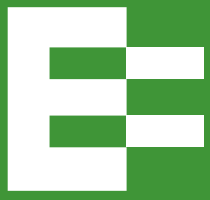
Sensory access in higher education

Guidance report 2009



Equality Challenge Unit

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1 Introduction

This guidance has been developed in response to evidence from research into the experience of disabled students, commissioned by the Higher Education Funding Council for England (HEFCE) and the Higher Education Funding Council for Wales (HEFCW) during 2008. This research, along with other sources, suggests that there are cases in which students who are blind or partially sighted, deaf or hard of hearing, or within the autistic spectrum are disadvantaged by their campus environment.

Terminology relating to sensory impairment is used differently by different disability groups. In this guidance, students and staff who are blind or partially sighted, deaf or hard of hearing, or within the autistic spectrum are collectively referred to as 'sensory impaired'. However, on the advice of members of the project's advisory group, the specific terms – blind or partially sighted, deaf or hard of hearing, or within the autistic spectrum – were used throughout the research process at interviews and focus groups. More information about the definitions of these impairments and experiences of people with them can be found on the websites of the relevant support organisations in section 7.

There is difficulty connected with focusing on particular impairment needs in a study of inclusive environments, as this could be seen to undermine recognition of the social model of disability, which defines disability in terms of the barriers placed on people by society, including higher education institutions (HEIs). (For a fuller explanation of the social model see COPP16: DRC, 2002.) Equality Challenge Unit (ECU) is committed to promoting the social model of disability and supporting all HEIs in removing the barriers experienced by disabled staff and students. This should lead to minimising the number of individual adjustments that need to be made.

The aim of this investigation was to explore and understand some of the barriers to inclusion currently experienced by sensory impaired staff and students in higher education, so that these can be lifted. Examples of such barriers identified in this research include problems in accessing appropriate support and equipment, a lack of staff training and awareness, and physical barriers such as distracting visual effects and acoustics.

Initial scoping undertaken by ECU revealed that the sector would welcome assistance in raising awareness and receiving more guidance, so that the needs of sensory impaired students can be better anticipated and provided for. The information in this report is not intended to be comprehensive or to replace existing authoritative access guides, but to supplement such guides. Although the importance of accessible websites, specialist software and assistive technology such as magnifiers, readers and textphones in assisting sensory impaired students was recognised by the researchers, a detailed review of this type of provision at the institutions involved in the study was not possible within the scope of this investigation.

1.1 Research methodology

This guidance report is based on a small-scale research project commissioned by ECU, funded by HEFCE, and conducted by a project team based at LSN between May and July 2009. It incorporates the information and advice received from an advisory group that was specifically set up for the project. The purpose of the investigation was to identify ways in which HEIs already provide support to sensory impaired students, and to highlight areas where improvements could be made. It is intended to be useful to all those responsible for the general management of campus environments, and provides information particularly relevant to student services, teaching and learning, and estates management.

All institutions in England were invited to apply to participate in the project, and three were selected to represent a range of campus environments. Through these institutions, it was possible to study both rural and urban locations, as well as a wide range of buildings – from listed buildings in rural settings to steel and glass structures in city centres.

Each institution was visited by an experienced access consultant for a two-day survey of selected areas, during which time interviews were conducted with sensory impaired students and the staff responsible for managing the campus environment.

The findings from each visit have been summarised in separate confidential reports. Key messages from these findings have been collated and are reported anonymously in this document, with recommendations for actions that will be applicable throughout the sector to improve sensory access.

2 Management issues

As part of their strategic vision, institutions should ensure their physical environments and services are fully accessible by all students. This will necessitate defined operational processes to ensure barriers are identified and tackled systematically. An effective way of ensuring an HEI creates an environment that is welcoming and accessible to sensory impaired students is to make it an identifiable part of the institution's Disability Equality Scheme (DES; **www.direct.gov.uk/en/DisabledPeople/RightsAndObligations/DisabilityRights/DG_10038105**). The legal requirement on HEIs to produce a DES means they should undertake impact assessments of relevant policies and practices, with the involvement of disabled people, which should include sensory impaired people, and then produce and implement an action plan to make the required improvements. Most of the issues highlighted by the findings from this investigation could be addressed effectively using this process.

2.1 Funding

Staff at one institution noted that, while they feel comfortable and able to work with sensory impaired students, they are apprehensive about recruiting more sensory impaired students because they believe that, both institutionally and departmentally, it would be hard to find the funding and time to provide the necessary support if the number of sensory impaired students increased significantly. Concern about a lack of resources could cause staff to discriminate against disabled students, and highlights the need for senior management to ensure staff are aware of the resources available to support disabled students, and that discrimination is unlawful.

The funding system for overseas students is also a cause for concern, as the different levels of funding for home and overseas students can potentially cause a discrepancy in the level of support that the institution is able to provide. So institutions need to consider their strategies for addressing this issue.

One institution noted that there is no funding for marketing support services for disability, so the service tends to be reactive rather than proactive.

2.2 Communication

All three institutions stressed the importance of maintaining communication between staff across departments in providing support for sensory impaired students. However, the majority of adjustments for courses at each institution are made departmentally rather than centrally. Support services pass on information to departments on both policy and individual levels – for example, by alerting lecturers to any difficulties their students face and any support requirements they may have – but there is no formal mechanism for doing this. Because of the lack of a formal system, staff are concerned that information is not being shared effectively between departments, and that they are not aware whether suitable support is being provided, as often students will volunteer information only if they are not receiving sufficient support. Interview data suggest that a formal system for passing on information would help to ensure students' requirements are put in place.

One institution has created committees across its student services and disability services, such as the student welfare committee, through which it receives information to enable central organisation. This committee structure provides a range of opportunities for disabled staff to contribute to planning and policy development across the university. The involvement of disabled staff at a recent committee meeting initiated discussions about lighting levels and wheelchair access in an upcoming rebuild.

Central organisation is particularly beneficial for certain services – for example, there is no need to have a Braille machine in every department, as they could stand idle for long periods; and centralisation could ensure all computer laboratories have 19-inch monitors specifically designated for students who are blind or partially sighted. Central organisation would also help to alleviate certain issues caused by departmental organisation – for example, at all three institutions, services such as engaging British Sign Language (BSL) interpreters or language service professionals are requested on a departmental basis via disability services. The departmental disability representatives organising these services generally are not given remission for the time this takes, and supporting disabled students while also fulfilling other duties can be a challenge.

Students interviewed at all three institutions said they value the support provided by student services. Students at an institution with several separate campuses

would like this provision to be made available at all campuses, to avoid disabled students having to travel to access services.

2.3 Students disclosing information

Many students begin to think about how they will manage finding disability support for their studies, their domestic arrangements and their social life only after securing a place on a course. It is often only at this stage that students become aware of what is available via disability services and student services. This is the time when students are most likely to disclose information regarding their disability.

Staff and students at all three institutions noted that most students are prepared to disclose information about their disability, although there appears to be a difference between home and overseas students. In general, overseas students do not wish to disclose information, and many prefer to hide a disability as they are afraid it may be seen as a weakness. Staff said that many disabled overseas students are not used to being supported positively, and more needs to be done to raise awareness of the benefits of support.

The policy of student services and disability services at all three institutions is to allow students repeated opportunities to disclose their disability, as there may be various personal reasons for not disclosing initially. However, disability services staff at one institution noted that students who are deaf or hard of hearing are often reluctant to acknowledge support needs. Staff explained that students appear to view hearing loss as a hidden disability, and feel they can get by at university without any additional assistance. It is usually when their grades are not what they were expecting that students realise their hearing loss may have had an impact on their learning.

Disability services at one institution believe that, because some students may never disclose an impairment, it is important to make the environment more accessible for everyone. For example, teaching staff are encouraged systematically to post lecture notes and presentations on the intranet and put information on the website so that people can access information without having to disclose.

At one institution, student services has made strong links with the students' union so that the union can alert students to the support that is available, even

if the student has not yet disclosed an impairment to student services staff. This institution also makes use of a tracker system – a student records system accessible to all academic staff on the college intranet. On each student's tracker entry there are three boxes: registered disability, yes/no; computer, yes/no; note-taker, yes/no. From the responses recorded in these boxes, staff gain immediate information about the students they are working with.

2.4 Involving students

All staff interviewed welcomed the idea of disabled students being involved in decision-making and planning meetings. However, many academic staff were unclear as to whether or not their institution has a clear procedure for ensuring sensory impaired students participate in such meetings. The general view was that it is up to individual departments to work out their own procedures – for example, by setting up student or staff committees – or for students to flag up their requirements.

There may be regular opportunities for students to make their views known through course committee meetings, informal discussions in year groups, and student feedback questionnaires. The institution that reported using these methods does not have an institutional system for involving students in decision-making and planning, but the information gathered through these means provides immediate feedback to staff, and any changes required are discussed with students before actions are agreed.

One institution has opted for a Single Equality Scheme to address race, gender and disability inequalities. The scheme provides details of a range of actions that the institution proposes to take, including 'more proactive involvement of students, staff and the wider community'. While there is a section on impact assessment, there is currently no explanation of how the institution plans to involve students, staff and members of the wider community in the assessment. Supplementary information on the development of the scheme since publication would also be welcomed.

2.5 Accessibility on campus

Staff may have difficulties in changing venues if a booked room proves inaccessible, as all venues are centrally booked and cannot be changed; staff are often required

to book rooms one term in advance, and after this booking is completed they can do little to change room booking arrangements. This can cause problems, for example where a student requires an induction loop and there is no loop in a booked room.

Interviews with students highlighted useful examples of inclusive practice connected to sensory access on campus. For example, in order to avoid background noise during the academic year, building works may be carried out at weekends or during holiday periods. In addition, staff try to minimise noise during exams by placing students who require extra time into a room of their own so they are not disturbed by other students leaving. However, it is evident from interviews that background noise, especially in social and catering areas, is often a problem.

> 'The canteen and common rooms are sometimes really noisy and I don't like to go there when they are really full. I can go there by myself, but with a group of people it is hard for me to hear and to communicate.'
>
> *Student with hearing loss*

> 'I dislike the catering building in particular due to the high level of background noise. I bring my lunch in instead.'
>
> *Staff member with acquired hearing loss*

One student with Asperger's syndrome spoke of his preference for a campus university where everything is gathered together on one site. At his institution, students on the autistic spectrum are provided with a mentor after an assessment has been carried out to match the student's requirements with the most suitable mentor. However, even with support and mentoring in place, another student on the autistic spectrum commented that he has experienced difficulty in finding everything he needs on campus. It may therefore be useful to provide early assessment, pre-entry support and familiarisation before starting university, which could include campus tours.

> 'It's taken me two years to locate half the food places!'
>
> *Student with autism*

Another student on the autistic spectrum commented that the doors in some of the staff offices are difficult to negotiate because of narrow corridors, and that doors do not all open in the same direction.

> 'I'd have the doors to the lab have large labels telling which direction you pull in, and a flat panel rather than a handle on the push side.'
>
> *Student with autism*

The importance of making the campus generally accessible for all disabled people was widely noted as, in addition to providing a positive experience for students with a range of impairments, this provides a positive experience for visitors. One student with a hearing impairment explained how, during an open-day visit, she had no problems moving around the campus, but there were difficulties for her mother, who is a wheelchair-user.

2.6 Accommodation

Student accommodation is an important feature for central management to consider. One institution employs a mobility trainer to identify which university accommodation is best for students with visual impairments and which would be unsuitable. The assessment considers movement between buildings, where it is not always possible to tell where the paths are. More appropriate accommodation would be near to shops and on a bus route.

Several sensory impaired students noted that living in halls makes life a lot easier for them, particularly where they develop good relationships with the warden, who may act as a mentor or buddy. These students commented that wardens of student residences play an important support role by, for example, being on hand to help when a student experiences difficulties in their domestic or social life.

Students on the autistic spectrum generally receive the same level of support as other disabled students, as all support plans are personal and designed around the needs of the individual. Wherever possible, disabled students, including those on the autistic spectrum, are encouraged to visit the university prior to starting their course so that they can visit the available accommodation and, with the assistance of a member of disability services staff, select the type of accommodation they want. It would be useful for these students to have the opportunity to stay in halls for a few days before the start of term, with support from staff, as part of familiarisation activities.

2.7 Recommendations: management issues

- Make available adequate funding to ensure disabled students, including sensory impaired students, are not discriminated against because of their support needs. Alternative funding for supporting sensory impaired students from overseas needs to be considered at the application stage, as these students are unlikely to be eligible for Disabled Students' Allowances (DSA: **www.direct.gov.uk/en/DisabledPeople/EducationAndTraining/HigherEducation/DG_10034898**).
- Take a centralised approach to student and disability services – this benefits students by providing more consistent and better quality services, and could reduce staff time and unnecessary duplication of services and equipment.
- Provide tighter support systems in institutions, and formalised communication of changes to all the people who need to know, giving specific responsibilities to named people. This would make disability services and the extension of disability support services on offer in different departments part of a formal provision for students.
- Ensure formal communication pathways between departments and students services, with clear responsibilities for staff members to ensure information about students is successfully conveyed. Course administrators could be the student's liaison between lecture staff and disability services to ensure adjustments are coordinated and applied appropriately. Workload remission for staff members working to support disabled students should be offered to ensure they are able to provide adequate support.
- Encourage all students, including overseas students, to disclose their disability. To achieve this, it is important to ensure a comfortable and safe environment, such as a face-to-face conversation in a private office. Students need opportunities to disclose information at any time. It is also important to appreciate that some students will not wish to disclose their disability, and this needs to be treated sensitively to ensure they do not feel pressured.
- Involve sensory impaired students in decision-making and planning, for example through course committee meetings, informal discussions and course feedback questionnaires; this could include an online format to increase accessibility.
- Consider general accessibility on campus, such as reducing background noise, providing separate cycle and pedestrian routes, and ensuring doors are clearly labelled with 'push' or 'pull' signs.

Management issues

- Provide a colour-coded accessible map, with full descriptions of facilities, to students before they start their studies at the institution.
- Assign a mentor to each potential student once a disability has been declared. If possible, it would be useful for the mentor to have studied the same or a similar course, as well as having a similar disability. Such mentoring support could also help students with autism to navigate their way around campus, increasing their confidence in accessing all buildings and services.
- Offer a campus orientation day for disabled students before their arrival, and consider the accommodation needs of sensory impaired students.
- Make it possible to change room bookings to enable suitable provision for sensory impaired students. Devising an inventory list of the accessible equipment helps to support the choice of suitable provision.
- Ensure services not targeted specifically at disabled students have an understanding of disability equality issues.

3 Support service providers

3.1 How services are promoted

It is important to promote support services to ensure students know that support is available and how to access it. A simple way to provide accessible information on service provision is through a section on the institution's website, including information for prospective and current students and for disabled staff.

Examples of information contained in the three institutions' websites include a dignity at work (anti-harassment) policy and guidance notes; an incident form for monitoring equality-related incidents, which specifically mentions the institution's commitment to creating a safe working and learning environment for disabled people; and details of services available to students who are blind or partially sighted, or deaf or hard of hearing. There was no specific mention in the online disability services' information about autism or the autistic spectrum, although there was mention of 'mental health difficulties' and 'unseen difficulties'. It is possible that people on the autistic spectrum may not recognise that unseen or mental health difficulties might include them, and it is suggested that all institutions should provide explicit information for each disability.

To supplement its website, one institution advertises the services of its disability team through dedicated noticeboards that provide an email address and typically generate considerable interest. In addition it also provides a disability handbook containing all the available information about its disability services and what is available for students who are blind and partially sighted, deaf or hard of hearing, or have hidden difficulties or mental health difficulties (autism was not specifically mentioned).

Induction is an important time for promoting support services to students; at one institution, students are informed during induction that written information is available in different formats. Personal tutors also promote and refer students to disability services.

To further promote support services for disabled students, both staff and students suggested that providing drop-in sessions for students would make disability services and student services more visible. These are not currently provided at any of the institutions studied, but staff and students suggest that this would make

it easier for students, who would not have to book a meeting to see a member of staff, and might be able to, for example, explore induction loop equipment.

3.2 Staff training

Training on working with disabled people is available at all levels: general disability awareness training for all new staff, including information about the function of the disability services team; more specific disability training courses, which staff consider useful to raise awareness and provide guidance; tailored training for heads of department, deans and those likely to sit on an interview panel; and equality and diversity training days that set disability equality in the context of the institution's broad equality policies, practices and procedures. Online training resources are also available at one institution, allowing staff to learn at a time that is suitable for them – this proved the most popular way for staff to learn about disability.

Despite the availability of this training, several members of staff reported being unaware of it, or being unable to attend refresher training, and only a few have specific or specialist expertise with regard to sensory impaired students. Many students rely heavily on technology, and some have taken the initiative in using these technologies, such as specialist software to read text. However, this cannot be expected from all students, so staff must be up to date in their knowledge of the available technological aids.

Several students across the three institutions noted that not all staff they come into contact with had been sufficiently trained.

> 'I don't think that staff have been trained. If I speak to a member of staff often, I will explain to them that it helps me if they look at me.'
>
> *Deaf student*

> 'Assistive technology is something that I use all the time. I developed my own assistive technology from scratch to suit my specific needs. It's a small camera, like a CCTV camera, that allows me to take pictures in real time and look at them on my computer. This is really useful during lectures.'
>
> *Student with partial sight*

Informal discussions take place among members of staff to inform approaches to assisting specified individuals, most often because of a learning difficulty such as dyslexia. Although this does not constitute full disability awareness training, these

discussions help raise awareness about the need to remove barriers in particular situations, such as by making alternative examination arrangements or by providing in-class note-takers.

Interview data across all three institutions indicate that, even if staff have attended training, most of their knowledge on disability originates from working directly with individual disabled students. This means their approach focuses on the needs of individual students rather than on dismantling barriers and making reasonable adjustments. There are also implications for staff learning on the job about specific disabilities and how they may be manifested. This may affect staff confidence when supporting students – it is important that staff are equipped with the appropriate tools before offering support to students.

None of the interviewees stated that disabled staff or other disabled people are involved in providing training about disability. Disability equality training delivered by disabled people fits with the ethos of the Disability Equality Duty (DED: **www.odi.gov.uk/resources/the-law-ded.php**).

3.3 Applications and admissions

Support services recognise that the application and admission stage is an important time for making contact with students who may need support. The admissions office has a clear duty to inform a member of disability services staff if a student has ticked the disability box on the UCAS form and indicated their type of impairment.

At one institution, a named person within the disability services for sensory impaired students makes contact with students as soon as they receive their application. If a student provides an email address, disability services sends a disability questionnaire. As most new students are unaware of the range of support that can be put in place for them, the questionnaire provides students with an initial opportunity to think broadly about what they might need in their new learning and living environment. In other cases, disability services telephone or write to all sensory impaired students to explain the range of facilities and services available. In particular, they try to describe, as realistically as they can, what being in a university environment entails.

During the application phase, potential students often seek the assistance of the disability services team and are provided with information about the help on offer, whether or not they eventually choose the institution. Some sensory impaired students noted that the reception they received at an institution's open day with regard to campus accessibility, the availability of relevant information, and the opportunity to discuss their requirements with support staff, helped to influence their decision about which institution to apply to.

Students mentioned that they would find it useful to have specific information about disability services sent to them, because there are so many other things to think about and to look at on the institution's website that it can be easy to overlook disability services information. This is particularly pertinent for overseas students, who already have to make arrangements for living in a different country and culture, and are usually unable to make visits before commencing their course of study. However, while students appreciate receiving information, they do not want to feel overwhelmed by it.

Support service staff spoke of the importance of providing students with information about the DSA and how they might use the allowance before starting their course. At one institution, there is strong support for international students, students not (yet) in receipt of the DSA, and students whose disability has not (yet) been diagnosed. This support is funded centrally by the institution, but encourages home students to apply eventually for the DSA. Meetings are held with individual students, who are provided with forms and background information to the DSA, how it works, and what the money may be used for. Both undergraduate and postgraduate students sometimes require a significant amount of assistance to complete the forms, which are seen as complicated. Support services staff at one institution noted that if students leave it until late in the first term to approach disability services, staff do not wait for the DSA process to be completed before providing support. However, despite the assistance available, some students remain unaware of the DSA, and EU students are uncertain as to whether or not they are eligible.

3.4 Support assessment

After students have disclosed their disability, staff aim to put the required support in place. At one institution, once a student discloses a disability, a full assessment is undertaken that looks at every aspect of the student's university programme and

the social and domestic aspects of their life. This assessment covers what would be required to participate fully in their programme – including support for all work-related elements, fieldwork and trips abroad; any equipment or in-class support they may need; their accommodation and dietary requirements; and assistance dogs' needs. It is suggested that all institutions consider this holistic assessment approach.

When an assessment has been undertaken, whether or not the student has yet applied for the DSA, students said that the support for which they had been assessed was usually in place in time for the start of their course. This is extremely important to enable students to develop a routine once they arrive in their new environment. Staff recognise that student support requirements will be different in different learning contexts, so a student's assessment takes classroom activities into account, as well as their disability.

3.5 Support provision

For sensory impaired students, university is a very different experience from school. For example, the size of a lecture room could make it difficult for a student with hearing loss to hear everything that happens; visually impaired students might find the volume of reading they are expected to do on their own difficult. At school, these students may have been provided with texts in the formats they require, or may have had one-to-one support in a special unit, so they may not have considered using a tape recorder or having a note-taker. In addition, the pace of learning is faster at university than during A-levels – something students are not always prepared for. A lack of awareness of the differences between school or college and university was reported to be a major reason why students had not considered the additional requirements they were likely to need in their new learning environment. Students may benefit from more comprehensive taster sessions before starting college.

Mature students, in particular, may need increased support if they develop a sensory impairment later in life, and need to adjust to living with a disability as well as adapting to life as a student. One mature student started to lose her vision during the first year of her course and did not return for her second year. However, realising that support might be available, she eventually contacted disability services, who arranged the support she required to complete her course.

Support service providers

Note-takers are an example of support that can be provided by institutions. It is important to remain sensitive to the wishes of students, who may not want the note-taker to sit next to them in class or identify themselves to other students. In the case of a student who is hard of hearing, it is often best for the note-taker to sit next to the student so they can write down instructions to the class as they are given, which can create difficulties if the student does not want their note-taker to be identified. Nonetheless, it is important to offer this option.

Institutions may also choose to use a transcription service to make books and journals available in other accessible formats. It is also possible, in some circumstances, to contact publishers directly to ask for electronic copies of books that can then be manipulated to meet the needs of a particular student.

Support services at one institution provide a three-level mentoring system for students with a disability. A first-level mentor accompanies the student in a class simply to provide reassurance. At level two, the mentor works with a student to provide one-to-one assistance. At level three, the mentor provides level one and two support, while also helping the student with the organisation of their work, their social activities and their living skills. Mentors provide support in a wide range of ways, including support for individual project work, going to the library and field trips – one student was supported on a criminology course visiting a prison – and on trips abroad.

Several of the students interviewed confirmed that there is a lot of support available, but some spoke of the need to be very proactive in making their own adjustments, and some had even designed their own assistive technology. This need for students to be proactive may be difficult for students on the autistic spectrum, who often do not have the insight to plan ahead and foresee necessary adjustments. Students may lack the motivation and capacity to be proactive, particularly when settling into a new environment and dealing with the associated anxieties. For these students, structure, routine, consistency, and having support services and systems in place are important.

This is true not only at undergraduate level, but also at postgraduate level. A postgraduate student on the autistic spectrum who needed to work to a set routine – which is not the usual pattern for postgraduate study – was given help with devising a timetable for handing in work on a regular basis, so that the student had a framework to work within.

Entering higher education offers students what is often their first experience of being away from home – they have to learn to carry out a whole range of tasks, including shopping, washing clothes, preparing meals, budgeting, and balancing studies and social life. Support needs arising from these issues are often provided by student services. It is suggested that this form of support should be considered at all institutions, as it is crucial to the success of students on the autistic spectrum.

3.6 Recommendations: support service providers

- Promote support services for sensory impaired students via central university websites. Ensure information is provided in plain English, and consider providing key information in BSL.
- Provide specific information about autism and the autistic spectrum, and the support available for students with these disabilities.
- Provide noticeboards to promote support services.
- Consider providing drop-in sessions for students to make disability services and student services more visible. Ensure staff understand BSL to make drop-in services accessible.
- Provide regular, annual training on working with people with particular disabilities at all levels, and ensure all staff are aware of this training. Encourage frontline and student support staff, as well as tutors, to attend specialist deaf awareness training.
- Ensure training includes up-to-date information on the use of assistive and other technology to support disabled students, including equipment and communication support for students who are deaf or hard of hearing.
- Ensure support services have a good understanding of hearing enhancement technology and are able to advise learning and estates managers on procurement and management issues, as well as the specific needs of individual students.
- In addition to training courses, consider providing online training resources so that staff can learn at a time suitable to them. Consider access for BSL users, for whom English is often a second language.
- Prioritise training for staff who have disabled students studying in their faculty.

Support service providers

- Ensure support services make contact with disabled students during the applications and admissions stages, as these stages are often very complicated for these students. Provide alternatives to telephone numbers for initial contact, such as a textphone number or email address.
- Ensure UK, EU and overseas students are provided with information about the DSA and receive assistance with completing the DSA form. Students could also be given detailed information about how long the process can take, to ensure they have sufficient time to complete the form and have it processed.
- Following a student's disclosure of their disability, provide a full assessment of their needs and follow this through with appropriate action. Ensure assessments for deaf or hard of hearing students are provided by a specialist assessor.
- Consider the specific support needs of mature sensory impaired students, as these may be different from those of other students. For example, consider the needs of students with hearing loss acquired during their course of study; provide staff with awareness training to support them in signposting relevant support and counselling services.
- Consider providing a mentoring system to support sensory impaired students throughout their course.
- In addition to students' specific support needs, consider general support needs, for example in helping them adjust to the faster pace of learning in higher education.
- Allow for reasonable adjustments, such as additional time for exams when using an interpreter or working in a second language.
- Ensure any specialist services (such as interpreters) are available before confirming the date of an event.
- Conduct a survey of staff skills and expertise to determine the training needs of all support service staff. This may be particularly important to ensure training is up to date with developments in assistive and other technology – noted as a big challenge by support service staff at all three institutions.
- Ensure disabled staff, or other disabled people, are involved in providing training on disability equality, as this fits with the ethos of the DED.

4 Learning managers

4.1 Understanding students' needs

Despite the training available to teaching staff, several students across all three institutions commented that teaching staff are unaware of the Disability Discrimination Act (DDA) and the DED, and do not have a clear understanding of disabled students' requirements.

> 'I have to keep asking and they don't see any legal issues. They don't know about the Disability Discrimination Act and there are no systems in the university for putting changes in place.'
>
> *Student with partial sight*

Several students with hearing loss reported that lecturers quite often forget they are in the class, and drift into whole-class teaching without directing their presentation to students who cannot hear well. In this situation, it is not uncommon for students to resolve difficulties with the help of friends on the course rather than that of disability services, despite the availability of a disability tutor in each department.

Teaching staff noted that they often rely on students being proactive, which makes them consider whether there are some sensory impaired students who 'suffer in silence'. Several staff noted that this may be especially true for students on the autistic spectrum, which has the potential to put them at a disadvantage.

Students appreciate the work of the departmental disability representatives, who ensure teaching facilities, course work and examination arrangements are suitable for each student.

> 'The disability officer wrote to all the teachers and asked if they could not turn their back to the board; that was very helpful. I hate it when people just come in and talk with their hands over their mouths – grrrr!'
>
> *Student with hearing loss*

4.2 Learning materials and support

Teaching staff work with students directly to find ways to support them, and do whatever they can to adapt teaching practices and materials for students who have sensory impairments by discussing their requirements with individual students. However, they would expect students to be involved in making their learning environment accessible, as meeting their support needs really depends on students taking some responsibility for obtaining what they need; some students had suggested specific support for the equipment they require.

The adjustments that academic staff can make for students who are deaf or hard of hearing are often quite simple: checking there are no technical difficulties with the hearing loop, ensuring students who lipread are able to do so, or using a microphone during classes.

> 'I'd like it that all lecturers use a microphone so everyone can hear easily.'
>
> *Student with hearing loss*

Consistent use of the intranet, where staff post lecture notes, materials and presentations for lectures, is extremely helpful for students with sensory impairment, particularly for those on the autistic spectrum, for whom taking in information and writing notes can be overwhelming and lead to anxiety.

> 'The most useful thing is the notes [available on the intranet] so I do sort of know what's going on. It's brilliant. If I don't understand, I can always go back to the teacher afterwards and say 'Look, I don't understand this bit.'
>
> *Student with hearing loss*

Conversely, handwritten notes, particularly when displaying complex equations, can be very difficult to read; it is important that lecture notes are typed. Transcription services from the Royal National Institute of Blind People (RNIB) can produce documents in accessible formats.

> 'There is a software programme that allows you to type equations, but none of the lecturers use it, or even knew about it before I told them. It was really difficult for me.'
>
> *Student with partial sight*

Teaching staff sometimes feel unsupported by their senior colleagues in their attempts to help students who are on the autistic spectrum, and staff may not be informed of new approaches to working with such students. An online noticeboard or online learning environment could be used to overcome this, so that staff have access to up-to-date information on training sessions and support strategies.

The libraries of the three institutions studied have different methods for ensuring accessibility for all students, including: a student services manager, whose role is to embed disability issues within the library service; induction training and disability awareness for all staff, covering issues such as disability etiquette; a mark on the library card of disabled students, which allows them to keep books on loan for an additional period; and communication between sensory impaired students, their personal tutors and lecturers, and library staff at different stages of the student's course, not necessarily just at the beginning. However, funding issues remain a difficulty for library staff, who have an insufficient budget for scanning books for partially sighted students.

4.3 Courses

Consideration of their disability is a secondary criterion for students when selecting their course of study; it is passion for their subject and a belief in the high quality of the education available that leads them to their selected institution. However, a student may sometimes select a particular option within their subject that they feel is compatible with their disability: one partially sighted student opted for a theoretical course because there is little laboratory work, and a student who is hard of hearing avoided an option involving a period abroad, anticipating communication difficulties.

Occasionally it is left to students to work out for themselves which tasks they would be unable to carry out. This eventual awareness might lead to applicants deciding that this course is 'not appropriate for them', in which case they may not pursue their application further. Decision-making and advance planning can be particularly difficult for students on the autistic spectrum, who need supported guidance and advice to help decide what path to take.

If a sensory impaired student applies for a course where participation criteria are externally governed by regulations of a professional body, an occupational assessment would be carried out to indicate whether the student is able to proceed

onto the course. Disability services staff liaise with teaching staff to carry out risk assessments and work with students to assess assistive technologies – such as using a video camera on field trips – and devise coping strategies, such as how to use a note-taker.

As far as can be ascertained, there are some professional bodies that have not yet taken sufficient steps to remove barriers to disabled students participating in areas of professional learning, even where a student wishes to use that learning for reasons other than a career in the field for which the qualification was designed. For example, a student may want to pursue a medical course with the aim of becoming a journalist on health issues rather than become a medical practitioner. However there are many professional bodies that are actively trying to encourage disabled students to participate in courses. Some examples of relevant guidance are:

- Chartered Society of Physiotherapy (2010) *Into physiotherapy: welcoming and supporting disabled students*
  www.csp.org.uk/publications/physiotherapy-welcoming-supporting-disabled-students
- General Medical Council (2008) *Gateways to the professions: advising medical schools: encouraging disabled students*
  www.gmc-uk.org/static/documents/content/Legal_review.pdf
- SWAP Learning and teaching Support Network (2004) *Access to practice: overcoming the barriers to practice learning for disabled social work students*
  www.swap.ac.uk/docs/Accesstopractice.pdf
- Teacher Training Agency (2004) *Able to teach*
  www.ucet.ac.uk/552

Where a work experience element is necessary for a course, teaching staff inform employers of a student's needs and ensure arrangements are made.

Timetable changes to individual courses are generally communicated by email, which is usually the best way to inform students of alterations.

4.4 Examinations and assessment

Disabled students may be provided with additional time to complete exams; however, this does not alleviate all difficulties. A partially sighted student reported that some exam questions are so long that he cannot see them in their entirety,

making it difficult for him to understand the full meaning. It would have helped to have the questions read to him, but he felt he would be better able to demonstrate learning via oral exams or course work.

Although it is possible to have exam papers modified externally by the British Association of Teachers of the Deaf, there remains some internal suspicion regarding this; some academic staff are concerned that exam questions are being made easier, giving an unfair advantage to sensory impaired students.

The biggest barrier to making reasonable adjustments is staff time, as staff generally do not have any workload remission. This is a particular issue for students on the autistic spectrum, who often require time-intensive support.

> 'All staff have been really helpful and willing to make changes, etc., as long as it doesn't take up too much of their time. I have to be very persistent and proactive to get what I need, and this is sometimes uncomfortable.'
>
> *Student with sight loss*

4.5 Recommendations: learning managers

- Ensure all staff are aware of the Disability Equality Duty (DED) (**www.direct.gov.uk/en/DisabledPeople/RightsAndObligations/DisabilityRights/DG_10038105**) and implications for their work, and their institution's DES action plan. Ensure teachers and lecturers identify the assistive technology and heading enhancement systems that will be needed in advance of the lesson, and verify that these will be available and functional in good time. For example, ensure preparation materials are given in advance to language service professionals and students who are deaf or hard of hearing, and ensure tutors are aware of effective teaching strategies for students who are deaf or hard of hearing.
- Ensure all students receive the support they need; do not assume students will always be proactive, or do not need support.
- Post timetables and lecture notes online in advance of lectures so that students have easy access to them, and time to read them. In addition, provide note-takers or speech-to-text for students who are deaf or hard of hearing, so that additional information can be captured. Ensure visual descriptions and transcripts for sound material.
- Produce all documents in accessible MS Word format rather than PDF format, as screen readers struggle with such documents.

Learning managers

- Ensure all notes are produced in type format rather than being handwritten.
- Ensure students are encouraged to select their courses based on their interests, not on whether a particular course is considered suitable to their disability.
- Make reasonable adjustments to fieldwork, laboratory work and work experience so that all students can participate. If this is not possible, or requested by students, provide suitable alternatives.
- Ensure teaching staff inform employers taking on students for work experience of their specific needs, and ensure any necessary adjustments are made.
- Provide students with reasonable adjustments in examinations, and consider allowing alternatives to written exams, such as course work, oral exams, or exams in BSL.
- Consider a range of ways to communicate with students (telephone, minicom, SMS, instant messaging, email, face-to-face), and ensure the specific communication skills of the key staff working with deaf or hard of hearing students, including those who use sign language, are taken into account.
- Consider methods for keeping staff up to date with assistive technologies. It may be useful, for example, to instigate a system of 'champions' – members of staff with specific knowledge of software for disabled students – who would train other staff.
- Consider including academic staff when selecting assistive technologies. This enables them to understand why the equipment is required, and heightens their awareness of students' disabilities.

5 Estates managers

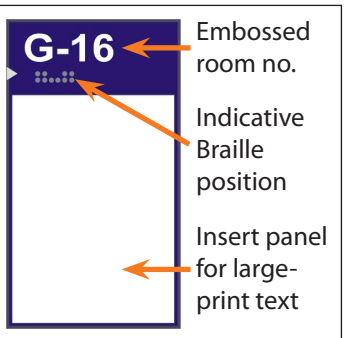
5.1 Training

Estates managers at the three institutions are keen to improve accessibility, but lack the information and training to meet all students' needs, particularly to address the needs of people with sensory impairments, which – unlike spatial and dimensional information – are difficult to convey in textbooks and guidance. None of the estates managers had attended an access training course, so much reliance is placed on either the knowledge of designers, or the minimal requirements set out in the 2004 Approved Document M of the Building Regulations (ADM). To move beyond minimum requirements, HEIs can aspire to the higher standards set out in BS8300:2009, *Design of Buildings and their Approaches to Meet the Needs of Disabled People: Code of Practice*, and other guidance.

It is advisable to employ an access professional to review building schemes to avoid excessive reliance on the knowledge of designers and limit costly retrospective changes.

5.2 Communication and wayfinding

All three institutions are in the process of upgrading signage, and while the new signs are an improvement on their predecessors, some fundamental shortfalls still exist. External reflective signage can be difficult to interpret even on a dull day. Current signage lacks tactile information, despite the recommendation of good practice standards to include Braille and embossed images and text. Where possible, it would be preferable to consider GPS or audio information. All institutions are correctly using a sans-serif font on their new signage, although the lettering needs to be large enough for the viewing distance.

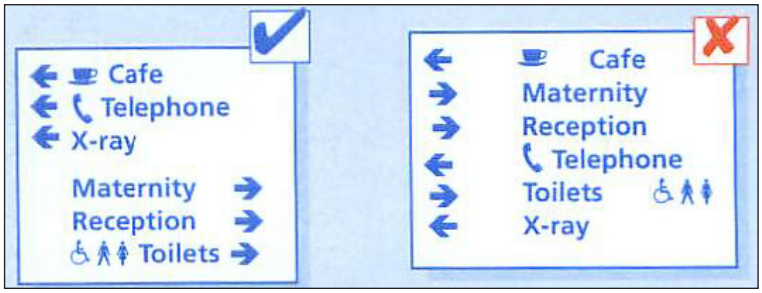


Classroom sign with flexibility for different messages while retaining tactile and visual information

Room signs should be consistent across campuses, avoiding different styles and numbering systems and enabling flexibility to provide additional information.

Directional signs usually incorporate reasonable arrows that have a distinct tail; a recommended example of such an arrow is given in ISO 7001.

While arrows are generally positioned correctly for the direction (on the right of text for a right direction, left of text for a left direction), arrows are not always grouped with those for other facilities in the same direction. This is considered good practice as it makes the information much quicker to digest.



Collective use of arrows is helpful in this NHS example

Temporary signs for particular events can be useful, particularly for registration and induction days, when many visitors will be unfamiliar with the campus. Although no template currently exists for these, it is best to avoid block capitals, small or serif fonts, and shiny plastic film or laminate.

One institution always uses blue hoardings for temporary construction works and displays a large, A1-sized explanatory notice, which makes changes easier to understand.

When alternative facilities are referenced, a sign needs to include directional information. For example, one institution has three principal places to buy food, open at different times of day; a notice stating that a location is currently closed suggests another location, but it would be better to add further information about how to find this alternative.

The maps available at the institutions would benefit from colour coding to differentiate between residential halls, lecture theatres and refreshment facilities, as well as incorporating well known symbols for toilets and canteens – these are

frequently more helpful than text, which may be too small for many people with visual impairments.

Map displays around the institutions are helpful, but would be easier to understand if oriented to the user. They would also be improved by the inclusion of embossed symbols and audio information.

5.3 Printed materials

Two items of the institutions' printed materials intended for new students (for example, a prospectus and student guide) were collected in each case. All three institutions predominantly use the recommended sans-serif fonts and left-aligned text, but currently lack both a required statement on how to obtain alternative formats, and prominent information about disability support. This is particularly important on prospectus guides, as the lack of this information may deter students with disabilities from applying. It is also advised to include information if the institution has achieved better accessibility than might be expected; for example, one institution has an accredited accessible fitness centre, but neglects to highlight the significance of this in student information and prospectus booklets.

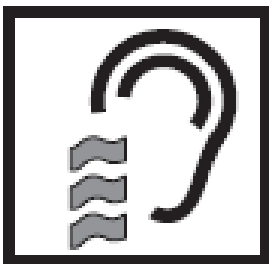
5.4 Hearing-enhancement systems

Arrangements for the provision of hearing-enhancement systems are almost non-existent at one institution, with reliance on portable induction loop systems only. These are often not readily available because they have been misplaced or their batteries have not been charged. Elsewhere, arrangements were better, with a combination of infrared and induction loop systems available.

There remains some confusion over the correct symbol to display and who is in charge of maintaining loop systems; one institution has already recognised this as an issue and is undertaking an audit of the systems it has in place. It is important to know what equipment is on site, where it is located, and whether it is fixed or portable, as well as regularly checking that it functions correctly. It is important to display the correct symbol so that people with hearing impairments understand the type of system provided and whether they need to collect a receiver or switch to the T-switch. Where receiving equipment needs to be used, it is helpful to display information about this. Equipment may be provided by a department, but estates are usually responsible for maintenance. This overlap in responsibilities may be the cause of undermaintained systems.

Facilities for people with hearing loss

Induction loop present



Infrared system present

Helpful sign if receivers are needed

5.5 Other technology

Many students rely on laptops for note-taking, especially those with certain sensory impairments. One institution has recently had a new laboratory installed that is, in many ways, more accessible than older facilities, although it currently lacks sufficient power sockets and as a result has trailing extension leads.

A range of software for sensory impaired students is readily available at two of the three institutions, but on occasion only in a dedicated area, which could segregate students from their friends or colleagues.

5.6 External

The paths and walkways at all three institutions are generally well maintained and do not have low-hanging foliage. In the case of damaged paving, one institution uses protective railings to avoid a trip hazard; this does not contrast well, but use of hazard tape could correct that.

Barriers over trip-hazards are helpful, but ought to be contrasting

Example of a well contrasted bollard

The institutions have attempted to align all street furniture to minimise obstructions on pathways; however, there are occasionally unavoidable obstacles, such as a line of trees running up the centre of a major walkway, which may need to be signalled through a change in floor surface around the tree. Bollards are frequently made evident, although there remain some that are disused or that do not contrast well with their surroundings.

A listed building at one of the institutions has an integral archway surrounding a passageway with windows on either side. This is a relatively dark area, and someone could accidentally walk into the window; no protection is offered against this as it is assumed that everyone would notice. As it is not always permissible or practicable to penetrate structure or ground finishes, a strategically placed contrasting planter would help to minimise any risk.

None of the studied institutions has yet created a designated cycle route, despite the increasing use of cycles as a mode of transport to, from and around campus. Thus there is no defined route that pedestrians can follow to avoid cyclists; one partially sighted student would feel safer if the campus was fully pedestrianised.

> 'Stop people riding bicycles on campus grounds! All cyclists should be made to dismount and walk their bicycles on entering the campus. Many still cycle, some at alarming speeds, along pathways within the grounds.'
>
> *Blind student*

On one campus, external lighting is felt to be inadequate for both night-time security and wayfinding, as it does not give consistent levels of light across principal pathways. This means that visitors and students moving around the site, particularly those with a visual impairment, are at risk of trips and falls.

5.7 Arrival and reception

The main reception building is evident on approach to all three institutions; however, surprisingly, none of them has suitable step-free access. When planning to introduce a ramped approach, it is advisable to retain or incorporate steps, as some people with a visual impairment either prefer the consistency of steps to a ramp or, in the case of sight loss due to diabetes, find a ramped surface particularly uncomfortable to use.

A number of the existing steps on campus lack good handrail support, either due to the listed status of the building, or because of the aesthetics of the initial design.

Steps ideally should have handrails on both sides so that they can be used with either hand.

The semi-automatic doors that two of the institutions have helpfully installed would benefit from better defined and better located push pads to trigger the doors. Care should be taken to ensure doors do not swing out onto walkways unexpectedly, so clearly contrasted guard rails or an audible warning should be installed.

The older buildings at these institutions are typically less physically accessible than more modern buildings; on the other hand, the newer buildings are often less accessible for those with sensory impairments due to the use of inappropriate materials. One institution in particular has a high proportion of buildings constructed of steel and glass, with the result that there are several new facilities where students with sensory conditions are likely to be disadvantaged by their environment. For example, extensive glazing, which maximises daylight into a building, can cast deep shafts of light and shade that can disorientate visually impaired people. Also, revolving and circular drum doors can minimise draughts successfully, but are unpredictable in speed and operation, making them particularly dangerous for visually impaired people.

5.8 Horizontal circulation

Most buildings across the three institutions offer suitable contrast between floor and wall finishes, although this seems to be more by accident than through planning. Only one institution has developed colour palettes to ensure sufficient contrast can be achieved.

Wall finishes in teaching spaces and ancillary areas are generally plain and matt with fairly even lighting. However, this is not always the case in bar and club areas, where lighting might include spot lamps and different coloured walls, so these should be checked to ensure they are not confusing for sensory impaired people. The décor in the students' bars is unlikely to be under university control, so improvements may need to be driven through the students' union. It is important to ensure social amenities are accessible to sensory impaired students – lack of access to social activities can result in diminished academic progress and an unhappy student experience, so sensory impaired students should be involved in the decision-making processes concerning design and layout.

All three institutions have poor-to-mediocre lighting in places, sometimes well below the lux levels recommended by the Chartered Institution of Building Services Engineers. Maintenance regimes are good, although a single tube failure is generally left until several have failed in the same area in the interest of economy; this can cause distracting pools of light and dark, making it difficult for people to lipread or causing eye strain, and leaves students with visual impairments at a significant disadvantage.

Finishes have a significant effect on students with sensory impairments, but institutions do not often consider them as a key accessibility feature. The choice of flooring, for example, can greatly influence a student's ability to orientate themselves: bold lines can easily be mistaken for steps or level changes by students with visual impairment; reflective surfaces can affect students with hearing-related balance conditions; heavily patterned carpets can contribute to sensory overload for some students with autism.

The colour contrast in newer buildings is often poorer than in older facilities, possibly demonstrating that the need for tonal contrast can be lost in aesthetic choices if no one challenges this. The designs created by a high-profile concept architect for several large new buildings at one institution were found to have monochromatic colour schemes and a minimalist approach throughout. The estates team proceeded to add blocks of colour to differentiate between rooms and enable doors to be seen easily, and has now decided always to engage a separate design team to develop the concept into internal environments that work for everyone.

Although the skylights and glazed roof areas at one institution undoubtedly create a light, bright environment, there are a number of seating positions in the coffee shop that everyone avoids during the middle of the day when shafts of strong sunlight beam down.

The full-height glazing panels that can be found in atriums and circulation spaces at all three institutions do not have blinds fitted, which makes the area difficult to navigate for someone with impaired vision; the shadows move during the day, so this is not a feature that someone can easily learn to recognise as harmless.

Some of the biggest challenges for someone with a sensory impairment can often be rectified by inexpensive changes or greater attention to detail. Small omissions

or ambiguity in information can cause confusion, difficulty and stress for people who are not able to make a multi-sensory interpretation or are overloaded by the way the information is provided. For example, the common practice of fitting pull handles on both sides of a pull/push door, evident in many buildings at each of the institutions, is confusing for most people and can be dangerous for someone who cannot see a 'push' or 'pull' sign.

> 'Some places are like running a rabbit warren, and some doors make no sense – inwards then outwards then random direction opening'.
>
> *Student with autism*

5.9 Vertical circulation

All institutions have some staircases that are located in an open circulation area rather than an enclosed stairway. Although it is helpful in these situations to provide some means of warning for people with visual impairments, the method is not the same as for external steps. Internal warning surfaces were once recommended in good practice guidance, but these were removed when it was realised that the number of accidents increased as a result. Good intentions at one institution led to the top, bottom and landings of all internal staircases having a high-profile PVC-type ribbing; unfortunately such a significant change in friction to the surface of the steps is likely to cause trips and falls.

A particularly confusing stair arrangement at one institution, where two staircases opposite one another meet at a central landing, will be potentially dangerous for someone who is blind or partially sighted, as it cannot reasonably be anticipated. Management must ensure people with visual impairments have a site induction that includes unusual features like this, so they can be avoided or anticipated, and possible enhancements can be considered to make the situation safer.

Tonal contrast is also helpful – many people with visual impairments have some residual sight, so a square of a highly contrasting colour at the head of stairs can be useful.

Older buildings often have single steps to address level changes. These are dangerous as they are difficult to see, and are not permitted in new builds. Where possible, it would be beneficial to replace these with a ramp that has a colour change to highlight the gradient.

Lifts at all three institutions are in good condition; none has a threshold misalignment, which demonstrates good maintenance arrangements. New lifts have voice annunciation, but still need a clear floor-level display for the benefit of people who cannot hear this.

5.10 Acoustics

Generally, the older buildings have a more accessible acoustic than more modern environments, with the exception of the reception at one institution which suffers considerable echo from a stone staircase. A site with a palatial glass and steel reception area, for example, presents a lot of difficulties for students when interpreting their environment because of the hard and reflective finishes within the space.

Catering areas are frequently noisy, and two institutions have made efforts to reduce the amount of echo by carpeting the floors. But this can cause problems with hygiene and cleaning, so other methods of reducing resonance should be explored.

None of the institutions has incorporated buffer zones between areas of activity, for example strategic placement of storage facilities, or unoccupied and quiet areas between teaching spaces. Floor-to-ceiling wall storage can help to improve the sound separation between rooms.

At least two institutions had noisy extraction and overhead cooling fans and projectors running during the audit visits, and there seems to be little awareness of how intrusive and possibly distressing such equipment can be to students with autism or hearing loss.

5.11 WC provision

Finding toilet facilities at the three institutions is not always easy. Directional signs rarely include toilets, door signs vary in size, colour, wording and reflectance, and none of the three institutions provides tactile information on every toilet door.

A wide variety of male and female symbols are used, although one institution consistently adheres to the British Standard (BS) symbols intended for public buildings. Comparisons between the BS symbols and other types are illustrated

below; it is important to provide clear symbols and tactile information so that everyone can verify that they are entering the correct facility.

BS8501-5002 male symbol with legs astride

BS8501-5001 female symbol with single stem (legs together)

Shape on this sign is still evident but processing takes longer

Male and female symbols hardly distinguishable from one another

All toilet facilities are clean and well stocked, but housekeeping could be further improved; waste and sanitary bins were found in transfer spaces in wheelchair-accessible facilities, and in at least one WC at each institution, cleaning materials were left out, which could result in someone with a visual impairment using the wrong product by mistake.

Newly refurbished standard WC provision at two of the institutions has excellent tonal contrast, but this is not always the case in accessible WC facilities.

5.12 Safety and fire

In several buildings, relatively minor shortfalls can accumulate to create an unsafe environment for someone with a sensory impairment, leading to trips or falls. This might include lighting a little lower than is good practice, coupled with poor tonal contrast and a level change or obstruction, for example worn contrast to step edges.

At one of the institutions, students occasionally take part in activities using industrial equipment, and a generic risk assessment had led to mandatory personal protective equipment such as goggles or ear defenders. For someone with an existing sensory impairment, the addition of such items could make the individual at risk of suddenly having a temporary dual impairment that could make the task impossible or dangerous, especially if the activity involves moving machine parts. A reasonable adjustment is likely to be needed, such as closer supervision, role-

swapping among students, additional guarding and so on, but in this particular case there is no evidence of any formal risk assessment and it is left to the discretion of staff at the time. As not all sensory conditions are readily apparent, this could be overlooked in a busy class activity.

One of the institutions has invested in a campus-wide vibrating alarm system for people with hearing loss. Initially this was triggered by a fire alert anywhere on campus, which was disruptive to students or staff members who could be many buildings away from the source of the alert; the system has now been refined so that the trembler unit is triggered only within a given radius of the fire outbreak.

A buddying system would be of benefit to students on the autistic spectrum who may be overwhelmed by the noise of the alarm and a crowded evacuation route. Supplementary wayfinding on fire exit routes, for example using light-emitting diodes (LEDs) or luminescent tape, is also worth considering.

The majority of buildings across two of the institutions have a simple push-bar mechanism on fire exit doors, but one institution has a number of new exit doors that have a perspex-encased device to open the doors, the operation of which is not readily obvious. The notices are ambiguous and would be difficult in a high-stress situation, and someone with a visual impairment would be unlikely to interpret the device at all unless they had been shown it previously.

Notice above the Perspex box

Hinged box encasing the usual break glass unit

5.13 Recommendations: estates managers

Access manual

= Consider producing an access manual containing guidelines for supply of materials and design protocol, as well as the history of decisions around accessibility, such as why a colour scheme or particular light fitting was chosen.

= Establish one or more colour palettes to be applied to new and refurbished areas to ensure the importance of sufficient contrast between key finishes is not overlooked.

Entrance doors

= Wherever practicable, have sliding automatic doors rather than swing or revolving doors. Swing doors need an audible, but not overwhelming, warning sound.

Disability forum

= Establish a forum or network of students and staff with sensory impairments to verify that ongoing needs are being considered when reviewing management practices and procedures, changes to the environment or buildings and maintenance regimes. The same network can be used for post-occupancy evaluations. Students on the autistic spectrum could be given the option of remote input if preferred.

= Ensure funding is available for the provision of communication support at forum or network meetings.

Training

= Provide sensory awareness training to the estates team, including lighting, colour and contrast, as well as BS8300:2009 and building regulations.

= Consider delegating to a senior member of the estates team specific responsibility for disability discrimination issues relating to estates management.

Works

= Provide a considerate contractors' scheme for any essential building work during term time. This might include ensuring clear wayfinding, providing alternative routes, applying hazard tape to level changes or obstructions, as well as noise reduction during core study time.

Institution inductions

= Include familiarity with unusual and potentially dangerous features in inductions with sensory impaired students.

= Designate a sensory/quiet room for students on the autistic spectrum and those with other sensory impairments. This quiet space might assist students to overcome any anxiety that their surroundings may be causing them.

Housekeeping

= Train cleaning staff in access issues, ensuring floors are not overly polished, faults and maintenance issues are quickly noted, and toilet transfer spaces are kept clear. Cleaning staff are the most likely to notice any locations where floor junctions are lifting or mats have become loose, and they need to be encouraged to report these so that remedial action can be taken immediately.

= Request that cleaners do not tie up the emergency alarm cords in WCs.

Hearing enhancement

= Regularly check all assistive aids, such as induction loops, to ensure they are functioning, rather than relying on a hearing aid-wearer to report a fault.

= Ensure the correct symbols are in place for the type of hearing-enhancement system supplied.

Signage

= Ensure large, embossed numerals indicating floor level are visible on every stair landing and opposite lift doors, to assist orientation.

= Display high-contrast signs on all toilet doors with embossed images, text and Braille.

= Develop a template for temporary signage. A Braille Dymo label-maker produces a self-adhesive, transparent tape with Braille that can be added to temporary notices and signs, lockers, and so on.

= Ensure the stationery specification is for matt laminate sheets.

= Supplement or replace signs that are not accessible due to style or finish, and ensure building names and common abbreviations are included on maps.

Estates managers

Information

= Display a notice advising how alternative formats can be obtained and, when maps are updated, consider recommendations for enhancement.

= Ensure all future printed materials carry a large print statement offering alternative formats such as large print, Braille and CD.

Cycles

= Separate cycle and pedestrian routes, at least with a delineator, so that people with sight loss can move safely around the campus.

Power sockets

= Ensure there are sufficient power sockets in laboratories and lecture theatres on all new builds and refurbishments, so that students who need to use laptops have ready access.

Lighting

= Regularly review lighting levels (350–500 lux to be provided for general study areas) and avoid the use of spot lamps in new schemes. Instead, consider using lighting on walls that is directed upwards rather than downwards.

= Avoid undiffused fluorescent lighting. Although fluorescent lighting has been cited as causing problems, it does have positive benefits in providing high light output. The newer high-frequency fluorescents are less noisy.

= Ensure all light fittings are retubed within the manufacturer's specified lifetime and replace failed light tubes regularly. Flickering lights need to be replaced straight away.

Acoustics

= Include requirements for low background noise and appropriate reverberation times for the type of space in all performance specifications.

= Make background noise levels on all devices, especially fans, extractors and ventilation, air-conditioning, projectors and other IT equipment, a primary consideration on all future acquisitions.

= Consider carpeting areas where a high echo occurs.

Steps

= Introduce corduroy tactile warning paving at the top and bottom of all new or repaired external steps, in accordance with the ADM.

= Check that the slip resistance on any tactile warning on internal staircases is the same as on the steps.

Glazing

= Ensure all full-height glazing has strong manifestation (glass markings) at two heights.

Highlight and promote existing achievements

= Promote disability services and institution accessibility in publicity material and student information.

Fire safety

= Consider supplementing fire exit route signs with luminescent or LED wayfinding systems.

= Provide visual alarms on new schemes.

= Introduce institution-wide vibrating pager alerts for students who are unable to hear the fire alarm, but ensure these are triggered only for relevant alerts.

= Consider adding fire safety information on tactile maps.

= Physically guide sensory impaired students through the safety route during their induction.

6 Technical glossary

Accessible WC
Often referred to as a 'disabled toilet' – a facility designed to meet the requirements of disabled people. Historically, such facilities were designed primarily around wheelchair use, but today they need to embrace the requirements of all users, including those with sensory and cognitive impairments. Sensory impaired people may prefer to use such facilities as the configuration will be familiar to them and it is a self-contained facility.

Ambulant accessible WC
WC cubicle or compartment not meeting wheelchair requirements, but suitable for an ambulant disabled person, usually having support rails in designated places, with an outward-opening door.

Assistive technology
Electrical and electronic equipment that assists people with disabilities.

Braille
A tactile system of writing and printing for people with profound vision loss, invented by Louis Braille in the 1830s.

British Sign Language (BSL)
A gestural language used by people who are deaf or hearing-impaired.

Chamfered
A bevelled surface at a corner or edge.

Colour contrast
Contrast in colour and tone.

Complementary steps
Steps constructed as an integral part of an access ramp.

Corduroy paving
A ribbed tactile paving that assists people with visual impairments by providing a warning, located at the top and bottom of external steps.

Dual sensory impairment
This usually means combined hearing and sight loss.

Embossed
Symbols or lettering standing proud from a surface.

Hearing-enhancement system
Systems that enable sound signals to be transmitted to people with impaired hearing without interference from background noise or excessive reverberation. Such systems may use induction loop, infrared or radio transmission. Sound field systems are also used, especially in educational settings.

Inclusive design
A philosophy that embraces the needs of all potential users.

Induction or inductive loop
A loop of wire fixed around a building or room, which may be built in at the outset or retrofitted. The wire is connected to an amplifier, a power source and a sound input device such as a microphone, or lead to a television. The sound is amplified and transmitted as a current around the loop, which works like a transmitting aerial. A hearing aid has a switch that, when in the T-position, picks up sound more clearly.

Infrared system
A wireless sound transmission system, which conveys sound from its source to hearing aids or headsets.

Light reflectance value (LRV)
The amount of light reflected: a measurement for comparing contrast between two finishes.

Manifestation
A system of marking hazards (such as clear glazing, leading edges of doors and windows, projections) so that they are clearly visible.

Matt
Dull surface giving little or no reflection.

Minicom
A trade name often used for a textphone (see: Textphone).

Neuro-diverse (ND)
Person with a cognitive profile that shows many peaks and troughs, denoting significant disparity between the best and worst of their information processing. Examples may include people with autism, Tourette's syndrome, dyscalcula or dyslexia. It is thought that 10% of the population are significantly ND.

Palantypist
A typist who types speech into a machine, which displays it on a computer screen.

Pan-disability
Embracing all disabilities – physical, sensory and cognitive.

Personal Emergency Egress Plan (PEEP)
A plan setting out the arrangements for a disabled person to evacuate a building safely.

Refuge
An enclosed area with fire-resisting construction, served directly by a safe route; it is a temporary, safe waiting place used as part of a comprehensive evacuation management plan for the safe escape of disabled people.

Sans serif
Fonts without projections on the ends of letters, for example Helvetica or Arial.

Spillover
Interference within one induction loop from a signal emitted from another induction loop nearby.

Tactile
Profiled surface or finish providing navigational guidance or warning to blind and partially sighted people. For example, blister paving is a style of tactile paving used to provide guidance at crossings; tactile signs may have embossed images and text and/or Braille.

Textphone
A telephone facility with an electronic keyboard that enables hearing-impaired people to communicate – communication can be direct textphone-to-textphone, or via a typetalk operator (relay service) from an ordinary telephone to a textphone.

Wayfinding
The process of identifying, travelling along, and adhering to a suitable route, usually comprising two main components – negotiation of obstructions or features, and navigation of a route or direction.

7 Sources of further information

7.1 Primary legislation

Disability Discrimination Act 1995. HMSO, London.
www.opsi.gov.uk/acts/acts1995/ukpga_19950050_en_1

Disability Discrimination Act 2005. HMSO, London.
www.opsi.gov.uk/Acts/acts2005/ukpga_20050013_en_1

Special Educational Needs and Disabilities Act 2001. HMSO, London.
www.opsi.gov.uk/ACTS/acts2001/ukpga_20010010_en_1

7.2 Access advice

- The National Register of Access Consultants is an independent register of accredited access auditors and access consultants who meet professional standards and criteria established by a peer-review system. It is a UK-wide accreditation service for individuals who undertake access auditing and access consultancy, and is freely available. **www.nrac.org.uk**
- The Access Association supports professionals whose primary responsibility is to promote and facilitate accessible environments and services for all, including people with disabilities. Its members work in local authorities and voluntary and private sector organisations. **www.accessassociation.org.uk**

7.3 Building regulations

England and Wales

Approved Document M: Access to and Use of Buildings, 2004 edition. Office of the Deputy Prime Minister/The Stationery Office, London. **www.communities.gov.uk/publications/planningandbuilding/buildingapproveddocumentm**

Northern Ireland

Building Regulations (Northern Ireland) 2006 *DFP Technical Booklet R: 2006 – Access to and Use of Buildings*. Department of Finance and Personnel Northern Ireland/The Stationery Office.
www.dfpni.gov.uk/index/buildings-energy-efficiency-buildings/building-regulations/br-technical-booklets/technical-booklet-r-2006.htm

Scotland
Technical Handbooks 2009. Scottish Executive/The Stationery Office.
www.sbsa.gov.uk/tech_handbooks/tbooks2009.htm

7.4 Design guidance

Barker, P. and Fraser, J. (2000) *Sign Design Guide – A Guide to Inclusive Signage*. JMU Access Partnership/Sign Design Society, London.

Bright, K., Cook, G. and Harris, J. (undated) *Colour, Contrast & Perception: Design Guidance for Internal Built Environments.* Project Rainbow, University of Reading. See **www.reading.ac.uk/ie/research/rainbow/rbwpubs.htm**

BS8300:2009 *Design of Buildings and their Approaches to Meet the Needs of Disabled People: Code of Practice*. British Standards Institution, London.

CIBSE/Society of Light and Lighting (2009) *Code for Lighting*. Chartered Institution of Building Services Engineers, London.

DCSF (2008) *Designing for Disabled Children and Children with Special Educational Needs: Design Guidance for Mainstream and Special Schools: Building Bulletin 102.* Department for Children, Schools and Families/The Stationery Office, London. (Much of this guidance is also relevant to adult learning.)

English Heritage (2005) *Easy Access to Historic Buildings*, 2nd edn. English Heritage, Swindon. **www.english-heritage.org.uk/upload/pdf/EH_EasyAccess_2004.pdf**; **www.english-heritage.org.uk/upload/doc/Easy_Access_word.doc**

Project Rainbow (undated) *Colour and Contrast – A Design Guide for the Use of Colour and Contrast to Improve Built Environments for Visually Impaired People* (CD-ROM). Project Rainbow, University of Reading. See **www.reading.ac.uk/ie/research/rainbow/rbwpubs.htm**

Sawyer, A. and Bright, K. (2006) *The Access Manual: Auditing and Managing Inclusive Built Environments*. Blackwell, London.

7.5 Disability Rights Commission guidance

There are several useful codes of practice produced by the former Disability Rights Commission (DRC). Most are available via **www.direct.gov.uk/en/DisabledPeople/RightsAndObligations/DisabilityRights/DG_4001070**

DRC (2002) *COPP16: Code of Practice: Post-16 Education and Related Services*. The Stationery Office, London.

DRC (2004) *Code of Practice: Rights of Access – Goods, Facilities, Services and Premises*. The Stationery Office, London.

DRC (2005) *The Duty to Promote Disability Equality Statutory Code of Practice*. The Stationery Office, London.

DRC (2006) *PAS78:2006 Guide to Good Practice in Commissioning Accessible Websites*. The Stationery Office, London.

7.6 Website accessibility

RNIB (2007) *See It Right: Making Information Accessible for People with Sight Problems* (book and CD-ROM), 2nd revised edn. Royal National Institute of Blind People, London.

Sensory Trust (undated) *Quick Web Accessibility – A Guide for Busy Voluntary Sector Managers and Designers*. Sensory Trust, St Austell. **www.sensorytrust.org.uk/resources/web_access_guide.pdf**

W3C Web Accessibility Initiative (WAI): **www.w3.org/WAI**

7.7 Additional information, support and guidance sources

General

Equality and Human Rights Commission, offices in Manchester, London, Glasgow and Cardiff, see **www.equalityhumanrights.com/our-job/contact-us**
Helpline:
England 0845 604 6610, **textphone** 0845 604 6620; **Scotland** 0845 604 5510, **textphone** 0845 604 5520; **Wales** 0845 604 8810, **textphone** 0845 604 8820

Sources of further information

Office for Disability Issues, Caxton House, 6–12 Tothill Street, London SW1H 9NA
E: office-for-disability-issues@dwp.gsi.gov.uk; **www.officefordisability.gov.uk**

Skill: National Bureau for Students with Disabilities, Unit 3, Floor 3, Radison Court, 219 Long Lane, London SE1 4PR
T/textphone: 020 7450 0620; **E:** skill@skill.org.uk; **www.skill.org.uk**

References

FAB (2005) *Good Practice Guide: The Application of Reasonable Adjustments and Special Considerations in Vocational Qualifications*. Federation of Awarding Bodies, London.

SFC (2000) *Teachability: Creating an Accessible Curriculum for Students with Disabilities.* Scottish Further and Higher Education Funding Council, Edinburgh.

Skill (2009) *Into Higher Education 2010 – Reach Out to Disabled Students.* Skill: National Bureau for Students with Disabilities, London.

SPACE Project (2007) *Staff–Student Partnership for Assessment Change and Evaluation – Inclusive Assessment*.
www.plymouth.ac.uk/pages/view.asp?page=10494

SWANDS Project (2002) *South West Academic Network for Disability Support – SENDA Compliance*. **www.plymouth.ac.uk/pages/view.asp?page=3243**

People within the autistic spectrum

National Autistic Society, 393 City Road, London EC1V 1NG
T: 020 7833 2299; **F:** 020 7833 9666; **E:** nas@nas.org.uk; **www.autism.org.uk**

References

Madriaga, M., Goodley, D., Hodge, N. and Martin, N. (2008) *Enabling Transitions into Higher Education for Students with Asperger's Syndrome*. Higher Education Academy, York.

Martin, N. (2006) Strategies which increase the likelihood of success at university of students with Asperger's syndrome. *GAP: Good Autism Practice* 7: 51–60.

Martin, N. (2008) *REAL Services to Assist University Students who have Asperger Syndrome.* NADP Technical Briefing 10/08. National Association of Disability Practitioners, Northampton.

Martin, N. (2008) *A Template for Improving Provision for Students with Asperger Syndrome in Further and Higher Education*. NADP Template 1/2008. National Association of Disability Practitioners, Northampton.

Martin, N. (2008) Empathy is a two way street, in: Pollak, D. (ed.) *Neurodiversity in Higher Education: Positive Responses to Specific Learning Differences.* Wiley-VCH, Waldheim'

Martin, N., Beardon, L., Hodge, N., Goodley, D. and Madriaga, M. (2008) Towards an inclusive environment for university students who have Asperger syndrome (AS). *Journal of Inclusive Practice in Further and Higher Education* 1: 3–14.

National Autistic Society (2008) 'University: how to support students with Asperger syndrome'. Online information sheet.
www.nas.org.uk/nas/jsp/polopoly.jsp?d=528&a=12205

Blind and partially sighted people

Guide Dogs for the Blind Association, Burghfield Common, Reading RG7 3YG
T: 0118 983 5555; **www.guidedogs.org.uk**

Royal National Institute of Blind People (RNIB), 105 Judd Street, London WC1H 9NE
T: 020 73881266; **www.rnib.org.uk**

Deaf and hard of hearing people

Royal National Institute for Deaf People (RNID), 19–23 Featherstone Street, London EC1Y 8SL
T: 020 7296 8000; **Textphone:** 020 7296 8001; **F:** 020 7296 8199; **www.rnid.org.uk**

References

Barnes, L., Harrington, F., Williams, J. and Atherton, M. (eds) (2007) *Deaf Students in Higher Education: Current Research and Practice.* Douglas McLean Publishing, Coleford.

RNID (2002) *Deaf Students in Higher Education: How Inclusive Are You?* Royal National Institute for Deaf People, London.

Sources of further information

People with learning difficulties

British Dyslexia Association, Unit 8, Bracknell Beeches, Old Bracknell Lane, Bracknell RG12 7BW
T: 0845 251 9002; **www.bdadyslexia.org.uk**

References

BDA (2009) *Inclusive Practice in the Workplace. The Employer's Handbook*. British Dyslexia Association, Reading.

People with mental health difficulties

MENCAP, 123 Golden Lane, London EC1Y 0RT
T: 020 7454 0454; **www.mencap.org.uk**

Equality Challenge Unit

www.ecu.ac.uk

Equality Challenge Unit supports the higher education sector to realise the potential of all staff and students whatever their race, gender, disability, sexual orientation, religion and belief, or age, to the benefit of those individuals, higher education institutions and society.

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