Monograph:
Berrett, B., Leake, G.R., May, A.D. et al. (1988) Economic Standards for Pedestrian Areas for Disabled People: Results of the Initial and Main Interview. Working Paper. Institute of Transport Studies, University of Leeds , Leeds, UK.

Working Paper 254

Published paper

Berrett, B., Leake, G.R., May, A.D., Parry, T., Whelan, J. (1988) *Economic Standards for Pedestrian Areas for Disabled People: Results of the Initial and Main Interview.* Institute of Transport Studies, University of Leeds. Working Paper 255

Working Paper 254

June 1988

ERGONOMIC STANDARDS FOR PEDESTRIAN AREAS FOR DISABLED PEOPLE:

Results of The Initial and Main Interviews

B Berrett
G R Leake
A D May
T Parry
J Whelan

This work was carried out under contract by TRRL.

CONTENTS PAGE NUMBER

TABLES

1. INTRODUCTION

1.1 Study Objectives and Structure

1.1.1 The Institute for Transport Studies was invited by the Transport and Road Research Laboratory to submit a research proposal, with costs, aimed at establishing suitable "Ergonomic Standards for Pedestrian Areas for Disabled People". The project commenced on 1st July, 1986 and was split into two parts, with part one involving four months' work over the period to 31st December, 1986 and part two finishing on 30th April, 1988.

1.1.2 The main objectives of the Study laid down in the design brief by the Transport and Road Research Laboratory were:

a) To produce a guide to good practice for the design and maintenance of footways and pedestrianised areas;

b) To provide, where possible, recommended standards for design and maintenance.

The good practice guide and the recommended standards were to be primarily aimed at disabled people and the elderly, but the requirements of the able-bodied were also to be considered, as were conflicts between the needs of different groups of user. The economic implications of implementation and maintenance were also to be detailed.

1.1.3 It was agreed with TRRL that a two part programme was to be developed. The first was concerned with reviewing existing literature and standards on footways, pedestrianised areas and access to buildings. The second part was the development and execution of a survey instrument for identifying a sample of disabled people for in-depth investigation, including interviews and on-site observations, in order to determine the ergonomic requirements for disabled and elderly people on footways and in pedestrianised areas. Each stage of the study was discussed in detail with an Advisory Committee established for the purpose.

1.1.4 To meet these requirements it was proposed to conduct the study in the following stages:

a) Contact and hold discussions with individuals and organisations involved or concerned with disabled people to identify priority issues for study;

b) Conduct a short initial interview survey with 10% of the registered disabled in Leeds in order to obtain a sample for each of the five selected disability types for further study. In addition control samples of 50 elderly and able-bodied respondents would also be selected;

c) Implement a physical survey of conditions in Leeds city centre to identify ranges of the individual impediments for further study;

d) Carry out more detailed interviews with a sample of 50 to 60 from each disability type in order to obtain perceptions and attitudes and to identify access-related barriers;

e) Conduct detailed observations of the ability of the members of the sample populations of the disability types and samples of the elderly and able bodies to tackle a series of identified impediments in Leeds city centre;

f) Conduct a brief follow-up interview with these same people to obtain their reactions to, and perceptions of, the on-site studies;

g) Analyse the results and develop relationships and resulting guidelines.

1.2 The Philosophy Adopted

1.2.1 In developing the methodology it was necessary to adopt an approach to the treatment of the needs of disabled people which raised a series of philosophical issues and methodological assumptions. These were discussed in detail with the Advisory Committee before being adopted as a basis for the study.

1.2.2 Site-specific solutions The removal of impediments will cost money, and may impose problems for other users. The nature of these costs and problems will depend critically on the location. Modifying a level pedestrian low density site to meet the needs of disabled people will cost less than modifying the steeply sloping, constrained sites found in some town centres. Rather than recommending universal standards, the study aims to develop relationships between the scale of an impediment and the effects which it has on different disability groups. Such relationships should enable the designer to determine the implications of different levels of expenditure on the benefit to disabled users.

1.2.3 Catering for a range of disabilities There are a number of types of disability to be considered, and within any one disability category there is a wide range. Rather than assume, therefore, that the reduction of a particular impediment will benefit all who are disabled, the study aims to develop, for specific types of disability, a relationship between the scale of the impediment and the proportion of people having that particular disability who will be impeded.

1.2.4 Integration rather than special treatment One of the aims of the project is to assist in integrating disabled people into society. Hence the methodology is not necessarily trying to highlight some special status for the various groups of individuals who might be classed in this way.

1.2.5 Involvement rather than observation While the starting point for the study was an ergonomic one, it is particularly important to avoid simply observing disabled people and making judgements on their behalf. The study, therefore, has involved disabled people at all stages of the research, and incorporated their suggestions.

1.2.6 Improving accessibility It is assumed that disabled people wish to use pedestrian facilities but that there can be barriers or impediments which prevent them from doing so. The project is concerned with providing advice on how to overcome

these impediments. It focuses therefore on the accessibility of an area rather than its attractiveness. However, some of the reasons why disabled people use pedestrian areas were obtained during the detailed survey work.

1.2.7 Selectivity in study design The range of disabilities, impediments and potential study environments is wide, and consequently there was a danger that the limited study resources would be spread too thinly to be effective. It was, therefore, necessary to be selective. Consequently, priority was given to impediments considered to be both important and under-researched; to disabilities which could be studied using a common study methodology; and to a study area where the full range of impediments could be studied efficiently.

1.3 Selection of Impediments for Study

1.3.1 One purpose of the literature review and consultation process (Berrett et al, 1988a) was to identify impediments of concern to disabled and elderly people, and existing standards and guidelines for the avoidance of those impediments. The following types of impediment were identified:

- Parking provision and location
- Public transport
- Movement distance
- Surface conditions and type
- Road crossings and intersections
- Under- and over-passes
- Extensions to pedestrian areas
- Furniture
- Information provision
- Toilets
- Vegetation
- Drainage
- Steps at kerbs and buildings
- Stairs
- Ramps
- Handrails
- Lifts
- Escalators
- Doorways/entrance ways
- Insufficient plan consultation with disabled groups
- Shared-use with vehicles
- Weather

1.3.2 It was necessary to select a smaller number of impediments from the above list in order that they could be examined thoroughly. The consultation process was particularly useful, together with guidance from the Advisory Committee. As a result the following impediments were selected for further investigation.

- Movement distance
- Surface conditions
- Ramps
- Parking
- Public transport access

1.4 Selection of Categories of Disability for Study

1.4.1 It was recognised in the literature review (Berrett et al, 1987) that the identification of disabled people poses many problems. Not only are sources limited and medically-oriented, but they can seriously underestimate the total number of disabled people. In addition to the problems associated with identifying disabled people from such sources, there is also the difficulty in identifying someone as being disabled, particularly those suffering from functional impairment.

1.4.2 A comparison of the various methods used to categorise disabled people was undertaken, from which it became clear that many classifications were currently used. Nine main categories were identified, namely:-

1) wheelchair users
2) activity impaired (e.g. through arthritis, angina)
3) ambulatory impaired (e.g. use of walking frames, crutches)
4) manipulatory impaired (restricted use of hands)
5) visually impaired
6) auditory impaired
7) mentally impaired
8) temporarily impaired (e.g. fractures)
9) encumbered (e.g. pushchairs, luggage).

1.4.3 Of these it seemed appropriate to concentrate on the first five, all of which have impairments which are readily identifiable. They also constitute the vast majority of permanently disabled people. The temporarily disabled present a further difficulty for study because of the problems of identification and because of the differences in people's reactions to temporary and permanent impairment. It was accepted, however, that these last four categories all merited further study, but that this was not possible within the resources initially available.

1.4.4 In practice the categorisations used were later changed in the light of the survey results and of the preparedness of those interviewed to participate in the observations. These changes are outlined in Section 2.

1.5 Study Reports

1.5.1 This report describes the results of the initial and main interviews. Section 2 briefly summarises the approach adopted in selecting the samples and conducting the interviews. Section 3 presents the results of the main interviews, and Section 4 summarises any additional results obtained from the initial interviews. Section 5 presents brief conclusions.

1.5.2 Further reports in the series describe the literature review and initial consultation process (Berrett et al, 1988a); the methodology adopted for identifying the samples and conducting the main interviews and observtions (Berrett et al, 1988b); and the results of the observation studies (Berrett et al, 1988c).

2. THE APPROACH ADOPTED

2.1 Sample Selection

2.1.1 The selection of the samples for study involved three separate processes, each of which is described more fully in Whelan et al, 1988. The first of these concerned the selection of the samples of disabled people. This involved attempting to contact some 1,300 disabled people from official registers of disability in order ideally to select a sample of 50 to 60 respondents in each of the five disability categories outlined in para 1.4.3. Contact in practice proved more difficult and time-consuming than anticipated, and the investigations focused on an approach to 842 disabled people. Each of these was invited to participate in an initial screening interview. A total of 494 successful screening interviews took place.

2.1.2 As a result of the responses obtained, it was realised that the category 'manipulatory impaired' (para 1.4.3) was too small to merit separate study, but that the ambulatory impaired were a sufficiently large group to merit division into three separate groups of differing degrees of impairment. Based on respondents' assessments of their own disabilities, they were grouped into those who:-

- normally used wheelchairs;
- normally used a stick, cane or similar aid, and were judged to suffer slight ambulatory disability;
- had a permanent or long term disability limiting their ability to walk, and were judged to suffer severe ambulatory disability;
- were registered as blind or partially-sighted, and hence visually handicapped;
- put themselves in an 'other' category.

2.1.3 The 'other' category was small in number and was not considered further in the observation phase. However, based on the interview results and the preparedness of interviewees to participate in the observations, it was decided to recategorise the ambulatory disabled into three levels of severity for the observation work. This gave five disability categories together with the elderly and able-bodied samples:

- Wheelchair users
- Visually handicapped
- Ambulatory (minor) disabled
- Ambulatory (moderate) disabled
- Ambulatory (severe) disabled
- Elderly
- Able-bodied

2.1.4 The elderly sample for the observation work was selected following approaches to a series of social centres in Leeds. The able-bodied sample for observation work was selected from among pedestrians in Leeds city centre who showed no evidence of being disabled, and were not obviously of pensionable age. The sample was drawn to represent the range of ages, both sexes, and different types of encumbrance.

2.2 The Interviews

2.2.1 For the disabled groups, two interviews were conducted. The first was the screening interview. It was designed initially to seek the respondents' self assessment of their disabilities, so that they could be assigned to the categories identified. The second main purpose was to seek agreement to participation in the main interview and observations. In addition the opportunity was taken to obtain, from a larger sample, details of use of Leeds city centre and local district centres, and of problems perceived in doing so. The questionnaire used is included as Appendix I.

2.2.2 The second interview, the main interview, was designed to obtain more detailed information from the selected sample of their use of Leeds city centre and local district centres. Those who did not use these centres were asked for their reasons; those who did were asked about modes used to gain access to the centres, and problems experienced in gaining access to the centre and moving around in the centre. The questionnaire used is attached as Appendix II.

2.2.3 The screening interview was administered to the 494 potential members of the disabled samples. Because it was designed primarily for sample selection, it was less thorough, and has been used to reinforce the results of the main interview, rather than to produce results on access and movement difficulties in its own right.

3. RESULTS OF THE MAIN INTERVIEW

3.1 General Observations

3.1.1 Table 3.1 indicates the numbers of respondents to the main interview in each of the five disability categories to which they assigned themselves. The wheelchair and visually handicapped groups were both of around the size of 50 which had been targeted. The ambulatory disabled groups were both somewhat larger. Only 13 categorised themselves as 'other'; they include respondents with angina, bronchitis, other unspecified chest conditions, and deafness, and respondents of restricted stature. They have not been considered in the subsequent analysis.

Table 3.1: Self-Categorisation of Respondents

Wheelchair User	55
Slight Ambulatory Disability	99
Severe Ambulatory Disability	73
Visually Handicapped	45
Other	13

3.1.2 Respondents were asked about their use of Leeds city centre and of district centres and, for each, the difficulties in gaining access to and using the centre. These results are presented for Leeds City Centre in section 3.2 and for district centres in section 3.3. Respondents were then asked in more detail about a series of problems associated in turn with parking, public transport, surface conditions, ramps, crossing the road and information provision. These are presented in

sections 3.4 - 3.6. Finally they were asked for suggestions of possible improvements to pedestrian areas; these are outlined in section 3.7.

3.1.3 Some interviewees did not answer all questions, so in the following tables the number of responses does not always tally with the total numbers of interviewees in each disability category. Where respondents indicated that they experienced problems, they were asked to specify the nature of the problems without the aid of a predetermined list of possible alternatives. It was possible for respondents to indicate one or more problems, or not to specify the type of problem experienced. For this reason the numbers indicating that they experienced problems does not necessarily tally with the types of problem identified. In practice relatively few did give details of types of problems, so in the more detailed questions, and no attempt has been made in these cases to present numerical evidence of types of problem. However, numerical evidence is presented on the numbers specifying differing degrees of difficulty.

3.2 Use of Leeds City Centre

3.2.1 Table 3.2 indicates the numbers in each of the four main groups who used Leeds and, for those who did not, the reasons stated. The lowest level of usage, at 49%, was found among wheelchair users; for the other groups between 64% and 72% used the city centre. The main reason given was difficulty in getting there; the first three answers, relating to access and parking, together accounted for two thirds of the reasons given. Dependency on others was the next most cited reason, with a sixth of the answers. Problems in the centre were rarely cited.

Table 3.2: Respondents' Use of Leeds City Centre

					Numbers stating reasons why Leeds not used							
	A	B	C	D	1	2	3	4	5	6	7	8
W'chair user	27	(49)	28	(51)	0	15	2	5	0	2	3	1
Slight amb dis	65	(65)	34	(35)	6	7	7	3	0	4	0	0
Severe amb dis	53	(72)	20	(28)	6	3	1	1	1	0	0	1
Vis. h'capped	29	(64)	16	(36)	0	3	0	4	0	0	0	0

Key:

A Numbers using Leeds City Centre
B Percentage using Leeds City Centre
C Numbers not using Leeds City Centre
D Percentage not using Leeds City Centre

1 Walking Distance
2 Difficulty in getting there
3 Lack of disabled parking
4 Dependency on others
5 Cost
6 Crowding
7 Ramps not available
8 Surface conditions

3.2.2 Table 3.3 gives the mode used by those who travel to the city centre. Car predominates for all except the visually handicapped, 76% of whom use bus. Car use is, not surprisingly,

highest for the wheelchair users. Few use trains or taxis, and none walk or use the (then recently introduced) access bus.

Table 3.3: Mode of Travel to Leeds City Centre

			Number (and Percentage) by:-						
	A	B	Bus	Train	Taxi	Walk	Own Car	Other Car	Access Bus
W'chair user	2	25	3(12)	0	3(12)	0	17(68)	2(8)	0
Slight amb dis	3	62	22(35)	1(2)	3(5)	0	27(44)	9(15)	0
Severe amb dis	2	51	15(30)	1(2)	2(4)	0	30(59)	3(6)	0
Vis. h'capped	0	29	22(76)	2(7)	0	0	5(17)	0	0

Key: A = No Response B = Response

3.2.3 Table 3.4 indicates the numbers stating that they changed their routes while in the city centre because of surface conditions, gradient or physical obstacles. Wheelchair users were much more likely to be affected than other groups, with around two thirds being affected by surface conditions and around a half by gradients and physical obstacles. Around a third of each of the other groups were affected by surface conditions. Gradients affected around a quarter of the ambulatory disabled but very few of the visually handicapped; conversely physical obstacles affected almost half of the visually handicapped, but only around a sixth of the ambulatory disabled. The predominant surface impediment for wheelchair users was kerbs; for the other groups it was uneven or cracked surfaces. Physical obstacles cited included litter bins, scaffolding and rubbish.

Table 3.4: Numbers Changing Their Routes in Leeds City Centre, and Causes

	No Response	Responses	Number Changing Route for Given Reason: A	B	C
W'chair user	4	23	14(61%)	12(52%)	9(39%)
Slight amb dis	5	60	19(32%)	17(28%)	10(17%)
Severe amb dis	2	51	17(33%)	11(22%)	7(14%)
Vis h'capped	3	26	8(31%)	1(4%)	11(42%)

Key: A Surface conditions
B Gradient
C Physical obstacles

3.2.4 Table 3.5 indicates the numbers who stated that there were streets, shops or buildings that they would have liked to, but were unable to visit. Almost three quarters of wheelchair users said that there were; steps were their most frequently cited impediment. Between a third and a half of the ambulatory disabled said that there were; walking distance and lack of parking (which has the effect of increasing walking distance) were most often cited. Even among the visually handicapped, who were least affected, the percentage restricted from destinations was 21%. Steps were again the most frequently cited reason.

Table 3.5: Numbers Indicating Inability to Visit Streets, Shops or Buildings in Leeds City Centre

	No Response	Responses	Number unable to visit
W'chair user	2	25	18 (72%)
Slight amb dis	4	61	21 (34%)
Severe amb dis	2	51	22 (43%)
Vis h'capped	0	29	6 (21%)

3.3 Use of District Centres

3.3.1 Tables 3.6 to 3.9 provide the same information as Tables 3.2 to 3.5 respectively, but for access to district centres.

3.3.2 The percentages using district centres are much higher for all categories, at between 73% and 88%. The difference between the city centre and district centres is particularly marked for wheelchair users. Difficulty getting there is again the main reason for those who do not visit district centres; together with walking distance it provides two thirds of the reasons given. Lack of parking is not cited, and only one respondent mentioned problems in the centre.

Table 3.6: Respondents' Use of Local Centres

					Reason why local centre not used				
	A	B	C	D	1	2	3	4	5
W'chair user	40	(73)	15	(27)	0	3(5%)	0	1(2%)	0
Slight amb dis	73	(74)	26	(26)	4(4%)	7(7%)	2(2%)	2(2%)	0
Severe amb dis	61	(84)	12	(16)	2(3%)	2(3%)	1(1%)	0	1(1%)
Vis. h'capped	33	(73)	12	(27)	0	4(8%)	2(4%)	0	0

Key:

A Number using local centre
B Percentage using local centre
C Number not using local centre
D Percentage not using local centre

1 Walking distance
2 Difficulty in getting there
3 Dependency on others
4 Cost
5 Surface conditions

3.3.3 Car was again the dominant mode of access for all but the visually handicapped; indeed, the percentages using car within each group were very similar to those for the city centre. Bus use was, however, much lower at between 3% and 20% of the groups. Taxi, train and access bus are again minority modes, but walking is quite common (except of course for wheelchair users) at 15% of the ambulatory disabled and 55% of the visually impaired. Indeed, it is interesting to note the marked contrast for the visually handicapped between bus as the dominant mode to the city centre and walking as the dominant mode to the district centres.

Table 3.7: Mode of Travel to Local or District Centre:

			Number (and Percentage) travelling by:-							
	A	B	Bus	Train	Taxi	Walking	Own Car	Other Car	Access Bus	Other
W'chair user	2	38	1(3)	0	2(5)	0	24(63)	2(5)	2(5)	7(18)
Slight amb dis	2	71	12(17)	1(0)	1(1)	11(15)	33(46)	12(17)	0	1(1)
Severe amb dis	0	61	12(20)	0	2(3)	9(15)	33(54)	3(5)	0	2(3)
Vis. h'capped	0	33	2(6)	2(6)	3(9)	18(55)	6(18)	1(3)	1(3)	0

Key: A = No Response B = Responses

3.3.4 Surface conditions were generally as likely to cause people to modify their routes in the district centres as in the city centre. Wheelchair users were slightly less affected, with kerbs again being the main impediment. The visually handicapped were rather more affected in the district centres; they and the ambulatory disabled again gave uneven or cracked surfaces as the main reason. Gradients and physical obstacles were generally much less likely to cause rerouteing.

Table 3.8: Numbers Changing Their Routes in District Centres, and Causes

	No Response	Response	Noumber Changing Route Because of: A	B	C
W'chair user	10	30	17(57%)	5(17%)	1(3%)
Slight amb dis	8	65	23(35%)	9(14%)	8(12%)
Severe amb dis	1	60	12(20%)	5(8%)	0(0%)
Vis h'capped	7	26	12(46%)	0(0%)	7(27%)

Key: A Surface conditions
B Gradient
C Physical obstacles

3.3.5 Wheelchair users were much less likely than in the city centre to find streets, shops or buildings that they could not visit; even so, 38% indicated that they did. Around a quarter of the slightly ambulatory disabled and the visually handicapped said that they were restricted in this way, while only one severely ambulatory disabled person said that he was restricted. With the exception of the visually handicapped, these percentages were much lower than for the city centre. Few cited reasons; the main one mentioned was steps.

Table 3.9: Numbers Indicating Inability to Visit Streets, Shops or Buildings in District Centres

	No Response	Response	Number unable to visit
W'chair user	11	29	11 (38%)
Slight amb dis	14	59	14 (24%)
Severe amb dis	1	60	1 (2%)
Vis h'capped	7	26	7 (27%)

3.4 Parking Problems

3.4.1 Table 3.10 indicates the numbers of those who used cars to access the city centre and the district centres who cited different types of problem. Much higher percentages cited problems in the city centre than in district centres. Wheelchair users were again the most seriously affected, with 90% experiencing problems in the city centre and 50% in district centres. The most common reasons, in both types of centre, were, in order of priority, lack of spaces set aside for disabled people, lack of any parking space and misuse of spaces by those without orange badges.

Table 3.10: Incidence and Nature of Parking Problems When Visiting

(a) Leeds City Centre

	Responses	Number with Problems	Numbers of people experiencing stated problems 1	2	3	4	5	6	7	8
W'chair user	20	18(90%)	3	0	7	0	0	7	0	2
Slight amb dis	47	26(55%)	4	0	20	0	0	3	0	0
Severe amb dis	43	20(47%)	2	0	14	1	0	6	1	0
Vis. h'capped	7	1(14%)	0	0	1	0	0	0	0	0

(b) District Centres

W'chair user	32	16(50%)	3	0	6	2	0	6	0	0
Slight amb dis	62	19(31%)	5	2	9	0	0	2	0	0
Severe amb dis	53	12(23%)	4	0	7	0	0	3	0	0
Vis. h'capped	8	1(13%)	0	0	0	0	0	1	0	0

Key:

1 Non Orange Badge users in bay
2 Lack of space within bay
3 Lack of disabled bays generally
4 Parking over lines
5 Cost
6 Lack of any parking spaces
7 Parking meters too far from centre
8 Finding parking where no kerbs

Note: Not all responses were from those who regularly used cars.

3.4.2 Table 3.11 indicates the numbers experiencing differing degrees of difficulty in the two types of centre. In the city centre, 70% of wheelchair users and around half of the other groups experienced some difficulty; one in seven of the ambulatory disabled and a third of the wheelchair users rated parking at least very difficult. In district centres just under a half of the wheelchair users and the slightly ambulatory disabled experienced some difficulty; but only a quarter of the severely ambulatory disabled did. The proportions finding parking very difficult were similarly lower.

Table 3.11: Difficulty in Finding Vacant Parking Spaces

(a) in Leeds City Centre

		Numbers indicating stated difficulty				
	Responses	Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
W'chair user	20	2	5	0	7	6
Slight amb dis	45	0	6	3	14	22
Severe amb dis	41	0	6	4	12	19
Vis. h'capped	7	0	0	1	2	4

(b) in District Centres

W'chair user	28	2	5	3	2	16
Slight amb dis	51	0	4	2	15	30
Severe amb dis	40	1	2	2	4	31
Vis. h'capped	8	0	1	0	0	7

3.4.3 Table 3.12 indicates the numbers experiencing differing degrees of difficulty in manoeuvring into parking spaces. Wheelchair users again experienced the most frequent problems; 30% in the city centre and 21% in district centres experiencing at least some difficulty. Among other groups the percentage experiencing difficulties was greater in district centres. Between 7% and 10% of the wheelchair users and severely ambulatory disabled considered manoeuvring very difficult in both types of centre. The main reasons cited were poor parking by others, bay widths and vehicles blocking the view.

Table 3.12: Difficulty Found in Manoeuvring Car into Parking Space

(a) in Leeds City Centre

	Responses	Numbers indicating stated difficulty in manoeuvring: Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
W'chair user	20	0	2	4	0	14
Slight amb dis	43	0	1	0	2	40
Severe amb dis	39	0	3	0	1	35
Vis. h'capped	6	0	0	0	0	6
Modified cars	20	0	1	2	1	16
un-modified cars	92	0	4	2	1	85

(b) in District Centres

	Responses	Numbers indicating stated difficulty in manoeuvring: Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
W'chair user	28	0	2	3	1	22
Slight amb dis	56	0	1	1	5	49
Severe amb dis	44	0	3	1	2	38
Vis. h'capped	6	0	0	1	0	5
Adapted cars	27	0	1	2	1	23
Un-adapted cars	124	0	5	5	7	107

3.4.4 Respondents were asked whether their cars were adapted. 29% of wheelchair users and around 15% of the ambulatory disabled had adaptations. The most common were hand controlled brakes, hand controlled accelerators, automatic gear changing and steering handles on wheels. Some of the wheelchair users had swivelling seats. As Table 3.12 indicates, there was no difference between those with and without adaptations in the percentage experiencing difficulties in manoeuvring.

3.4.5 Table 3.13 gives similar statistics for difficulties getting out of the car. Again the wheelchair users fare worst, with 40% in the city centre and 36% in district centres having some difficulty and 10% to 15% finding it at least very difficult. Percentages of other groups having difficulty are similar in different types of centre at around 75% for the slightly ambulatory disabled and 10% for the severely ambulatory

disabled. The most commonly stated reason is lack of space, but some wheelchair users mentioned egress into the traffic stream.

Table 3.13: Difficulty in Getting Out of the Car

(a) in Leeds City Centre

	Responses	Numbers indicating difficulty in getting out of cars: Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
W'chair user	20	0	3	4	1	12
Slight amb dis	47	0	0	1	9	37
Severe amb dis	38	0	0	0	4	34
Vis. h'capped	7	0	0	0	0	7

(b) in District Centres

W'chair user	28	1	3	2	4	18
Slight amb dis	54	1	0	2	11	40
Severe amb dis	43	0	0	2	2	39
Vis. h'capped	8	0	0	0	1	7

3.4.6 Table 3.14 gives similar results for difficulty in moving between the parking place and the destination. Once again, wheelchair users were more likely to experience difficulties; 40% in the city centre and 32% in district centres did so. Ten percent in the city centre, and as many as 25% in district centres, found it at least very difficult. Around a quarter of the ambulatory disabled experienced some difficulty in the city centre and around a sixth in the district centres. In all cases the distance involved was the main cause of the problems.

Table 3.14: Difficulty Found in Moving Between Parking Space and Destination

(a) in Leeds City Centre

	Responses	Numbers indicating difficulties in moving between parking space and destination: Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
W'chair user	20	0	2	3	3	12
Slight amb dis	47	0	0	4	8	35
Severe amb dis	40	0	3	2	4	31
Vis. h'capped	7	0	0	0	0	7

(b) in District Centres

W'chair user	28	1	6	0	2	19
Slight amb dis	54	0	0	0	9	45
Severe amb dis	43	0	2	1	4	36
Vis. h'capped	8	0	0	1	0	7

3.4.7 Finally information was sought on parking duration and type of parking. Mean durations were around two hours in the city centre and around one hour in district centres. Bays set aside for disabled people were the most commonly sought type of space in the city centre; somewhat surprisingly off street spaces were the most common in district centres. Few attempted to use parking meters, but yellow lines were quite popular, and around a sixth stated that any type of space would be acceptable.

3.5 Public Transport Problems

3.5.1 Table 3.15 indicates the numbers using public transport (which was predominantly bus) to the city centre and district centres who cited different types of problem. Around three fifths of the ambulatory disabled experienced problems in the city centre, compared with around two fifths in the district centres. The proportions for the visually handicapped were about half of these levels. The main problems cited in both locations were getting on and off the bus and the use of steps.

Table 3.15: Incidence and Nature of Problems with Using Public Transport

(a) in Leeds City Centre

	Responses	Number with problems	Numbers indicating specific problems 1	2	3	4	5	6	7	8
W'chair user	5	2(40%)	0	0	0	0	0	0	0	0
Slight amb dis	39	24(62%)	11	2	0	1	5	1	1	1
Severe amb dis	25	14(56%)	7	3	0	1	3	2	2	1
Vis. h'capped	29	10(34%)	4	2	3	0	3	1	0	0

(b) in District Centre

W'chair user	3	2(67%)	0	0	0	0	0	0	0	0
Slight amb dis	29	10(34%)	5	0	0	0	4	0	1	0
Severe amb dis	22	9(41%)	3	1	1	0	3	2	0	0
Vis. h'capped	13	2(15%)	0	0	2	0	0	0	0	0

Key:
1 Getting on/off bus
2 Getting to seat
3 Identifying bus number
4 Distance from kerb
5 Steps
6 Insufficient seating
7 Inconsiderate drivers
8 No direct buses

3.5.2 Table 3.16 indicates the numbers experiencing differing degrees of difficulty in moving to their destinations from public transport. Those few wheelchair users who used public transport were particularly likely to experience severe difficulties. For the remaining groups, no more than a quarter experienced any difficulty, and only a very few considered the difficulty more than slight. There are no consistent differences between the city centre and district centres. Various reasons for difficulty, including crowds, surface condititons and walking distance were cited.

Table 3.16: Difficulty in Moving to Destination from Public Transport

(a) in Leeds City Centre

	Responses	Number indicating difficulty in moving to destination from public transport: Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
W'chair user	5	2	0	0	3	0
Slight amb dis	33	3	0	0	4	26
Severe amb dis	24	0	1	0	3	20
Vis. h'capped	27	0	0	0	4	23

(b) in District Centre

	Responses	Number indicating difficulty in moving to destination from public transport: Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
W'chair user	3	2	0	0	0	1
Slight amb dis	26	3	0	0	3	20
Severe amb dis	16	0	0	0	1	15
Vis. h'capped	8	0	0	0	2	6

3.5.3 Table 3.17 provides similar information for the return journey to public transport (which may of course involve using a different stop). The results are in practice broadly similar to those for journeys from public transport. Gradient appeared as an additional reason for difficulties.

Table 3.17: Difficulty in Returning from Destination to Public Transport

(a) in Leeds City Centre

	Responses	Number indicating difficulty in returning from destination to public transport: Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
W'chair user	5	2	0	0	1	2
Slight amb dis	33	3	0	0	4	26
Severe amb dis	24	0	1	0	3	20
Vis. h'capped	27	0	0	0	5	22

(b) in District Centre

W'chair user	3	2	0	0	0	1
Slight amb dis	25	3	0	2	1	19
Severe amb dis	17	0	0	0	1	16
Vis. h'capped	9	1	0	0	2	6

3.5.4 Table 3.18 indicates the numbers experiencing differing degrees of difficulty in waiting for buses. Here there are marked differences between the city centre and district centres. In the city centre 56% of the slightly ambulatory disabled and 38% of the severely ambulatory disabled experienced some difficulty, primarily because of lack of seating. One in eight of the slightly disabled found waiting very difficult. The visually handicapped were less affected; around a quarter experienced some difficulty. In district centres 39% of the slightly ambulatory disabled and 18% of the severely disabled experienced some difficulty; none of the visually handicapped did. Again, lack of seating was the prime cause.

Table 3.18: Difficulty Found in Waiting for the Bus

(a) in Leeds City Centre

	Responses	Numbers indicating difficulty found in waiting for the bus: Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
W'chair user	5	2	0	0	1	2
Slight amb dis	32	3	1	4	10	14
Severe amb dis	24	0	1	4	4	15
Vis. h'capped	27	0	0	1	6	20

(b) in District Centre

W'chair user	3	2	0	0	1	0
Slight amb dis	26	3	0	1	6	16
Vis. h'capped	10	0	0	0	0	10
Severe amb dis	17	0	1	1	1	14

3.6 Other Problems

3.6.1 Table 3.19 indcates the numbers of respondents who indicated that they experienced problems with surface conditions, ramps and crossing the road when attempting to reach destinations either in the city or district centres. Around a half of all groups had problems with surface conditions, with the exception of the visually handicapped, only a quarter of whom were affected. The most common complaint was uneven or cracked surfaces. Very few experienced problems with ramps. Around a half had problems crossing the road, with the exception of wheelchair users, only a third of whom were affected. The time required to cross was the main concern, but wheelchair users mentioned kerb height as well, and the visually handicapped lack of audible warnings.

Table 3.19: Numbers Expressing Different Types of Problem in Reaching Destinations

	Surface Condition		Ramps		Crossing Road	
	Responses	Number with problem	Responses	Number with problem	Responses	Number with problem
W'chair user	44	25 (57%)	47	5 (11%)	49	16 (33%)
Slight amb dis	81	38 (47%)	75	4 (5%)	89	54 (61%)
Severe amb dis	64	31 (48%)	60	3 (5%)	69	34 (49%)
Vis h'capped	39	9 (23%)	32	4 (12%)	37	20 (54%)

3.6.2 Respondents were also asked to mention any other problems which they experienced. About a sixth of them did so. A wide range of problems was mentioned; in order of frequency they were lack of seats, lack of buses, steps, overhanging notices and lack of guard- or guiderails.

3.6.3 Respondents were also asked if they had any difficulties in finding their way around the city centre or in finding particular destinations. A third of the slightly ambulatory disabled and between 15% and 20% of the other groups did. The most frequently mentioned problems were poor signing and poor information on toilets.

3.7 Suggested Improvements

3.7.1 Respondents were asked to suggest improvements to pedestrian facilities in the city and district centres. Slightly over half of all the groups gave suggestions, with the exception

of the visually handicapped, only 39% of whom did.

3.7.2 The most common suggestion by far was for more parking; 32 respondents suggested this, drawn from all groups except the visually handicapped.

3.7.3 The second most frequent suggestion was for smoother pavements, with 18 mentions, drawn from all groups.

3.7.4 Other commonly mentioned requirements were more toilets (11 mentions), dropped kerbs (8 mentions, primarily from wheelchair users), and more seats, wider pavements and better control of disabled parking space (7 mentions each).

3.7.5 When asked specifically for suggestions for improved information, 19 suggested more signing, and 7 the provision of information in a pre-journey booklet.

4 RESULTS OF THE SCREENING INTERVIEW

4.1 Categorisation of Respondents

4.1.1 Table 4.1 compares the categories to which the 494 respondents to the screening interview and the 285 respondents to the main interview assigned themselves. The main interview contains a substantially smaller proportion of severely ambulatory disabled respondents; these are offset by roughly equal increases in the percentages of slightly ambulatory disabled, visually handicapped and 'other'. These differences arise largely as a result of the problems of obtaining agreement to participation in the main interview. They need to be borne in mind in comparing the two sets of results.

Table 4.1: Self Categorisation of Respondents

Category	Main Survey %	Screening Survey %
Wheelchair user	19	18
Slight amb dis	35	31
Severe amb dis	26	38
Vis handicapped	15	11
Other	5	2

4.1.2 The screening questionnaire also asked respondents with different types of disability what types of aid they used. Among wheelchair users, 75% were aided by a helper; 25% wheeled themselves unaided. Among the ambulatory disabled, 75% used one stick or cane, 15% two sticks or canes, and the remaining 10% user zimmer frames or other aids. Among the visually handicapped, 45% used a long cane, 40% used short canes, and the remainder were roughly equally split between those using guide dogs, helpers and other aids.

4.2 Levels of Mobility

4.2.1 The Screening Interview raised questions on the frequency with which respondents went out, whether they were accompanied or not, and how far they could move without resting. The relationships between these responses provide

insights into the extent to which mobility affects willingness to go out.

4.2.2 Table 4.2 indicates the numbers of respondents in each category of disability who went out at different frequencies. Interestingly the severe ambulatory disabled are most likely to go out frequently; around 60% did so daily and only 3% less than once a week. The wheelchair users were the least likely to go out daily; only 30% did so.

Table 4.2 Frequency of Getting Out by Disability

	At least once a day	At least once a week	At least once a month	Less frequently
Wheelchair user	27	48	5	8
Slight amb dis	77	92	6	10
Severe amb dis	95	60	3	1
Visually handicapped	22	25	4	2

4.2.3 Table 4.3 indicates the numbers of respondents in each disability group who indicated that they went out accompanied or alone. Here again the wheelchair users were markedly different from the others; 85% always went out accompanied, compared to around two thirds for the slightly ambulatory disabled and a half for the other categories.

Table 4.3: Level of Accompaniment by Disability

	Mostly go alone	Sometimes alone sometimes accompanied	Always accompanied
Wheelchair user	3	8	64
Slight amb dis	34	19	90
Severe amb dis	33	39	81
Visually handicapped	15	10	23

4.2.4 Table 4.4 relates frequency of going out to level of accompaniment for all disabilities including those in the 'other' category. It shows a strong correlation, with under half of those going out each day always being accompanied, compared with around three quarters of those going out at least once a month, but not daily, and all of the small group of infrequent travellers.

Table 4.4: Frequency of Going Out by Level of Accompaniment

	Mostly alone	Sometimes alone sometimes accompanied	Always accompanied
At least once per day	75	54	99
" " " " week	28	30	138
" " " " month	2	1	10
Less frequently	0	0	10

Note: These figures include the manipulatory impaired and "other" disability groups.

4.2.5 Table 4.5 compares the distances which respondents said that they could move without resting by disability type.

Table 4.5: Movement Distances Without Resting by Disability

	0-20 metres/ yards	21-50 metres/ yards	51-75 metres/ yards	75 + metres/ yards
Unaided wheelchair users	22	5	5	12
Slight amb dis	65	52	14	72
Severe amb dis	35	34	28	72
Visually handicapped	8	4	8	35

4.2.6 Table 4.6 compares distance moved without resting with frequency of going out for all disability types including 'other'. Again there is a close correlation; only around a fifth of those going out daily said that they had to stop within 20 metres, whereas a third or more of those going out weekly or monthly, and virtually all of those going out infrequently did.

Table 4.6: Distance Moved Without Rest by Frequency Going Out

	0-20 metres/ yards	21-50 m/yds	51-75 m/yds	75 + m/yds
At least once per day	42	34	29	112
" " " " week	68	55	24	69
" " " " month	6	5	0	3
Less frequently	16	0	0	1

(These figures include manipulatory disabled and "other" disability groups.)

4.3 Use of Leeds City Centre and District Centres

4.3.1 Table 4.7 compares the percentages of respondents in each disability category in each of the interviews who said that they used the city or district centres. All groups have markedly fewer respondents using these centres in the screening interview than in the main one. It is clear that the process of self selection which determined willingness to participate in the main interview has led to an underrepresentation in the main interview of those who do not use the city or district centres. This needs to be borne in mind in interpreting the results.

Table 4.7: Respondents' Use of City and District Centres

Category	Percentage Using City Centre		Percentage Using District Centre	
	Screen	Main	Screen	Main
Wheelchair User	42	49	55	73
Slight amb dis	42	65	60	74
Severe amb dis	65	72	74	88
Vis handicapped	52	64	54	73

4.3.2 The screening interview also asked about the problems which restricted respondents' use of the city and district centres; responses were fairly similar to those for the main interview. In addition it asked about travel concessions available to the respondent. The only concession which appeared likely to affect use of the city centre was a mobility allowance; almost two thirds of those with allowances did so, compared with just over a half for those without. For district centres, availability of an orange badge appeared important. Almost three quarters of respondents with orange badges used district centres, while under half of those without did. Availability of a bus pass had little effect in either location.

4.3.3 The screening interview also provided information on the frequency with which respondents used different modes. While this was not related to travel to specific centres, the results support those given from the main interview in Tables 3.3 and 3.7.

4.4 Willingness to Participate in the Main Interview

4.4.1 The main purpose of the screening interview was to identify respondents willing to be interviewed further, and to provide a population from which a structured sample could be drawn for the main interview. As already noted, many of these later refused to be interviewed, and the main interview sample was less structured than intended as a result. However, the information on the characteristics of those who expressed themselves willing at the screening interview is of some interest, and is presented here.

4.4.2 Overall around 70% of respondents expressed willingness to participate. Those who did not use the city or district

centres were slightly less willing, at around 65%. The visually handicapped were also slightly less willing, at 63%. The only groups who were markedly less willing were the very small numbers of people going out less than once a week, of whom only 48% were willing to participate. Generally it appears that there was very little bias in the self selection process at this stage.

5 CONCLUSIONS

5.1 Summary of Screening Interview Findings

It was shown that nearly all wheelchair users were always accompanied when they went out, compared to around 2/3 for the slightly ambulatory disabled and 1/2 for other categories. It was shown that there was a strong correlation between the need to be accompanied and the frequency of going out.

5.2 Summary of Main Interview Findings

Between 1/2 and 3/4 of respondents used Leeds city centre, and between 3/4 and 9/10 of respondents used their local or district centres. The main reason why Leeds city centre was not used related to the difficulty in getting there.

The usual mode of travel to the city centre was by car, except for the visually handicapped who mainly used buses.

Parking problems were widely reported. Nearly all wheelchair users, and about 1/2 of ambulatory disabled respondents reported difficulties relating to lack of vacant abailable parking space in Leeds city centre. Problems relating to manoeuvring cars into parking spaces and getting out of cars were seen as less important than the lack of parking space and the consequent difficulty in moving between available parking space and destination(s). Such problems were considered to be less severe in local or district centres.

The principal mode of public transport was the bus. Around 3/5 of the ambulatory disabled respondents experienced problems with using public transport in Leeds city centre, compared to around 2/5 in local centres. The proportions for the visually handicapped were about half of these levels. Few wheelchair users used any public transport.

The main problems with using public transport were getting on and off buses, particularly the steps. Waiting for buses was a greater cause of difficulty than moving between destinations and public transport.

Once in the city centre of Leeds, many respondents found they had to change route because of surface conditions, gradients or physical obstacles, with wheelchair users being particularly affected by surface conditions and gradients, and visually handicapped respondents particularly affected by physical obstacles.

Almost 3/4 of wheelchair using respondents reported that they were unable to visit shops or buildings that they would have

liked to, and between a third and a half of ambulatory disabled likewise suffered.

Respondents generally reported that they less often had to change route or were unable to visit shops or buildings in local or district shopping centres than in Leeds city centre.

6 REFERENCES

Berrett B, Leake G, May A D, Whelan J (1988a) Ergonomic Standards for Pedestrian Areas for Disabled People: Literature Review and Consultations. WP 252 Institute for Transport Studies, University of Leeds.

Berrett B, Leake G, May A D, Whelan J (1988b) Ergonomic Standards for Pedestrian Areas For Disabled People: Methodology and Sample Identification. WP 253 Institute for Transport Studies, University of Leeds.

Berrett B, Leake G, May A D, Parry T, Whelan J, (1988c) Ergonomic Studies for Pedestrian Areas for Disabled People: Results From Observation Work (WP255) Institute for Transport Studies, University of Leeds.

WP254
tp/plh D29
21 7 88

PROBLEMS WITH PEDESTRIAN AREAS

	CODE	COL
INTERVIEWEE:		(1-6)
ENUMERATOR:		(7-8)
DATE:		(9-10)
TIME STARTED:		
DATE OF BIRTH:		(11-12)
ADDRESS:		(13-16)

BACKGROUND

Good morning/afternoon. The Institute for Transport Studies at Leeds University, in conjuction with Leeds City Council, is carrying out a study - funded by the Transport and Road Research Laboratory - to find out how much disabled people use pedestrian precincts, such as the paved areas in the centre of Leeds, and footways, and whether it would be possible for disabled people to use them more by removing some of the existing problems. As a result of the study we hope to recommend improvements which will enable disabled people to move about more easily. We would be grateful therefore, if you could answer a few questions to help us find ways of overcoming some of the problems that arise in using such pedestrian precincts, for example in going shopping. Your answers will, of course, be treated in confidence.

DETERMINATION OF DISABILITY/HANDICAP

CODE | COL | GO TO

It would be very useful if you would complete the next section of this interview, which is concerned with identifying your ability to move around outside the home.

1. Could you indicate which of the five categories below you would consider most closely describes your situation. Please indicate ONE only.

A - You normally use a wheelchair for getting about, either with or without help. ☐ — GO TO 3A

B - You can walk but either need someone to help you, or have to use a stick/cane, a walking frame or similar aid. ☐ — GO TO 3B

C - You can walk without too much difficulty but have limited use of your hands or arms. ☐ — GO TO 3C

D - You are partially sighted or registered blind. ☐ — GO TO 3D

E - You have some permanent or long-term disability which limits your ability to move outside with ease (e.g. angina, arthritis). ☐ — GO TO 3E

F - Other, please specify ☐

DISABCT1 ☐ — I7

2. Could you indicate if any of the other categories also describe your situation?

A ☐
B ☐
C ☐
D ☐
E ☐

I8-22

3A

i) Do you use a wheelchair most of the time aided or unaided?

1) aided WHEELAID ☐

2) unaided — 23

ii) How many years have you used a wheelchair? ☐☐ — 24-25

APPENDIX 1 - PRELIMINARY INTERVIEW

	CODE	COL GO TO
iii) (if unaided) For what distance can you use your wheelchair without rest, in Leeds City centre for example? 1) 0 - 20 metres/yards 2) 21- 50 metres/yards WRANGE 3) 51- 75 metres/yards 4) 75+ metres/yards (specify)	☐	26
iv) What impairment/disability causes you to use a wheelchair? _____	☐☐	27-28
3B		
i) Which of the following aids do you use most often outside? 1) A walking stick or cane 2) 2 walking sticks or canes 3) A Zimmer frame AMAID 4) A wheelchair 5) Other (specify)	☐	29
ii) How many years have you used an aid? _____	☐☐	30-31
iii) How far can you walk before you have to stop and rest in, for example, the centre of Leeds? 1) 0 - 20 metres/yards 2) 21 - 50 metres/yards 3) 51 - 75 metres/yards A RANGE 4) 75+ metres/yards (specify)	☐	32
iv) What impairment/disability causes you to use an aid in moving about outside? _____	☐☐	33-34
3C		
i) Do you require an aid in order to move around outside? 1) Yes 2) No	☐	35
ii) (If yes) What sort of aid is it? _____	☐	36

	CODE	COL GO TO
iii) How long have you had the impairment to your hand(s)/arm(s)? _____	☐☐	37-38
iv) How far can you walk before you have to stop and rest in, for example, the centre of Leeds? 1) 0 - 20 metres/yards 2) 21- 50 metres/yards MR RANGE 3) 51- 75 metres/yards 4) 75+ metres/yards (specify)	☐	39
v) What is the cause of the impairment to your hand(s)/arm(s)? _____	☐☐	40-41
3D		
i) Which of the following aids, if any, do you use to move around outside? 1) Long cane 2) Short cane 3) Guide dog BAID 4) Person 5) Other (specify)	☐	42
ii) How long have you been registered as partially sighted/blind? _____	☐☐	43-44
iii) How far can you walk without resting? 1) 0 - 20 metres/yards 2) 21- 50 metres/yards B RANGE 3) 51- 75 metres/yards 4) 75+ metres/yards (specify)	☐	45
iv) What is the cause of the impairment to your eyes? _____	☐☐	46-47
3E		
i) What sort of assistance, if any, do you need in order to move about outside? _____ FAID	☐	48
ii) How many years have you had the impairment/disability that limits your ability to move around outside? _____	☐☐	49-50

iii) How far can you walk without resting?

1) 0 - 20 metres/yards

2) 21- 50 metres/yards FRANGE

3) 51- 75 metres/yards

4) 75+ metres/yards (specify)

iv) What is it that limits your ability to walk or move around outside ?(for example angina or lung condition) _____

4. Which of the following do you use or have? Please tick as many as are relevant.

1) concessionary travel permit, e.g. bus pass

2) orange parking badge

3) mobility allowance

4) other

ACTIVITY PATTERN

We need to find out how often you manage to get around outside, or what prevents you from doing so. The following questions will enable us to find this out.

5. Could you tell me how often you manage to get out of your house/home?

1) at least once a day

2) at least once a week FREQCT

3) at least once a month

4) less frequently

6. Could you tell me the main reasons why you go out of your home. This includes trips by walking, public transport, or car. Please tick one box for one activity/purpose.

	daily	weekly	monthly	less	never
work	☐	☐	☐	☐	☐
shopping	☐	☐	☐	☐	☐
leisure	☐	☐	☐	☐	☐
friends	☐	☐	☐	☐	☐
medical	☐	☐	☐	☐	☐
other	☐	☐	☐	☐	☐

CODE	COL	GO TO
☐	51	
☐☐	52-53	
☐☐☐☐	54-57	
☐	58	
☐	59	
☐	60	
☐	61	
☐	62	
☐	63	
☐	64	

7. Do you use the pedestrian precinct in the centre of Leeds, for example for shopping?

1) Yes LEEDSPA

2) No

a) Do you find any problems in getting to the pedestrian precinct?

1) Yes

2) No ACPROBS

b) What are they? _____

c) Do you find any problems in moving about the pedestrian precinct?

1) Yes

2) No MOPROBS

d) What are they? _____

e) Why do you not use Leeds City centre pedestrian precinct? _____

f) Do you use any other centres, such as _____, for example for shopping?

1) Yes

2) No OTHRPA

g) What are they? _____

h) Do you find any problems getting to these areas?

1) Yes OACPROB

2) No

i) What are they? _____

CODE & COL	GO TO
☐ 65	IF NO GO TO 7e.
☐ 66	IF NO GO TO 7c.
☐☐☐☐☐☐ 67-72	
☐ 73	IF NO GO TO 7f.
☐☐☐☐☐☐ 74-79	
☐☐☐☐☐☐ I-6	
☐☐☐☐☐☐ 7-I2	
☐ I3	IF NO GO TO 8.
☐☐☐☐☐☐ I4-I9	
☐ 20	
☐☐☐☐☐☐ 2I-26	

	CODE & COL	GO TO
j) Do you find any problems moving about these areas?		
1) Yes — DMOPROB	☐ 27	
2) No		
k) What are they? _____	☐☐☐☐☐☐ 28-33	
8. If you go to a pedestrian precinct, such as the one in the centre of Leeds, which of the following most nearly reflects the way you travel?		
1) mostly go alone		
2) sometimes alone, sometimes with someone else — DEPEND.	☐ 34	
3) always with someone else		

9. Below is a list of various forms of transport. Could you indicate how often you use each and how easy they are to use?

	daily	weekly	monthly	less	never	CODE & COL	GO TO
Bus	☐	☐	☐	☐	☐	☐ 35	
Train	☐	☐	☐	☐	☐	☐ 36	
Taxi	☐	☐	☐	☐	☐	☐ 37	
Walk	☐	☐	☐	☐	☐	☐ 38	
Own car	☐	☐	☐	☐	☐	☐ 39	
Other car	☐	☐	☐	☐	☐	☐ 40	
Access bus	☐	☐	☐	☐	☐	☐ 41	
Other	☐	☐	☐	☐	☐	☐ 42	

	impossible	difficult	easy	CODE & COL	GO TO
Bus	☐	☐	☐	☐ 43	
Train	☐	☐	☐	☐ 44	
Taxi	☐	☐	☐	☐ 45	
Walk	☐	☐	☐	☐ 46	
Own car	☐	☐	☐	☐ 47	
Other car	☐	☐	☐	☐ 48	
Access bus	☐	☐	☐	☐ 49	
Other	☐	☐	☐	☐ 50	

	CODE & COL	GO TO
10. (For car users and orange badge holders only)		
a) Could you say which shopping centre within the Leeds area you made your last car trip to, either as driver or passanger? _____	☐☐ 51-52	
b) On this trip, at which of the following did you park:		
1. disabled parking bay		
2. single/double yellow line		
3. parking meter	☐ 53	
4. an off-street car park		
5. at a private space		
6. other, please specify _____		
c) (If used Leeds City Centre) At what location did you park? _____		
d) What time of the day did you park at:		
1. before 9.00am		
2. between 9 - 11.00 am		
3. between 11.00am & 2.00pm	☐ 54	
4. between 2 - 6.00 pm		
5. after 6.00pm		
e) About how long did you park for? _____	☐ 55	
11. Thank you very much for giving up your time to complete this interview. I assure you that the information will be of value. We hope to extend the study at a later date by having a further interview and to take people on a short trip around a pedestrian precinct, such as the one in the centre of Leeds. I would be very grateful if you could indicate whether you are willing to take part in this. Your answer will not commit you to anything. Once again I would like to assure you that there will be no direct reference to an individual in the report we produce.	☐ 56	

APPENDIX II - MAIN INTERVIEW

BEFORE INTERVIEW ON HOW PEOPLE USE PEDESTRIAN AREAS

INTERVIEWER

DATE

TIME STARTED

TIME FINISHED

INTERVIEWEE

SEX Male
Female

ADDRESS TELEPHONE

BACKGROUND

Good morning/afternoon. Thank you for agreeing to take part in this element of the study we are carrying out to find out what problems people have in using pedestrian areas. We would be grateful if you would answer a number of questions which will provide us with a fuller picture of your activities.

ASSESSING DISABILITY

1) Could you indicate which category most closely describes your situation. Please indicate only ONE.

A - Normally use a wheelchair

B - Normally use a stick/cane or similar aid

C - Can walk satisfactorily but have limited use of arms

D - Registered blind or partially sighted

E - Permanent or long-term disability limiting your ability to walk

F - Other (state)

ACTIVITY PATTERN

2) Do you ever use the centre of Leeds for any purpose, such as shopping or work?

Yes [GO TO QUESTION 4] ☐

No [GO TO NEXT QUESTION] ☐

3) Why don't you use the centre of Leeds?

4) Do you ever use a local or district centre for any purpose, such as shopping or leisure?

Yes ☐ [GO TO NEXT QUESTION] No ☐ [GO TO QUESTION 6]

5) Please indicate the local centre you visit most often?

6) Why do you not visit a local or district centre ?

7) How do you normally travel to the centre of Leeds or the local district centre? (Please ✓)

	Bus	Train	Taxi	Walk	Own car	Other car	Access bus	Other
Leeds	☐	☐	☐	☐	☐	☐	☐	☐
Local (state)	☐	☐	☐	☐	☐	☐	☐	☐

8) How often do you use the pedestrian area in the centre of Leeds and/or your local district centre for the following purposes. (Indicate Leeds city centre with a 'C' and the district centre with an 'D').

		5+wk	2-4xwk	Wkly	2-3xmth	Mthly	Less	Never
work	C	☐	☐	☐	☐	☐	☐	☐
	D	☐	☐	☐	☐	☐	☐	☐
shopping	C	☐	☐	☐	☐	☐	☐	☐
	D	☐	☐	☐	☐	☐	☐	☐
day centre	C	☐	☐	☐	☐	☐	☐	☐
	D	☐	☐	☐	☐	☐	☐	☐
leisure	C	☐	☐	☐	☐	☐	☐	☐
	D	☐	☐	☐	☐	☐	☐	☐
friends	C	☐	☐	☐	☐	☐	☐	☐
	D	☐	☐	☐	☐	☐	☐	☐
medical	C	☐	☐	☐	☐	☐	☐	☐
	D	☐	☐	☐	☐	☐	☐	☐
other	C	☐	☐	☐	☐	☐	☐	☐
	D	☐	☐	☐	☐	☐	☐	☐

USE OF LEEDS CITY CENTRE AND/OR DISTRICT CENTRES

9) Where do you normally arrive at and depart from when you visit:

a) Leeds city centre

Arrive

Depart

b) District centre named in question 5)

Arrive

Depart

10) a) On your last visit to the centre of Leeds where did you go ? (Indicate route)

i) Did any of the following create difficulties that influenced the route you took:

	Yes	No
surface conditions		
gradients		
physical obstacles		

ii)How did they influence your route?

surface conditions

gradients

physical obstacles

b) On your last visit to the district centre where did you go? (Indicate buildings etc. below)

i) Did any of the following create difficulties that influenced the route you took:

	Yes	No
surface conditions		
gradients		
physical obstacles		

ii)How did they influence your route:

surface conditions

gradients

physical obstacles

11) Were there any streets, shops or buildings you would have particularly liked to visit but were unable to in:

a) Leeds city centre

Yes ☐ [GO TO NEXT QUESTION] ☐

No ☐ [GO TO QUESTION b] ☐

i) What were they ? (Refer to map) ☐☐☐☐☐

ii)Why were you unable to visit them ? ☐☐☐☐

b) District centre

Yes ☐ [GO TO NEXT QUESTION] ☐

No ☐ [GO TO Q.12] ☐

i) What were they ? ☐☐☐☐☐

ii)Why were you unable to visit them ? ☐☐☐☐

ASSESSMENT OF IMPEDIMENTS [ASK OF EVERYONE]

PARKING

12) Do you ever travel by car (as driver or passanger) to:

a) Leeds city centre

	Driver	Passanger	
Yes	☐	☐	☐
No	☐	☐	☐

b) District centre

Yes	☐	☐	☐
No	☐	☐	☐

13) Do you use a specially adapted vehicle?

Yes ☐ [GO TO NEXT QUESTION] ☐

No ☐ [GO TO QUESTION 15] ☐

14) What sort of adaption(s)/modification(s) to the vehicle do you use? ☐☐☐☐

LEEDS CITY CENTRE

15) a) Do you encounter problems in parking when visiting Leeds city centre?

Yes ☐ [GO TO NEXT QUESTION] ☐

No ☐ [GO TO QUESTION 16]

b) What are they? ☐☐☐☐

c) Could you indicate sites/locations at which you encounter such problems? ☐☐☐☐

16) On your last visit by car how difficult was it for you to find a vacant parking space at Leeds City centre?

Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
☐	☐	☐	☐	☐

☐

17) Which of the following were you looking for to park at:

i) yellow line ☐

ii) disabled parking bay ☐

iii) parking meter ☐ ☐

iv) off-street car park ☐

v) any ☐

18) a) What was the day and time of this visit?

Day ☐☐ Time ☐☐

b) Where did you park first? ☐☐

c) How long did you park here for? ☐

d) Where else did you park during this visit? ☐☐☐☐

19) a) When you found a space , how difficult was it for you to manouevre the car into it the first location you parked at in Leeds city centre?

Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty	
☐	☐	☐	☐	☐	☐

[GO TO Q.20]

b) (If Impossible to Some Difficulty) What was the cause of this difficulty?

☐☐☐☐

20) a) How difficult was it for you to get out of the car at the location you parked at in Leeds city centre

Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty	
☐	☐	☐	☐	☐	☐

[GO TO Q.21]

b) (If Impossible to Some Difficulty) What was the cause of this difficulty?

☐☐☐☐

21) a) On your last car-borne journey how difficult was it to move between where you parked and your destination in Leeds city centre

Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty	
☐	☐	☐	☐	☐	☐

[GO TO Q.22]

b) (If Impossible to Some Difficulty) What was the cause of this difficulty?

☐☐☐☐

22) What were the destinations you aimed to visit on this trip in Leeds city centre

☐☐☐☐☐

DISTRICT CENTRE

23) a) Do you encounter problems in parking when visiting the local district centre?

Yes ☐ [GO TO NEXT QUESTION]

No ☐ [GO TO Q.24]

b) What are they?

c) Could you indicate sites/locations at which you encounter such problems?

24) On your last visit by car to your local centre how difficult was it for you to find a vacant parking space ?

Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
☐	☐	☐	☐	☐

25) Which of the following were you looking for to park at:

i) yellow line ☐

ii) disabled parking bay ☐

iii) parking meter ☐

iv) off-street car park ☐

v) any ☐

26) a) What was the day and time of this visit?

Day Time

b) Where did you park first?

c) How long did you park here for?

d) Where else did you park during this visit?

27) a) When you found a space, how difficult was it for you to manouevre the car into it at the first location you parked at in the district centre?

Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
☐	☐	☐	☐	☐

[GO TO Q.28]

b) (If Impossible to Some Difficulty) What was the cause of this difficulty?

28) a) How difficult was it for you to get out of the car at the location you parked at in the district centre

Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
☐	☐	☐	☐	☐

[GO TO Q.29]

b) (If Impossible to Some Difficulty) What was the cause of this difficulty?

29) a) On your last car-borne journey how difficult was it to move between where you parked and your destination in the district centre?

Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
☐	☐	☐	☐	☐

[GO TO Q.30]

b) (If Impossible to Some Difficulty) What was the cause of this difficulty?

30) What were the destinations you aimed to visit on this trip?

PUBLIC TRANSPORT

31) Do you ever use public transport to visit:

a) Leeds city centre

Yes ☐ [GO TO Q.32]

No ☐ [GO TO Q.39]

b) District Centre

Yes ☐ [GO TO Q.39]

No ☐ [GO TO SURFACE CONDITIONS]

LEEDS

32) a) Do you encounter any problems in using public transport when travelling to Leeds city centre?

Yes ☐ [GO TO NEXT QUESTION] ☐

No ☐ [GO TO Q.33] ☐

b) What are they? ☐☐☐☐

c) Could you indicate those sites at which you experience problems with public transport ? ☐☐☐☐

33) On this visit how easy or difficult was it to move to your destination from where you got off the bus?

Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty	
☐	☐	☐	☐	☐	☐

[GO TO Q.34]

b) (If Impossible to Some Difficulty) What was the cause of this difficulty ? ☐☐☐☐

34) a) On this visit how easy or difficult did you find getting back to the bus stop you caught your return bus from

Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty	
☐	☐	☐	☐	☐	☐

[GO TO Q.35]

b) (If Impossible to Some Difficulty) What was the cause of this difficulty ? ☐☐☐☐

35) a) On this visit how easy or difficult did you find waiting for the bus

Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty	
☐	☐	☐	☐	☐	☐

[GO TO Q.36]

b) (If Impossible to Some Difficulty) What was the cause of this difficulty? ☐☐☐☐

c) What was the number of the bus you caught, the time you caught it at, and the location of the bus stop?

Bus No. Bus Time Location

36) What were the destinations you aimed to visit

37) a) Do you encounter any problems in using public transport when travelling to the district centre?

Yes ☐ [GO TO NEXT QUESTION]

No ☐ [GO TO Q.38]

b) What are they?

c) Could you indicate those sites at which you experience problems with public transport?

38) a) On this visit how easy or difficult was it to move to your destination after you got off the bus?

Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
☐	☐	☐	☐	☐

[GO TO Q.39]

b) (If Impossible to Some Difficulty) What was the cause of this difficulty?

39) a) On this visit how easy or difficult did you find getting back to the bus stop you caught your return bus from?

Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
☐	☐	☐	☐	☐

[GO TO Q.40]

b) (If Impossible to Some Difficulty) What was the cause of this difficulty?

40) a) On this visit how easy or difficult did you find waiting for the bus?

Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
☐	☐	☐	☐	☐

[GO TO Q.41]

b) (If Impossible to Some Difficulty) What was the cause of this difficulty?

c) What was the number of the bus you caught, the time you caught it at, and the location of the bus stop?

Bus No. Bus Time Location

41) What were the destinations you aimed to visit?

SURFACE CONDITIONS

42) a) Were there any locations at which the condition of the pavement caused problems for you in reaching particular locations ?:

Yes ☐ No ☐

b) Could you indicate the locations at which you experienced such difficulties:

a

b

c

c) Could you indicate what the the difficulties were at the various locations:

a

b

c

d)How difficult did the surface conditions make it for you to reach your destination?

	Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
a	☐	☐	☐	☐	☐
b	☐	☐	☐	☐	☐
c	☐	☐	☐	☐	☐

RAMPS

43) a) Were there any locations at which ramps caused problems for you in reaching particular destinations:

Yes ☐ No ☐

b) Could you indicate ramps you use or have tried to use when visiting Leeds city centre?

a) b) c)

c) Could you indicate the precise nature of the problems you had in using these ramps:

a)

b)

c)

d) Could you indicate how easy or difficult it was for you to move:

i) up

	Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
ramp a	☐	☐	☐	☐	☐
ramp b	☐	☐	☐	☐	☐
ramp c	☐	☐	☐	☐	☐

ii) down

	Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty
ramp a	☐	☐	☐	☐	☐
ramp b	☐	☐	☐	☐	☐
ramp c	☐	☐	☐	☐	☐

CROSSING THE ROAD

44) a) Do you encounter any problems when crossing the road?

Yes ☐ No ☐

b) What is the nature of the problems and how could they be overcome?

c) Could you indicate locations within the centre of Leeds at which you experience problems in crossing the road?

a

b

c

d)How difficult or easy for you to cross the road is it at location:

	Impossible	Very Difficult	Difficult	Some Difficulty	No Difficulty	
a	☐	☐	☐	☐	☐	☐
b	☐	☐	☐	☐	☐	☐
c	☐	☐	☐	☐	☐	☐

GENERAL

45) a) On your last visit to the centre of Leeds were there any other things that made it difficult for you reach particular destinations?

Yes ☐ No ☐ ☐

b) What were these problems? ☐☐☐☐

c)Could you indicate locations at which you experienced such problems? ☐☐☐☐

INFORMATION PROVISION

46) a) Do you encounter any problems in finding you way around the city centre pedestrian area, or in finding particular locations or services such as bus stops, toilets, shops, banks, etc.?

Yes ☐ No ☐ ☐

b) What kind of information would be helpful in overcoming such problems? ☐☐

c) How should it be made available? ☐☐

47) a) Are there any other problems to getting about that I have not asked you about?

Yes ☐

No ☐ ☐

b) What and where are they ? ☐☐☐☐

48) a) Could you think of any improvements to the Leeds City Centre pedestrian area or your local district centre that would make them easier to use?

Yes ☐

No ☐

b) What are they ?

49) Could you indicate any questions or other aspects of this interview you found difficult to answer and why?

50) Do you have any suggestions on how the interview could be improved?

51) Thank you very much for completing this interview. To get a fuller picture of some of the problems and ideas you have raised we would like to invite you to the pedestrian area in the centre of Leeds and take you on a journey around this area on two separate occasions. We will provide transport to and from your home as well as refreshments, and there will be fully trained medical staff available. Each visit will probably take about 2.5 hours in total, including rest periods. Fuller details will of course be supplied before you take part.

Are you willing to take part in this exercise.

Yes ☐

No ☐

If yes, what days of the week are you available?

Monday		Tuesday		Wednesday		Thursday		Friday		Saturday	
AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM