EDC15D004

Title:	**Access for All: Guidance for the Accessible Design and Use of the Built Environment at UEA**
Author:	Katherine Deane/Access for All Group
Date:	2 November 2015
Circulation:	Equality and Diversity Committee – 9 November 2015
Agenda:	EDC15A001
Version:	Final
Status:	Open

Issue

To inform the Committee of a guidance document developed by the Access for All Group, for use by Estates/Architects in the design of new buildings and refurbishments of existing buildings and the surrounding environment.

Recommendation

The Committee is asked to provide input into the draft guidance and support the guidance principles prior to final approval by the Executive Team.

Resource Implications

None for the Committee to agree at this stage.

Risk Implications

The risk of not adopting this guidance exposes the University to a risk of being inaccessible to a range of disabled people and non-compliant with the law. Risks are those of compliance and reputation but primarily of unnecessary and unfair exclusion of individuals with the right to pursue their education in an accessible environment. Further financial risks occur in correcting avoidable errors, sometimes as soon as the building opens for use.

Equality and Diversity

The focus of this guidance document is to ensure that the University designs out inaccessible features in its built environments and to raise awareness from design stage of a minimum standard viewed as acceptable by the University in this respect.

Timing of decisions

n/a

Further Information

n/a

Background

The Access for All Group was established following an Open Forum held by the Vice Chancellor in September 2014. It follows on from the DDA Group and the Campus Accessibility Budget Group to bring a more informed view to the University's development of its campus. The remit of the group is to determine priorities in campus improvements and extends to informing the design of new buildings and refurbishments to ensure that accessibility is at the forefront of consideration from the point of design rather than informing corrective work once a building is open. The group represents all areas of the University community (Staff, Students and Service Users) and has been working on this set of design principles over several months to ensure that key areas are considered at the outset, thus avoiding expensive re-work at a later date.

Access for All:

Guidance for the Accessible Design and Use of the Built Environment at UEA

Access All Areas Working Group: October 2015

The University of East Anglia aims to have a campus of equal opportunity and access for all. In order to achieve this UEA endorses the concept of Universal Design[1]. "This is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability. An environment (or any building, product, or service in that environment) should be designed to meet the needs of all people who wish to use it. This is not a special requirement, for the benefit of only a minority of the population. It is a fundamental condition of good design. If an environment is accessible, usable, convenient and a pleasure to use, everyone benefits. By considering the diverse needs and abilities of all throughout the design process, universal design creates products, services and environments that meet peoples' needs. Simply put, universal design is good design."[1]

There are 7 Principles of Universal Design[2]. These were developed to guide the design of environments, products and communications.

Principle 1: Equitable Use

The design is useful and marketable to people with diverse abilities.

Guidelines:

1a. Provide the same means of use for all users: identical whenever possible; equivalent when not.

1b. Avoid segregating or stigmatizing any users.

1c. Provisions for privacy, security, and safety should be equally available to all users.

1d. Make the design appealing to all users.

Principle 2: Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.

Guidelines:

2a. Provide choice in methods of use.

2b. Accommodate right- or left-handed access and use.

2c. Facilitate the user's accuracy and precision.

2d. Provide adaptability to the user's pace.

Principle 3: Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

Guidelines:

3a. Eliminate unnecessary complexity.

3b. Be consistent with user expectations and intuition.

3c. Accommodate a wide range of literacy and language skills.

3d. Arrange information consistent with its importance.

3e. Provide effective prompting and feedback during and after task completion.

Principle 4: Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Guidelines:

4a. Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.

4b. Provide adequate contrast between essential information and its surroundings.

4c. Maximize "legibility" of essential information.

4d. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).

4e. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

Principle 5: Tolerance for Error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

Guidelines:

5a. Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.

5b. Provide warnings of hazards and errors.

5c. Provide fail safe features.

5d. Discourage unconscious action in tasks that require vigilance.

Principle 6: Low Physical Effort

The design can be used efficiently and comfortably and with a minimum of fatigue.

Guidelines:

6a. Allow user to maintain a neutral body position.

6b. Use reasonable operating forces.

6c. Minimize repetitive actions.

6d. Minimize sustained physical effort.

Principle 7: Size and Space for Approach and Use

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

Guidelines:

7a. Provide a clear line of sight to important elements for any seated or standing user.

7b. Make reach to all components comfortable for any seated or standing user.

7c. Accommodate variations in hand and grip size.

7d. Provide adequate space for the use of assistive devices or personal assistance.

In order to implement Universal Design at UEA the following recommendations are made.

ASSUMPTIONS

These principles are written with the assumption that statutory guidance for access (e.g. Building Regulations 2010, Approved Document M – Access to and Use of Buildings and BS8300[3]), health and safety issues, and compliance with the Equality Act 2010[4] have been addressed. This guidance is to highlight UEA's additional standards over and above these minimum requirements.

GENERAL PRINCIPLES

1. The University regards it as essential that the estate is easy and safe for everyone to use.
   a. Design should prioritise the health and wellbeing of all users of the environment.
   b. Early and continuing consultation with people with specific access needs is essential to ensure this aim for each and every project. It is critical that people with a wide range of disabilities (i.e. all UCAS codes[5]) are consulted to ensure access for as many people as possible.
   c. Low tech, elegant and green access solutions are always preferred as long as accessibility is not compromised (Equality Act 2010[4]).
   d. On-going adjustments are expected dependent on people's specific needs and change of usage of the estate.
   e. Repairs where items need refurbishment or replacement should be undertake with a view to these principles e.g. replacement of door handles, or lighting type, or socket covers of contrasting colours.

GENERAL ACCESS

2. Information
   a. Web pages should provide detailed information on access across the campus.
   b. Information should be updated when routes or rooms are blocked (for repairs etc).
   c. Signage across the campus should highlight accessible routes, doors, lifts.
   d. Consideration should be given to both words and symbols being used to indicate where toilets and lifts are.
   e. Sans serif font, clear contrast between background and text, suitable size font (particularly if it needs to be read from standing), coloured background preferred.
   f. Consideration to be given to location and height of signs so they are suitable to be read from standing and sitting positions.
3. Toilets
   a. All taps should be lever taps.
   b. All toilet doors should be light (see doors) i.e. door closers should not be used on any toilet doors.
   c. Signage should be gender neutral where possible and use symbols and words. The signs should indicate which side you transfer to.
   d. Disabled toilets should have sufficient space for wheelchair turning circle plus space for carer to assist.
   e. Consideration should be made to provision of "Changing Places" i.e. bench and hoist to allow changing of pads for someone with (e.g.) paraplegia.[Pg 37, reference 8]
   f. Large levers for locking. Electronic locks are not recommended as too erratic.
   g. Lighting should be motion sensor linked (see also lighting section).
   h. Full length mirrors should be provided.
   i. Contrasting colours should be used for handrails, toilet seat, tiles behind sink, floor to walls (see also colours below).
   j. Baby changing facilities should be included where possible but not impede space for disabled users.
4. Taps
   a. All taps in all locations must be lever taps.
5. Rest rooms
   a. Consideration should be given to designing rest rooms into building plans.
      i. These should have space for a couple of people to sit and for one person to lie down.
6. Furniture
   a. Consideration should be made for flexibility of use, provision of:
      i. Choose chairs with a consideration to ergonomic design and lower lumbar support.
      ii. Lockable wheels on lightweight tables and chairs.
      iii. Variable height tables, kitchen work surfaces and work benches.
      iv. If chairs are stackable they must have hand holes in back of chairs.
   b. Consideration should be given to the inclusion of knee hole spaces e.g. in a run of floor level cupboards in a kitchen. NB. These spaces must be kept clear (they are not a space for bins or storage).
   c. Furniture should not be heavy (if unavoidable consideration given to use of lockable wheels)
   d. Lecture theatres should have at least 2 wheelchair spaces
      i. Consideration should be given to flexible layouts that allow wheelchair users to choose where they sit

7. Stages.
    a. The stage must have step free access.
    b. Raised stages should have a clear and effective lip or barrier at the front to prevent falls.
    c. Steps up to stage should have handrails (see steps).
    d. Furniture on the stage should be easily moved (see furniture) including the podiums.
    e. Microphones and slide changers must not be fixed in place.
    f. Stages must accommodate all types of wheelchair/mobility scooters etc in a safe way and permit easy turning (360) and safe manoeuvring.
8. Temperature.
    a. The ability to change the temperature of an area e.g. an office or seminar room should be included.
9. Power Sockets.
    a. Many people with disabilities use equipment that needs to be recharged regularly. Multiple power points with contrasting colour cover plates should be available at waist height around rooms.

MOBILITY ACCESS

10. Pedestrian access.
    a. Paths must be linked up without steps (unless a ramp is also provided) and appropriate across the whole of the Research Park.
    b. Paths should be wide enough to allow 2 wheelchairs to pass each other, and ideally wide enough to allow 3 people to walk abreast (to allow for signing and walking).
    c. Paths should be made with a stable surface i.e. gravel can be used only if it stabilised with hexagonal cell systems.
    d. Dropped curbs at all possible crossing points. NB. Where temporary works block a dropped curb a temporary ramp must be provided nearby to ensure accessibility of routes.
    e. "Design-out" clashes between car parking and accessible pathways and dropped kerbs i.e. paths must not end where they can be blocked by parked cars.
    f. Flat rest areas should be provided on slopes.
    g. Provide regularly spaced seating along routes. Seating should provide options to transfer from wheelchairs, arm rests to push up from, and a variety with and without backs rests. Seating should be manufactured from warm materials (no bare metal).
    h. The use of bollards to restrict car access must not block wheelchair access.
    i. The use of security gates to block vehicular access must allow wheelchair access around them. Consideration should be given to an intercom so requests for vehicular access for accessibility can be made.
    j. All footpaths must be adequately illuminated.
    k. Path edges must be protected to prevent wheelchair users running off the edges.
    l.
11. Door access.
    a. Must be accessible for all users.
    b. Consideration to keeping doors as light as possible (remove unneeded door closers).
    c. Corridor doors should be kept open with magnets (so they close in the event of fire) or powered up.
    d. All heavy doors should be powered up. (Heavy is >30 N force to open[3]).
    e. Doorways should be wide enough (775 mm minimum[3]).
    f. Grab rails and handles should not be cold (i.e. bare metal).
    g. All lever and pull handles should be of suitable dimensions and clearance.[3]
    h. All door locks should use large levers.

12. Lifts
   a. Need to be large enough to allow wheelchairs to turn around and/or have space for a carer to share the lift e.g. the size of the lift in the Edith Cavell Building should be the minimum size.
   b. Signage in lifts should be large clear and contrasting.
   c. Auditory messages must be provided to inform users of floor levels and door opening and closing.
   d. Lighting should be bright enough to allow reading of signs (see lighting below).
   e. Mirrors are needed in older smaller lifts where you have to reverse out.
   f. A lift's location in the building should be clearly signed.
   g. Consideration should be given to location of lifts with regards to access to lifts out of hours and at weekends.
   h. Consideration should be given to the provision of more than one lift in a building to allow for repairs, maintenance and break downs
   i. Personal Emergency Evacuation Plans (PEEPs) should be created quickly and efficiently for all users of lifts. Signs should highlight who can instantly create a PEEP for visitors.
13. Steps and stairs
   a. If possible steps should be removed from the design (except for protected stairs between floors). Steps with associated ramps are acceptable(Please note that steps may aid the mobility of those using leg prostheses for whom ramps can be problematic).
   b. Ground floor fire escape routes should never include steps.
   c. Fire exit steps and staircases must be straight to allow for use of Evacuation Chairs.
   d. All steps need handrails on both sides. External handrails must not be bare metal.
   e. The contrast strip should be on the edge of the step (not before it).
   f. Stair risers should be solid (no floating stairs).
   g. Glass must not be used for the step or riser of stairs. Great care should be used when considering the use of glass for the sides of stairways.
   h. Consideration should be given to putting a lip on the side edges of steps where there are gaps between the step and the wall – to prevent sticks and crutches from slipping off the step.
   i. Consideration should be given to recessed lighting of steps (see lighting section).
   j. Stairs must not be spiral or curved such that they prevent the easy use of evacuation chairs.
14. Flooring.
   a. Flooring both internal and external should be non-slip (even when wet).
   b. Flooring should be smooth and give low resistance to rolling.
   c. Flooring should contract in colour with the walls (see colours below).
   d. Flooring should not "turn up" the wall without a colour change.
   e. Door mats should be a similar colour to surrounding floor[7].
15. Alarms.
   a. All alarm pull cords must be located so they can be reached from the floor; e.g. so they can be reached from the floor beside the bed, not just from in the bed.
   b. Refuge point alarms should be clearly sign posted and instructions for use posted.
   c. Refuge points must be located such that the noise generated by the fire alarm system does not prevent easy communication between the refuge pint and the Lodge.
   d. Fire alarms should include a visual alarm (flashing light).

VISION ACCESS

16. Colours.[3, 6]
    a. Contrasting colours should be used to distinguish once thing from another.
        i. Different colours for floors and walls and doors.
        ii. Different colours for work surfaces (which should be matt) from walls.
        iii. Handles should be a different colour from doors.
        iv. Face plates for sockets and light switches should be a contrasting colour compared to the switch and the wall.
        v. A strong tonal difference between pavement and roadway and between street furniture and the surrounding paving is very helpful.[6]
    b. Choice of colours and contrasts should take into account colour blindness etc.
    c. Choice of colours should be made with consideration to reducing wash-out effect and enhancing natural skin tones so facial expressions are more easily readable.[5]
17. Lighting.
    a. All teaching spaces should have natural light.
    b. Flexible lighting options should be provided with a view to light spectrum, light intensity, and window blinds.
    c. Lighting must be sufficient and not create glare.
    d. Bare bulbs are to be avoided. Translucent covers to diffuse lights are recommended.
    e. Harsh strip lighting is not appropriate.
    f. Flexible lighting to focus on the face of the presenter (so lip-reading is enhanced) and on a sign language interpreter in a lecture theatre or seminar settings.
18. Glass partitions
    a. There must be clear visual markings on all glass partitions, walls, barriers etc, at both standing and sitting height.

HEARING ACCESS

Acoustic adjustments are complex. Please consult experts, particularly when installing hearing loops.

19. Acoustic environment.
    a. Consideration should be given to the acoustic noisiness of areas where many people have conversations i.e. foyers, bars, canteens.
    b. Consideration should be given to sound proofing between rooms.
20. Hearing loops.
    a. Reception desks should have hearing loops.
    b. Hearing loops should be provided in all lecture theatres.
    c. Consideration should be given to provision of hearing loops in meeting rooms, seminar rooms and other teaching spaces.
21. Consideration should be given to lines of sight, colours, lighting levels and space sufficient for someone to use sign language or lip reading for communication.[9]

REVIEW PERIOD

After this consultation and revision this document is to be revised by the Access All Areas Working Group at least every two years.

(Authored by Dr K Deane)

REFERENCES

1. What is Universal Design? National Disability Authority, Dublin. 2012 http://universaldesign.ie/What-is-Universal-Design/
2. The 7 Principles of Universal Design. National Disability Authority, Dublin. 2012 http://universaldesign.ie/What-is-Universal-Design/The-7-Principles/
3. White Paper. A Guide to Issues. Access to and Use of Buildings. Building Regulations Document M. 2007 SMART SYSTEMS LTD
4. Information and guidance on the Equality Act 2010. Government Equalities Office, London, 2015. https://www.gov.uk/guidance/equality-act-2010-guidance
5. UCAS Disability codes. Bath 2015. https://www.bathspa.ac.uk/study-with-us/giving-you-support/disability-and-dyslexia/ucas-disability-codes
6. Ross Atkin "Sight Line: Designing Better Streets for People with Low Vision." Helen Hamlyn Centre, Royal College of Art, London 2010. http://www.designcouncil.org.uk/sites/default/files/asset/document/sight-line.pdf
7. Corinne Greasley-Adams, Alison Bowes, Alison Dawson and Louise McCabe. "Good practice in the design of homes and living spaces for people with dementia and sight loss." The University of Stirling, Stirling. http://dementia.stir.ac.uk/system/files/filedepot/12/good_practice_in_the_design_of_homes_and_living_spaces_for_people_living_with_dementia_and_sight_loss_final.pdf
8. "Accessibility By Design (Now includes Changing Places). A Standard Guide." A LABC Publishing Publication. Ten Alps Publishing, Macclesfield. 2010. http://www.bracknell-forest.gov.uk/accessibility-by-design-handbook.pdf
9. "DeafSpace" Gallaudett University, Washington DC, USA. 2013. http://www.gallaudet.edu/campus_design/deafspace.html and http://www.wired.com/2013/08/what-architects-can-learn-from-a-dorm-designed-specifically-for-deaf-students/