800mm wide and 1800mm long should be provided at the correct intervals along the ramp to act as resting points. The table overleaf indicates maximum ramp lengths between landings in different settings. Maximum lengths of ramps in the built environment can be found in Part M of the Building Regulations.

Standards and Specifications

Edgings: Where possible an up stand of 100mm, usually in the form of a kerb, should be provided on any open side of a ramp. The upstand should contrast visually with the ramp surface so that it is easily detectable to visually impaired people.

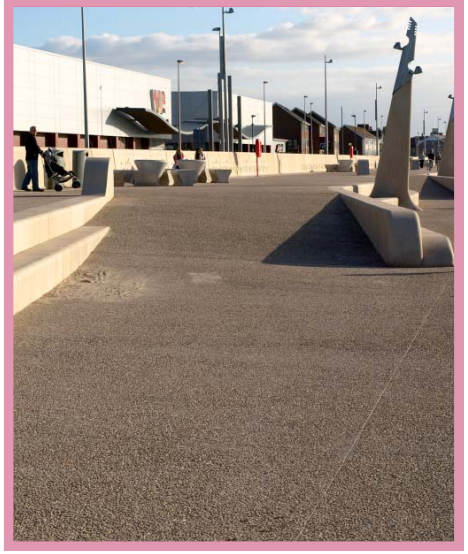
Surfaces: The ramp surface should be slip resistant, especially when wet. When steps are not provided as an alternative then the colour of the ramp should contrast visually with that of the landings to aid visually impaired people. The surface of the ramp should be of a sufficient width to accommodate a maximum cross-fall of 1:50. Cross falls in excess of this can present difficulties of balance for wheelchair users and some ambulant disabled people. Refer to **Surfaces Design Sheet** for details on erosion control.

Width: For ease of design, the width of a ramp should match that of the landings. Landing widths differs depending on the design of the ramp and their location. Confirmation of ramp widths should be sort from the relevant detailed guidance.

Landings: Landings, also known as rest platforms, should be provided at intervals along the ramp and at the foot and head of the ramp. They should be level and have a maximum gradient of 1:50 along their length. The number of intermediate rest platforms needed is dependant on the gradient of the ramp. Further information is given in the table overleaf. The guidance in Part M of the Building Regulations should be used when working in the built environment.

CASE STUDY: CLEVELEYS COASTAL DEFENCE SCHEME, LANCASHIRE

As part of the scheme wide ramps were provided between the two promenade levels to accommodate a number of different users including; maintenance vehicles, buggies, cyclists and wheelchair users.



Gradients

The below table is taken from the **Countryside for All Good Practice Guide** and applies to countryside environments.

GRADIENT	URBAN AND FORMAL LANDSCAPES *Maximum distance between landings for 750mm vertical climb*	URBAN FRINGE AND MANAGED LANDSCAPES *Maximum distance between landings for 830mm vertical climb*	RURAL AND WORKING LANDSCAPES *Maximum distance between landings for 950mm vertical climb*
1:20 (5%)	15 metres	16.60 metres	19.00 metres
1:18 (5.5%)	13.5 metres	14.94 metres	17.10 metres
1:16 (6.2%)	12 metres	13.28 metres	15.20 metres
1:14 (7%)	10.5 metres	11.62 metres	13.3 metres
1:12 (8.3%)	9 metres	9.96 metres	11.4 metres
1:10 (10%)			9.5 metres

DESIGNER'S QUESTIONS

What should designers consider?

1. Is the gradient proposed steeper than 1:20 thus requiring the use of a ramp?
2. Can recycled, site generated or locally sourced materials be used?
3. Is there a reasonable alternative route that would negate the need for a ramp?
4. Is there sufficient room for the required width and length of ramp (including landings and handrails) to achieve the required gradient?
5. Is the proposed surface material for the ramp of a sufficient non-slip value?
6. Is there enough space to provide both a ramp and steps?
7. Can the ramp be turned into a feature within its setting.
8. Who are the intended users? ***bikes and buggies as well as pedestrians.***

Seating: In a rural environment where a long length of ramp is required the inclusion of seating at landings will better accommodate the needs of people with limited stamina. However, ensure the seat does not narrow the ramp width unduly. Refer to the **Furniture Design Sheet** for further details.

Handrails: Handrails on a ramp act in a number of ways; as a potential means of propulsion as an aid to balance and as a safety barrier. As some people have weaknesses on one side, ideally handrails should be provided on both sides of the ramp or down its centre, possibly with twin handrails. However it is acknowledged that it may not always be possible to provide handrails to both sides of a ramp due to constraints so at least one handrail should be provided as a minimum. Further information can be found on the **Handrails Design Sheet.**

Ramp alignment: Ramps should be reasonably and intuitively direct. Users will find it frustrating and counter-intuitive when forced to walk away from the direction they really want to go without good reason and many people will be tempted to cut corners where physically possible. In practice, features of interest or terrain may justify a slightly longer route. Where steep terrain means that a longer ramped route is needed to meet access standards, the length and directions of deviation should be minimised to avoid user frustration.

CASE STUDY: DYMCHURCH COASTAL DEFENCE SCHEME, KENT

As part of this scheme an Equality Access Statement was undertaken which identified a number of recommendations to improve access. The primary purpose of the project was to provide effective sea defences but in addition to this a number of access improvements were achieved. This included a number of ramps to provide access between the upper and lower promenades. Although the gradient of the ramps (1:12) complies with current regulations (BS8300:2009) in order to avoid compromising the sea defences the ramps where lengthened beyond that recommended for a 1:12 ramp and landings located less frequently. As a result appropriate access was provided (albeit not fully compliant) whilst not comprising the flood defence element of the scheme.

At Emberton Country Park, Milton Keynes this ramp has been developed to allow access to a lookout point. The ramp transverses a level change of 5 meters and is designed to comply with current access legislation. Due to the length of the ramp a number of seating areas which also act as passing places have been situated at regular intervals along it.

FURTHER SOURCES OF INFORMATION

Building Regulations 2010: Part M, Access to and use of buildings.

Regulations relate specifically to access to a building but should be used as a best practice guide when considering surface and footpath design in general.

Fieldfare Trust: Countryside for All Good Practice Guide.

Access guide specifically aimed at rural landscapes and open countryside situations.

Highways Agency: Design Manual for Roads and Bridges

Volume 7 Pavement and Footway Design specifically relates to the design and specification of surfaces.

http://www.dft.gov.uk/ha/standards/dmrb/

Department for Transport: Inclusive Mobility, A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure.

http://www2.dft.gov.uk/transportforyou/access/peti/inclusivemobility.html

Visitor Safety in the Countryside Group

Their website has some good information regarding path surfaces, the different types and what's best to use in different situations.

http://www.vscg.co.uk/good-practice/published/external-pedestrian-path-surfaces

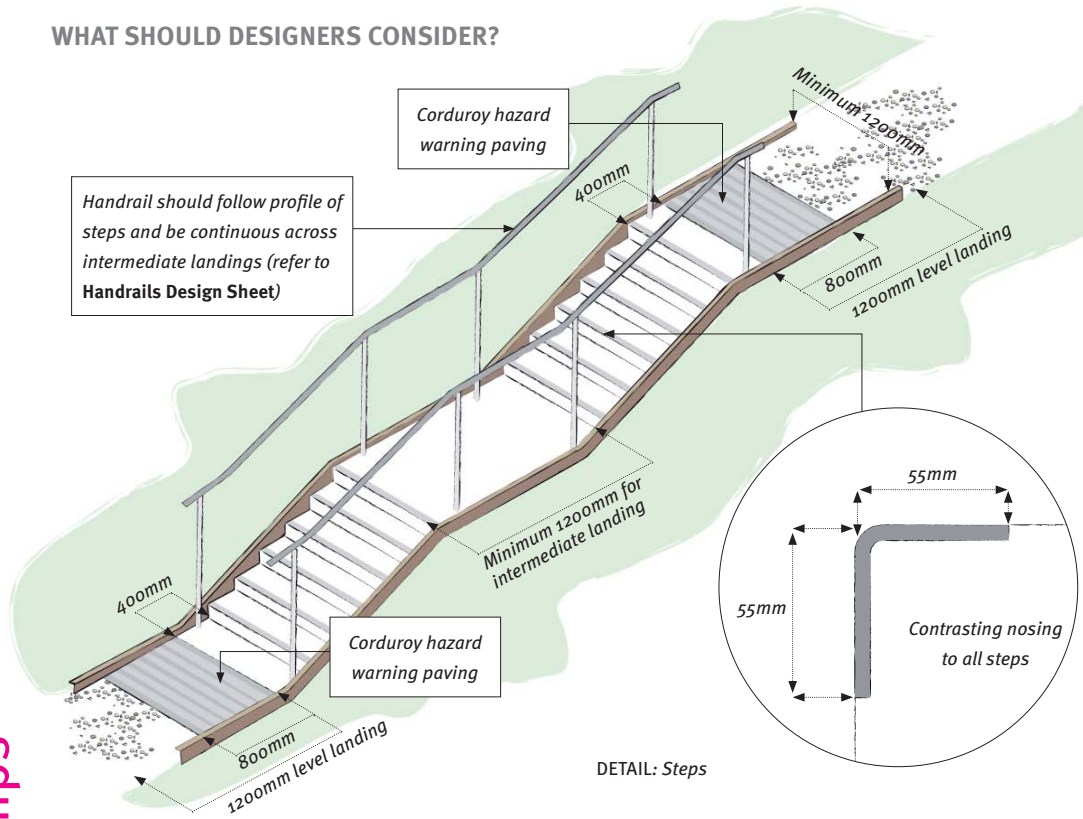
English Heritage: Easy Access to Historic Landscapes

A guide produced to help property owners and managers make historic landscapes more accessible to visitors.

http://www.english-heritage.org.uk/content/publications/docs/eahl-tagged.pdf

Steps and step ramps

WHAT SHOULD DESIGNERS CONSIDER?



DETAIL: *Steps*

Step ramps are usually found in remote locations where access expectations are reduced and physical constraints exist.

The inclusion of a ramp and separate steps offers the best solution in terms of access as it accommodates all potential users. This can result in interesting design solutions as pictured above.

St Georges Quay Scheme, Lancaster. Up and over steps have been used to facilitate access over the flood wall. They should be designed to be as accessible as possible within the constraints of the site

Background

Wherever possible the need for steps should be designed out of a scheme and consideration of alternative routes should be made.

In some circumstances the need for steps is unavoidable. When they are needed care should be taken to make sure they comply with the relevant guidance. For some ambulant disabled people, steps are a better option than a ramp but where possible the provision for steps and a ramp should be made to accommodate all users. If there is only room or budget for one solution then a ramp should be used as it accommodates all user groups.

When to use?

Steps should be designed to assist mobility impared people. Although ramps should be used ahead of steps, many countryside visitors, including some ambulant disabled people, find steps safer and easier to use. Careful consideration to the specific circumstances of a site and the type and level of access provision is needed when deciding upon the use of steps.

Single steps and changes in level that are less than 150mm should be avoided unless caused by a kerb line where drop kerbs should be used at identifiable crossing points to allow access for all users. The use of steps in lieu of level access or a ramp will be easier to justify in rural or open countryside situations as the level of access expected is not comparable with that of more urban environments.

In certain circumstances it may be preferable to use step ramps. These are often used in woodland or remote environments to improve access up a slope and are not suitable for wheelchair access. In these situations the use of an informal access solution is more appropriate and often more cost effective. Although there is no specific guidance governing the use of step ramps, the detail overleaf provides a construction detail and is based on information taken from the **Scottish Natural Heritage: Countryside Access Design Guide**.

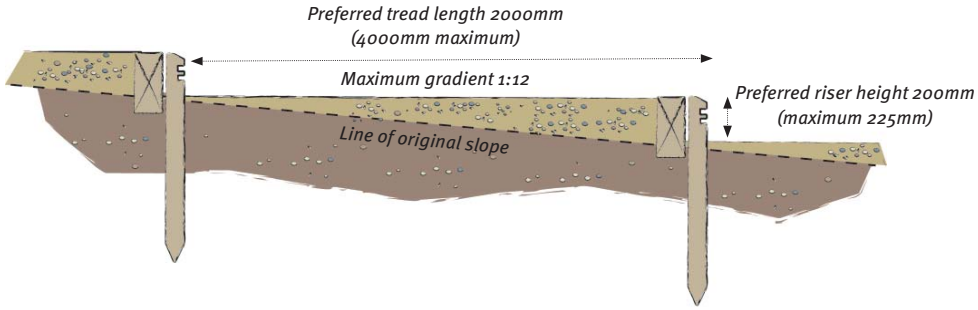
Standards and Specifications

Height and Landings: As a general rule any single flight of steps should not have a total rise exceeding 2000mm. If however this figure is exceeded then landings or rest areas should be inserted at intervals of 2000mm as a minimum. The provision of landings at the top and bottom of steps to accommodate any necessary tactile paving should also be considered.

CASE STUDY: DYMCHURCH COASTAL DEFENCE SCHEME, KENT

The primary purpose of this project was to provide effective sea defences. The solution was a 1:3 stepped wall however this didn't provide safe access for the public down to the beach. In order to overcome this a series of steps built into the sea defence wall where proposed. The steps have been designed in accordance with Part M of the Building Regulations and include handrails to either site. The resulting structure provides an effective sea defence as well as safe public access to the beach.

A contrasting nose should be included along the front of each step to make it easier for visually impaired users.



DETAIL: *Step ramp (detail from the* **Scottish Natural Heritage: Countryside Access Design Guide**).

It may be possible to relax the use of landings in more remote environments where users are more likely to be able to cope with more demanding climbs.

Width: Steps should be a minimum of 1200mm in width and preferably at least 2000 or wider if heavy use is envisaged. It may be possible to reduce the width in remote locations where the need for inclusive access is not as critical.

Riser and Treads: Guidance on the most suitable riser heights and tread depths varies depending on the guidance consulted and the context of the site. **Building Regulations 2010, Access To and Use of Buildings (2004 edition incorporating 2010 amendments)** states risers should be between 150 and 170mm in height and treads should be between 280 and 425mm deep. All steps in a flight should have the same tread height and riser depth to aid user rhythm.

It may be appropriate in more rural environments to relax the maximum riser and tread dimensions. In these situations a maximum riser height of 250mm and a maximum tread depth of 1000mm is acceptable.

Treads with a smooth, round nosing, slightly angled towards the riser are preferable. Protruding or open treads should be avoided as they present trip hazards. They should be constructed using non-slip materials that remain non-slip when wet or muddy. Although not recomended, if nessesary, projection of the nose over the riser should be kept to a maximum of 25mm.

Handrails: Handrails should be provided along both sides of steps. For information on the design of handrails refer to the **Handrails Design Sheet.**

Treatment of step noses: A nose that visually contrasts with the rest of the step will help partially sighted users. Guidance indicates that a contrasting strip, 55mm wide, on the riser and tread is sufficient (see diagram on page 15).

Hazard warning paving: The use of corduroy hazard warning paving is required at the top and bottom of steps. Guidance states that two rows of 400 x 400mm corduroy paving should be installed approximately 400mm from the top and bottom step to make up a 1200mm landing. This requirement needs to be considered when designing steps.

Drainage: Drainage of individual steps needs to be carefully considered to prevent Health and Safety issues arising. Likewise the top, bottom and intermediary landings should be well drained to reduce the risk of ice forming.

Cycle troughs: Where cycling is known to be a popular form of transport then a cycle trough can be fitted to the steps to allow cyclists to wheel their bike up or down the steps.

DESIGNER'S QUESTIONS

What should designers consider?

1. Is there an alternative route that would negate the need for stepped access?
2. What is the total rise of steps and are intermediate landings required?
3. Is there sufficient room for the recommended dimensions including any landings and tactile paving?
4. Does the situation require steps that are fully compliant with current Building Regulations or can they be used as best practice? i.e. is the situation urban, rural or open countryside?
5. Is there tactile hazard warning paving to the top and bottom of the steps?
6. Has a contrasting nosing been applied to the steps?
7. Can recycled, site generated or locally sourced materials be used?

FURTHER SOURCES OF INFORMATION

Building Regulations 2010, Access To and Use of Buildings (2004 edition incorporating 2010 amendments).

Regulations relate specifically to access to a building but should be used as a best practice guide when considering surface and footpath design in general.

Fieldfare Trust: Countryside for All Good Practice Guide.

Access guide specifically aimed at rural landscapes and open countryside situations.

Department for Transport: Inclusive Mobility, A guide to Best Practice on Access to Pedestrian and Transport Infrastructure.

http://www2.dft.gov.uk/transportforyou/access/peti/inclusivemobility.html

English Heritage: Easy Access to Historic Landscapes

A guide produced to help property owners and managers make their historic landscapes more accessible to all visitors.

http://www.english-heritage.org.uk/content/publications/docs/eahl-tagged.pdf

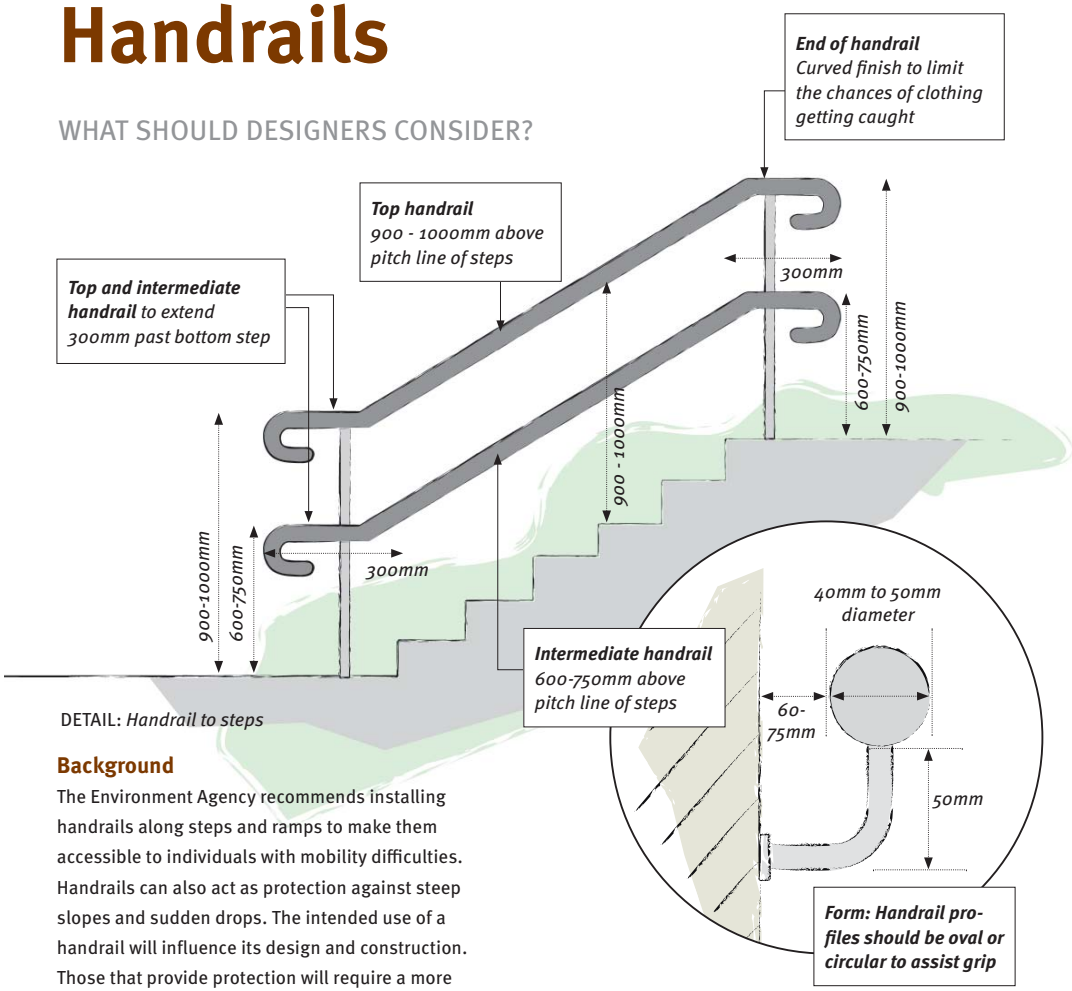
Scottish Natural Heritage Countryside Access Design Guide

A web based guide specifically aimed at improving access to the countryside. The guide contains a number of downloadable PDF design and construction information sheets detailing different step solutions for countryside settings.

http://www.snh.org.uk/publications/on-line/accessguide/

Handrails

WHAT SHOULD DESIGNERS CONSIDER?



DETAIL: *Handrail to steps*

DETAIL: *Handrail cross section*

Background

The Environment Agency recommends installing handrails along steps and ramps to make them accessible to individuals with mobility difficulties. Handrails can also act as protection against steep slopes and sudden drops. The intended use of a handrail will influence its design and construction. Those that provide protection will require a more robust design than those acting as a mobilty aid.

When to use?

As a general rule a handrail should always be provided along steps and ramps. This becomes a legal requirement in situations that facilitate access to a building.

Handrails should also be provided on raised boardwalks and bridges. In these situations the handrail should be designed to act as a security barrier as well as to facilitate access. A number of rails at different heights should be included to accommodate a range of users. This is illustrated on the next page.

Standards and Specifications

Position: Handrails should be positioned so that they do not reduce the clear width of the ramp or steps beyond the minimum requirements, as stated in the **Steps and Step Ramps** and **Ramps Design Sheets**.

Example of an accessible handrail design with a 'free from obstruction' top and middle rail. The colour contrasts with the surrounding environment making the handrail highly visible.

Good example of an accessible handrail including a top and middle rail free from obstruction and a up-stand providing edge protection along both sides.

Whilst this handrail reflects the character of the surrounding landscape and has a top and middle rail the material choice and finish reduces it accessibility.

They should be set at a height that is convenient for all the expected users. Guidance recommends between 900mm and 1000mm above the ramp or nose line of the steps. Consideration should be given to a secondary handrail at a lower height to accommodate children and wheelchair users. Guidance on the recommended height ranges from 600 to 750mm. When a handrail is adjacent to a wall or fence **Part M Building Regulations 2010, Access To and Use of Buildings** recommends a clear gap of 60 to 75mm should be provided so that finger grip is not impeded. Other guidance suggests this gap should be 50mm as anything greater risks hands or arms getting wedged between the wall and the handrail.

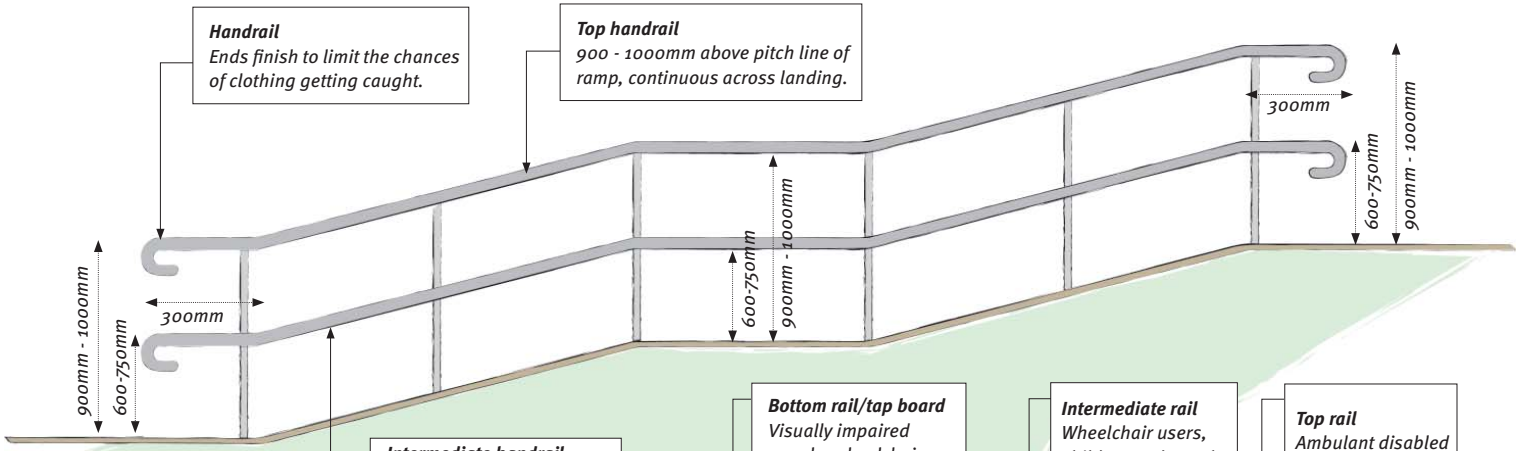
Form: A handrail should follow the pitch line of the ramp or flight of steps including any landings. It should extend beyond the start and finish of the ramp or steps by 300mm and finished in such a way that limits the chances of clothes getting caught on it e.g. curved ends. Ideally the profile of the handrail should be oval or circular to assist grip with a diameter of 40 to 50mm. The choice of material will have an impact on what form the handrail will take.

Materials: The material should be comfortable to touch, easy to grip and provide good forearm support. It should have sufficient properties to provide the necessary support. A non-abrasive material that does not retain heat or cold should be used. The material selected should reflect the surrounding landscape character.

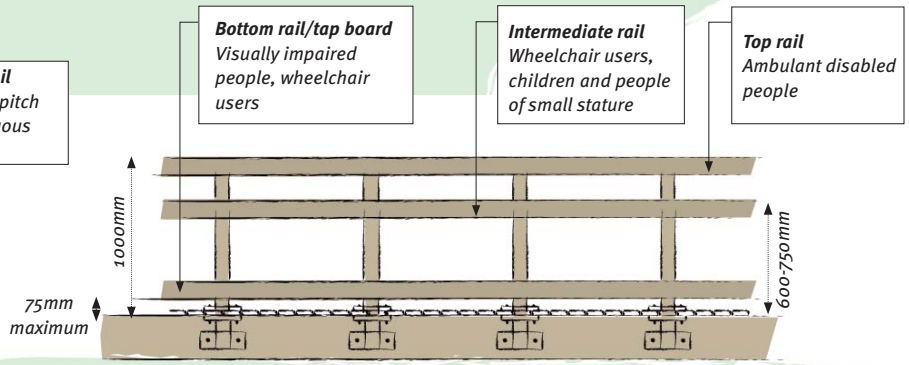
Visibility: A handrail should be clearly visible when approaching it. It should provide a visual contrast with the surrounding environment without being highly reflective.

CASE STUDY: CARLISLE FLOOD RISK MANAGEMENT SCHEME

Two existing footbridges across the River Caldew were replaced as part of the scheme. The new bridges provide access for pedestrians and cyclists. The handrails are designed to be free from obstruction and the railings are set higher to accomodate safe cyclist use.



DETAIL: *Handrail to ramp*



DETAIL: *Handrail to deck*

DESIGNER'S QUESTIONS

What should designers consider?

1. What level of access is needed, can be achieved or will be expected in this situation? i.e. is the situation urban, rural or open countryside?
2. Are the steps and / or ramp in a situation that requires the installation of a handrail? i.e. is the situation urban, rural or open countryside?
3. Can recycled, site generated or locally sourced materials be used?
4. Is the proposed handrail being used purely to ease access or as a security barrier as well?
5. Is there sufficient room to install a handrail and maintain the minimum clear step or ramp width requirements?
6. What is the best material to use for the handrail taking into consideration the surrounding landscape character and the comfort of the user?

Fixing: Fixings should be designed so that they do not protrude beyond the surface of the handrail. The surface should remain smooth and comfortable to touch along its full length. Protruding fixings may cause injury and become a liability for the Environment Agency and / or landowner.

Grot spot avoidance: Try to avoid rubbish traps forming at the base of handrail posts where debris cannot be easily removed. This can be designed out by positioning the posts on top of a wall.

Cycle rails: Barriers adjacent to designated cycle ways tend to be set at a higher level to act as a parapet rail. BS 7818 recommends such rails be set at 1.15m above ground level for pedestrians and 1.4m for cyclists.

CASE STUDY: CLEVELEYS COASTAL DEFENCE SCHEME, LANCASHIRE

A double handrail was included on the steps down to the beach. Its central position provides support to different sides and having twin rails also allows greater numbers to use the steps at the same time. Note that brass studs have been used as tactile hazard warning paving at the top of the steps.

FURTHER SOURCES OF INFORMATION

Building Regulations 2010, Access To and Use of Buildings (2004 edition incorporating 2010 amendments)

Regulations relate specifically to access to a building but should be used as a best practice guide when considering surface and footpath design in general.

Fieldfare Trust: Countryside for All Good Practice Guide.

Access guide specifically aimed at rural landscapes and open countryside situations.

Department for Transport: Inclusive Mobility, A guide to Best Practice on Access to Pedestrian and Transport Infrastructure.

http://www2.dft.gov.uk/transportforyou/access/peti/inclusivemobility.html

English Heritage: Easy Access to Historic Landscapes

A guide produced to help property owners and managers make their historic landscapes more accessible to all visitors.

http://www.english-heritage.org.uk/content/publications/docs/eahl-tagged.pdf

SUSTRANS: Design and construction

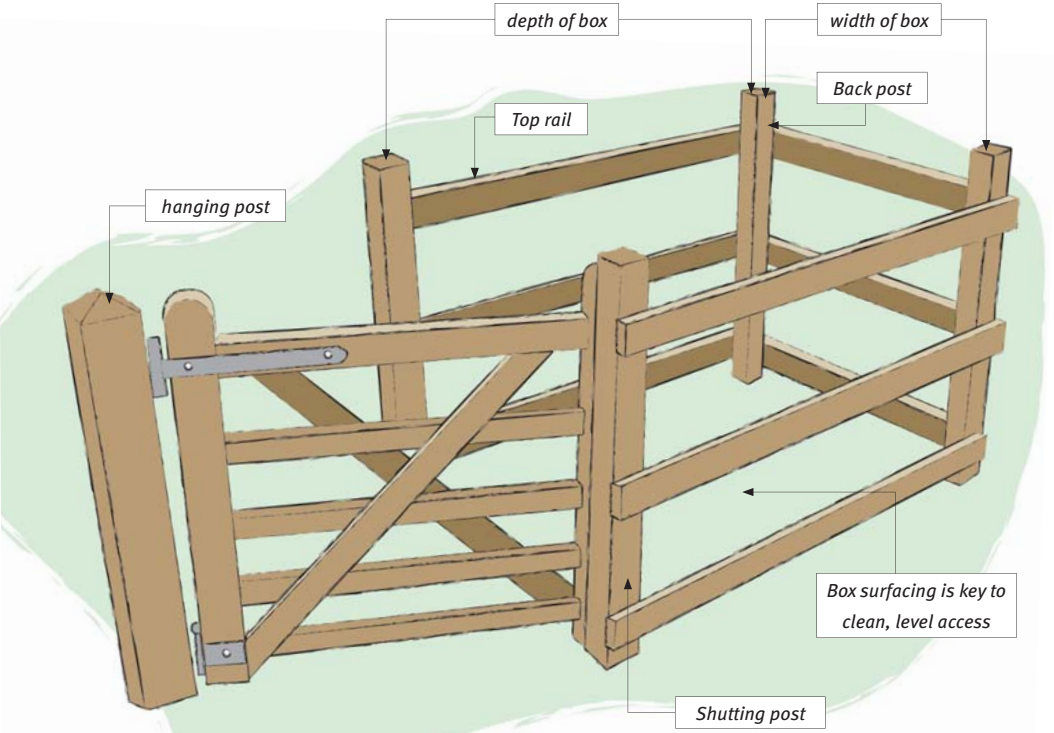
Development and design details for the design of walking and cycling routes.

http://www.sustrans.org.uk/resources/design-and-construction

GUIDANCE - Public Safety Risk Assessment of Assets - Fencing Guidance - Environment Agency, Agency Management System Document.

Gates

WHAT SHOULD DESIGNERS CONSIDER?



DETAIL: *Kissing gate. (See table on next page for dimensions of different sized gates).*

CASE STUDY: STANAH COASTAL EMBANKMENT, LANCASHIRE

As part of this refurbishment project a vehicle and pedestrian gate was installed at the end of the embankment to control access. The pedestrian gate is designed so that is can be opened separately to the vehicle gate as not to discourage pedestrian access.

A Large Mobility Kissing Gate is fully accessible. This gate is from the Centrewire Woodstock range.

The introduction of a pedestrian gate alongside a larger vehicle gate will open up the footpath to a wider range of users than if just a vehicle gate was provided. Some users will be put off using a footpath by the prospect of having to open a vehicle gate to gain access.

Large, traditional kissing gate which facilitates access for a number of different users whilst preventing the escape of livestock from the adjoining fields.

When to use?

At control points where land ownership, security or livestock management require the ability to make an area secure, but at the same time allow public or management access. **It is important to note that we do not recommend the use of stiles as access control points.**

Who are the users?

All the following users need to be considered:

- Pedestrians
- People with pushchairs
- People with 'off-road' buggies
- Dog walkers
- Wheelchairs
- Motorised mobility scooters
- Cyclists
- Horse riders
- EA Maintenance
- Land owners

Management Issues

Inspection – *who will inspect and at what frequency?*

Maintenance – *greasing moving parts, maintaining surfacing, cutting adjacent hedgerows*

Livestock – *appropriate for livestock e.g. mesh at lower levels for lambs, high gate for horses and deer.*

Vandalism and theft – *fixings to be welded in place to deter theft.*

Emergency access – *shared keys, consultation before installation.*

Promotion of access – *is a route of recreational significance and gate types need to be stated?*

Public Rights of Way – consent for closure or temporary realignment.

Standards, Specifications and Specialist Suppliers

BS5709:2006 – Gaps, Gates and Stiles: dimensioning and positioning data.

Defra: Authorising structures (gaps, gates & stiles) on rights of way gives guidance primarily to Local Authorities as to what consents and development control rights they hold over the listed access points.

Centre Wire Ltd: a leading supplier of accessible gates.

Gate Control Gear: a commercial supplier of gate ironmongery.

The National Key Scheme (NKS) sometimes referred to as RADAR keys, offers disabled people independent access to locked public toilets around the country. Toilets fitted with National Key Scheme (NKS) locks can now be found in shopping centres, pubs, cafés, department stores, bus and train stations and many other locations in most parts of the country. These keys can also be used to open gates along paths.

Gate Fixing Considerations

- Hang one hinge 'upside-down' to deter theft.
- Self closing hinges remove the need for latches.
- What level should latches be set at? Consider wheelchair users and horseriders.
- Is there space to allow wheeled users to access through the gate.
- Be aware of finger traps at hinges and shutting posts.
- Does it require a soft close hinge or closing pad to reduce banging noise?

Bespoke solution on a green lane in Kent with side wicket gate for pedestrian and wheelchairs and dipped field gate for horse riders.

Clear, level deck access and a wide space at gate to allow for easier opening and shutting. Although edge protection has been provided in this situation, handrails are also recommended.

High and low level latches will enable all user groups access through a gate.

DESIGNER'S QUESTIONS

What should designers consider?

1. Who are the likely users?
2. Type of gate – traditional or kissing gate?
3. Public Rights of Way – who has a legal right to use the path?
4. Layout – compliance with BS5709
5. Security – permanently open, ability to lock, RADAR key, latch and catch systems?
6. Can recycled, site generated or locally sourced materials be used?
7. Self closing – sprung closing device, weighted or not at all?
8. Material – timber or steel?
9. Opening width – pedestrian, cyclists, mobility vehicle, farm vehicle, larger construction plant?
10. Height – low for pedestrians and wheelchairs, higher for horse riders and control of large livestock.
11. Weight – heavier gates need larger hinges and are more difficult to operate.
12. Access – flat and level, type of hard surface, erosion control
13. Land-use – what foreseeable land-uses are there?
14. Vandalism – choice of material, how gate is hung on hinges, padlock boxes
15. Public safety – moving parts, screening hinges, springs in door closers, catches and latches, climb and fall risks, avoiding sharp corners and protrusions.

Gate type	Dimensions	User considerations
FIELD GATE	3000-3600mm wide	*Allows access for all with suitable latches and approach areas*
PEDESTRIAN GATE	1000mm wide	*Allows access for all with suitable latches including motorbikes and motor scooters but not horse riders*
BRIDLE GATE	1525mm wide	*Allows access for all with suitable latches including motorbikes, motor scooters and horse riders*
SMALL KISSING GATE	1000mm wide x 1000mm deep	*Allows access for pedestrians and cyclist if they up end their bikes within the box*
MEDIUM KISSING GATE	1200mm wide x 1200-1400mm deep	*Allows access for all with suitable latches, but space restricts motorbike and horse access*
LARGE KISSING GATE	1500mm wide x 1400-1900mm deep	*Accessible to all with suitable catches apart from horseriders*
GATES IN DEER FENCING	At least 2000mm high	*To prevent deer jumping over at a low point*

FURTHER SOURCES OF INFORMATION (WEBLINKS AND PDF PORTFOLIO DISK)

Pittecroft Trust User Guides
Simplified guides to BS5709:2006 and Defra's Authorising Structures (gaps, gates & stiles) on Rights of Way.
http://www.pittecroft.org.uk/5709.pdf and http://www.pittecroft.org.uk/understanding.pdf respectively.

BS5709:2006 Gates, Styles and Gaps

Scottish Natural Heritage
Examples of gate designs on clear, concise design sheets.
http://www.snh.org.uk/publications/on-line/accessguide/gates_list.asp

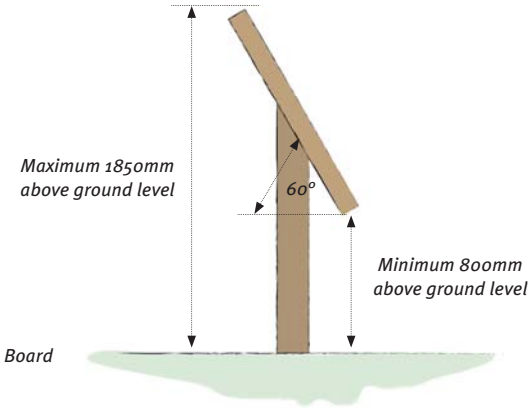
Woodland Trust Community Woodland Network
A series of specifications and guides relating to access and woodland management amongst other material.
http://frontpage.woodland-trust.org.uk/communitywoodlandnetwork/publications/woodmgnt.htm

Fieldfare Trust
Specific consideration of promoting disabled access in the countryside - A Good Practice Guide to Countryside Access for Disabled People – available to buy online from the Fieldfare Trust.
http://www.fieldfare.org.uk/?page_id=53

Centre Wire Ltd
Suppier of gates and other access products.
http://www.centrewire.com

Gate Control Gear
Supplier of gate closing and hinge systems
www.gatecontrolgear.com

Signage and visitor information



DETAIL: *Interpretation Board*

Background

Signage should give clear direction and information for a defined area, whether that be a building, a park or a wider area of open landscape. Signs should form a wayfinding strategy which takes into account the needs of a number of users depending on the situation. Signage is used by people to maintain a clear sense of direction and importantly independence whilst visiting a place.

In addition, many people use online and printed publications to make informed choices about where to go before they make a visit. Providing such 'pre-visit' information about accessible places is equally if not more important than providing information on site, in terms of promoting the benefits of well-designed access projects.

CASE STUDY: VALLEY, NORTH WALES

Works to the existing coastal defences to improve public access including a number of new viewpoints over the intertidal habitat area. Interpretation boards were installed at each of the viewpoints with information about the defences, why they are necessary and the flora and fauna that inhabits the area.

When to use?

There are many places where the use of a sign is appropriate. They are an important tool used to orientate visitors and direct them along a certain path or route. Signs should be used to help visitors interpret features of interest, but also warn of possible hazards. However, it is important to keep the number of signs to a minimum to prevent cluttering a site although there may be a temptation to put a sign at every point of interest they should be predominantly used sparingly as information tools.

The use of internationally recognised disabled access signage should be used where appropriate. There is a wide range of signs that can be used and more information can be found on the Enjoy England's website www.enjoyengland.com.

An interpretation board on the Lower Lancaster Flood Alleviation Scheme. It is located in a designated viewing area adjacent to the footpath and orientated to overlook the wetland habitat.

Interpretation signage should be designed to accommodate the needs of as many users as possible. Signs that combine the needs of different users are considered more inclusive than separate signs each aimed at a different user's needs.

The main locations where signage is most important are car parks and at the beginning and junctions of paths. A system of regular and similar signs along a given route is appropriate.

The most frequently used types of signage will be visual and tactile. However on occasion it may be appropriate to reinforce this with audible information. It is important to remember that no one type will suit the requirements of all users.

NB: When designing signage in Wales they must be in both the English and Welsh languages.

Types of Signage

Information can take a number of different forms including;

- ***Visual:*** signs and notice boards.
- ***Tactile:*** signs with embossed lettering and images or Braille.
- ***Audible:*** public address and security systems, induction loops, telephones and infrared devices.

It is common to see a combination of visual and tactile forms of information on one sign which can then, if necessary, be complimented with audible information such as radio frequency or infrared systems.

Standards and Specifications

Size and Position: The size and position of a sign are critical to its success. It is important that wherever possible provision is made so that all users can reach it. Those individuals with visual impairments will need to have direct access to a sign in order to read or touch it. Signs should be positioned so that both wheelchair users and people standing can see and read them. The area around the sign and access to it should be level and well maintained.

The table below is taken from the **FieldFare Trusts "Countryside for All Good Practice Guide"** and indicates the ideal position of a sign relative to the mean eye height (1300mm).

Viewing Distance	Lowest point not below	Highest point not above
1m	800mm	1850mm
2m	700mm	2150mm
3m	650mm	2400mm

Visibility: Safety signs and symbols of accessibility have a system of prescribed colours which are mandatory. For all other signs; letters, symbols and pictograms should contrast visually with the signboard. The signboard should then contrast visually with its surroundings.

CASE STUDY: STANAH FLOOD ALLEVIATION SCHEME, BLACKPOOL

A viewing area including an interpretation board was created as part of the refurbishment works to this coastal flood embankment. In order to make the board accessible it was installed at a height suitable for wheelchair users and included a Braille panel.

When deciding on the most appropriate visual contrast for signs it is important to take into consideration the seasonal change of any background vegetation.

The material used to create the sign will also affect its visibility. For instance the use of white as a background colour can cause dazzle in certain conditions. Matt or non-reflective materials should be used where possible.

Speaking Signs: The use of audible information can help blind or partially sighted people better interpret their surroundings by helping them to find their destination as well as informing them of the presence of street furniture, tactile maps or other features they may wish to use or avoid. Used in the right locations it can also encourage other users to learn more about the environment, particularly children.

A number of speaking sign systems exist, but not all are appropriate for the external environment and research should be undertaken to determine which is best for the location.

Where possible and when budgets allow, audible information should complement tactile signs. This is usually along a route designed for visually impaired users.

Sign Technology: Lighting or audible information systems may require an electric supply or alternatively could be solar powered or user powered with a wind-up handle.

Tactile Signs: These can take the form of symbols or text and cater for both sighted and visually impaired people. Individuals who cannot read Braille can still be aided by tactile information. When designing tactile signs, embossed text or symbols should be used as they are easier to read than indented or engraved.

Way finding or Self-guiding: The use of way finding signage in the external environment should give people the confidence to walk certain paths and routes. A series of signs along a route that are common in appearance will be easily identifiable to an individual. Information at the beginning of a route about its accessibility is essential to disabled users when deciding if it is right for them. Such information should be made available online to allow people to make a decision in advance .

Above all way-finding signs should be simple to follow to avoid confusion, particularly if there are a number of route options.

Interpretation boards: The use of interpretation boards should be limited to those areas where they are going to be most effective. Before deciding on the inclusion of interpretation boards you should consider;

Who are the likely visitors and what they will be interested in? This is also useful when deciding the type and layout of the board.

Does the budget allow for effective interpretation to be included in the scheme?

Is this a new site and therefore will visitors be interested in learning about it?

What is the message you want to put across and will it be well received?

Interpretation boards should be set at a 60 degree angle so they can be easily read by all users.

DESIGNER'S QUESTIONS

What should designers consider?

1. **Do you need a sign at all?**
2. Can recycled, site generated or locally sourced materials be used?
3. **What is the main function of the sign or signs? Information, interpretation, direction or all three?**
4. **Considering the route or area where the sign is going to be placed, what user groups will need to be able to read it?**
5. **Will the sign block or obscure features of interest when in situ?**
6. **Do the materials and colours chosen contrast sufficiently with the surroundings? NB Seasonal change needs to be accounted for.**
7. **What font size will be needed to make sure the sign can be read easily in this location?**
8. **Are there regular / similar places along a route where signage could be positioned?**
9. **Alternatively, can regular and similar places for signage be incorporated into the design of an area or specific route?**
10. **Is the use of internationally recognised symbols of accessibility appropriate in this situation?**
11. **How will the information on the sign need to be presented? i.e. visual, tactile or audio?**
12. **How long will a sign last and when will replacements be needed?**
13. **Is signage positioned in a way that does not compromise operational access to structures for maintenance and operation.**

FURTHER SOURCES OF INFORMATION

BS8300: Design of Buildings and Their Approaches to Meet the Needs of Disabled People.

This British Standard relates specifically to buildings internally and access to them but should be used as a best practice guide when considering the design and use of signage in the external environment.

Fieldfare Trust: Countryside for All Good Practice Guide.

Access guide specifically aimed at rural landscapes and open countryside situations. Includes detailed guidance on the use of signage, particularly interpretation.

Sign Design Society: The Sign Design Guide

Concerned with making environments accessible to everyone and addresses the concept of 'inclusive signage'. The document can be ordered from the **Sign Design Society** website (link below) for a cost of £23.

http://www.signdesignsociety.co.uk/index.php?option=com_content&view=article&id=54:the-sign-design-guide&catid=10&Itemid=19

Royal National Institute for the Blind (RNIB): Tactile Images and Maps Brochure

Details of a 'Map for All' developed and produced by the RNIB that can be read by sight, by touch or a combination of both.

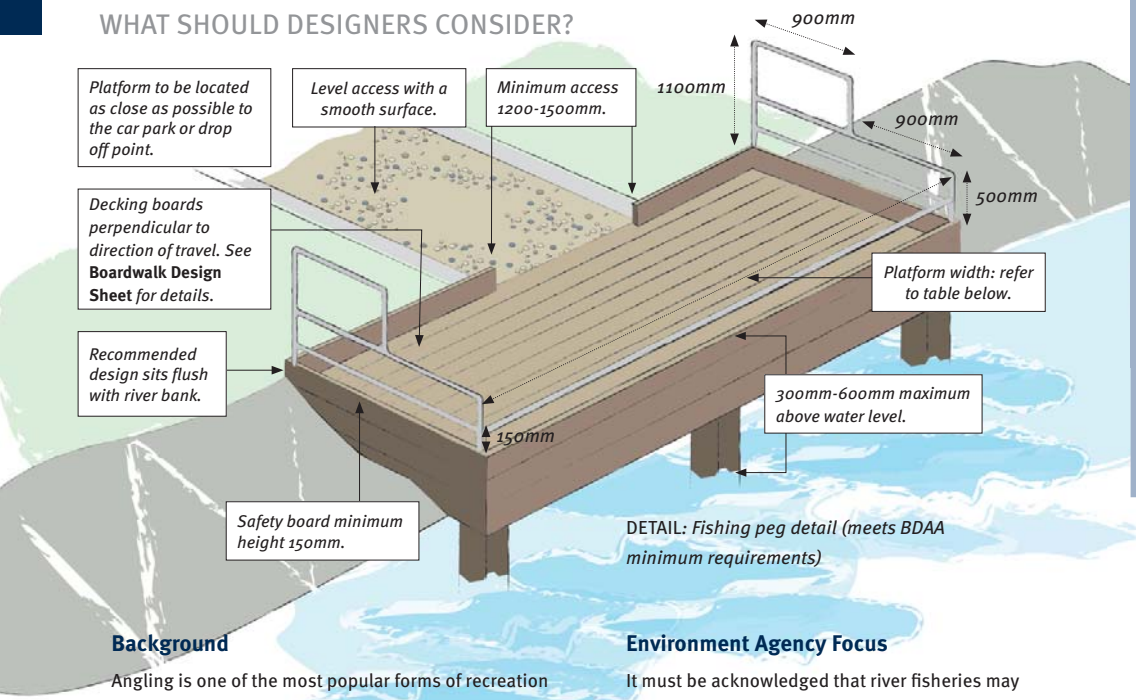
Graphic Ad

http://www.graphic-ad.com

Graphic Ad are the current framework supplier to the Environment Agency for the design and manufacture of communication materials.

Fishing platforms

WHAT SHOULD DESIGNERS CONSIDER?



DETAIL: *Fishing peg detail (meets BDAA minimum requirements)*

Background

Angling is one of the most popular forms of recreation in the UK enjoyed by an estimated 1 million people. The Environment Agency is responsible for the development of fishing in England and Wales. Anyone over the age of 12 fishing in freshwater in England and Wales must have a valid Environment Agency rod licence.

Existing Experts

The British Disabled Angling Association is the leading authority on the provision of access to fisheries. Their two guides, as referenced in the side bar, provide clear and practical advice. They kindly request a donation when their guides are downloaded.

Fishing pegs should be designed and installed by a suitably qualified person. Although the use of 'flat pack' peg systems maybe appropriate in certain locations, bespoke solutions often provide a more accessible facility.

Environment Agency Focus

It must be acknowledged that river fisheries may not be fully accessible at all locations. However, this should not stop consideration of trying to develop a number of fully accessible fishing pegs.

More information on the wider facilities, such as car parking and signage, and how they should be designed can be found on the **Canoe Access Design Sheet**.

Platform type	Dimensions
SINGLE PLATFORM/SWIM/PEG	1800 x 1800mm wide
DOUBLE PLATFORM/SWIM/PEG	4000 x 1800mm wide
COACHING TRAINING PLATFORM	8000mm x 1800mm

(This minimum length will accommodate 6 anglers)

CASE STUDY: DANSON PARK, KENT

This wheelchair accessible fishing peg is suitable for a wide range of users and was made possible by funding from the EA. The design was developed in conjunction with BDAA to ensure a fully accessible facility. The design and construction of the peg is such that it limits disruption to the riverbank. Note the level gradient from the path onto the peg to allow easy access for wheelchairs.

Features	Dimensions	User considerations
HANDRAILS	950 x 1000mm high 45-50mm diameter	*Handrails of 950-1000mm high require a middle safety rail of 500mm high*
KNEE BAR	450-500mm high	
WHEELCHAIR BUMP STOP	150mm high	*Along all sides extending over water or open ground*
APPROACH TO PLATFORM	1:15 gradient (best practise)	*1:12 acceptable*
HEIGHT OFF WATER	300-600mm	*Consideration of summer and winter water levels*

FURTHER SOURCES OF INFORMATION

The British Disabled Angling Association *http://www.bdaa.co.uk* have published an **Access Guide Pack** detailing the design of accessible fishing pegs - ***Access Guidelines for Fisheries*** and ***Access Guidelines of Fisheries Technical Information***

The Institute of Fisheries Management *http://www.ifm.org.uk/*

DESIGNER'S QUESTIONS

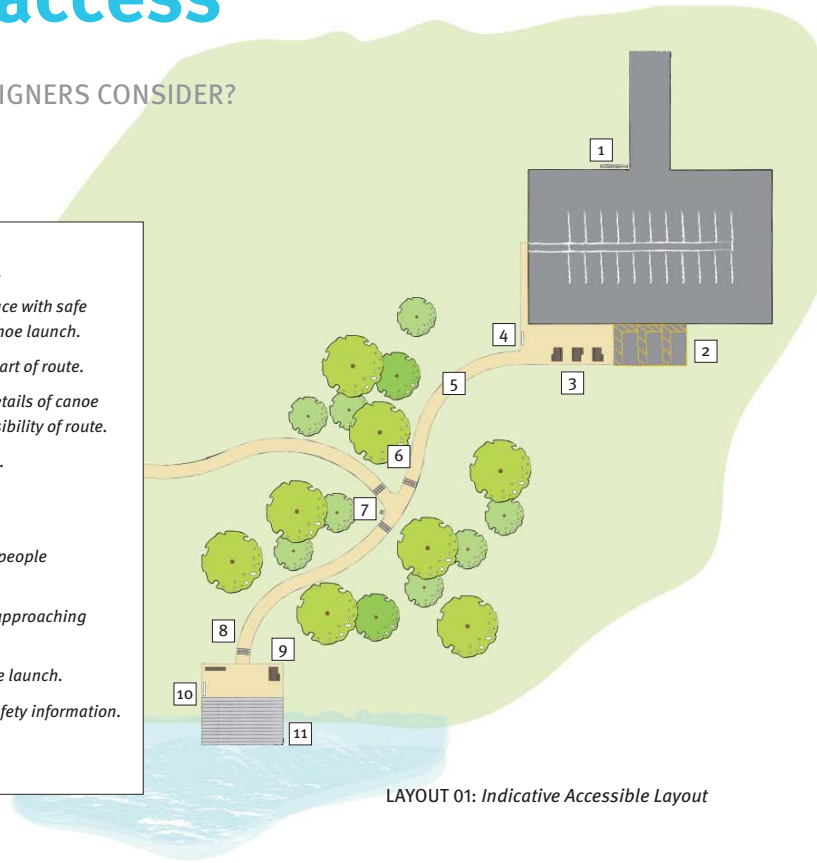
What should designers consider?

1. What type of fishing are you trying to cater for? Coarse, game, sea?
2. Is the route to the fishing peg accessible from the car park or point of public transport?
3. What is the best angling location? On bank edge, over water, in the water or from a boat?
4. Will the peg be subject to flooding?
5. Is there sufficient space for layout of tackle around the peg?
6. Is signage appropriate to give priority to disabled users?
7. Are larger pegs required for parent and children, disabled and carer, group teaching?
8. Is the proposed site in a stable position in terms of slope stability and channel meandering?
9. Are there any over hanging branches that can snag lines whilst casting?
10. Is there sufficient shelter to help screen anglers from view by fish and give some privacy?
11. Can recycled, site generated or locally sourced materials be used?
12. Is the peg positioned so it is not visually intrusive?
13. Is there sufficient space between pegs so you do not feel you're fishing on top of each other?
14. Are there natural fish holding features you can fish towards from the peg?
15. Is there space behind for pole fishing?
16. Who is going to maintain the peg?
17. Is there ready access to maintain the peg and surrounding area?

Canoe access

WHAT SHOULD DESIGNERS CONSIDER?

1. *Car park information sign.*
2. *At least 1 no. disabled space with safe accessible route to the canoe launch.*
3. *Resting/seating area at start of route.*
4. *Information board with details of canoe launch, length and accessibility of route.*
5. *Path width to be 2000mm.*
6. *Tactile paving to warn of approaching junction.*
7. *Wayfinding sign to direct people to canoe launch.*
8. *Tactile paving to warn of approaching canoe access.*
9. *Seating/rest area at canoe launch.*
10. *Information board with safety information.*
11. *Accessible canoe launch.*



LAYOUT 01: *Indicative Accessible Layout*

It is not always possible to create a fully accessible canoe access so a decision should be taken early in the design process.

Potter Lock Wier improvements, River Medway. The canoe shoot was combined with the fish pass.

This canoe access pontoon by Ez-Dock uses a roller system which allows the canoeist to pull themselves onto the pontoon and transfer to and from a wheelchair.

Background

The British Canoe Union (BCU) promotes canoeing as a sport to be enjoyed by everyone, regardless of ability. In order for this to be achieved, inclusive canoe access is essential. There is no "one size fits all" solution when developing new or improving existing sites. It is very much dependent on the conditions that exist at a particular site.

This section explores the elements that make up inclusive canoe access and looks at a number of successful case studies which include innovative access products.

Although there is no specific guidance on the design of fully inclusive canoe access in the UK, the BCU promotes the development of canoeing for disabled people through a number of initiatives. 'Canoeing for all' aims to ensure that all people have an equal opportunity to participate in canoeing. The BCU's 'Paddle-Ability' focuses on the ability in canoeing rather than their disability. Delivering new or improving existing launches as part of our schemes will help both organisations achieve their access goals.

The BCU is supported by a number of bodies who can give an insight into the local canoeing scene. These include:

Canoe England (www.canoe-england.org.uk)
Scottish Canoe Association (www.canoescotland.org)
Canoe Wales (www.canoewales.com)
The Canoe Association of Northern Ireland (www.cani.org.uk)

Providing a fully accessible launch

The design of a fully accessible launch is more than just the point of access to the water. The elements that make up the facility as a whole need to be carefully planned so they provide for the needs of as many users as possible. A number, if not all, of the design elements discussed in this guide will be needed in order to provide a fully accessible canoe launch. The list of design considerations below is not exhaustive and will only be fully achievable in a small number of situations. It is a challenge for the professionals involved to decide what is achievable based on the site conditions and the budget available.

DESIGNER'S QUESTIONS

What should designers consider?

1. Is there a right of access for canoes on the river or lake?
2. What form of canoe launch is appropriate for the site? *River, lake, reservoir, canal, or tidal situation?*
3. What types of canoe are likely to be used?
4. Is it possible to achieve a fully accessible launch point? *Disabled changing and toilet facilities, close to the car park, level footpaths, accessible gradients down to the water?*
5. Is there an alternative site nearby that may offer a better solution?
6. Can recycled, site generated or locally sourced materials be used?
7. Who are the intended users? *Abled bodied, visually impaired, disabled users.*
8. What are the most appropriate materials when the level of access and landscape character are taken into consideration?
9. Is there suitable car parking nearby?
10. Is there an existing canoe launch elsewhere that can be used as a template and applied to this situation?
11. What can realistically be achieved for the budget available?
12. Does the chosen location best suit the type of launch proposed?
13. Who will manage, maintain and promote the facility?

Car parking and amenities: Where a car park already exists an access audit should be carried out to identify what measures could be taken to make it more accessible. If the budget allows for the development of a new car park then the guidance set out the in **Car Park Design Sheet** should be followed. Careful consideration should be given to the start of the path within the layout of the car park, including the provision for disabled and family car spaces.

Level access to launch point: The ease of access between the car park, main footpath, and any associated amenities to the canoe launch is an important consideration when developing an inclusive facility. Recommended gradients and cross falls to accommodate wheeled users are discussed on the **Surfaces Design Sheet**. Particular attention should be paid to the length of the route and its proximity to the water's edge. Tactile paving along the route can be used to alert visually impaired people to hazards such as junctions.

Way finding and information signage: Signage should be kept to a minimum. Directional signage should be easy to follow and provide details of the length and accessibility of the route, including the suitability of the canoe launch for disabled users. If needed wayfinding signage should be easy to spot and adjacent to the route at regular intervals. The use of both tactile and audio signage should be considered when designing for disabled people, particularly in the car park or start of the route. Likewise online pre-visit information needs to be available as this is one of the main ways a disabled person will find out if the level of access is appropriate.

Information should be included to inform the user how to safely use the canoe launch and the associated waterbody.

CASE STUDY: ROSS ON WYE AND KERNE BRIDGE CANOE ACCESS

The EA's Wye Navigation Team along with the Wye Valley Area of Outstanding Natural Beauty and Herefordshire Council all worked together to make these two innovatively designed launch ramps. The absence of edge protection on the ramps allows canoe access at different river levels but the raised edge at the flat rest platforms provides a level of safety. Although appropriate for the requirements the concrete finish is not sympathetic to the landscape character. Further images and design drawings are available in the PDF Portfolio which accompanies this guide. Additional information about the scheme can be found on Canoe England's website:

http://www.canoe-england.org.uk/news/perfect-paddling-for-canoe-launches

Seating: The inclusion of rest points should be considered both at the start of the route and at the canoe launch. If the route is some distance then consideration should be given to the inclusion of rest points along the way at 50m intervals. If the route originates in a car park then seating should be located at the start of the path. This will also help identify the location of the route. The rest point at the canoe launch should be a safe distance from the water's edge. The choice of furniture should suit the needs of the people who are expected to use it. The use of tactile paving should be considered to alert visually impaired people they are approaching rest points.

Accessible canoe access point – "no one solution fits all:" Some locations may require a large amount of work in order to develop an accessible canoe launch whilst others will readily lend themselves to it. If a fully accessibly launch is to be provided as part of a larger project, say a flood risk management scheme, then its position should be determined as early as possible. This will then allow other features, such as accessible routes to it, to be incorporated at no, or limited cost as part of the larger project.

Consultation: Local canoe groups should be consulted to identify the most appropriate locations for canoe access.

FURTHER SOURCES OF INFORMATION

Canoe and Kayak Handbook: Handbook of the British Canoe Union. Chapter 10 "Inclusive Canoeing and Kayaking" details the varying requirements of disabled canoeists. The handbook can be purchased from the BCU for £16.95 (2012 prices) on 0845 370 9500 or http://www.bcushop.org.uk/index.php.

Canoeing for Disabled People by Geoff Smedley
This book can be purchased from the BCU for £15.95.

EZ Launch for Kayaks and Canoes
A modular launch point system with accessible transfer for kayaks and canoes designed for people with disabilities. It also includes a transfer bench for wheelchair users to aid access. Although this system is widely used in the USA, it is currently not used in the UK.

http://www.ez-dock.com/en/ez-dock-products/ez-launch.html

Building Regulations 2010, Access To and Use of Buildings (2004 edition incorporating 2010 amendments). Regulations relate specifically to access to a building but should be used as best practice when considering the infrastructure associated with the development of canoe access.

FURTHER SOURCES OF INFORMATION CONTINUED

British Canoe Union (BCU)
The leading body within the UK promoting canoeing as a sport. The organisation has a number of initiatives aimed at promoting the sport to disabled people which are detailed on its website *www.bcu.org.uk*

Home Countries Canoe Organisations
The Canoe England website includes a number of useful case studies.

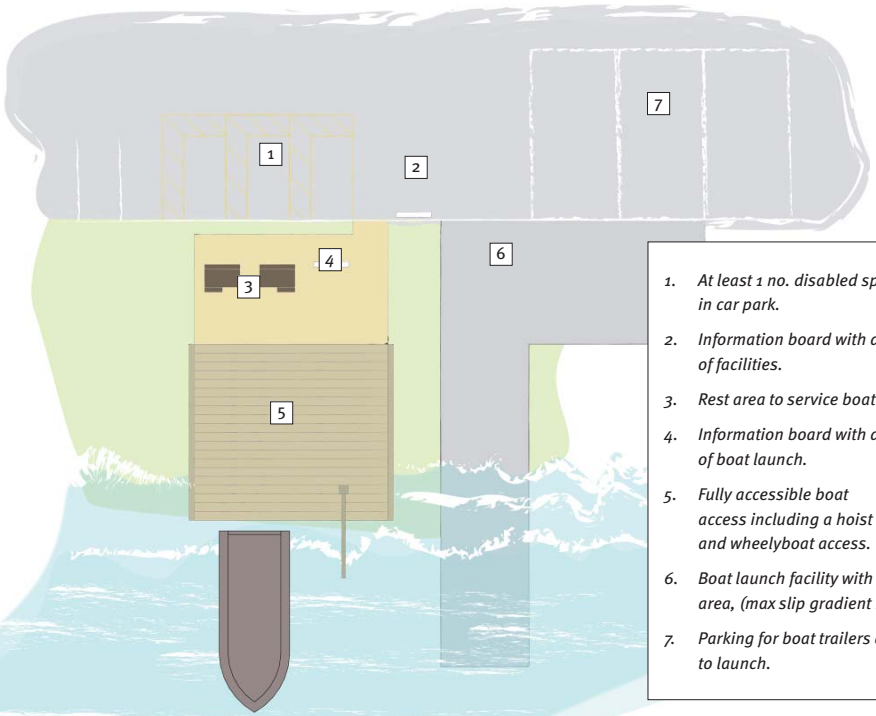
www.canoe-england.org.uk
www.canoescotland.org
www.canoewales.com
www.cani.org.uk

Fieldfare Trust: Countryside for All Good Practice Guide. Access guide specifically aimed at rural landscapes and the open countryside. It can be bought from the Fieldfare Trusts website *http://www.fieldfare.org.uk/* for £61.20 inc VAT (2012 prices).

Department for Transport: Guidance on the Use of Tactile Paving Surfaces
http://www.bbsgraniteconcepts.com/wp-content/uploads/2010/06/Dft-download.pdf

Boat access

WHAT SHOULD DESIGNERS CONSIDER?



1. *At least 1 no. disabled space in car park.*
2. *Information board with details of facilities.*
3. *Rest area to service boat launch.*
4. *Information board with details of boat launch.*
5. *Fully accessible boat access including a hoist and wheelyboat access.*
6. *Boat launch facility with rigging up area, (max slip gradient 1:15).*
7. *Parking for boat trailers close to launch.*

LAYOUT 01: *Indicative Accessible Layout*

If access is required from multiple points then a number of edge protection types can be used as shown on the above pontoon. Note the metal grating used to provide a non-slip surface.

Wheely boats are a great way of providing access to water for wheelchair users.

The use of portable pontoons specifically designed to accommodate the needs of disabled people can provide temporary access to the water where otherwise it would be difficult or impossible. Permanent solutions are preferred but these systems can prove useful if occasional use is envisaged.

Background

Boat launches come in a variety of different forms and sizes. No one solution will suit all locations and the final design will be dictated by the constraints of the proposed site. This is a large subject area with many examples of differing solutions. This design sheet looks at how the boating industry is developing fully accessible launch facilities and what is required to achieve this.

The Royal Yachting Association (RYA) has produced a number of guides and handbooks addressing the planning of boat facilities. They detail the general requirements and ways to accommodate the needs of people with mobility difficulties. The Further Sources of Information section overleaf includes a link to the RYA website.

DESIGNER'S QUESTIONS

What should designers consider?

1. What is the most suitable solution for the proposed location?
2. Can a fully accessible route to the boat launch be provided?
3. Is there an alternative site nearby that offers a better solution?
4. In order to achieve the required access provision, is it better to split the boat launch point from the boat access point?
5. What type of users are likely to use the facility? *Able-bodied, visually impaired, wheel chair users, groups?*
6. Is there an existing facility elsewhere that can be used as a template?
7. What can be realistically achieved for the budget available?
8. Is the chosen site suitable for the type of boats proposed?
9. Is a hoist required and does it need to be a permanent installation?
10. Is a certain type of accessible boat required? If so, what are its specific requirements?
11. Would the use of a portable system be more cost effective on an existing launch point?
12. Have suitable non-slip surfacing and safety rails been included?
13. Has signage been included to explain 'the rules of the launch'?
14. Can recycled, site generated or locally sourced materials be used?

Types of Accessible Boats

A number of boats and dinghies have been designed to accommodate disabled users as well as overcome the varied levels of access found at launch points. Examples of these can be found on the "Sailing for All" website *(www.sailingforall.com)* .

Boat launches require specific features to accommodate accessible boats. For example The Wheelyboat Trust recommend a certain set of elements to facilitate correct use of their boats. More information can be found on their website *www.wheelyboats.org*.

Portable Pontoons

Mobile or portable pontoons which accommodate different types of disability including wheelchair users, have been developed to deal with the varied levels of access found at launch points. One such system is the Access Wheelchair User Transfer Dock detailed on the Sailing for All website. This portable system is designed to fit onto existing launch points and provides improved access for reduced mobility sailors.

Boat hoists provide a space efficient solution to boat access for disabled people. As they require a number of people to operate them they should only be considered if infrequent use is envisaged or where space is at a premium and other access solutions are not appropriate.

Hoists

The use of hoists is a common solution for low mobility users to access boats. They can be permanent or temporary depending on the level of use envisaged. When developing a boat launch, provision for the inclusion of a suitable hoist, its anchor points and storage should be considered.

The development of a successful boat launch requires input from an appropriately qualified specialist who has experience working in fluvial or coastal situations. It may also be necessary to apply for a Flood Defence Consent as part of the works (http://www.environment-agency.gov.uk/research/planning/93498.aspx).

Types of Boat Launch

The choice of boat launch will depend upon the location, the level of access being provided, and budget. Most solutions will accommodate the needs of low mobility sailors however there are some that do not.

Boat launches that can be adapted to accommodate low mobility users:

- Jetty
- Pontoon
- Pier

By including handrails (see **Handrails Design Sheet**) to both sides, one side or down the middle of the launch and toe boards (minimum 75mm in height) along its edges will make it more accessible to disabled users.

And those that don't:

- Slip

The nature of a slip means that it is not appropriate for the needs of disabled people and should only be considered when other means have been discounted.

Providing an accessible launch

The development of a fully accessible boat launch should consider the wider facilities that make up the whole site and not just the launch itself. Due to the nature of boat launching (car and trailer), the facilities need to be close to a car park or main amenities. Consideration should be given to the design of rigging up areas and the needs of the disabled people. Trailer parking is required as is information about the rules of the launch and the waters that are available. More information on the wider facilities, such as car parking and signage, and how they should be designed can be found on the **Canoe Access Design Sheet, Car Park Design Sheet** and **Signage Design Sheet.**

CASE STUDY: CROSBY LAKESIDE MARINA

The Crosby Lakeside £10-million Adventure Centre is located in an Area of Outstanding Natural Beauty and is designed to be a fully accessible facility. Facilities include unimpeded access onto the dock, accessible pontoons, a boat hoist and a shelter to ease crosswinds. These individual elements combine to create a boat access point that accommodates both disabled and non-disabled users.

FURTHER SOURCES OF INFORMATION

Sailing for All
Website aimed at developing equipment and techniques to make boating more accessible. The website includes a number of good case studies and further information on the Access Wheelchair User Transfer Dock/Pontoon system.
www.sailingforall.com

Access Class Associated (UK)
Website with information about accessible boats, locations of clubs that accommodate disabled sailors and planned events.
www.accessclass.org.uk

The Royal Yachting Association (RYA)
The RYA has developed a number of documents that provide guidance on the design of boating facilities. This includes developing facilities that accommodate the needs of disabled people and requirements under the Equality Act. The guidance documents are:

- Planning Guide for Boating
- Facilities: At a Glance
- Planning Guide for Boating Facilities
- RYA Planning Handbook

All of the above are downloadable from the RYA website free of charge.
www.rya.org.uk

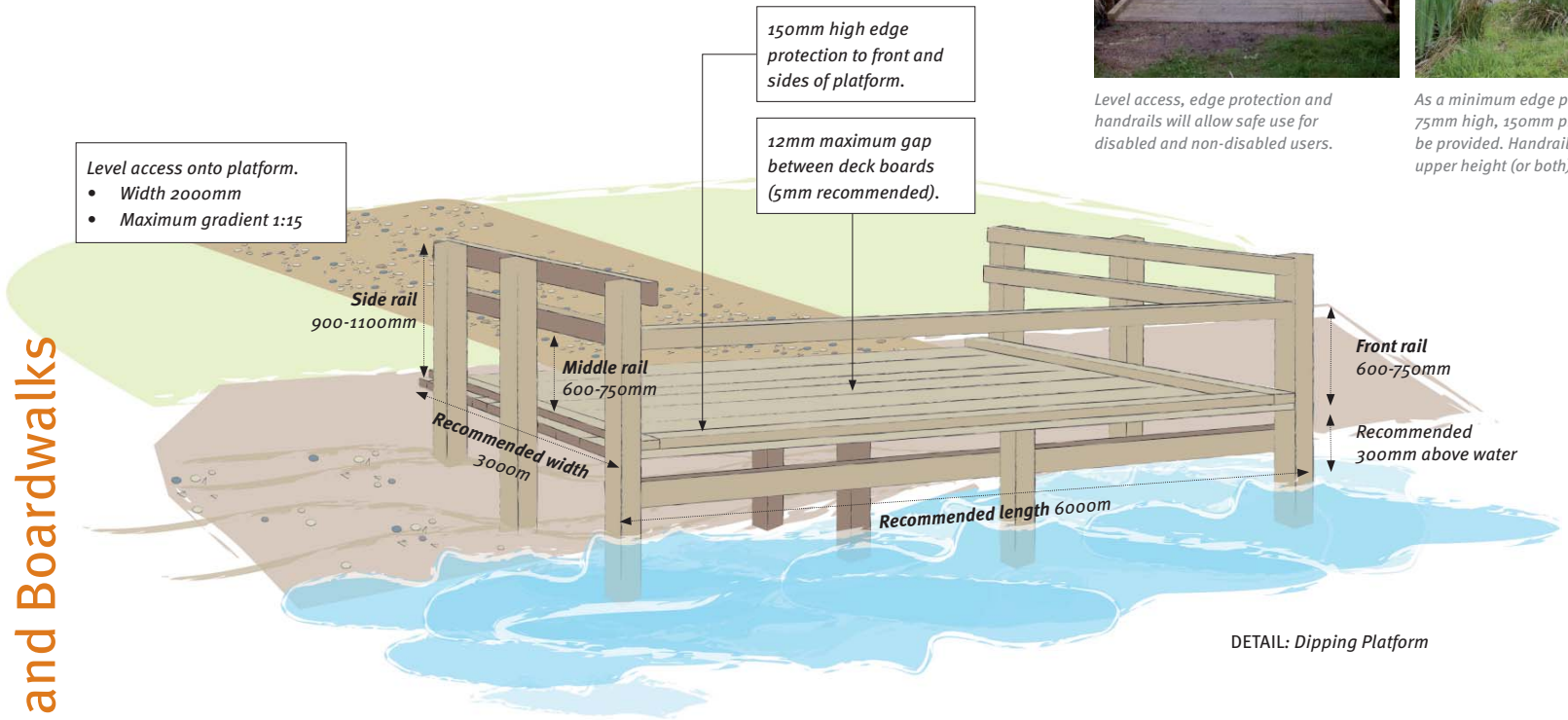
Wheelyboat Trust
This charity works with other organisations to provide disabled people with access to water. Their website details the different wheelyboats that are available and the elements needed to accommodate them.
www.wheelyboats.org

Dipping platforms and boardwalks

Level access, edge protection and handrails will allow safe use for disabled and non-disabled users.

As a minimum edge protection (min 75mm high, 150mm preferred) should be provided. Handrails of mid or upper height (or both) are preferred.

Boardwalks can be designed into attractive features and take on more imaginative forms as shown here on the River Eden in Cumbria.



DETAIL: *Dipping Platform*

Background

Dipping platforms are a popular form of human interaction at the water's edge. They are primarily thought of as places for outdoor education but can also be used for duck feeding, fishing or somewhere to sit and watch the water.

Decks or boardwalks can be used to create a raised route through rough terrain, wetlands or over water that would ordinarily be inaccessible. Boardwalks can also double up as dipping platforms or fishing pegs and in this situation additional space for such activities should be included outside of the main pedestrian flow.

The design of both these structures will typically include a number of other elements in this guide such as Surfacing, Fishing Pegs, Handrails and Signage.

Standards and Specifications

Dipping Platforms: Although there are no recognised standards that define the size and general arrangement of dipping platforms, the elements required (as mentioned above) are regulated by a number of standards which are discussed on the other design sheets within this guide. Most dipping platforms will require some element of bespoke design, but there are off-the-shelf products available.

In general, successful dipping platforms consist of the following;

- Fully accessible routes to allow disabled access.
- Open space on the bank in their immediate vicinity to accommodate large groups.
- Access in the order of 2400mm or greater to allow three or four people to gain access onto the platform.
- Wide, level platform at least 6m in length and 3m in depth to accommodate large groups.
- Free from steps and other trip hazards.
- A suitable depth of water to the front and ideally the sides (typically 300-500mm depth) to provide interesting habitat to study.
- Provision of side rails between 900and 1100mm high as shown on the illustration.
- Tapping boards or edge protection 150mm high preferred.
- A rail (600-750mm high) along the front of the platform to provide a safety barrier, but not too high to prevent easy dipping, (as shown on the illustration).
- A raised 'table top' positioned on the platform, or off it, to allow the specimens from the 'hunt' to be examined. By placing it at a suitable height (500mm above ground level) all users will be able to view it.
- A teaching bench at the back of the platform, or just off it to allow a lesson or briefing to be given. These can also be used by the general public.
- Lockable gates are sometimes used to prevent unwanted access but this is dependent on the location.

Boardwalks should be a minimum of 1200mm wide to accommodate one way traffic or 2000mm wide if two-way traffic is expected. When a 1200mm wide deck is proposed then the provision for passing places at regular intervals (minimum every 100m) should be included.

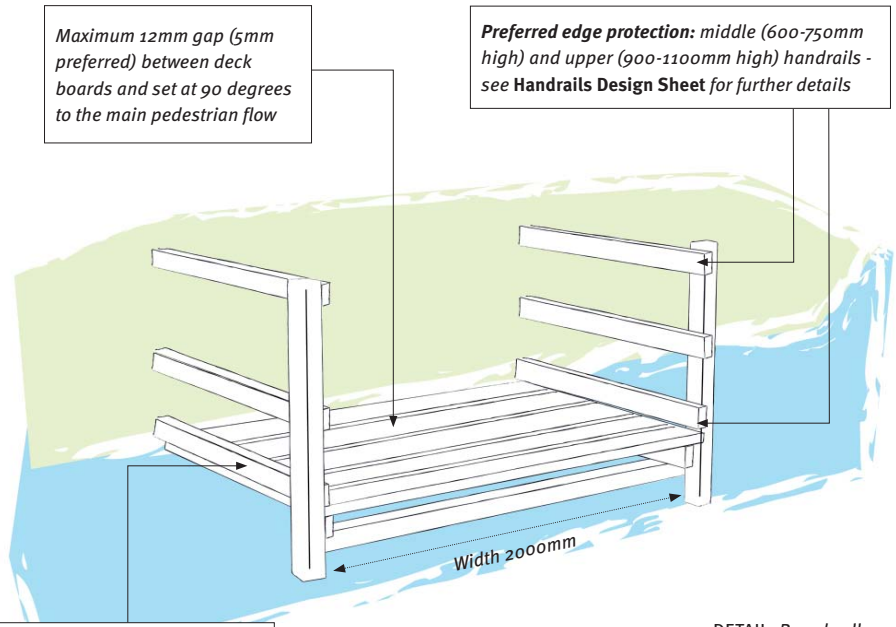
Deck boards should run at right angles to the direction of pedestrian flow (parallel with the bank on dipping platforms) to reduce the risk of wheels becoming lodged in the gaps. Gaps between the boards should be no more than 12mm, but 5mm is recommended.

Middle and high level handrails should be included if there is an identified risk of serious injury from a fall, as should edge protection along the full length of the boardwalk. Refer to the **Handrails Design Sheet** for further details.

Provision of anti-slip boards or coatings is required on both boardwalks and dipping platforms. Including this in the initial design is more effective than retrofitting.

As with standard paths the provision for passing places (if the width is restricted) and rest points needs to be considered.

More information on the wider facilities, such as car parking and signage, and how they should be designed can be found on the **Car Park and Signage Design Sheets**.



DETAIL: *Boardwalk*

CASE STUDY: CHINBROOK MEADOWS, RIVER QUAGGY FLOOD ALLEVIATION SCHEME

This boardwalk in Chinbrook Meadows was designed to provide access over the water and establish a nature study area. It is wider than required so that multiple activities can take place at one time enabling it to be used by a number of different user groups. Edge protection is included to provide a safety barrier for wheeled and visually impaired users and the boards are set at a 90 degrees to the main pedestrian flow.

DESIGNER'S QUESTIONS

What should designers consider?

1. Are the existing or proposed routes to the facility fully accessible to all levels of mobility?
2. What width is appropriate? Will there be movement in one direction or two?
3. What are the safety implications for people falling from the platform?
4. Is a full side rail required, or will edge boards suffice?
5. Can recycled, site generated or locally sourced materials be used?
6. How easy is it to replace the rails or edge boards if damaged?
7. Has the deck been set at the right level to minimise flood risk, but not elevate it too far to make it appear set at the wrong height?
8. Will mud be walked onto the deck at the access points and can this be avoided?
9. Has a suitable non-slip surface been identified and what is its specified life span? How easy is it to replace?
10. Can other features be incorporated on the deck such as seating or interpretation boards, can they be made fully accessible?

FURTHER SOURCES OF INFORMATION

Fieldfare Trust: Countryside for All Good Practice Guide.

Access guide specifically aimed at rural landscapes and the open countryside. It can be bought from the Fieldfare Trust's website *http://www.fieldfare.org.uk/*

Scottish Natural Heritage Countryside Access Design Guide

A web based guide specifically aimed at improving access to the countryside. The guide contains a number of downloadable PDF design and construction information sheets which deal with deck and boardwalk construction.

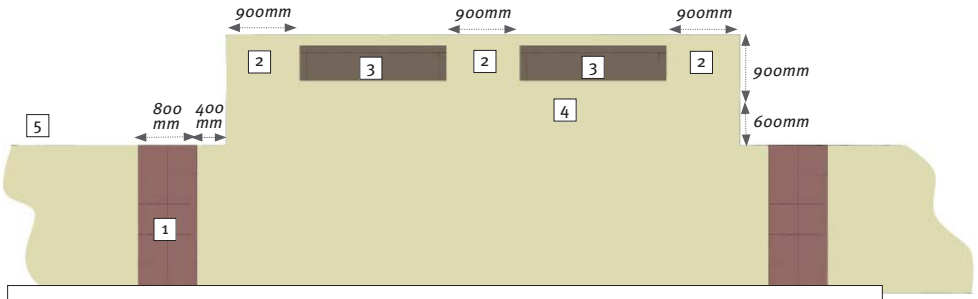
http://www.snh.org.uk/publications/on-line/accessguide/

The British Disabled Angling Association

Although guidance is aimed at the development of fishing platforms it should be referred to when designing dipping platforms. *www.bdaa.co.uk*

Street furniture

WHAT SHOULD DESIGNERS CONSIDER?



1. *Tactile paving to alert visually impaired people to the presence of seating and rest areas. Note - to be used only when information on the function of the tactile paving can be given to the users ahead of taking the route.*
2. *Space adjacent to seating (min 900mm square) to allow wheelchair users to sit with friends and family.*
3. *Mixture of seating types to accomodate different users. Material to be visually contrasting with surrounding environment.*
4. *Accessible surface to rest area.*
5. *Litter bin positioned away from seating area.*

DETAIL: *Seating and Rest Areas*

Picnic bench with gap for a wheelchair

Tree grille with filler surfacing

Signage giving distance

Litter bin with contrasting bands

Bollard with reflective strip

Interpretation board set at low level

Background

Furniture in the external environment comes in many forms to perform various functions. On Environment Agency schemes this typically includes seats, litter bins, signage, bollards and planters.

In recent years there has been a drive to de-clutter urban and rural areas of unnecessary furniture as it protects local character, helps reduce urbanisation in rural areas, is cheaper, and leads to less items to maintain. However there is still invariably a requirement to provide furniture on our schemes.

Placing of Furniture and Rest Areas

The requirement and location of furniture needs to be considered during detailed design to ensure it is incorporated appropriately. Furniture should be set to one side of a path to prevent obstacles and trip hazards in the main thoroughfare. Tactile paving can be used to alert the visually impaired to the presence of furniture. Depending on the situation furniture or rest areas should be located at regular intervals between 50 and 100m apart. When seating is provided a space should be included next to it so that wheelchair users can pull up alongside.

Rest areas are best located where there is something to see or shelter is provided. Litter bins in rest areas can smell and attract wasps and flies so are better placed at the entrance or exits. Please refer to the illustration above for the recommended layout and dimensions.

Types of Seating

Seats provide helpers and those with mobility difficulties to take a rest. Its important to consider what material it is made of; how quickly it will dry and how cold it will feel. The colour of the seat should contrast with the surrounding environment so that it's easy to identify for the visually impaired. Seating should have a back and arm rests and a seat height of 450-520mm above ground level. If perch seats are being considered then a seat height of between 500-750mm is more appropriate. If possible a mixture of seating types should be provided including benches with and without arm rests (wheelchair users find it easier to transfer onto a seat without arm rests) and perches (as some people may find getting up from a lower position difficult).

Surfacing around furniture

The surface around furniture and within rest areas should be firm, durable and contrast visually with the colour of the furniture. It should be flush with the main pedestrian route and free from any obstructions that may act as trip hazards.

Other elements to consider when specifying street furniture:

- The addition of reflective bands to bollards and posts to make them more prominent to the visually impaired.
- Tree grilles are best specified with in filled frames, or porous resin bound aggregate as they reduce trip hazards and are easier to maintain.

DESIGNER'S QUESTIONS

What should designers consider?

1. When considering proposals for a specific site the first question that should be considered is, is this piece of furniture actually required? If the answer is yes then a series of further questions follow on.
2. Who are the intended users? What are their requirements?
3. Does the furniture contrast with the surrounding environment so it is easily identifiable for the visually impaired?
4. Is it located in a suitable position so it can be used by all? e.g. sunny, safe and interesting location.
5. Is there appropriate access for the intended users?
6. Has confirmation been sought that it does not affect maintenance or inspection access?
7. Does it require Flood Defence, Planning or Conservation Area Consent(s)?
8. Is it visually appropriate for the location?
9. Can recycled, site generated or locally sourced materials be used?
10. Does it need to comply with a Local Authority design code or similar?
11. Is it robust enough for the location? Could it withstand flooding or vandalism?
12. How easy is it to maintain and repair? Who is going to maintain it?
13. Can the function it performs be combined with a different item? e.g. seats on a low wall.
14. Can contributions be found for the furniture? or can it be provided free of charge?
15. Can recycled materials, or site generated materials be re-used to form the furniture?
16. Will its positioning lead to conflict with nearby residents or businesses if misused?
17. Does the seating area feel safe to use with good lines of site and observation?
18. Does the seating area feel sheltered, is it in a sunny position and with something interesting to look at?
19. Is the furniture positioned in a way that does not compromise operational access to structures for maintenance and operation?

- The need for cabinets and feeder pillars are identified and sited away from paths and main pedestrian routes but still allow maintenance access.
- The effect of the proposed furniture on the local landscape character.
- Consult with local authorities to see if they, their transport provider partners or advertising companies will provide street furniture free of charge.
- What is the design life, maintenance requirements and who will replace it?
- Lifesaving equipment should be located in an easy to access area regardless of physical disability and the height to open not greater than 750mm from the ground.

CASE STUDY: HYLTON ROAD, WORCESTER

As part of the works to build a new flood embankment a combined cycle and pedestrian path was created along the top of the embankment linking Worcester University with the city centre. The new route has a number of rest areas with seating at regular intervals along it providing places to stop safely outside of the main pedestrian flow. However this example does not provide space for buggies or wheel chairs between the seats.

FURTHER SOURCES OF INFORMATION

Building Regulations 2010, Access To and Use of Buildings (2004 edition incorporating 2010 amendments).

Regulations relate specifically to external furniture on the lead up to a building entrance, but should be used as best practice when considering other locations.

BS8300:2009 Design for buildings and their approaches to meet the needs of disabled people - code of practice.

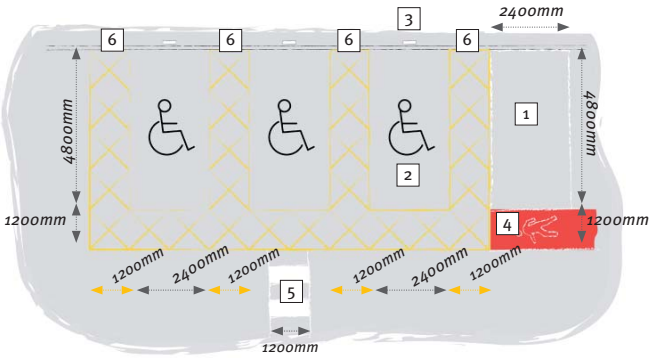
Again aimed specifically at external furniture on the lead up to a building entrance but as with the Building Regulations, it should be used as best practice when working in other locations.

Fieldfare Trust: Countryside for All Good Practice Guide.

Access guide aimed at rural landscapes and the open countryside. It can be bought from the Fieldfare Trust's website *http://www.fieldfare.org.uk/* for £61.20 inc VAT.

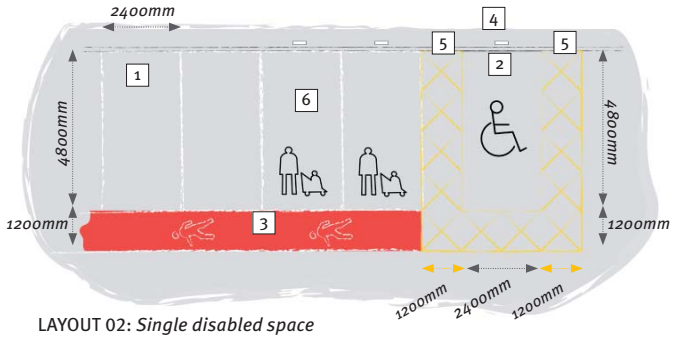
Car parks

WHAT SHOULD DESIGNERS CONSIDER?



LAYOUT 01: *Multiple disabled spaces*

1. *Standard parking bay (2400 x 4800mm).*
2. *Disabled parking bay (2400 x 4800 with 1200mm wide hatching to 3 sides - combined with adjacent space).*
3. *Disabled parking signage.*
4. *Designated pedestrian route (1200mm wide).*
5. *Designated pedestrian crossing (1200mm wide).*
6. *Drop kerb access to pedestrian route.*



LAYOUT 02: *Single disabled space*

1. *Standard parking bay (2400 x 4800mm).*
2. *Disabled parking bay (2400 x 4800 with 1200mm wide) hatching to 3 sides.*
3. *Designated pedestrian route through car park (1200mm wide).*
4. *Disabled parking signage.*
5. *Drop kerb access to pedestrian route.*
6. *Designated family parking spaces.*

Background

The provision of a car park at any location used for recreation by the general public will result in a higher number of visitors. Appropriate car parking facilities makes access for disabled people, elderly people and families with young children much easier as they do not have to walk long distances to get to their desired destination. At some remote locations the need for a car park may not be feasible or cost prohibitive. When a car park is included in a scheme it should accommodate the needs of a range of different users.

When to use?

Deciding on the need or want for a car park will depend on the number of visitors expected, the nature of the site and the Local Authority and Highway Authority opinions.

Car parking may also be required so that routine maintenance can be carried out safely by Environment Agency operatives or local land managers. Such maintenance facilities will not necessarily require the same standard of accessibility as public car parks.

If space is at a premium then the hatched access zone around disabled spaces can be reduced to just two sides as shown above but three is recommended for individual disabled spaces.

All elements that make up a car park should be fully accessible. This includes such features as signage and interpretation.

The addition of marked pedestrian routes will make it safer for pedestrians to navigate from their car to the amenities and will also alert drivers to their presence.

The space available will influence the location of a car park and its size. It may not be possible to provide the amount of car parking required in some locations due to space restrictions. In these circumstances, alternative sites should be explored and 'Park and Walk' links created.

Local Authorities have their own parking standards which detail what provision is required for certain uses.

Standards and Specifications

Positioning of disabled and family spaces: Part M of the Building Regulations states that disabled parking bays should be no more than 50m from the entrance to a building. This rule should also be applied in more rural and open countryside situations when considering distances to toilets and access routes. If space is restricted then priority should be given to the inclusion of disabled spaces over family spaces. Where disabled spaces are used drop kerbs between the bay and adjacent paths should be provided to aid access. In this situation the maximum gradient of the ramp to accommodate the drop kerb should be no more than 1:12. Refer to **Ramps Design Sheet** for further guidance. BS 8300 states that at least one enlarged designated parking space (4800x8000mm) should be provided where space permits for those travelling in adapted commercial vans.

Number of disabled parking bays:
Local Authorities have their own individual requirements regarding the number of disabled spaces that should be provided in car parks. They should be consulted when developing proposals.

The below table is taken from the **Fieldfare Trust's Countryside for All Good Practise Guide** and gives an idea of the minimum number of disabled spaces required against the total number of spaces. It is always better to exceed this minimum standard.

TOTAL SPACES	SUGGESTED ACCESSIBLE SPACES
1-25	1
26-50	2
51-75	3
76-100	4
101-150	5
151-200	6
201-300	7
301-400	8
401-500	9
501-1000	2% of total
1001 and over	20+1 for each 100 spaces over 1000

It must be noted that when a Local Authority prescribes the number of disabled spaces required then this will take precedent over other guidance. Where it is not possible to provide disabled spaces close to a facility then the inclusion of a drop off and pick up point should be provided as a lesser alternative.

DESIGNER'S QUESTIONS

What should designers consider?

1. Does the site require a car park?
2. Does the Local Authority have specific requirements for car parks, including number of disabled spaces?
3. Can the area available provide the required spaces as set by the Local Authority?
4. Is there an opportunity to incorporate SUDs in the car park design?
5. Does the distance between the car park and associated facilities comply with the recommended standards?
6. Considering the intended use of the car park and the landscape character, what are the most suitable surfacing materials and site furniture?
7. Are the disabled spaces located as close as possible to the related facilities? If not, can a drop off and pick up point be included?
8. Have drop-kerbs or ramps been included to allow disabled access to the associated facilities?
9. Can recycled, site generated or locally sourced materials be used?

CASE STUDY: MORRISONS CAR PARK, SALTNEY, FLINTSHIRE

This scheme involved the creation of a car park in association with a joint flood defence scheme and supermarket development. The car parking has been set back from the floodwall to allow space for a riverside footpath with bollards to prevent cars encroaching. Bi-lingual signs in English and Welsh demark disabled parking bays. There are clearly defined pedestrian routes marked by cross hatching painted on the car park surface. Disabled bays are located close to the entrance of the supermarket which include an additional 1200mm space on three sides to aid access.

Sizes of different parking bays:

Standard car parking space: 4800 x 2400mm

Family car parking space: 4800 x 2400mm
(with signage to indicate designated use).

Disabled car parking space: 6000x 4800mm
(including 1200mm hatching to both sides and front boundary of the space).

These are minimum sizes and greater widths benefit all users. If space is restricted then reductions to the above requirements can be made, for instance combining the 1200mm strip between two bays will reduce the space needed, as shown on Layout 01.

Safe pedestrian routes through car parks: Safe access routes should be considered as part of the car park design. The route should be level with a minimum width of 1200mm and where possible 1500mm to allow wheelchair users to pass more easily. Where this is not possible then provision for ramps or steps maybe required. Pedestrian routes should be clearly marked either on the surface of the car park or with signage. Drop kerbs should be used at crossing points and clearly marked using tactile paving.

Signage within car parks: Disabled and family bays should be clearly marked either on the surface of the bay or with sign posts located at the end of each bay. Ideally the location of disabled and family spaces should be marked on the entrance sign to inform the users. The location of pedestrian routes through a car park should be well marked in a similar way to the disabled spaces, either with sign posts or surface markings. General information such as parking charges, opening and closing times and emergency numbers should be located at the entrance to the car park. For additional information on the use of signage in the external environment, see the **Signage Design Sheet**.

Surfacing: The car park surface should be level, smooth, and free from loose stones. The use of coloured markings is often used to differentiate between types of parking spaces and pedestrian routes. There are no set standards that govern which colours should be used but the images on these pages illustrate the approach. When coloured markings are used they should contrast with the general surface colour of the car park.

Ticket Machine: Where the use of ticket machines is required then provision should be made for disabled people. A machine should be located adjacent to the disabled bays and have controls set between 750-1200mm above ground level. However blue badge users typically do not have to pay car park charges.

FURTHER SOURCES OF INFORMATION

The Local Planning Authorities Car Park Standards Guidance can usually be found on their website but should also be available from their Planning Department. This will give guidance on the specific parking standards that apply, including the required number of disabled spaces.

Building Regulations 2010 Part M, Access To and Use of Buildings.

Regulations relate specifically to parking standards when considering building access but should be used as best practice when considering parking provision in other situations.

Fieldfare Trust: Countryside for All Good Practice Guide.

Access guide specifically aimed at rural landscapes and the open countryside. It can be bought from the Fieldfare Trust's website *http://www.fieldfare.org.uk/* for £61.20 inc VAT.

Metric Hand Book: Part 4 – Design for the Vehicle

Offers guidance on the layout of car parks and the different configurations available including minimum road widths and parking bay sizes.

Department for Transport: Inclusive Mobility, A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure.

http://www2.dft.gov.uk/transportforyou/access/peti/inclusivemobility.html

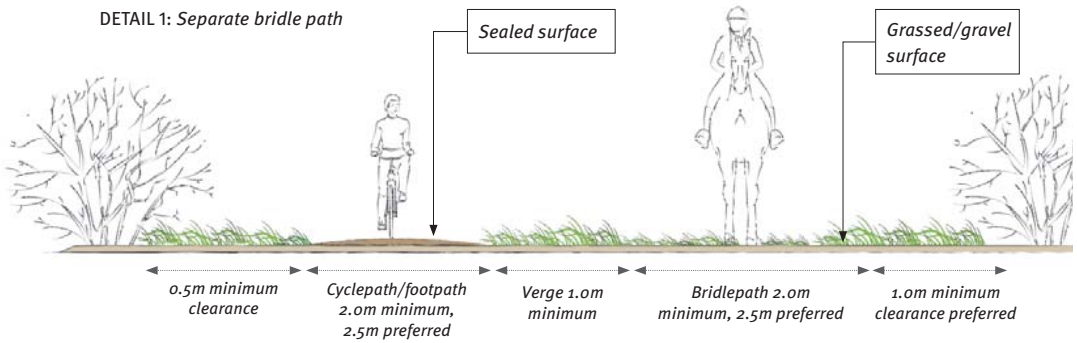
Department for Transport: Guidance on the Use of Tactile Paving Surfaces

http://www.bbsgraniteconcepts.com/wp-content/uploads/2010/06/Dft-download.pdf

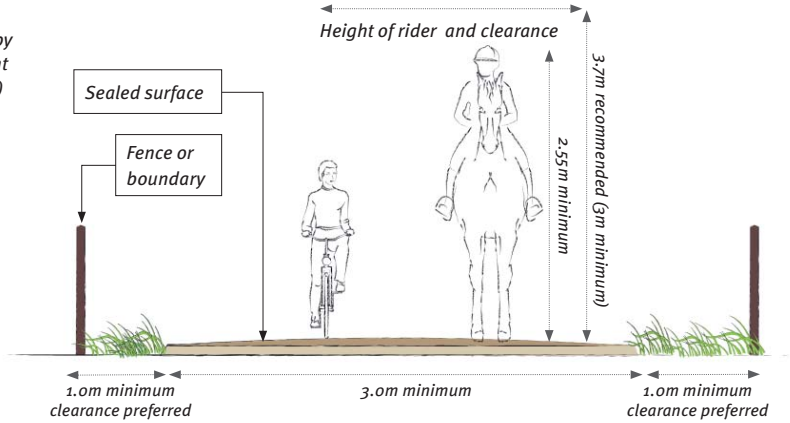
Equestrian access

WHAT SHOULD DESIGNERS CONSIDER?

DETAIL 1: *Separate bridle path*



DETAIL 2: *Multi-user path as recommended by SUSTRANS (Environment Agency preferred detail)*



Background

The British Horse Society (BHS) states that out of approximately 188,700km of Public Rights of Way in England only 32,400km are designated bridleways. This is around 22 percent of the overall network. Many bridleways are disconnected because the roads inbetween them are no longer safe due to high volumes and speed of traffic. This leaves many equestrians without a safe continuous route. As a result the BHS have successfully campaigned to SUSTRANS and the government to allow equestrian access on the National Cycle Network (NCN). They also want to encourage the development of multi user paths that accommodate pedestrians, cyclists and horse riders as shown in Detail 2 above.

A combined cycleway and footpath with a separate bridleway best meets the needs of all users. The above image illustrates how when done effectively, all users can enjoy the same route in a safe environment.

Grass offers the best surface for equestrian use if well drained and mowed regularly. However it is not suitable for cycle and wheelchair use so a more appropriate surface is required for multi-user paths

Where necessary, such as a road crossing or multi user paths, horse riders will tolerate a hard surface as illustrated above.

When to use?

If a Public Right of Way is a designated bridleway it will appear on the Definitive Map and suitable access for horse riders should be maintained. On other routes equestrian access should be encouraged where there is sufficient room to accommodate multi-user paths. SUSTRANS state that as a minimum a 3m wide path should be provided for a shared cycle track, footpath and bridleway with a minimum clearance of 1m on either side of the path (total width 5000mm). However, the BHS are concerned these requirements will deter the creation of new routes for horse riders due to the space required. As an alternative, they state that a total width of 3m is sufficient to accommodate horse riders on multi user paths as where necessary, one user type will give way. SUSTRANS' guidance relates to paths on the NCN and should be adhered to when working on it. In other circumstances the project team will have to decide if access for horse riders can be accommodated and what form it takes i.e. separate bridle path or multi user path.

Standards and Specification

Width and Height: When considering the width and clear height of a bridleway the safety of the horse, rider and other users should be the main consideration. SUSTRANS recommend a minimum path width of 3m with a 1m clear zone on both sides, see Detail 2. The entrance to a bridleway should be at least 1.5m wide and in circumstances where the rider is required to turn the horse, (at gates) then a diameter of at least 3m should be provided.

The BHS state that the minimum height of a mounted rider is 2.55m above ground level. The height clearance on a bridleway should be at least 3m and preferably 3.7m. Overhanging branches and other obstacles should be regularly maintained to provide the clearance. If a bridleway passes through an underpass then a clear height of 3.7m is recommended.

The width of a designated bridleway is usually referenced on the Definitive Statement and the BHS will raise an objection to works that seek to reduce it.

Surface and Gradient: Consideration should be given to existing and potential users and expected level of use. In general the material should be non-slip, resilient and require minimal maintenance. Introduction to Equestrian Access, a guide produced by the British Horse Society, Scottish Natural Heritage and The Paths for All Partnership offers the following as a guide to surfaces. They are listed in descending order of preference for horse riders:

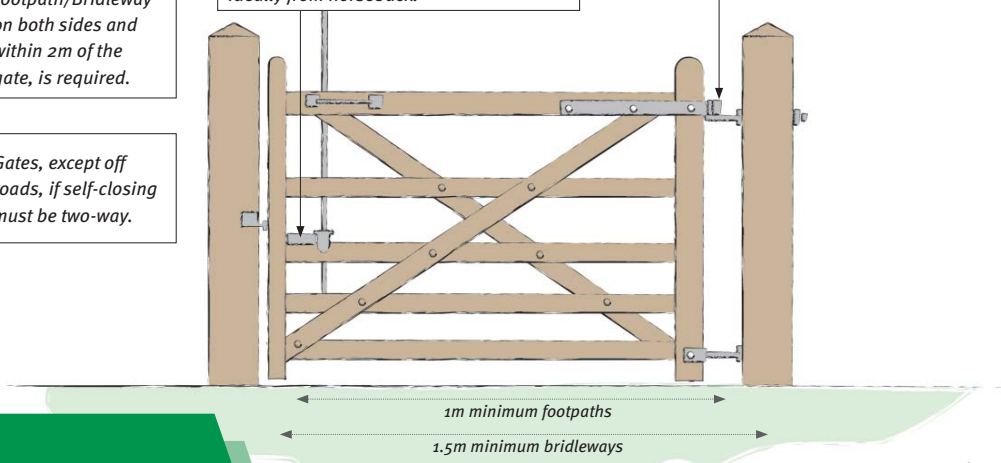
1. Short, firm, well-drained turf, which is ideal for riding and walking, and usually firm enough for cycling, but may not suit wheelchair users.

For public paths a notice saying Public Footpath/Bridleway on both sides and within 2m of the gate, is required.

Gates, except off roads, if self-closing must be two-way.

Latches, if fitted, to be clearly visible and operable from both sides of the gate and ideally from horseback.

Not more than 50N (5kg on spring balance) force to fully open.



DETAIL: *A two-way bridle/ pedestrian gate*

What should designers consider?

DESIGNER'S QUESTIONS

1. Is this route a designated bridleway or could it be upgraded to a bridleway?
2. Is there sufficient room to allow a separate bridleway?
3. Is there sufficient room to accommodate a multi user route?
4. Is this route currently used by horse riders?
5. Is there an existing network of bridleways that connect to the proposed route?
6. What surface material will be most suitable?
7. Can recycled, site generated or locally sourced materials be used?
8. Can the proposed route be made suitable for horse riders? i.e. removing obstacles, gates, changes in level, available width?
9. If appropriate can an alternative route be found that will accommodate horse riders?
10. Have the proposals been reviewed by the BHS?

2. Vegetated paths on firm base such as grassed over forest roads or disused railway tracks stripped of ballast to expose consolidated ash solum, which are ideal for supporting year-round multi-user paths, provided they are well drained.
3. Paths where the natural vegetation is protected or reinforced by some type of sub-surfacing.
4. Formally constructed paths with firm, non-slip surface.
5. Sealed surfaces, which may be necessary to facilitate cycle or wheelchair access, but are generally less popular with riders.

The decision on what surface material to use should also be influenced by the surrounding environment and what has been used locally elsewhere.

SUSTRANS and the BHS recommend that multi user paths, implemented due to width restrictions should be surfaced with a fibre reinforced dressing (such as fibre reinforced concrete or tarmac). When works are taking place on the National Cycle Network SUSTRANS prefer sealed surfaces in order to reduce maintenance costs. This also applies to multi user paths however they understand that this doesn't necessarily suit all users.

A maximum gradient of 1:12 is recommended on paths intended for equestrian use. However consideration of the surrounding environment needs to be made and in certain circumstances a steeper gradient maybe unavoidable. If steps are required on steep slopes then the recommended length of step is 2.9m (to allow a horse to stand on all fours on each step) and height of riser is 150mm. It is also acceptable to allow a slight downward slope towards the riser if necessary.

Gates

For equestrians gaps are always more preferable than gates. Where gates are required they should be designed and installed so that they are safe and easy for equestrian use. They should not require the rider to dismount in order to use them. The use of gates or stiles on bridleways is controlled through BS5709:2006 Gates, Stiles and Gaps. BS5709 has a number of examples of compliant gates including a two way bridle / pedestrian gate and horse stile. The BHS offer detailed information on the design of equestrian gates. There is a link in the Further Sources of Information section.

It is important to ensure that the barriers being proposed are suitable for all possible users of a path. Please refer to the **Gates Design Sheet** for further information on what to consider when specifying gates.

CASE STUDY: STANNAH FLOOD ALLEVIATION SCHEME, BLACKPOOL

New multi user path designed to accommodate horse riders, pedestrians and cyclists. The path is 4m wide with a 1m wide grass verge along one side. The vegetation along the right hand side is regularly cut back to maintain the clear width.

Fencing

Where fencing is required it is important to make sure the type of fence is not dangerous to the horse or rider. Preferably a timber post and rail fence should be used set 1m back from the edge of the path. The use of wire fencing is less desirable and can cause injury. Electric fences should not be used.

FURTHER SOURCES OF INFORMATION

The British Horse Society has a number of free information sheets that are included in the pdf portfolio that accompanies this guide or can be downloaded from their website, They include; Standards and Dimensions, Gates and Guidance on Supporting Equestrian use of Cycle Routes. *www.bhs.org.uk*

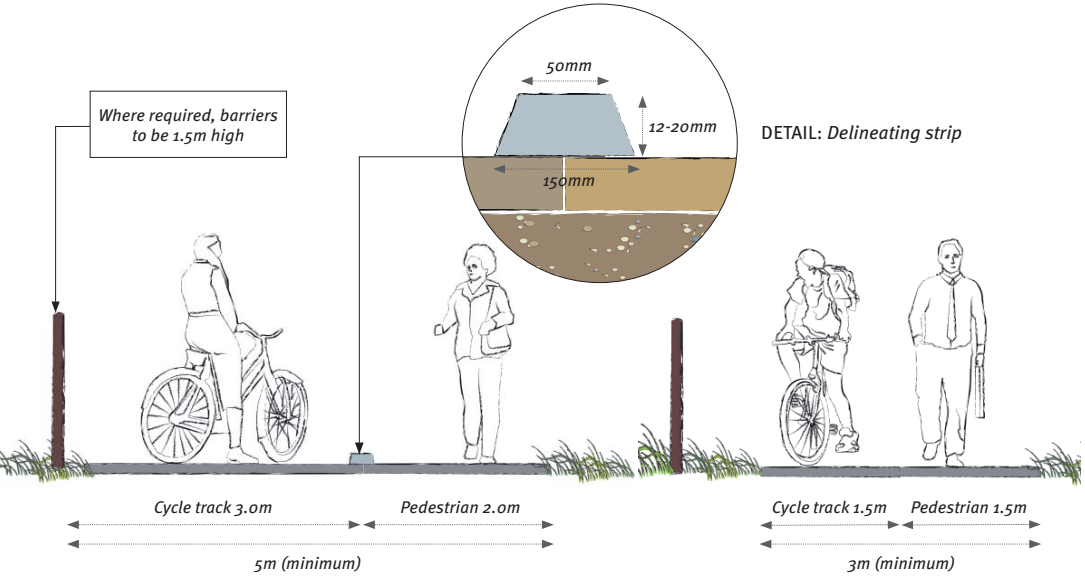
Paths for All Partnership guidance document Equestrian Access Factsheet details the design of equestrian paths and offers a number of different surfacing and drainage solutions. The document (produced in conjunction with the BHS and Scottish Natural Heritage) can be found in the pdf portfolio that accompanies this guide or downloaded from their website *www.pathsforall.org.uk*

Riding for the Disabled Association (RDA) through its network of local RDA groups offers support and advice on the development of equestrian facilities that accommodate disabled riders. Details of local RDA groups can be found at *www.rda.org.uk*

SUSTRANS information sheet FF27 details requirements for equestrian access to the National Cycle Network and offers guidance on the development of multi user paths including details of widths and surfaces. The information sheet can be found in the pdf portfolio that accompanies this guide or downloaded from *www.sustrans.org.uk*

Cycle access

WHAT SHOULD DESIGNERS CONSIDER?



DETAIL: *Segregated route*

DETAIL: *Shared route*

Background

Cycle paths can be either a dedicated or combined (multi user) route. They are commonly developed as part of wider transport improvement or access improvement projects with the aim of facilitating a safe environment for cyclists and other users. The implementation of such routes opens up more areas to cyclists and encourages more people to cycle. SUSTRANS development of the National Cycle Network (NCN) is one example of how cycleways can improve access not only for cyclists, but for pedestrians, horse riders and motorised buggy users as well.

When to use?

Ideally new cycle routes should form part of an existing network. The development of cycle paths should always be considered when planning new routes or undertaking improvement works to existing paths. Cycleways can be implemented for a number of different reasons including; links between existing attractions, leisure cycling (where the cycleway itself is the attraction) and the development of an existing network, such as the NCN. There may also be Local Authority Policies that promote the creation of new routes. An assessment to establish the existing level of cycle use maybe required to determine if a dedicated cycleway is required. Requirements for safe cycle access along a route should be considered carefully when developing proposals including those where other users are present. It is particularly important to consider the required widths and whether they can be accommodated effectively.

A two-way timber gate on a multi-user path. Gates should ideally be avoided, but are sometimes required for safety.

The Millennium Coastal Path runs for 21km along the Carmarthenshire coastline. It is designed to be in keeping with the surrounding landscape and accommodates a number of user groups.

Clear separation and good floor signage. Note the hazard warning paving to warn users of the steps on the right hand side.

Routes should only be actively promoted for cycling if they have been specifically designed for it. Multi user paths have to accommodate a variety of speeds and can be dangerous if not planned correctly.

Side Junctions

The number of side junctions should influence which side of a route becomes the footpath and which is the cycleway.

Side junctions are the most dangerous part of a cycleway as users join the route. Cyclists already on the main path could be travelling at speed and this could lead to potential conflict or accidents.

To minimise this risk the footpath should go on the side with the most junctions. Cycle stops should also be placed at the side junctions to slow users down and make them aware of the main route.

Standards and Specification

Widths:

Type of Route	Preferred Width	Minimum Width
Cycle only	3m	2m

Segregated Cycle / Pedestrian Route

5m (3m cycle route, 2m pedestrian route)

Shared Cycle / Pedestrian Route

3m (1.5m cycle route, 1.5m pedestrian route)

Gradients: The gradient of a multi user path can lead to conflict between users. Downhill gradients will result in cyclists travelling fast and increases the potential for conflict with pedestrians. Measures such as widening the route should be considered in this situation.

Segregated or shared?

Segregated routes should always be the preference but it is accepted that this will not always be possible. When assessing whether a segregated or shared route is viable the following general points should be considered.

CASE STUDY: CARLISLE & CALDEW FLOOD ALLEVIATION SCHEME

A shared cycleway and footpath was created as part of the scheme. The path is 3m wide with regular rest points which also provide elevated views over the river. Access is restricted when river levels are high and signage is in place to warn people that the path is liable to flood.

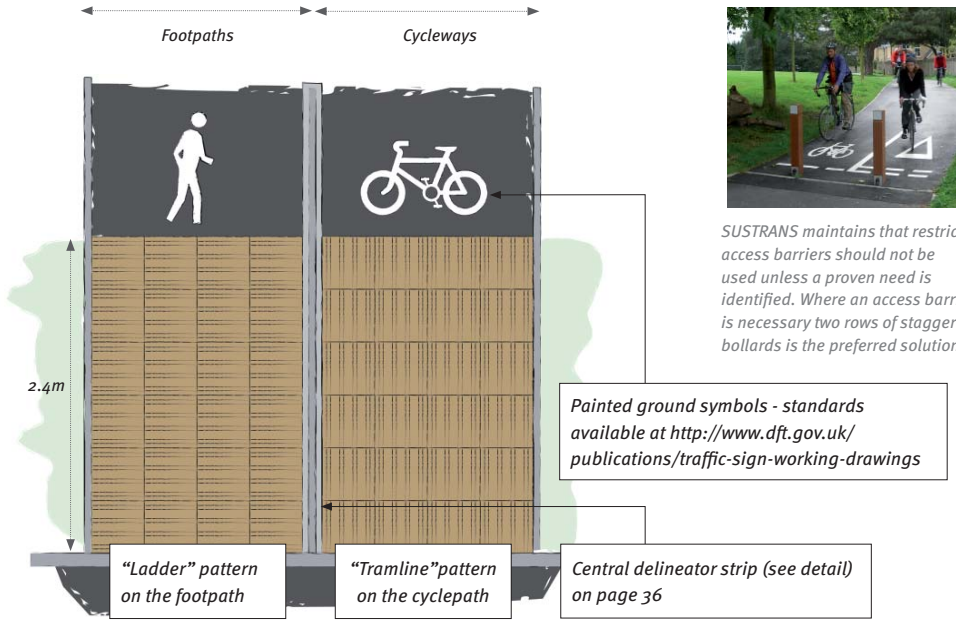
Segregated if:

- High flows of pedestrians or cyclists are expected.
- Disabled people or other vulnerable users are likely to use the facility on a regular basis.
- There is sufficient width available.
- Lots of side junctions.

Shared if:

- Flows of pedestrians or cyclists are expected to be low.
- Flows of pedestrians in particular are expected to be very low.
- Disabled people or other vulnerable users are unlikely to use it.
- There is limited width available.

Each site will have specific factors that influence the choice between a segregated or shared route. It is the responsibility of the project team to make a decision.



DETAIL: *Use of tactile paving on shared cycleway/footpath*

SUSTRANS maintains that restrictive access barriers should not be used unless a proven need is identified. Where an access barrier is necessary two rows of staggered bollards is the preferred solution.

Anti - motorcycle gates can be used to 'police' access of certain vehicles. Care should be taken when using them as they can also restrict wheelchair access.

Bespoke solutions such as the above, can sometimes be the most appropriate way to achieve access for multiple users whilst maintaining safety on the route.

DESIGNER'S QUESTIONS

What should designers consider?

1. **Is the path a designated cycleway?**
2. **Are there any existing cycleways in the surrounding area it needs to link with?**
3. **Can the proposed route accommodate the cycle access requirements?**
4. **Will the route need to accommodate different user types?**
5. **Which type of cycleway is most appropriate i.e. segregated or shared?**
6. **What is the most effective surface material to accommodate all intended users?**
7. Can recycled, site generated or locally sourced materials be used?
8. **Is there a requirement to provide cycle access i.e. is the path part of the National Cycle Network?**
9. **If a dedicated cycle route is being considered, is it at least as convenient as the current route?**
10. **Have the number of side junctions been considered?**
11. **Are cycle barriers required to slow down users?**
12. **Has Sustrans or the Local Authority Cycling Officer been consulted?**
13. **Has signage and tactile paving beeen included?**
14. **Are barriers to the side of cycleways 1.5m high as a minimum?**

Tactile Paving / Markings

Segregated routes will require the use of tactile paving to indicate to visually impaired users which section of the route is safe to use. Tactile paving (as detailed above) should be provided at the beginning and end of the route, at regular intervals in-between and at any intersections with other routes. The central delineator strip should run the full length of the route and be slightly raised to provide a boundary between the pedestrian and cycle lanes. It is also recommended that cycle and pedestrian symbols are marked on the surface to indicate the intended use.

Cycle stops

These are not designed to prevent access, but to prevent speed at places such as junctions. They generally force the cyclist to slow down, but not necessarily dismount. There are a number of proprietary systems, but they must be suitable for their particular location. SUSTRANS have published 'A Guide to Controlling Access on Paths' which offers guidance when considering access controls on multi user paths.

FURTHER SOURCES OF INFORMATION

Department for Transport
Design Manual for Roads and Bridges (Volume 6 Section 3 Part 5 TA 90/05) The Geometric Design of Pedestrian, Cycle and Equestrian Routes.
http://www.dft.gov.uk/ha/standards/dmrb/

Guidance on the use of Tactile Paving Surfaces
http://www.bbsgraniteconcepts.com/wp-content/uploads/2010/06/Dft-download.pdf

LTN 2/04 – Adjacent and Shared Use Facilities for Pedestrians and Cyclists.
http://www.ukroads.org/webfiles/LTN%202-04%20Adjacent%20and%20Shared%20Use%20Facilities%20for%20Pedestrians%20and%20Cyclists.pdf

SUSTRANS: Information Sheet FF04: Shared User Routes, Information Sheet FF05: Disabled People and the National Cycle Network
http://www.sustrans.org.uk/resources/publications/information-sheets

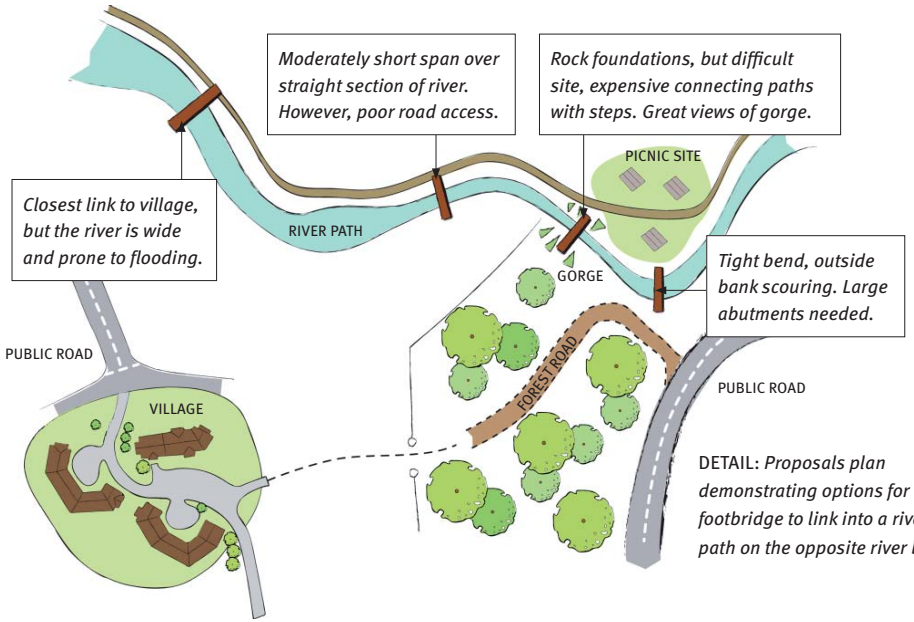
The National Cycle Network – Guidelines and Practical Details Issue 2
http://www.sustrans.org.uk/resources/design-and-construction/technical-guidelines

Local Authority Cycling Officers
Most local authorities have a designated cycling officer tasked with promoting cycling access within their borough. They are good sources of advice and local knowledge.

A Guide to Controlling Access on Paths
http://www.sustrans.org.uk/resources/design-and-construction/traffic-free/access-controls

Footbridges

WHAT SHOULD DESIGNERS CONSIDER?



DETAIL: *Proposals plan demonstrating options for a footbridge to link into a riverside path on the opposite river bank.*

Background

A fully accessible design will not just consider the bridge in isolation, but also the wider elements within the surrounding landscape and how they should be managed in order to create a fully accessible bridge. The design of a footbridge should be undertaken by an appropriately qualified engineer with experience in footbridge design.

When to use?

Bridges should be used when all alternative routes have been discounted and a bridge is the only way of facilitating access. Bridges tend to be costly, so each one must be fit for purpose and not restrict path use. Knowing who the users will be and what their needs are is the first step to achieving a successful design. It is not always possible to construct a fully assessible bridge due to the restrictions of the surrounding environment. In these circumstances the principles of Least Restrictive Access should be applied and the bridge should be made as accessible as possible.

Making the approaches to a bridge fully accessible will be dependent on the surrounding environment. Ensuring a safe transition onto the bridge from the approach path is essential. This will involve a ramp in most cases due to the inherent nature of bridges and in some cases, steps may be needed. Users will slow down and congregate at bridges resulting in an increased wear of the approach path. Consideration should be given to widening the approach to accommodate more users and improve drainage. In these areas, specification of the path should accommodate the increased use. The bridge can be made safer and more comfortable to use by extending the handrails into the approach route.

CASE STUDY: BEAM PARKLANDS, EAST LONDON

This project has transformed the Dagenham washlands, a crucial flood defence, into a popular and well used community asset. Paths, viewing platforms and footbridges are key components of the site.

FURTHER SOURCES OF INFORMATION

Paths for All, Path Bridges: Planning, Design, Construction and Maintenance
www.pathsforall.org.uk

Fieldfare Trust Countryside for All Good Practice Guide
www.fieldfare.org.uk

Department for Transport
Design Manual for Roads and Bridges Volume 2 Section 2 Part 8: Design Criteria for Footbridges
www.dft.gov.uk/ha/standards/dmrb/

Connect 2: Connect 2 and Greenway Design Guide Chapter 8 Bridges and other Structures
http://www.sustrans.org.uk/what-we-do/connect2/connect2-resources#greenways

DESIGNER'S QUESTIONS

What should designers consider?

1. Have all the alternatives been considered before proposing a bridge?
2. Will the bridge footings impact on privately owned land or land not in the control of the Environment Agency?
3. Which user types will the footbridge need to accommodate?
4. What level of use is expected? In order to help the engineer determine appropriate loadings.
5. Does the bridge need to accommodate equestrian use? Additional loadings and higher balustrades need to be considered.
6. Will the installation of the footbridge require planning permission? Ideally seek pre-application advice from the Local Planning Authority and Access Officer.
7. Does the bridge cross a road? Approval from the Highways Agency required.
8. Can recycled, site generated or locally sourced materials be used?
9. Does the bridge cross a railway line? Approval from Network Rail required.
10. Does the bridge cross a watercourse? This may require flood defence consent. Consider effects on flow (particularly in flood conditions) and proposed building materials.
11. Can an adequate clearance (air draught) be achieved underneath the bridge? i.e. for water courses consider: fisherman, sailing boats, canoeists, or commercial traffic and debris.
12. Is the design of the bridge in keeping with the surrounding environment?
13. Are there safe transitions between footpath and bridge?
14. Is the bridge wide enough to accommodate the intended users? See **Surfaces, Ramps, Dipping Platforms** and **Boardwalks, Equestrian Access** and **Cycle Access Design Sheets** for further details.
15. Is the handrail designed to accommodate the intended users? See Handrails design sheets for details.
16. Does the bridge need passing places, rest points and / or seating to accommodate the needs of multiple users?
17. Are any proposed ramps and steps orientated parallel to the water course to minimise flood impacts?
18. Are the proposed deck materials non-slip? See **Surfaces** and **Dipping Platforms** and **Boardwalks Design Sheets** for details.
19. Are the gaps between timber boards no greater than 12mm? See **Dipping Platforms** and **Boardwalks Design Sheet** for details.
20. Has a final safety and inspection regime been determined in advance?

Management and Maintenance

Together with our partners we manage over 7,400km of flood defences. As the capital works programme progresses this figure will increase. In order to ensure both existing and new assets continue to be managed appropriately, we need to ensure what we build is to the highest possible standards, including the provision of appropriate access.

Our Operations Teams will also need to consider the existing provision of public access at our sites and what can be done to improve it. By employing these techniques across our assets over time the standard of access will be raised, improving recreational access and contributing to the creation of more sustainable assets for the future.

There are some assets that will require more regular inspection and maintenance than others including those that enable access such as bridges. The design elements covered in this guide will be used by the public on a daily basis. Regular inspections and maintenance are essential to ensure they remain fit for purpose and the standard of access is maintained. The use of Access Audits is one way to assess if a site is achieving the appropriate level of access for its situation. These can be carried out as part of routine inspections with any works required identified in a maintenance and repair schedule. This process will ensure that we continue to promote public access, help protect and improve the environment and maintain sustainable assets into the future.

Whilst developing new projects it is important that management and maintenance is considered from an early stage. This is of particular relevance to the provision of access to ensure that, they can be adequately maintained for the whole life of the project. Whilst access solutions need to be of the highest possible standard, they also need to be sustainable. It does not make sense to propose an access solution where looking forward there is insufficient budget to maintain it. It is also important to ensure that what is being proposed can physically be maintained to an acceptable standard. Consideration needs to be given to what equipment will be needed. For example;

- The size and turning circles of any maintenance vehicles.
- The loadings (point of axle loads) of any maintenance equipment on the ground.
- The reach of any maintenance equipment.
- The level of public access and safety (working at height or over water).
- The limitations of any maintenance equipment (steep slopes, suitable surfaces, max heights)

The above list is not exhaustive and each situation will have different requirements. By developing a 'common' approach to access and setting required standards it is hoped that a more efficient approach to management and maintenance will develop in the future.

There is no point investing public money to create an equality of access for it not to be maintained and the access for all provision lost. The reason for this is best summed up by comments from Terry Mosley, President of the British Disabled Angling Association who remarked during the production of this guide;

"Just imagine how frustrating it is when you have got up early, asked a mate to come and pick you up, and travelled 70-odd miles to find you can no longer use the site because the access facilities have not been maintained. There are few if any alternatives, so you just have to go home"

Consultation on Access Proposals

It is important to gain agreement on access proposals from the relevant parties before major funding decisions are made and/or planning applications submitted. As with the design process the earlier consultation is undertaken the greater the positive impact it can have by defining objectives and understanding their implications on site.

Internal consultation

We recommended that your regional National Environment Assessment Service team (NEAS) is consulted as they have a sound understanding of the potential opportunities and impacts on other receptors. Where recreation officers are in post, they will be able to link in with local recreation and access projects and may have knowledge of other sources of funding to assist the development. On the same theme the External Funding Officers based regionally and nationally can help to identify third party funding.

It is also important to inform the Operations Team of the proposals as they will be managing and maintaining the assets and must be involved in the design process to ensure that it is safe and easy to maintain. Any requirements for incident response operation and restrictions during flood conditions can be discussed at this stage. This could involve closure of access to enable operation of flood defences which will need to be clearly conveyed to other users. If a feature is to be adopted by a local authority, their maintenance officer needs to be involved in the design process.

External

For the majority of cases the first person to consult is the Access Officer at the Local Authority. Most local authorities have one and they usually sit within the Highways or Planning teams to gain an oversight of access issues and promote the standards that the local authority wishes to achieve.

The Access Officer is likely to be aware of local access groups who campaign to improve access. It is worth engaging with these groups as they are likely to be the primary users of a facility so keeping them informed of our intentions will hopefully reduce criticism and lead to other worthwhile suggestions. However, be aware of raising expectations to a level that cannot be realistically achieved. There is also the matter of making sure that groups can understand the proposals in sufficient detail so they can make informed comments, do not assume that technical drawings will be understood by all.

Likewise, national organisations such as the Fieldfare Trust and the British Disabled Angling Association can provide advice on access proposals. They have an extensive knowledge of legislation and best practice and although they may not wish to comment on matters of site detail they can advise on standards to aim for and good examples.

Design Liability

Design liability still remains with the designer. This could be our own staff, our framework consultants or other groups and organisations developing their own access proposals.

The reason for this is simple – no one solution fits all for any of the design elements illustrated in this guide.

Designers are still expected to use their professional skill and judgement to assess a site and identify potential barriers to access. They need to understand what level of access is appropriate and then design the individual elements to deliver the desired level.

The individual elements need to be carefully designed and integrated into the existing environment. This guide helps designers, managers and other functions to ask the right question and achieve the best outcomes.

List of Sources

ANGLING ACCESS

Access Guidelines for Fisheries, *British Disabled Angling Association.*

Access Guidelines for Fisheries: Technical Information, *British Disabled Angling Association.*

BOAT JETTIES

Good practice examples of access to forests or countryside, July 2007. *Prepared for Forestry Commission Scotland by OPENspace: The research centre for inclusive access to outdoor environments.*

Planning Guide for Boating Facilities, *British Marine Federation, Royal Yachting Association.*

Planning Guide for Boating Facilities at a Glance, *British Marine Federation, Royal Yachting Association.*

RYA Planning Handbook Guidance on facilities development for recreational boating in the UK Second edition, *Royal Yachting Association,* April 2009.

New Build Car Park Guidelines, for Car Park Designers, Operators and Owners, *Park Mark Safer Parking Scheme*

Access Wheelchair User Transfer Dock/Pontoon, *Steve Sawford Marine Ltd*

Access C-Crane Personnel Hoist, *Steve Sawford Marine Ltd*

CANOE ACCESS

Ez-launch for Kayaks and Canoes, Unbeatable Access and Safety, *Ez-dock*

Floating dock and lift systems, *Ez-dock*

CASE STUDY - Canoeing Paddle-Ability – an integrated approach to sport for disabled people, *Sport England*

Universally Accessible Canoe and Kayak Launches, *Mark Brochu, Director, St. Clair County Parks and Recreation, Kim Haller, Director, Midland County Parks and Recreation, Pam Blough, Landscape Architect, PM Blough, Inc.* Revised 2/23/09

CAR PARKS AND KERBS

Car Parks in the Countryside, a Practical Guide to Planning and Construction, *Scottish Natural Heritage*

Car Park and Landscape Design, *Sport England*

DIPPING PLATFORMS

Access Guidelines for Fisheries, *British Disabled Angling Association.*

Access Guidelines for Fisheries: Technical Information, *British Disabled Angling Association.*

GATES

Timber Purchasing Policy (April 2007) *Environment Agency*

Pittecroft Trust User Guide, Understanding the Defra guidance on Public Path Structures (Gaps, Gates, Stiles, Cattle-grids etc.)

HANDRAILS

Countryside Access Design Guide, *Scottish Natural Heritage*

SIGNAGE

Final report for signage and wayfinding for people with learning difficulties Building Research Technical Report 6/2005, *Building Research Establishment for Office of the Deputy Prime Minister: London, February 2006.*

Tactile Images and Maps 2011, Helping businesses to create an inclusive society, *Royal National Institute for the Blind*

Accessibility Training 2011, Helping businesses to create an inclusive society, *Royal National Institute for the Blind*

STEPS, STEPS AND STEP RAMPS

Carmarthenshire Disabled Access Group Guide to Country Steps

Easy Access to Historic Buildings, *English Heritage*

Countryside Access Design Guide, *Scottish Natural Heritage*

SURFACES

Highways Agency Design Manual for Roads and Bridges

Cycle Infrastructure Design, Local Transport Note 2/08, *Department for Transport,* October 2008

Guidance on the use of tactile paving surfaces, *Department for Transport*

Easy Access to Historic Buildings, *English Heritage*

Assessing the slip resistance of flooring, a technical information sheet, *Health and Safety Executive*

Path Erosion and Management, *Lake District National Park Authority Education Service*

Lowland Path Construction, *Scottish Natural Heritage, Scottish Enterprise, Paths for all Partnership*

ADDITIONAL INFORMATION

By all reasonable means: Inclusive access to the outdoors for disabled people, *Landscape Access Recreation*

Goods and Services: Making access to goods and services easier for disabled customers, a practical guide for small businesses and other small service providers, *Disability Rights Commission*

Alternative designs for access through Flood Defences, *Environment Agency,* October 2010

Disability Discrimination Act; Guidance on matters to be taken into account in determining questions relating to the definition of disability

Glossary of Accessibility Terms

ACCESS OFFICER: Individual, typically employed by a Local Planning Authority, responsible for promoting the best access standards in all the council's buildings and highways: to make it easy for everybody to come and go about their business.

APPROPRIATE ACCESS: A term used to describe the proposed level of access after an assessment to determine the intended users and limitations and sensitivities of the surrounding environment.

BUILDING REGULATIONS: A suite of documents that apply in England & Wales to promote standards for most aspects of a building's construction. They consider the needs of all people, including those with disabilities, and their requirements when accessing and moving around buildings.

DISABILITY DISCRIMINATION ACT (DDA) 1995: The first UK discrimination law to introduce an active approach to access for disabled people. Those covered by the Act had to take steps to remove barriers from disabled peoples participation. The DDA 1995 remained in place until it was replaced by the Equality Act 2010.

EQUALITY ACT 2010: The current discrimination law in the UK introduced to consolidate a number of Acts and Regulations (including DDA) which formed previous anti-discrimination laws. It includes for the first time rights for people not to be directly discriminated against or harassed because they have an association with a disabled person or are wrongly perceived to be disabled.

EQUALITY IMPACT ASSESSMENT: An assessment or analysis of a policy, service or function. A useful tool to enable you to assess the implications of your decisions on the general public.

FLOOD DEFENCE CONSENT: Permission from the Environment Agency (as well as Planning Permission from the Local Authority) when undertaking works within Main River or in proximity to existing flood defences.

FLUVIAL: Used when referencing the processes associated with rivers and streams and the deposits and landforms created by them.

INTERPRETATION BOARD: A sign which educates and informs people about their surroundings in a particular location.

LAND-USE PLANNING SYSTEM: An alternative term to describe the Town and Country Planning system within the UK.

LEAST RESTRICTIVE ACCESS: A principle, referenced in a number of access guides, which requires all works to meet the highest possible access standards. It acknowledges that this cannot always be achieved and where the highest possible access standards cannot be reached there should always be clear reasoning documented as to why. The idea of this principle is that over time the overall standard of access will raise.

RECEPTORS: Term used to describe an individual or group of people that a scheme or proposals will impact on whether it be a positive or negative impact.

STATUTORY CONSULTEE: Those bodies that have a statutory duty i.e. legal requirement, to comment on planning and other applications.

WAYFINDING: The term used to describe the collective elements within a scheme that enable people to orientate themselves in a particular location and navigate from place to place.

AMBULANT DISABLED: This term refers to people with a wide range of disabilities who are not regular wheelchair users. This could include, for example, people who have diabetes, epilepsy, multiple sclerosis or cancer.