

Measuring Disablement in Society: Working Paper 2
Gaining Access: Disabled People and the Physical Environment

Ann Salvage and Gerry Zarb, 1995

This report is one of a series of working papers based on the *Measuring Disablement in Society* project being undertaken by researchers at the Policy Studies Institute with funding from the Economic and Social Research Council. Other working papers cover the topics of transport provision, employment, the involvement of disabled people in local planning and the Citizen's Charter.

The *Measuring Disablement in Society* (MDS) project aims to develop measures to assess the extent to which disabled people are excluded from full participation in society. This report aims to draw together the literature relating to physical access in order to identify previous research, to trace relevant legislative and other changes and to suggest directions for the MDS project. Brief details are provided of secondary data sources which will be exploited and of existing measurement tools.

Introduction: a hostile environment?

In the late 1980s, four charities joined forces to organise a conference on Housing and Independent Living, bringing together housing professionals and the disabled consumers of their services. Early in the organisational process, the conference organisers stumbled on a problem - they could not find a venue that would accommodate sixty disabled delegates. Eventually, the conference was held, at great expense, in the Hilton Hotel in Warwick, the only venue out of hundreds around the country which could cater for delegates' needs (Pilkington, 1992).

Freedom of movement around and between different parts of the built and natural environment is taken for granted by the majority of people in modern Britain. For many people, however, such freedom is denied, to the extent that whole areas of life may remain largely closed to them. This situation has arisen, to a large extent, because our built environment has been designed without taking into account the needs of those who have mobility problems or sensory impairments.

Twenty years ago, in a text which went on to become the prime source for designers wishing to take the needs of disabled people into account, Goldsmith observed somewhat pessimistically, "*buildings always have been, and always will be, geared to suit two-legged able-bodied people and not people propped on sticks or rolling about in chairs on wheels*" (Goldsmith, 1976:16). More recently, a booklet produced by the Centre for Accessible Environments observed that,

“unfortunately, far too much of the existing environment has been designed and constructed for use by that fictional character, the average person.....” (Fearn, 1993:2).

Disabled people (of whom there are six million in the UK) in common with all other people but perhaps to a greater extent, require access to education, employment, housing, transportation, health care, recreation, entertainment, electoral and legal representation, religious worship, shopping, tourism, technology and the media (McGough, 1994).

There is, after all, only one environment which all individuals should be able to share equally and independently. In order to achieve equality of access, this environment either has to be designed from the outset for maximum flexibility to meet varying needs, or adapted and used in ways that achieve that flexibility (Fearn, 1993).

In the last decade, access for disabled people to public buildings and facilities has become an important part of the political agenda; in particular, Imrie and Wells note that there has been a growing awareness that disabled people, in their everyday lives, are having to confront hostile built environments: *“ones where access to buildings, streets and places is often impossible.”* (Imrie and Wells, 1993:213)

Clearly, restrictions on disabled people's access to the physical environment are deeply embedded in cultural attitudes and policies towards provision for disabled people on a more general level and it may be argued that it is invidious to focus specifically on physical access. In placing our focus here, however, we adopt Barnes' (1991) contention that institutional discrimination against disabled people is never more obvious than in the restrictions placed on mobility and access by a poorly designed environment. Throughout the 1970s and 1980s, a range of government committees and research reports concurred that access difficulties for disabled people were a fundamental cause and manifestation of discrimination (Imrie and Wells, 1993).

Issues of access for disabled people arise in all areas of the built environment. Many people suffer disadvantage due to inappropriate and inaccessible housing. Thus, people with mobility problems may find themselves confined to the lower floor of a two-storey house because they are unable to use the stairs, while those who become wheelchair users later in life may find they have inadequate manoeuvring space and may even be unable to get in and out of the house without alterations.

Even if disabled people are able to leave their homes without too many difficulties, access problems may arise in the street, in public buildings or in transport provision. In the street, wheelchair users may find it difficult to locate safe crossing points, while kerbs and steep slopes present obstacles for those with mobility problems. People with visual impairment may find their free movement impeded by street furniture and street signs which are poorly designed in terms of size and colour contrast.

Gaining access to public buildings depends for many disabled people on the provision of ramps and doors, which are easy to open. Once inside, poor signage, inadequate colour-contrast on doors and steps and poor lighting may make navigation difficult for visually impaired people, while those with hearing impairments may find themselves unable to obtain the information they require. Wheelchair users may find that circulation areas and corridors fail to provide adequate turning space, that upper floors are inaccessible due to lack of lifts or that there are no accessible toilets. Both wheelchair users and people with poor muscular strength may have difficulty getting through resistant internal doors, and those installed specifically to meet fire regulations may be a particular problem.

In a recent study by the Consumers Association respondents using banks and building societies reported heavy doors, lack of induction loops, and cash-dispensers and counters which were too high. Many chain stores had narrow aisles, few had changing rooms large enough for wheelchairs and few had accessible toilets, while many supermarkets had no seats and fewer than half had baskets or trolleys designed for use by wheelchair users. In restaurants, fixed seating and tables posed problems for wheelchair users and walking aid users and there were few accessible toilets. The presence of steps often meant that cinema-goers had to choose a film being shown on the ground floor (Which?, 1989).

Access for whom?

Given the enormous range of physical disability, it is clear that no one design solution can meet all needs. In his textbook on designing for disabled people, Goldsmith observes that *“the heterogeneity of the disabled population bedevils architectural answers. What may be convenient for one set of disabled people can be anathema to another, and what for the majority is execrable can be indispensable for the few.”* (Goldsmith, 1976). Various writers have noted specific areas in which the needs of different groups of disabled people may conflict with one another. Dropped kerbs may be essential for wheelchair users but a hazard for people with visual impairments (DOT, 1992) and the placing of entryphones needs to be different in order to meet the needs of both groups. (Westminster City Council, 1989).

While ambulant disabled people may require a narrow toilet compartment with rails securely fixed at either side and side walls to lean against for support, wheelchair users need space to manoeuvre and transfer (Goldsmith, 1976). Even within broad types of physical impairment, needs may differ significantly. Long (1995) notes that there are significant differences between the environmental requirements of people who are totally blind and those who have some residual vision, while needs for accessible housing design may vary greatly according to the social role of wheelchair users.

Focusing on these differences in design requirements among disabled people, however, can distract attention from the fact that a very large proportion of the population finds itself impeded by environmental factors at some point in their lives. The Junior Organisation of the Royal Institution of Chartered Surveyors, in a recent discussion paper, has stressed that physical access is not simply a problem for wheelchair users or those with sight and hearing problems. People suffering from chronic illness, those with artificial limbs or walking aids, pregnant women, parents with small children, people carrying heavy luggage or shopping and people with sports injuries all have their own problems in getting around their environment (Royal Institution of Chartered Surveyors, 1994). A similar awareness of the need to provide for a wide variety of access requirements is demonstrated in the introduction to a design guide produced by the Centre for Accessible Environments. The guide is based on the belief that the needs of disabled people, older people and carers with young children should be considered as an integral part of the design process (Palfreyman, 1993). It is thus rooted in a philosophy of universal rather than specialist design.

The legislative framework

Existing Statutes and the Responsibilities of Local Planning Authorities

The laws and regulations relating to access in Britain have developed in a haphazard way and have not been easily enforceable (GLAD/Freeman's, N/D). In 1982 the Committee on Restrictions Against Disabled People (CORAD) concluded that statutory frameworks were doing little to address the problems of access for disabled people. Barnes (1991) has argued that the present legislative base concerning access reinforces a 'disabling environment' which maintains a system of apartheid between the able-bodied and the disabled.

Chronically Sick and Disabled Persons Act, 1970.

The Chronically Sick and Disabled Persons Act remains the most significant statute concerning access provision for disabled people (Imrie and Wells, 1993). Section 4 of the Act requires that,

“Any person undertaking the provision of any building or premises to which the public are admitted, whether on payment or otherwise, shall, in the means of access both to and within the building or premises and in the parking facilities and sanitary conveniences to be available (if any) make provision, insofar as it is both reasonable and practicable, for the needs of the members of the public visiting the building or premises who are disabled.”

Section 6 requires similar provision at places of accommodation, refreshment or entertainment, and Section 8 relates to access and facilities at university and school buildings (The Chronically Sick and Disabled Persons (Amendment) Act 1976 extends the requirements of the 1970 Act to places of employment) (Palfreyman, 1993).

This Act, never fully implemented (Walker, 1994) set the pattern for a statutory framework constructed around a voluntaristic and co-operative, rather than coercive code (Imrie and Wells, 1993). Section 4 of the Act only requires developers to provide access to buildings if it is ‘practicable and reasonable’ to do so, and Bennett has observed that the legislation did little other than sit on the statute books. *“The planning profession appeared not to acknowledge its existence and even if they had, the developer could always argue that access provision was both impracticable and unreasonable.”* (Bennett, 1988:8). *Disabled Persons Act, 1981*

After a considerable time, and a great deal of lobbying by disability groups, an attempt was made to strengthen the existing legislation. The Disabled Persons Act 1981 introduced two new Sections (Sections 29A and 29B) to the Town and Country Planning Act 1971. This places a duty on local planning authorities, when granting planning permission, to draw the attention of developers to the provisions of the Chronically Sick and Disabled Persons Act, 1970 and to the British Standards Institution Code of Practice for Access of the Disabled to Buildings (BS 5810, 1979). (This is a voluntary code of practice which sets down the essential provisions that need to be incorporated in buildings to ensure that they can be conveniently used by disabled people).

Section 76 of the Town and Country Planning Act, 1990 reiterates the requirement for local planning authorities, when granting planning permission, to draw the attention of the applicant to Sections 4 and 7 of the Chronically Sick and Disabled Persons Act.

Housing and Planning Act, 1986

This Act outlines the duty of local authorities to draw attention to the *Code of Practice for Access of Disabled People to Buildings* (BS 5810) and DES Design Note 18, 1984 ('Access for Disabled People to Educational Buildings'). In addition there are various codes of practice, statutory instruments, circulars and building regulations (see below.)

The town planning system controls and manages the use and development of land through a system of development plans and development control. The system has been generally effective in achieving this over the last 40 years or so, but has been less successful in dealing with issues relating to the specific needs of disabled people (Macdonald, 1995). While planning is concerned with the external appearance of buildings and their proposed use (rather than their internal arrangements) local planning authorities do have a responsibility to draw the attention of developers to the access requirements of disabled people (Southon, 1993).

The Department of Environment has issued over twenty Planning Policy Guidance notes to inform local planning authorities of their responsibilities in relation to different areas of development control. Six of these notes make specific reference to provision of access for disabled people.

Thus PPG1 ('General Policy and Principles') published in March 1992 states that "*The development of land and building provides the opportunity to secure a more accessible environment to everyone, including wheelchair users and other people with disabilities, elderly people and people with toddlers or infants in pushchairs. Developers and local authorities are encouraged to consider the issue of access at an early stage in the design process. Local planning authorities should ensure that they are fully informed about ways in which access needs can be met, and can offer appropriate advice to developers*" (DoE, 1992a).

PPG3 on 'Housing', published in 1992, states that "*Developers are already considering whether the internal design of housing, and access to it, can meet the needs of the disabled, whether as residents or visitors. To the extent that regulation is justified the Government looks to the Building Regulations and not the planning system to impose requirements. Access arrangements to all non-domestic dwellings are already covered by the Regulations and the Department is assessing the practicality of extending the requirement of Part M of the Building Regulations to new dwellings.*

However, where there is clear evidence of local need, a local planning authority could include in a local plan a policy indicating that it would seek to negotiate elements of housing, access to the disabled, on suitable sites.....The plan should not seek to impose detailed standards.” (DoE, 1992b).

The PPGs on Industrial and Commercial Development (PPG4), The Countryside and Rural Economy (PPG7) and Tourism (PPG21) make no mention of provision of access for disabled people, and even in those which do refer to disabled people, the tone is clearly permissive and the guidance vague. Thus paragraph 10 of the PPG6 on ‘Town Centres and Retail Developments’ (1993) states that “*Local planning authorities should encourage level access to shops, parking for people with disabilities and covered areas close to transport routes.*” The Access Committee for England has recently urged the Department of the Environment to provide new explanatory guidance notes on planning for disabled people, arguing that PPG’s are ‘confusing and misleading’ and that a much stronger role should be played by local planning authorities (Planning Week, 1994).

District planning authorities are now required to prepare local development plans, and these have been identified as an opportunity to improve access for disabled people.

In the foreword to a recent guide to the design of access policies for local development plans, Peter Lainson, Vice Chairman of the Royal Town Planning Institute, observed that “*Inclusion of good access policies in development plans will let developers know that access for disabled people is an important priority when proposals for development are under consideration, and will give useful guidance on the standard expected*” (ACE/RTPI, 1993).

Central government, however, has as yet produced no guidance for local planning authorities on the ways in which they can use local development plans to encourage access for disabled people and it has been left to the Access Committee for England and the Royal Town Planning Institute to undertake this task (ACE/RTPI, 1993). There is thus no specific or up-to-date guidance from Government on how planning authorities should be assisting disabled people in their areas. Macdonald has called for the needs of disabled people to be made explicit throughout the PPG series: “*The series should give a clear definition of the role and scope of planning in terms of disability, and guidance should ensure local authorities are fully informed about how this might be achieved*” and for the Department of Environment to produce or commission a good practice guide on planning and disability (Macdonald, 1995:12).

Research published in 1993 suggested that many local planning authorities tend to understate their powers to secure access for disabled people and are reluctant to use either their local plan or the planning conditions as tools for promoting access issues (Imrie and Wells, 1993). Planners in practice have much more power than they think they have, “*yet there is a reluctance on the part of the institutional apparatus to provide a stronger political framework or unambiguous controls to enable planners to persuade the development industry to take a more positive approach towards access issues*” (Imrie, 1994).

New research developed by the Department of Geography, Royal Holloway College (University of London) in conjunction with the Centre for Accessible Environments, will explore the interrelationship between disability and access in the built environment by focusing on the role of the British land-use planning system in securing access provision for disabled people. It will provide a national picture of access practices and policies in British planning authorities and assess how far and in what ways practices in local planning and development control adequately address access issues in the built environment (Imrie, 1994).

The Building Regulations

In the absence of clear guidance and legislation on access for disabled people to the built environment, planning officers frequently look to Part M of the Building Regulations to secure access provision (Imrie and Wells, 1993). The Building Regulations impose requirements on how most non-domestic buildings should be designed and constructed to secure specific objectives relating to health and safety, access for disabled people and energy conservation (MacDonald, 1995) requiring that “reasonable provision” be made to ensure that new buildings are accessible for disabled people. Part M of Schedule One of the Building Regulations (Housing and Building Control Act (DoE, 1991) sets out legal requirements on access only in very general terms - it is left to the Government's 'Approved Document M' to spell out what is meant by 'reasonable provision' (DoE, 1992c).

The 1985 Building Regulations affected buildings to which the general public were admitted, but disability was not taken into account until 1987, and at that time people with sensory impairments were not included in the definition of 'disability'. In 1992, the definition of 'disability' was extended, with disabled people being defined as people who have:

a) an impairment which limits their ability to walk or which requires them to use a wheelchair for mobility or

b) impaired hearing or sight (ACE, 1994).

The revised Building Regulations are mandatory and apply to all floors of all new public buildings and some extensions and total refurbishments. They guarantee wheelchair access to hotel bedrooms and bathrooms, leisure centre changing facilities and showers, and to restaurants and bars.

Criticism of the content and power of the building regulations as they apply to disabled people has been widespread. The regulations require only that 'reasonable provision' be made and critics of Part M have observed that, because of this, they are often overlooked or disregarded (Imrie and Wells, 1993). Since Part M is descriptive, rather than prescriptive (Holmes-Siedle, 1994), there are any number of ways in which a developer can meet them and the importance of precise placing and spacing may be ignored (Langton-Lockton, 1994). With provision not presumed to be mandatory, effective enforcement is difficult, and there are no inducements to encourage better access provision (Imrie and Wells, 1993).

The regulations have also been criticised for their generality and inadequate detail. Based on a British Standard (BS 5810) which has not been revised since 1979, the dimensions specified in Part M are minimum dimensions, and even these are cut in practice (Holmes-Siedle, 1994). Whereas the Americans with Disabilities Act specifies details such as door-pressure, door ironmongery, thresholds, height and operation of controls, the British Building Regulations fail to provide this level of detailed specification (Fleck, 1994a). Neither do they have anything to say about colour contrast (which can be of vital importance to people with visual impairment (Tait, 1994).

Buildings built before 1987 are not covered by Part M unless they have been extended or converted, and since the early 1990s saw a decline in the rate at which public buildings were constructed, it will be a very long time before all buildings become accessible to all (Which?, 1995). Barnes (1991) notes that, where buildings are extended or converted for a different use, the legislation demands only that access should not be worsened.

That the imposition of the Building Regulations is currently failing to make public buildings accessible was made clear in a recent 'Which?' survey identifying numerous obstacles to building use by disabled people. A report on the survey notes, for example, that while the Building Regulations cover the width of doorways, they fail to specify how easy they should be to open and note that a heavy door may be as much of a barrier to disabled people as a narrow door (Which, 1995).

Criticism of the Building Regulations has also focused on the fact that they are limited both in applying only to new buildings and in applying only to non-domestic buildings. In July, the Government published a consultation paper *Disability on the Agenda* (DSS, 1994) which confirmed its intention to consult on possible measures for new dwellings in the Building Regulations. The purpose of the changes was to introduce a range of design provisions for new dwellings and their approaches in order to allow occupiers:

- a) to invite disabled people to visit them in their homes without undue hazard or inconvenience to the visitor,
- b) themselves to be able to cope better with reducing mobility and to be able to 'stay put' longer in their own homes (DoE, 1995a).

The main changes would be to extend the requirements to new dwellings, with supporting guidance in an approved document, including the following provisions:

- a) access to a suitable entrance,
- b) wider external/internal doors within the entrance storey,
- c) suitable circulation space within the entrance storey,
- d) a suitable wc in an entrance storey of more than a specified size,
- e) accessible switches and sockets,
- f) reasonable access to bed-sitting rooms, flats or maisonettes above the entrance storey (DoE, 1995b).

Since then, a draft of the proposed new regulations has been circulated for comment to approximately 100 interested organisations, with a request that views be forwarded to the Department of Environment by April 1995 (DoE, 1995c). In connection with the proposed extension of the Building Regulations, the Department of Environment has commissioned a survey on 'Private Housebuilders' Attitudes to Visitability Housing' and the results of the research suggest that it would be unlikely for the industry to improve access to new homes on a voluntary basis due to practical and cost implications and that amending the Building Regulations would be the only possible way to introduce appropriate standards (DoE, 1995b). In addition, the Department of Environment has undertaken a Cost Compliance Assessment exercise to assess the likely extra cost of building accessible homes.

The likely increased cost of construction, the research concludes, would vary for an average new home costing £30,000 from £180 (if a stepped approach and entry is deemed acceptable to £400 (if a ramped approach and level entry were provided at the outset. (DoE, 1995b).

Recent Developments: Legislating Access

In 1994, Dr Roger Berry introduced a Private Member's Bill - the Civil Rights (Disabled Persons) Bill - aiming to give disabled people statutory rights and to outlaw discrimination in employment, housing, transport and the provision of goods and services.

Possible implications of the Bill were that all employers would be obliged to make their premises accessible to disabled people and that new, and perhaps even existing housing projects, would need to provide suitable access for disabled people (Packer, 1994a). Following the failure of this Bill (Hobson, 1994) the Government introduced its own legislation. The new Disability Discrimination Act has three main focii. Firstly it introduces a right for disabled people not to be discriminated against when applying for employment or when employed, and provides that this right is infringed when employers do not take reasonable steps to remove physical barriers or adjust their practices to enable a disabled person to be employed. Secondly, it introduces a right of access to goods, facilities and services, which will require service providers to adapt their policies, procedures and practices and to remove physical barriers and barriers to communication as long as this is reasonable. Thirdly, it establishes a National Disability Council to advise Government on their strategy for disabled people and enable the Secretary of State to set up a conciliation service to provide advice and support to individuals alleging discrimination by those providing goods and services (Disability Discrimination Act, 1995).

Dissatisfied with the provisions in the Government's proposals, Harry Barnes, Labour MP for Derbyshire NE, sponsored a Private Member's Bill - the Civil Rights (Disabled Persons) Bill - which was scheduled for its second reading a month after that of the Government's Bill. The Private Member's Bill offered a less restrictive and more costly alternative to the Government's proposals, aiming to give disabled people statutory protection against all discrimination (Kirkbridge, 1995). Whereas the Government Bill did not specify a legally-based timetable for achieving access, the Barnes Bill would have ensured that this was imposed (Rights Now, 1995). The Barnes Bill would also have strengthened the National Disability Council proposed in the new Act (with purely advisory powers) to a body with the power to enforce the new law (as the CRE does for race discrimination and the EOC for sex discrimination.)

Housing: a special case for treatment?

New Build Housing

Housing has been recognized as a vital component of community care and as a key to independent living (DoH, 1989).

Despite this recognition, it remains true that there is an acute shortage of housing suitable for disabled people (ACE/RTPI, 1993). Traditionally built homes can present countless barriers to people with different types of disability.

Steps to the front door can be an obstacle to many and especially to wheelchair users. Internal stairs, unrippable door handles, lack of circulation space for wheelchair users, inaccessible switches and sockets are just a few of the barriers with which disabled people may be faced. Despite the fact that the demand for dwellings catering for the ever-increasing population of elderly and disabled people is certain to grow in the future, the number of dwellings specially built to meet this demand has been falling over the last decade (Housing Corporation, 1991; ACE, 1992; Imrie and Wells, 1993; ACE/RTPI, 1993; Ridout, 1994). Ridout (1994) notes that, while the number of dwellings completed for elderly, chronically sick or disabled people in England and Wales in 1982/83 was slightly over 12,500, by 1991/2 the figure had fallen to 6,357.

Until recently (see McCafferty, 1994) there had been no in-depth national study of the housing needs of disabled people. Partly because of this, and partly due to the failure of local authorities to inform themselves of local needs (Ounsted, 1987; Morris, 1990) there has been a focus on providing one-bedroom accommodation for wheelchair users, despite the fact that many of these individuals live with at least one other person (Morris, 1987; Pilkington, 1992). A study for Shelter undertaken in 1989 (Morris, 1990) found that even though local authorities have a key role to play in providing housing for disabled people, only three of 21 housing departments had the most basic written policies. Many of the authorities had no idea how many elderly and disabled households lived in their areas, and many had little knowledge of either the supply of accommodation suitable for physically disabled people or the demand for it (Morris, 1990).

Awareness of their own supply of adapted accommodation also appears to be low among local authorities. A recent study of the mismatch between the housing aspirations of people with a physical disability and suitable available property across all forms of tenure in Kent (Joseph Rowntree Foundation, 1995) found that very few local authorities had information on properties that had been adapted.

This study also found, however, that many people with a physical disability were reluctant to register their housing needs with a local authority, in some cases because of perceived stigma attached to the notion of registration in any form.

Apart from local authorities' lack of awareness of local need, a major contributing factor to the mismatch between disabled people's housing needs and the availability of suitable accommodation has been the traditional focus on providing for 'special needs' rather than on attempting to work towards 'universal access'.

Clapham and Smith (1990) have observed that, by focusing on 'special' housing provision, policy has perpetuated a notion that anyone without an 'official' frailty, handicap, disability or learning difficulty can have their housing needs satisfied through the normal workings of the market.

A recent report by the Access Committee for England suggests that there is growing support, both in the United Kingdom and abroad, for incorporating an improved level of access into all housing, as part of a wider policy for enabling elderly and disabled people to integrate into the wider community (ACE, 1992). Design details vary from country to country, but there is a fair degree of unanimity on the structural elements that are required: *“Whether it is called accessible, barrier-free, adaptable or multi-generational, the common thread is housing that can easily be adapted to suit the physical needs of most people, including those who are disabled, without major structural alteration, and that can, without adaptation, be visited by wheelchair users. Its common design elements are:*

- *level access*
- *adequate doorwidths*
- *reasonable circulation space in halls and passageways and*
- *an entrance level toilet”* (ACE, 1992:4).

In the Netherlands, a 'universal' approach to accessible housing has developed, with a focus on building homes which can be readily adapted to meet changing need (Langton-Lockton, 1989). This approach has been developed in this country by the Joseph Rowntree Foundation with its concept of 'Lifetime Homes'. Such homes are not 'special needs housing' but ordinary homes designed from the outset to provide adequate space and adaptable accommodation to suit the wide variety of people whose needs and circumstances at some time in their lives may be subject to unforeseen changes (Lewis, 1992). In such homes, changing needs could be met without expensive adaptations or a need to move to another home (Joseph Rowntree Foundation, 1992).

Features specified in the design of lifetime homes include extra parking space, level or gently sloping access, wide doorways and hallways, bathroom\bedroom ceilings strong enough to incorporate a hoist, a removable panel between bathroom and bedroom and accessible basin, toilet and bath (Packer, 1994b).

Parallel with the development of the concept of lifetime homes, the Access Committee for England published in 1992 a set of criteria for the design of accessible housing (ACE, 1992). The ACE document draws together design advice from a variety of sources to make clear, unambiguous advice available to house builders, with detailed criteria aiming to encourage the building of homes which are accessible to all. The recommendations are for the design of new housing and can apply to all sectors of the house building industry. If adopted as a design standard it will aid the integration of disabled people by providing the basis for equality of access to new housing stock. The guidelines for local access policies for local development plans issued by the ACE and RTPI recommend that local planning authorities adopt ACE's 'criteria for accessible general housing'. These standards have the backing of major national organisations covering a variety of consumer interests, and have already been widely adopted by local authorities and housing associations (Access Action, 1994).

Adaptations to existing homes

Given the acute shortage in Britain of specially designed housing for disabled people, and the fact that it is only very recently that attention has been given to enforcing stricter access regulations on the building of new homes, it is likely that many disabled people will continue to live in general-purpose housing which may be ill-suited to their needs. For these individuals, the availability of grants to adapt their homes to make them more accessible may make the difference between continuing to live in familiar surroundings and having to move to meet their housing needs.

The Local Government and Housing Act introduced, for all tenures, a statutory Disabled Facilities Grant for access to a dwelling, and use of key facilities within it, and a discretionary Disabled Facilities Grant for extra items (RADAR, 1994). The Act also provided various forms of Minor Works Assistance which can be used for adaptations for disabled people other than council tenants (disabled people are also entitled to assistance under the Chronically Sick and Disabled Persons Act (Joseph Rowntree Foundation, 1994).

Recent research for the Joseph Rowntree Foundation revealed that there are large variations in the level and quality of provision of adaptations in local authorities in England and Wales.

“In one place a person may apply for help, wait a week or two for assessment and within a few months have a completed adaptation. In another, someone with similar needs and similar resources may wait two years for assessment and then, perhaps, be unable to proceed because there is no financial top-up available from social services” (Joseph Rowntree Foundation, 1994).

Some authorities were found to use Minor Works Grants as a swift and flexible way of providing adaptations, but these were not available in all areas, leaving some people at a considerable disadvantage depending on where they lived (Joseph Rowntree Foundation, 1994). Both the Rowntree study and an earlier study for RADAR (Clarkson, 1992) found that there were delays in many local authorities in assessments, with a national shortage of community occupational therapists being largely to blame. The RADAR study also found that inability of applicants to meet their assessed financial contribution was a major cause of withdrawal and that refusal to take a means test at the enquiry stage or the formal application stage was a common reason for withdrawing from the application process (Clarkson, 1992). Another recent study of the hidden housing needs of disabled people found that where disabled people applied for adaptations under the Disabled Facilities Grant but could not agree with the authorities on the adaptations needed, nothing was done although the need remained (Suffolk Coastal and Mid Suffolk Disability Housing Research Group, 1994).

Apart from these shortcomings of the Disabled Facilities Grant system, the system of grant administration is complex and it may be hard for both users and professionals to know who should be funding what (Joseph Rowntree Foundation, 1994). Acknowledgement of the complexity of the system led RADAR, in 1993, to produce a guide to the Disabled Facilities Grant process, aimed at giving prospective applicants *“a greater understanding of the system, the role of the authorities concerned and their rights as an applicant”* (RADAR, 1994).

What design guidance is available?

For Designers

Since Selwyn Goldsmith published the first edition of his guide to designing for disabled people in 1976, there have been numerous other publications intended to assist designers and architects to ensure that the built environment is accessible to disabled people.

A guide published by the Centre for Accessible Environments (Palfreyman, 1993) gives detailed design specifications for aspects of the built environment including car parking, access routes, street furniture, entrances to buildings, fixtures and fittings and public conveniences, including guidance on the needs of people with both physical and sensory impairments. Designing for people with sensory impairments is also covered in an earlier publication by the Access Committee for England (Thorpe, 1986) which provides guidance for designers on public buildings and spaces.

Many local authorities produce their own design guides (e.g. Corporation of London, 1993; London Borough of Islington, N/D) covering design of the pedestrian environment as well as giving advice on the design of public buildings.

The Centre for Accessible Environments pioneered the use of 'access audits' of the built environment. Their guide and checklists (Fearn, 1993) can be used to assess the extent to which buildings can be used by disabled people. The Association of Access Officers has also produced a checklist based on Part M of the Building Regulations (Fleck, 1994b).

Local authorities have been urged to utilise the AAO checklist to audit the accessibility of their public buildings in fulfilment of the new requirements for information to be provided to the Audit Commission. It has been suggested, however, that the information produced on the accessibility of public buildings needs to be much more specific and detailed to be of use to disabled people wishing to use their local public buildings, and that what is really needed is a set of guides to individual buildings with details of how easy they are to use for people with different types of disability (Fleck, 1994b).

For Disabled People

In response to the difficulties with which many disabled people are faced in moving around the built environment, many charities and other bodies have published guides giving disabled people detailed information either on general access to buildings, transport, public conveniences etc in a specific geographical area (e.g. GLAD/Freemans, N/D; Couch et al, 1989), on specific types of facilities in a local area (e.g. Gloucestershire County Council, 1993) or on specific types of facilities on a national scale (e.g. Scott and Stanford, 1994).

While these guides are undoubtedly helpful for disabled people wishing to visit new areas with confidence that they will be able to gain access to the places they have chosen, they are of little assistance unless disabled people are aware of their

existence and in many cases it will be necessary to make a special journey to a public library to consult them.

Summary and Conclusions

Despite an increase in awareness of the extent to which disabled people are precluded from full participation in society by an inaccessible physical environment, the existing legislative framework in the UK remains rooted in a voluntaristic approach which fails to ensure equality of physical access to all people. Guidance from central government has been weak and many local planning authorities have left it to the Building Regulations to ensure that the access needs of disabled people are met. These regulations are themselves lacking in specificity and even when they are fully enforced, fail to ensure full access to all buildings.

Specially constructed accommodation for disabled people is in short supply and often unsuitable for disabled people living with others, while for those who wish to adapt their homes, obtaining a grant is a complex process, the success of which varies between local authorities.

To date, it would appear that a 'specialist' approach has dominated policy thinking on ensuring access for disabled people; rather than seeking to design an environment which will provide access for all, disabled people have been identified as a group with 'special' needs for whom the existing environment must be adapted. Such an approach not only marginalises and stigmatises, it also fails to acknowledge the fact that a disabling environment creates disability, and also to recognize that most people have special access needs at some time in their lives.

There are signs that access for disabled people in many areas of life will improve in the future - the Government's Disability Discrimination Act and the plans to extend the sphere of influence of the Building Regulations have been welcomed by disabled people while attracting severe criticism for their content. With these related changes, disability can truly be said to be 'on the agenda' although, of course, the impact of the changes has yet to be seen.

Several organisations have developed instruments for use in the measurement of the extent to which disabled people are excluded from full participation in society by a hostile physical environment. However, considerable conceptual work remains necessary before it will be possible to develop measures which will allow comparisons to be made between different geographical areas.

Measuring accessibility

How Has Access Been Instrumentalised?

An important part of the current research will involve undertaking evaluations of the accessibility of the built environment for disabled people. A number of instruments are already in existence, elements of which may be incorporated into the research design. The Royal Association for Disability and Rehabilitation (RADAR) produces a series of evaluation forms for assessing access to a wide variety of buildings and public facilities, including education facilities, specific leisure facilities (e.g. zoos, ice-rinks, museums, discos), holiday facilities, bus, coach and railway stations, shopping centres, post offices, banks, hotels and airports. All seek information on parking, the approach to the building/facility, entrances, circulation areas, toilets and specialist areas in terms of the presence or absence of obstacles such as steps and the provision of aids such as ramps and handrails.

The access audit pack produced by the Centre for Accessible Environments (Fearn, 1993) contains eighteen checklists on aspects of the built environment affecting accessibility which can be used (with amendments and additions) for most types of buildings in conjunction with the design criteria in the accompanying guide 'Designing for Accessibility.' (Palfreyman, 1993). The Association of Access Officers checklist used by some local authorities to undertake audits of their buildings may also be helpful. The questions contained in the checklist, however, are based on Part M of the Building Regulations, - accepted by the Audit Commission as a measurement yardstick - which lay down only minimum requirements. (Under the provisions of the Citizen's Charter of 1991, the Audit Commission is required to publish league tables of the performance of local authorities, one performance indicator being the proportion of public buildings which are accessible to disabled people (Audit Commission, 1992)).

Types of Measurement

Clearly, some aspects of the environment lend themselves more readily to measurement than others. It is relatively easy to count the number of steps to the entrance of a public building, to observe whether there is a ramp and even to measure the gradient of that ramp (a range of equipment is available to assist in measuring ramp gradients, the force of door closers and other factors in the built environment) (Holmes-Siedle, 1994). Other aspects may not be so easy to measure in an 'objective' way. One aspect of building design which has been relatively neglected in discussion of access requirements is lighting (Fearn, 1993). A simple measurement of brightness will tell us little about how easy it is for people with visual impairments to navigate around a building, and factors such as colour-

contrast which interact with lighting levels also need to be taken into account. Again, the layout of buildings may have a significant effect upon the extent to which disabled people find them easy to use, but this could present something of a measurement challenge.

Using Disabled People in assessing accessibility

Asking disabled people to assist in assessing accessibility of buildings would appear the logical way of ensuring both that measurements are meaningful and that the measuring instruments are administered by those to whom they are most relevant. The Centre for Accessible Environments has recommended that, where measuring equipment is not available, “*judgements should be made in conjunction with the people most affected*” (Penton, 1994). It is suggested that the adequacy of lighting should be assessed by a partially-sighted person, the acceptability of a deep-pile carpet by a wheelchair user, door mobility by a person with reduced strength and background noise levels by a person with a hearing impairment. In general, the merit of this approach is accepted. There is a danger, however, that an assumption will be made that one wheelchair user's needs are the same as another's and that all people with visual impairment share similar lighting level requirements. The extent to which the access needs of individuals vary even among those with broadly similar physical conditions will therefore be borne very much in mind in the execution of the current research.

Conceptualising access

Access to the environment may be conceptualised utilising a 3-tier model (see Figure 1). At an individual level, we can raise questions concerning an individual disabled person's ability to move around the environment in terms of the stages involved in moving from site A to site B. Thus Figure 1 sets out the steps involved in a simple shopping expedition.

First of all the individual has to be able to leave the house. At a second - societal/environmental - level, whether or not this can be achieved may depend on various factors including housing design (are there steep steps which prevent someone with arthritis getting out of the house?), provision of social services (does the individual need assistance to get out of the house?) and provision of aids and appliances (does the disabled person need the support of a walking frame or a wheelchair?) Such factors will, in turn, depend upon government policies and legislation and on local authority policies on housing and social services provision.

Figure 1: Access to the environment: a conceptual model

<u>Individual Level</u>	<u>Societal/Environmental</u>	<u>Policy</u>
1. Can the disabled person leave the house?	Housing design. Social services (personal assistance). Provision of aids and appliances (e.g. wheelchairs, walking aids).	Housing policy Social Services provision
2. Can the disabled person get to the shops?	Provision of accessible public transport and/or special transport. Accessibility of pavements/roads. Proximity of shops and services. Parking allocation for disabled people.	Transport policy Highways policy
3. Can the disabled person enter the shop?	Provision of level access/ramps. Signage. Door quality (eg strength required to open, grip required).	Legislation on design of retail premises (e.g. Building Regulations)
4. Can the disabled person move around the shop comfortable and easily?	Turning space for wheelchairs. Level flooring/ramps. Lifts. Provision of seating. Signage.	As above
5. Can the disabled person buy the goods s/he requires?	Provision of assistance for visually and	Legislation on retail premises.

hearing impaired people (e.g. induction loop, staff help).
Counter heights for wheelchair users.

Retail staffing training in disability awareness.

At any one point in the process of leaving home and making a purchase, the disabled person may meet barriers to the successful completion of that exercise. Thus a wheelchair user may leave the house using a ramp and travel to the shopping centre on a low-floor bus only to find that the shop s\he wishes to visit can only be entered by steps. Or the individual with hearing impairment may arrive at the shop only to find that s\he cannot obtain useful information on a product because no induction loop is provided.

While it may be useful to discuss access issues as they arise in different environmental contexts, it is thus clear that access to the 'total environment' can be impeded by barriers placed at any one point in that environment.

What Should We be Measuring?

Figure 2 sets out the types of barriers to access which have been identified in the literature, and the particular groups of people for whom they are most likely to be problematic, together with initial thoughts on the ways in which they might be measured. For some of the suggested indicators (eg presence or absence of handrails on ramps, door widths, ramp gradients) measurement would be relatively straightforward. For others (eg colour-contrast on signs, visibility of lift controls, adequacy of lighting levels) measurement is not so straightforward and further conceptual work will be required.

Proposed research and measurement issues

In order to identify barriers and develop measurements on accessible environments, the research team are carrying out a consultation process. We are very keen to have people's views on any further access barriers which could be added to the ones we have listed here.

National statistics on access have already been collected. These include the Performance Indicators published by the Audit Commission on access to public buildings and the numbers of specially adapted dwellings in each local authority (see working paper no. 3 on the Citizen's Charter for a discussion of these

indicators). Unpublished statistics have also been obtained, to make a comparison of the demand for and supply of accessible housing in different parts of the country. Supply figures include those on Disabled Facilities Grants (for adaptations), existing accessible housing, new building of accessible housing and expenditure on accessible housing. Indications of demand include the numbers of people on a housing waiting list who require accessible housing.

An important part of the research project will involve carrying out access audits of the built environment. There are already several access guidelines, parts of which will be used to develop the research design. Assessment by local disabled people of public sites in the two case study areas will make sure that the measurements are meaningful. The fact that access needs of individuals vary even among those with broadly similar types of impairment will be taken into account wherever possible. More development work is needed on measures which will allow comparisons between different geographical areas, and the research will hopefully help us make a start on this.

Figure 2: Barriers to access

<u>What</u>	<u>Who</u>	<u>Measures/indicators</u>
IN THE STREET		
<i>Street hazards</i>		
a) <u>Obstructions</u>	wheelchair users; blind and partially sighted people	width restrictors, street furniture (e.g. bollards, bins), colour contrast.
b) <u>Danger zones</u>	wheelchair users blind and partially sighted people wheelchair users and people with other mobility impairments	steep dropped kerbs, inadequate timing at pedestrian crossings, tactile markers at crossings/number of crossings/ lighting level (at night)/uneven pavements
c) <u>Inability to cross</u>		
i) Kerbs	wheelchair users and people with other mobility impairments	dropped kerbs/ number and gradient
ii) Crossings	blind and partially	signage of pedestrian

	sighted people; deaf and hearing impaired people; wheelchair users and people with other mobility impairment	crossings/tactile markers, bleepers, ramps at underpass
<i>Inability to get from car to destination</i>	wheelchair users and people with other mobility impairments	allocated parking spaces (number and proximity), unloading space, signage
<i>Inability to navigate</i>	blind and partially sighted people	signage: size/ colour- contrast/height/ lighting/tactile markers
OUTSIDE BUILDINGS		
<i>External steps</i>	wheelchair users and people with other mobility impairments; blind and partially sighted people	height of risers, tread length, clear nosings, non-slip surface, handrails, closed treads, landings, lighting, tactile/visual warning at top, space at top/ bottom for wheelchair
<i>External ramps</i>	[As above]	handrails, protected edges, gradient, non-slip surface, landings, lighting
<i>'Invisible' entrance doors</i>	All disabled people (particularly people with visual impairments)	colour/texture, signage, visibility of all-glass doors
<i>Inaccessible entrance doors</i>	wheelchair users blind and partially	flush threshold, space for wheelchair user to open, location, grip of handle, push strength, (revolving only?) flush mat, door width, entryphone,

	sighted people; deaf and hearing impaired people	height/visibility.
INSIDE BUILDINGS		
<i>Inaccessible reception desks/counters</i>	wheelchair users and people with other mobility impairments; blind and partially sighted people; deaf and hearing impaired people	counter height, manoeuvring space colour contrast induction loop, lighting/ décor OK for lip-reading?
<i>'Invisible' internal doors</i>	blind and partially sighted people	[as for external]
<i>Inaccessible internal doors</i>	wheelchair users and people with other mobility impairments	[as for external]
<i>Inability to get from one level to another</i>		
a) <u>Stairs</u>	wheelchair users and people with other mobility impairments; blind and partially sighted people	[as for external steps], are there alternatives (e.g. lifts/ramps?)
b) <u>Ramps</u>		[as for external ramps]
c) <u>Lifts</u>	wheelchair users and people with other mobility impairments; blind and partially	manoeuvring space (out and in) door width, door opening time, support rails, control siting, manipulability of controls, audio floor announcement.

	sighted people; deaf and hearing impaired people	tactile controls, visibility of controls, visual floor level display
<i>Inaccessible toilets</i>	wheelchair users blind and partially sighted people; deaf and hearing impaired people	manoeuvring space (out and in), handrails, siting of basin, manipulability of controls/locks/taps, colour contrast of fittings/décor, visible flush, visible door controls, visible alarm cord
<i>Inaccessible public areas</i>	wheelchair users and people with other mobility impairments; blind and partially sighted people	manoeuvring space, slip-resist floor, even surfaces, highly-polished reflective surfaces,
<i>Inability to navigate</i>	blind and partially sighted people	signage: size/colour-contrast/ height/lighting
 INSIDE/OUTSIDE		
<i>Inability to use public telephone</i>	wheelchair users and people with other mobility impairments; blind and partially sighted people; deaf and hearing impaired people	height, door width grip/ease of handset grab rails, signage, tactile cues, inductive coupler
<i>Inability to gather auditory information</i>	deaf and hearing impaired people	induction loop (and interference by air

conditioning/fluorescent lights,
lighting/décor suitable
for lip-reading

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