



Creating Access For All:

Guidance for Historic Vessels

Appendix 3: Sea Change Sailing Trust



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www.nationalhistoricships.org.uk

Sea Change Sailing Trust | Access Survey

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1.0 Introduction

1.1 Introduction

This access survey and design appraisal is intended to support the Sea Change Sailing Trust in their funding application for the construction and fit-out of a unique new seagoing Thames sailing barge, which is currently a hull shell and deck. The barge (also referred to as 'she') is a replica of the last sailing barge built in 1930 and as such is intended to do the same work as the original as a sea going cargo barge. It is an important part of the project to retain its authenticity and to be true to the original design and her function.

The purpose of the barge is to work residentially with young people and adults from eight years upwards including those with learning difficulties, vulnerable adults and people with dementia. Some people may have other associated sensory disabilities. The objective of the project is not a pleasure sailing experience, as provided by many other charitable organisations, but to teach and preserve sailing skills unique to an operational cargo barge.

The vessel will operate on the lower River Thames and estuary. She will



View of the hull of the barge lying at her mooring in Maldon Basin

carry cargo and trainees, engaging them in traditional seamanship skills as the vessel was intended. The main cabin (in the centre of the hull) will be demountable to carry cargo but for part of the summer it will accommodate hammocks and some demountable fittings in the hold, and an additional stairway access. A portable bosun's sling could be used for people with restricted access for open day events to the lower deck.

It is envisaged a number of the Trust's current client groups will sail with the new vessel in this summer configuration, but the core vision of the appeal is to enable the Trust to work for extended periods out at sea with small numbers of young people based on individual need.

1.2 Project constraints

There are comparatively few changes to the original 1928 design, except those required by modern regulations, like a watertight collision bulkhead each end. The size of the hold will be reduced slightly to permanently allow for four trainees to be accommodated forward and three staff aft with a small galley area.

The barge is required to be being built to cargo ship rules under the Det Norsk Veritas - Germanischer Lloyd classification society. As a result, there are a number of historic and safety requirements that will restrict physical access particularly for wheelchair users and people with severe mobility difficulties who may rely on mobility aids as follows:

- the original deck width either side of the hold access hatch is very narrow for wheelchair access, especially once it is fitted out;
- there are restricted turning circles on deck;
- the (removable) companionway down into the hold is steep with limited space to accommodate safely a platform lift;
- raised door thresholds are required to prevent water ingress in the hold in case of leakage;
- the barge will be docking at numerous ports and pontoons where tide heights will dictate access on and off the barge, none of which can be step-free;

- operationally the barge will be out at sea with the length of residential activities varying according to training requirements but the essence is that the vessel becomes base for upwards of one to thirteen weeks. With a 15° heel under sail and the restricted deck surface would not make this a safe environment for wheelchair users;
- the fit out of the operational barge is such that essential parts of the fixed sailing equipment such as ropes, pulleys and the horse are located in difficult places and prevent wheelchair movement around the deck;
- the barge, being true to the fit out and design of a sailing barge, will have limited electricity for safety equipment required by regulation (eg a VHF radio) but this will be in-sufficient for power systems, e.g. lift.

Whilst it can be argued that the hold could accommodate a platform lift and the main cargo could have an accessible WC and berth or hammock, this would render the cargo hold non-usable and the design and function no longer true to the original, one of the main tenets of the project.

The platform lift could also only be used stationary at port and not at sea due to the heeling moments.

There are many other larger Thames sailing barges that are equipped for wheelchair access to provide a better sailing experience and the Trust therefore believes that they can meet their Equality Act duties for most other trainees with disabilities although the barge can be made wheelchair accessible for open day events on board as a managed approach with auxiliary aids.

1.3 Instruction

HADA (Helen Allen) was appointed as access consultant for the project by Sea Change Sailing Trust in July 2017.

1.4 Scope of audit

The access survey takes into account a site visit conducted in July 2017 and describes and appraises the proposed inclusive design provisions for the barge to ensure that they both comply with regulations in relation to good practice

access guidance (BS8300), where possible, to provide a reasonable level of access so that the Trust may meet their obligations under The Equality Act 2010. The site visit was conducted to ascertain the context of the proposed improvements that are not readily apparent from the naval architect's plans.

The site and design appraisal has been undertaken using the 'journey sequence' from arrival of where the barge is currently berthed at Maldon to reviewing facilities and the proposed activities to take place on board with specific regard to disabled people as:

- Visitors to the barge; and
- Staff / trainees working staying on the barge.

It is normal for access audits to include approximate costings for access improvements. However such guidance is only available for buildings and not for the fit out of a barge. In this case the access survey will default to the costings already produced by the Trust with additional recommendations of where additional funds may be required for access

improvements. There are some common elements between the barge and buildings such as signage and step nosings for example.

The survey does not describe or evaluate any part of the barge or any areas that are used solely for inspection, repair or maintenance of any service or fitting. If a disabled person requires access to these areas as part of their work then their employer is expected to take all reasonable steps to ensure that there are no barriers to them carrying out their work. Any adjustments that are required would be carried out retrospectively as and when the need is identified.

The meaning of 'disabled' in this Access Review is the definition stated in the Equality Act 2010.

Note:

HADA provides guidance and advice as access consultants. The consultancy does not have the authority to officially approve designs. This remains the responsibility of Building Control authorities.

1.6 Interpretation of the standards

As this is a new operational barge, the structure is not subject to Building Regulations or even best practice access standards relating to buildings such as BS8300.

As a sail training vessel, the barge is regulated by the Maritime and Coastguard Agency, is a Royal Yachting Association Training Centre, an RYA Sailability Foundation Centre and Duke of Edinburgh's Award Approved Assessment Centre. The barge is required to be being built to cargo ship rules under the Det Norsk Veritas - Germanischer Lloyd classification society. These are predominantly safety standards and have no inclusive design guidance.

In light of the lack of any other access guidance relating to operationally active barges and ships reference is therefore made to BS8300:2009 as a baseline *ergonomic* standard for access plus good practice guidance listed in the appendix as a standard for design and management of the barge.

1.8 Regulations and The Equality Act

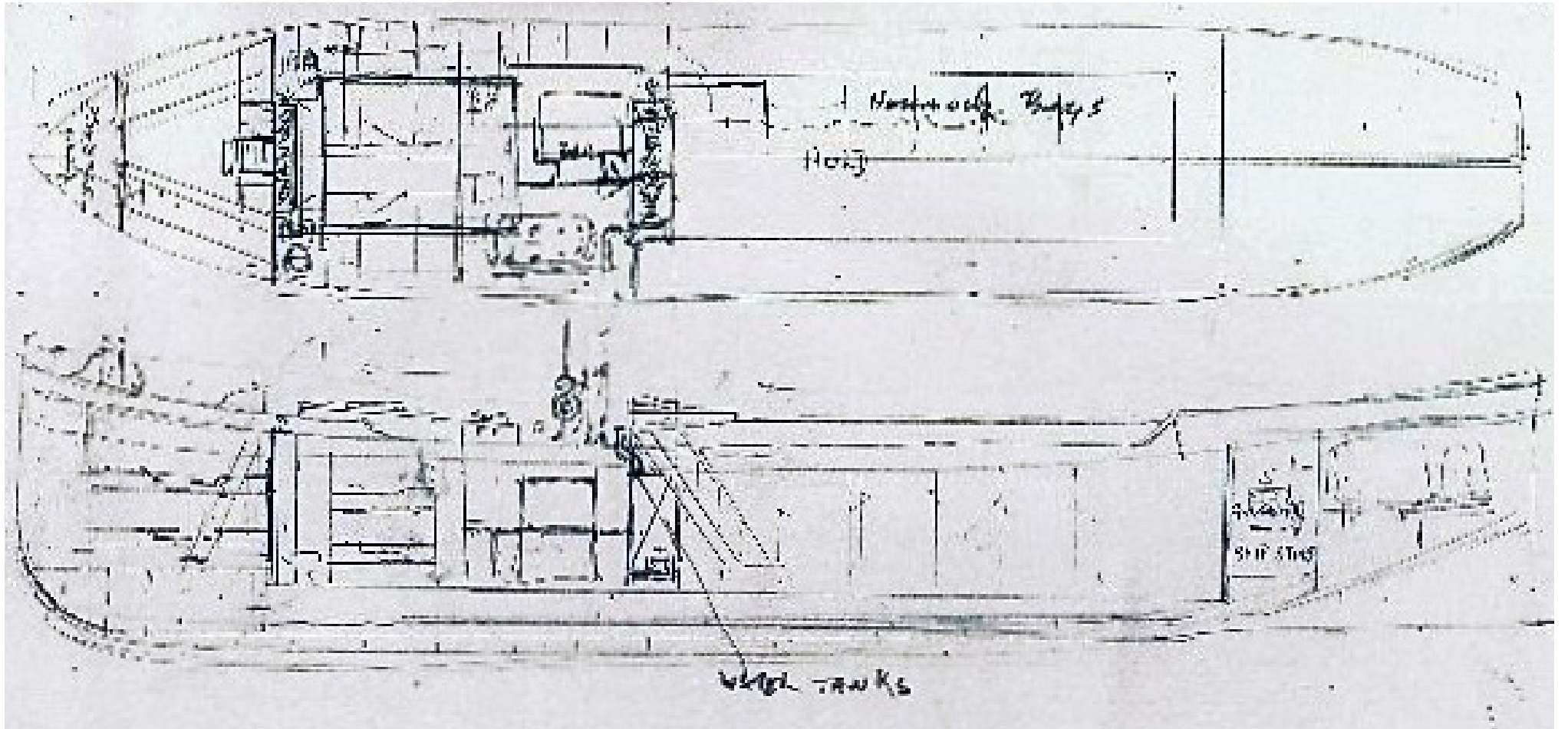
The Equality Act cannot override any other piece of legislation whether a statutory Building Regulations or health and safety requirements. In such cases a managed approach or alternative provision may be adopted by the Trust's Access Management and Visitor Plan, especially for open day events.

When considering a reasonable adjustment to a physical feature, the Equality Act does not override the need to obtain consents such as planning permission, building regulations approval, listed building consent, scheduled monument consent and fire regulations. If the consent is not given, there is still a duty to consider a reasonable means of avoiding the feature or providing an experience by an alternative method.

1.10 Management and maintenance

Once construction works are complete full accessibility will rely on effective facilities management.

Management items will range from provision of a good quality website to the effective maintenance of sea to land access, induction loops, lighting and equipment. Inspection of specialist devices and training of staff should become a regular element of management processes. Open day social events on the barge will rely heavily on management to enable access.



Proposed fit out plans

2.0 Access Survey

2.1 Arrival

Sea to land access is subject to tide heights and the style of pontoon access provided in each harbour. Height differences between the deck and pontoon can be quite substantial subject to tide heights and calendar with access for staff and visitors via a timber gangway. In some cases the barge may have to moor alongside other boats requiring assistance for some trainees across to land.

The barge, however, will work predominantly from a mooring or her anchor, so boarding will be by means of stepping up from a tender with a boarding ladder where needed. For ambulant but hesitant clients the leeboard is partially lowered to provide two steps of around 9 inches from the tender to the deck with firm hand holds in the safety rail and rigging.

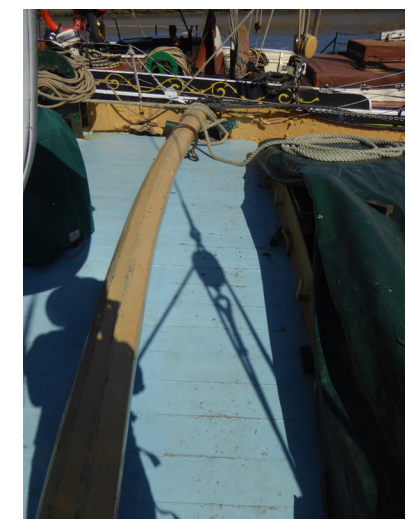
The barge may be open time to time to the public for day events and in such cases access will be managed with assistance and wider gangway boards with slip resistance surfaces to enable a day visit by a wheelchair user.



Narrow deck width - before and fit out (to compare)



Variable gradients and stepped access on board



Comparable deck fit-out with ropes and self tacking (right image) headsail traveller

2.2 Deck circulation - horizontal

The deck width either side of the cargo hold narrows down to less than 700mm in places with substantial on board rigging that protrudes into the gangway.

Self tacking headsails also results in limited access on deck. To modify this would result in the barge no longer being true to its original design as a Thames sailing barge.

For open events there may be the possibility of constructing a raised false deck to enable wheelchair access with cut outs for views to essential equipment and down to the hold as a managed solution.

2.3 Companionway - access to below deck

Access to below deck is via a companionway (stairs). Due to the prevention of water ingress, the hatch must have a raised threshold (coamings). A removable weather board was considered to lower the threshold to make access easier and avoid having to step so high but this is not permitted under the Thames Freight Standard for safety reasons. The



Comparable typical companionway (stairs) to below deck via hatch



Proposed stairs



Bosuns chair or conventional sling using barge pulley system



rake of the companionway is normally quite steep and is dictated by the floor to ceiling height of the cabin and space below; it is usual, and safer, to descend backwards down the steps.

However, efforts will be made to install a compliant (AD Part K) staircase for the removable steps into the hold with BS8300 compliant handrails and contrasting step nosings to assist partially sighted and blind passengers and people requiring support. The stair will be demountable for stowage when loaded. Otherwise there will be companionway stairs into the forecabin and aft cabin.

For open day events access to the hold could be facilitated for wheelchair users and people with restricted mobility by the use of the bosun's chair for the more adventurous using the pulley system of the boats rigging.

2.5 Hold - galley and social area

Below deck the fit-out will comprise fixed built-in fitted furniture and supporting structural columns. Due to the nature of sailing at sea and the effects of heeling and waves, it is safer for crew to have furniture and structural items situated close together



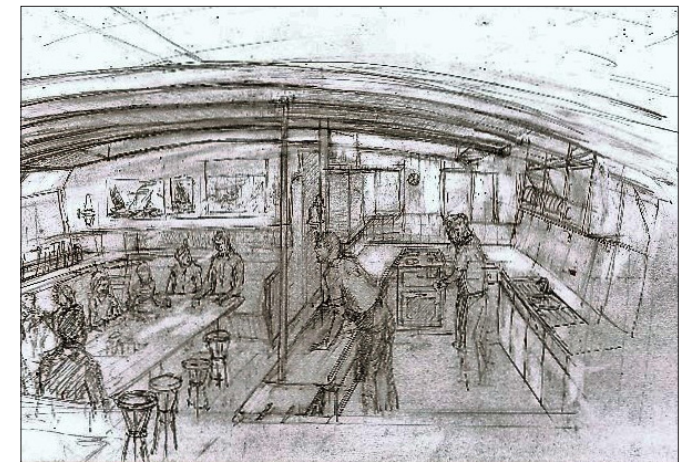
Typical raised door thresholds



Main hold awaiting fit out



Bunks in bow area for trainees



Aft galley and social area - note tables and seating have to be secure and fixed for safety

to enable holding on and to prevent falling; hence all furniture has to be strong and firmly fixed to the floor. Apart from the cargo hold, it is dangerous to have clear open spaces below deck. As a result, and as an operational cargo barge, it would be inappropriate to have clearances suitable for wheelchair access for the safety of all passengers even with a maximum 15° heel. Key features will be colour highlighted however for partially sighted people and people with learning difficulties and dementia.

2.6 The ‘heads’ - WC provision

There will be two standard WCs or ‘heads’ as they are called, which will be equipped with grab bars and plenty of opportunities for support and bracing for all passengers and not just those with mobility or balance issues. As there is no wheelchair access below deck there will be no wheelchair accessible WC. These will be organised on land for open day events. There will be a sit down shower in the forward toilet

2.7 Sleeping accommodation

As with most sea going vessels and barges the sleeping accommodation with

be arranged in fixed bunks with built-in timber cabinetwork. Bunks will have raised sides to prevent falling out and contain bedding when the barge is heeling under sail. In summer months the cargo hold will have additional hammocks.

2.8 Signage, wayfinding and lighting

Sensory provision is one of the key areas that the barge fit-out can and will accommodate differing communication needs with tactile embossed text with pictograms and Braille for the WCs, sleeping quarters and labels on equipment where required. This is particularly important given that the Trust already works with young adults with learning difficulties and differing communication needs. A portable induction neck loop system can also be used by instructors for people with hearing loss who use a hearing aid with a T’ switch.

Tonal contrast and colour coding will be adopted for essential safety features such as handrails, grab bars and step nosings.

Lighting will also ensure that bare bulbs will be concealed to minimise glare levels and will comply with CIBSE and lighting guidance suitable for maritime vessels to

assist partially sighted people. . The Trust relies heavily on accompanying staff in the case of clients with learning difficulties to assist in making the experience as real as possible by providing support.

2.9 Conclusion

Whilst the barge will not be able to safely accommodate wheelchair users operationally on a day-to-day basis, as she will be out at sea with no means of safe access from cargo to deck level, the barge will be able to accommodate a wide range of people with other types of disability.

The Trust already does a large amount of valuable work with young adults with learning difficulties and has the potential to accommodate many other types of ability, particularly those people with sensory disabilities. Access provisions can be easily accommodated with good tonal contrast, tactile signage and the use of auxiliary communication aids whilst open day events can be managed and access increased to enable wheelchair users and people with restricted mobility to board the barge.

3.0 Costs

The following costs are for guidance only to enable the Sea Change Sailing Trust to budget for access improvements and provisions to their Thames barge project. As the barge is still under construction, it has been difficult to ascertain the exact dimensions and requirements.

The recommendations do not represent product or company endorsements.

Item	Location / purpose / details	Cost (incl VAT)	Suggested model	*Supplier (note these are only suggestions and not product endorsements)
Portable neck loop / induction loop	For use on deck and open events and below deck to communicate with people with hearing loss	£331	L431 Roger Clip on infra red microphone	Action on Hearing Loss (was RNID)
Highlighted step nosings	Companionway	£30 per linear m	Aluminium slip resistant with colour infill	Gradus or similar
Access hoist / bosun's chair	For open day events to access below deck	£275 or.....	Heavy duty model	Harken
Access hoist / bosun's chair	For open day events to access below deck	£160	Etac Molift Rgo Comfort Sling Net Highback L	Health and Care .co .uk
Painted hardwood handrails for companionway	Companionway and grab bars in WCs and around cabins; all to be constructed of timber.	£30 per linear metre	n/a	To be constructed Sea Change team
Extra wide (1000mm) gangway with slip resistant surface	For open day events for access from land. TBC Length and material (marine plywood?) TBC.		n/a	To be constructed Sea Change team
Tactile signs for WCs (x2)	For WCs for assist blind and partially sighted people.	£21.34 each	unisex tactile WC sign with Braille Ref. TAC213	http://www.seton.co.uk/toilet-unisex-symbol-tactile-braille-safety-signs.html

Tactile bump ons for controls	To assist equipment usage for people with sight loss, e.g. on taps, kettles, on/off controls	£5.75	Product code: DL15	RNIB
Lever taps for WCs and galley (x2?)	To assist people with restricted dexterity and strength in hands	£25.00 pair	n/a	Wickes or similar

Appendix 1 | Standards for inclusive design

A1.1 Legislation

Equality Act 2010

The majority of the Equality Act 2010 (the Act) came into force on October 1, 2010. The Act replaces various, separate anti-discrimination laws, including most of the Disability Discrimination Act 2005 (DDA) and subsequent amendments, with further sections replaced over a period of time.

Disability is one of nine 'protected characteristics' defined by Part 2 of the Act. Definitions of discrimination are also described.

Service providers and employers will have ongoing duties, similar to those in the DDA, under the Equality Act. These duties might include removing physical barriers to disabled people, provision of aids and equipment and ensuring management policies and practices do not discriminate against disabled people.

The Act does not contain any specific requirements for the built environment and therefore has no relevance to 'compliance' in respect of physical building standards.

Planning and Compulsory Purchase Act 2004

In April 2010, the government introduced changes to the planning applications process. The circular Guidance on Changes to the Development Control System, effective from 10th April 2010, set out the formal requirements for Design and Access Statements to accompany most applications.

A1.2 Building Regulations

Note that these standards do not apply to the barge fit-out.

- **Approved Document M (Access to and use of buildings) – Volume 2: Building other than dwellings**, HMSO, 2015 edition;
- **Approved Document B (Fire safety) – Volume 2 - Buildings other than dwellinghouses** (2006 edition incorporating 2010 and 2013 amendments)
- **Approved Document K - Protection from falling, collision and impact**, HMSO, 2013.

It is essential to understand that the Regulations require Building Control approval. The Regulations make clear that designs other than those shown in the document can be approved if they are justified as being equally or more effective. Approval confers acceptance that the building meets all reasonable standards in respect of physical access for disabled people with regard to the Equality Act.

A1.3 British Standards

British Standard 8300:2009+A1 2010 Design of Buildings and their Approaches to Meet the Needs of Disabled People - Code of Practice, British Standards Institution, 2010

This British Standard was reviewed and republished in 2009 and its guidance is considered good practice. Where practical and reasonable it is recommended that BS 8300 recommendations are

applied to new buildings where AD Part M fails to give guidance.

British Standard 9999:2017 Code of Practice for Fire Safety in the Design, Management and use of Buildings, British Standards Institution, 2017

These standards, revised in October 2017, include guidance for the safe evacuation of disabled people from buildings in an emergency. There is also a useful Fire Safety Risk Assessment Supplementary Guide *Means of Escape for Disabled People* published in 2007 by the DCLG.

A1.4 Policy

National Planning Policy

- **National Planning Policy Framework (NPPF)**, Department for Communities and Local Government, 2012

The NPPF states that all developments should be designed to be inclusive and that this should be addressed by local policies. It also advises that local planning authorities should assess their housing requirements by considering the needs of the different groups in the community including children, older people and disabled people.

- **Town and Country Planning** (Development Management Procedure) (England) Order 2015, Article 9

A1.5 General guidance

Planning and Access for Disabled People (2003)

This good practice guide was published by the Office of the Deputy Prime Minister to provide guidance in the delivery of inclusive environments through the town and country planning system.

Design and Access Statements – How to Write, Read and Use Them, Commission for Architecture and the Built Environment (CABE), 2007

This guide is intended as best practice guidance in support of the Government circular *Guidance on changes to the development control system*, issued in August 2006

Guidance on Information Requirements and Validation, Department for Communities and Local Government, 2010

This guidance accompanies Government policy on information requirements for planning applications, including design and access statements and the validation process. This replaces the Validation of Planning Applications: Guidance for local planning authorities published on 7 December 2007.

Access Principles, Disabled Persons Transport Advisory Committee (DPTAC)

All access statements should recognise the DPTAC principles in advising Government and industry, which are as follows:

- Accessibility is a condition of any investment;

- Accessibility must be a mainstream activity; and
- Users should be involved in determining accessibility.

If a disabled person requires access to these areas as part of their work then their employer is expected to take all reasonable steps to ensure that there are no barriers to them carrying out their work. Any building adjustments that are required would be carried out retrospectively as and when the need is identified.

A1.6 Notes and clarifications

Definitions of ‘gentle slopes’

Approved Document M defines a gentle slope as being more gentle than 1:20. This discrepancy is important because the handrails and other access provisions are not usually required for ‘gentle slopes’.

The terminology of Section 1, *Approved Document M* is used throughout the Access Statement to avoid confusion, as follows:

- A gentle slope has a gradient of between 1:60 and 1:20. This gradient does not require handrails but does require a level landing for every 500mm rise.
- A ramp has a gradient steeper than 1:20, but no steeper than 1:12. Level landings are required according to the standards and handrails are required on both sides of a flight.

Access for maintenance and servicing

The Access Review does not describe or evaluate any part of the development that is used solely for inspection, repair or maintenance of any service or fitting, in line with the scope of Part M of Schedule 1 to the Building Regulations 2000 (as amended by SI 2003/2692).

Appendix 2 | Bibliography

A comprehensive selection of guidance can be found via the Design Council (CABE) website (<http://www.designcouncil.org.uk/inclusive-design>), which includes some items below.

2.1 British Standards

British Standard 8300:2009 (Amended 2010) Design of Buildings and their approaches to meet the needs of disabled people - Code of practice, British Standards Institution, 2010.

British Standard 9999:2017 Code of practice for fire safety in the design, management and use of buildings, British Standards Institution, 2017.

British Standard 5656-2:2004 Safety rules for the construction and installation of lifts. Particular applications for passenger and goods passenger lifts. Accessibility to lifts for persons including persons with disability, British Standards Institute, 2004.

British Standard w CEN/TS 15209:2008 Tactile paving surface indicators produced from concrete, clay and stone (Draft in development), British Standards Institution, 2008.

British Standard 7997:2003 Products for tactile paving surface indicators, British Standards Institution, 2003.

British Standard 5395-1:2010 Stairs - Part 1: Code of practice for the design of stairs with straight flights and winders, British Standards Institution, 2010.

British Standard 7000-6:2005 Design Management Systems - Part 6: Managing inclusive design – Guide, British Standards Institution, 2005.

British Standard 5499-4:2000 Safety signs, including fire safety signs – Part 4: Code of practice for escape route signing, British Standards Institution, 2000.

British Standard 8501:2002 Graphical symbols and signs – Public information symbols, British Standards Institute, 2002.

A2.2 Access statements

Planning and Access for Disabled People, ODPM, 2003.

Guidance on Information Requirements and Validation, Department for Communities and Local Government, 2010.

Design and Access Statements: How to Write, Read and Use Them, Commission for Architecture and the Built Environment (CABE), 2006.

A2.3 Buildings

Designing for Accessibility, Lacy A., CAE/RIBA Publishing, 2004.

Inclusive Design Toolkit, London Development Agency, 2009.

Building Sight: a Handbook of Building and Interior Design Solutions to Include the Needs of Visually Impaired People, Barker, Barrick and Wilson, RNIB/HMSO, 1995.

A2.4 Signage, lighting and wayfinding

The Colour, Light and Contrast Manual: Designing and Managing Inclusive Built Environments, Bright K., Cook G., Wiley-Blackwell, 2010.

Sign Design Guide: a guide to inclusive signage, JMU and the Sign Design Guide, 2000.

A2.5 Heritage

Easy Access to Historic Landscapes, English Heritage, 2012.

Easy Access to Historic Buildings, Adams (John), English Heritage, 2012.

A2.5 Accessible Sports

<http://www.rya.org.uk/programmes/rya-sailability/Pages/hub.aspx>

<https://www.sportengland.org/facilities-planning/design-and-cost-guidance/accessible-facilities/>