

Street lighting trial

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Research conducted by Synovate

1. Executive summary

This research was commissioned by Transport for London (TfL) to assess the impacts on and benefits offered to people by LED street lights at two pedestrian footpath locations in London: Moat Crescent footpath, Barnet; and Glenlea Road footpath, Greenwich. LED lighting uses less power and has a longer life than conventional bulbs, and therefore potentially offers a saving in energy costs. The 'green' LED lighting on these footpaths is claimed to give a greater depth of view than conventional street lights.

This research involved 213 doorstep interviews with local residents who regularly use the footpath. We report findings from each footpath separately. However, there is a great deal of similarity between residents' views in each area. The main findings from the research are as follows.

Awareness of the changes in the street lights is low

Set in the context that usage of both footpaths is reasonably high¹, relatively few residents are aware of changes to the lighting on the footpaths: 37% in each area are aware of changes after prompting. However, given that the lights were erected over a year ago, awareness might be lower now than when they were originally installed.

Where the new street lights are considered better, it is because they are considered brighter

Most do not consider the street lights to be better because they have not noticed any changes to them.

Of those who noticed a change, most prefer the new lighting, mainly because they say the lights are brighter. A small number say (unprompted) that the new lights make it easier to see, and they feel safer because of the new lighting.

¹ All respondents were screened to use the footpath at least once a month

Relatively few say they have noticed the different colour of lights, even after prompting. Of these, one third have no preference for the colour of the lights. Among those who did choose, most prefer the green lights.

Some residents can see more clearly and further, but do not use the footpath any more often after dark

For most regular footpath users, the new lights have not had any impacts on perceptions or use of the footpath, because they are not aware of the lighting having changed.

Of those aware of the changed lights (37%), a majority agree that they can see more clearly with the new lighting on the footpath, and that they can see further. Regular users of the Moat Crescent (Barnet) footpath are slightly more likely to mention positive effects of the lighting than regular users of the Glenlea Road (Greenwich) footpath.

Fewer people say they feel safer using the footpath after dark. Even fewer say they now use the footpath more after dark. We can conclude that the lighting has some impact on perceptions of safety, but being able to see more clearly and further are not the only factors required for enhanced feelings of safety and likelihood to use the footpath more (after dark).

Recommendations

Given the relatively low awareness and impact of the new LED lighting, there is not a strong case for continuing or furthering the trial on the basis of safety gains alone. However, as the LED lights are generally preferred where they *are* noticed, this strengthens the case for development of LED (pedestrian) street lighting if it also brings other benefits (e.g. energy efficiency, reduction in maintenance).

2. Background to and objectives of the research

Since April 2008, Transport for London (TfL) have been trialling a design of LED street lights at two pedestrian footpath locations in London: Moat Crescent footpath, adjacent to the A406 in Barnet; and Glenlea Road footpath, adjacent to the A2 in Greenwich. LED lighting uses less power and has a longer life than conventional bulbs, and therefore potentially offers a saving in energy costs. The LED street lights at these footpaths emit a 'green' light, which is claimed to produce a greater depth of view than conventional street lights. Therefore these street lights may create greater feelings of safety.

TfL wish to assess the customer impact and benefit offered by these LED street lights, in order that the trial can be assessed more fully. The research objectives are as follows.

- Assess the awareness of the change in street lights among users of the footpaths (noting that awareness of change might be lower given the installation was over a year ago).
- Identify whether the new street lights are preferred, and why.
- Gauge whether the new street lights have resulted in increased perceptions of safety when using the footpaths, and / or increased use of the footpaths.

3. Research details

3.1 Methodology

Quantitative face to face interviews were conducted with residents within the local area of the footpaths. Interviews were of 5-7 minutes duration.

See Appendix 1 for the questionnaire.

3.2 Sample

Interviews were conducted with local residents who use the footpath at least once a month. No quotas were applied on other criteria (e.g. socio-demographics, length of residence in the area). In total, 213 interviews were completed:

- 93 with residents around the Moat Crescent footpath, Barnet;
- 120 interviews with residents around the Glenlea Road, Greenwich.

See Appendix 2 for the sample profiles for each area.

3.3 Timescales

Interviews were conducted during evenings and weekends between 16th and 22nd November 2009.

Notes on reporting

Percentages

Throughout the report un-weighted base sizes are reported and due to rounding some figures will not equal 100%.

Small sample sizes

Care should be taken when drawing inferences on sample sizes less than 50 respondents.

Actual figures are reported where questions have a base size of less than 30.

Sample size has limited the analysis by sub-group: base sizes of less than 30 are not reported.

Statistical significance

Significant differences at the 95% confidence level are reported.

4. Main Findings

4.1 Awareness of the change in street lights among users of the footpaths

Residents were asked a series of questions about the footpaths and the surrounding area, for example, whether they had noticed any changes (at all), or any changes specifically to the lighting.

4.1.1 Moat Crescent footpath, Barnet

In Barnet, usage of the footpath is reasonably high². Over half (54%) of the residents surveyed use the footpath at least once a week. A fifth (20%) use it five or more days a week.

Very few residents (12%) mention noticing changes to the street lights unprompted. More specifically, 4% mention that the lights have changed / new lights are installed, and 2% mention 'green' lights or different coloured lights.

After prompting, over a third (32%) mention noticing changes to or differences in the street lighting on the Moat Crescent footpath. More specifically, 10% mention noticing that (some of) the street lights are green.

In total, 37% of local residents who use the Moat Crescent footpath at least once a month say they are aware of some type of change or difference to the street lighting on the footpath.

² All residents were screened to use the footpath at least once a month.

Awareness of changes to / differences in street lighting (Moat Crescent, Barnet)	Q7/8 Unprompted 'any changes'	Q9/10 Prompted 'any changes'	Q11 Prompted 'lights different'	
Noticed changes to street lights	12%	32%	32%	
Lights have changed / new lights	4%	3%		
Green lights	2%	10%		
Better / good lighting	2%	1%		
Different coloured lights	1%	3%		
More lights	1%	2%		
Bigger lights	1%	2%		
Down-lighting	1%	-		
Halogen lights	1%	-		
Brighter lights / well lit	-	14%		
Dimmer / darker	-	4%		
Easier / clearer to see	-	3%		
New lights	-	3%		
Colour	-	1%		
Different lighting	-	1%		
Environmentally friendly	-	1%		
Missing / vandalised lights	-	1%		
Safer	-	1%		
Solar powered	-	1%		
<p><i>Source: Q7/8 / Q9/10 / Q11</i> <i>Base: all residents local to Moat Crescent footpath, Barnet, who use the footpath at least once a month (n=93)</i></p>				

4.1.2 Glenlea Road footpath, Greenwich

In Greenwich, usage of the footpath is high¹. Two thirds (68%) of the residents surveyed use the footpath at least once a week. A quarter (23%) use it five or more days a week.

Very few residents (8%) mention noticing changes to the street lights unprompted. More specifically, 3% mention that the lights have changed / new lights are installed, and 3% mention 'green' lights or different coloured lights.

After prompting, a quarter (24%) mention noticing changes to or differences in the street lighting on the Glenlea Road footpath. More specifically, 12% mention noticing that (some of) the street lights are green.

Awareness of changes to / differences in street lighting (Glenlea Road, Greenwich)	Q7/8 Unprompted 'any changes'	Q9/10 Prompted 'any changes'	Q11 Prompted 'lights different'
Noticed changes to street lights	8%	24%	35%
Green lights	3%	12%	
Lights have changed / new lights	3%	0%	
Missing / vandalised lights	2%	1%	
Different coloured lights	1%	3%	
More lights	1%	2%	
Different lighting	1%	-	
Better / good lighting	-	7%	
Brighter lights / well lit	-	4%	
New lights	-	3%	
Colour	-	1%	
Lights always work now	-	1%	
Solar powered	-	1%	
<p>Source: Q7/8 / Q9/10 / Q11 Base: all residents local to Glenlea Road footpath, Greenwich, who use the footpath at least once a month (n=120)</p>			

In total, 37% of local residents who use the Moat Crescent footpath at least once a month say they are aware of some type of change or difference to the street lighting on the footpath.

4.2 Perceptions of the new street lights

Residents aware of changes to or differences in the street lighting were asked whether they thought it was better, worse or about the same than it was / from other street lights in the area, and also if they had a preference for the colour of the lights (green vs. yellow / white).

4.2.1 Moat Crescent footpath, Barnet

37% of regular footpath users are aware of any changes to or differences in the street lighting on the footpath. Of these, more – four times as many – say the lighting is better than it was than say the lighting is worse than it was (21 people vs. 5 people).

The main reasons for saying the lighting is better are:

- it is brighter (12 of 21 people);
- it is easier / clearer to see (6 of 21 people);
- it is safer (2 of 21 people);
- it is green / the lights are green (2 of 21 people).

No other reasons are mentioned by more than one person.

Only five people say the lighting is worse. Four of these say this is because it is now dimmer / darker.

4.2.2 Glenlea Road footpath, Greenwich

37% of regular footpath users are aware of any changes to or differences in the street lighting on the footpath. Of these, half (50% / 22 people) say the lighting is better than it was. Four times as many people say the lighting is better now rather than worse now (22 people vs. 5 people).

The main reasons for saying the lighting is better are:

- it is brighter (13 of 22 people);
- it is safer (3 of 22 people).

No other reasons are mentioned by more than one person.

Only five people say the lighting is worse. Four of these say this is because it is now dimmer / darker.

4.3 Street light colour preference

All were specifically asked if they had noticed that some of the street lights were different colours. If they had noticed this difference, their preference of light colour was asked.

Around two fifths of regular footpath users are aware that some of the street lights are different colours (after specific prompting): 39% of Moat Crescent (Barnet) footpath users and 41% of Glenlea Road (Greenwich) footpath users.

Of these, the proportion who prefer the green lights is around twice the proportion of those who prefer the 'conventional' (yellow / white) lights. 44% / 43% of those aware of colour differences prefer the green lighting, for Moat Crescent and Glenlea Road respectively). Around one third (36% Moat Crescent, 31% Glenlea Road) have no preference.

Of those that think the street lighting on the footpath is better than it was, more than half prefer the green lights (12 of 21 people in Moat Crescent, Barnet, and 13 of 22 people in Glenlea Road, Greenwich).

4.4 Impacts on perceptions of safety and use of footpath

Residents who were aware of changes to or differences in the street lighting on the footpaths were asked to agree or disagree with a series of statements to gauge whether the new street lights have resulted in increased perceptions of safety when using the footpaths, and / or increased use of the footpaths.

4.4.1 Moat Crescent footpath, Barnet

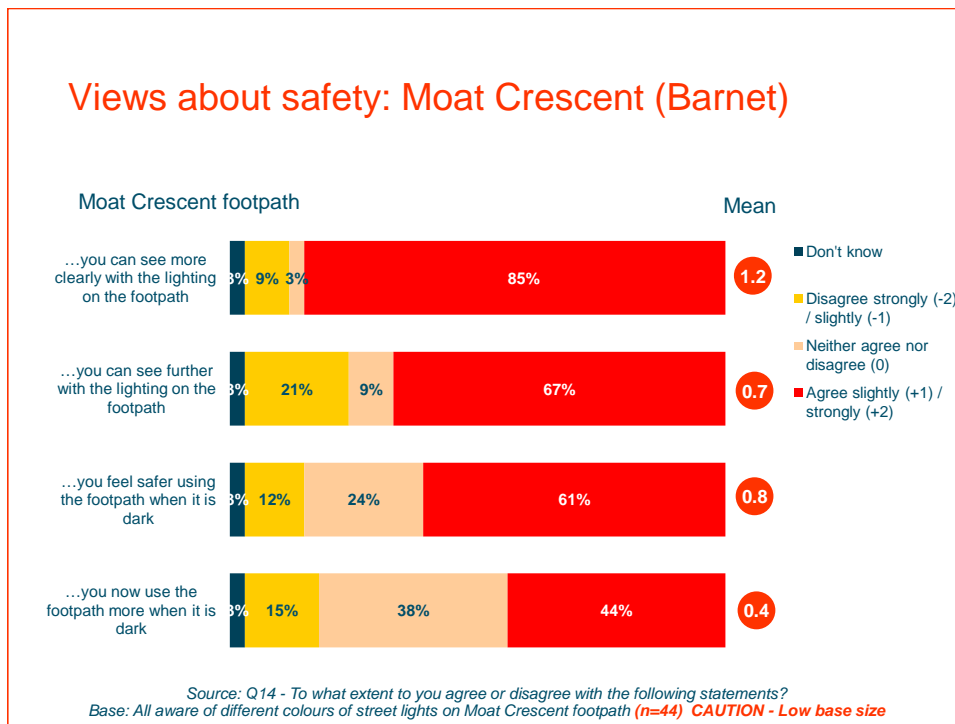
Of those aware of changes to the street lights (37%)³, most agree that:

- that they could see more clearly with the new lighting (85% agree);
- they can see further with the new lighting (68% agree); and
- they feel safer using the footpath after dark (62% agree).

³ Note that following figures are based on a low sample size (n=44)

Despite residents saying that that they feel safer using the footpath when it is dark, less than half (44%) agreed that they now use the footpath more.

Less than one fifth disagree with each of these statements. The highest level of disagreement is that they can see further with the new lighting, with 21% disagreeing,



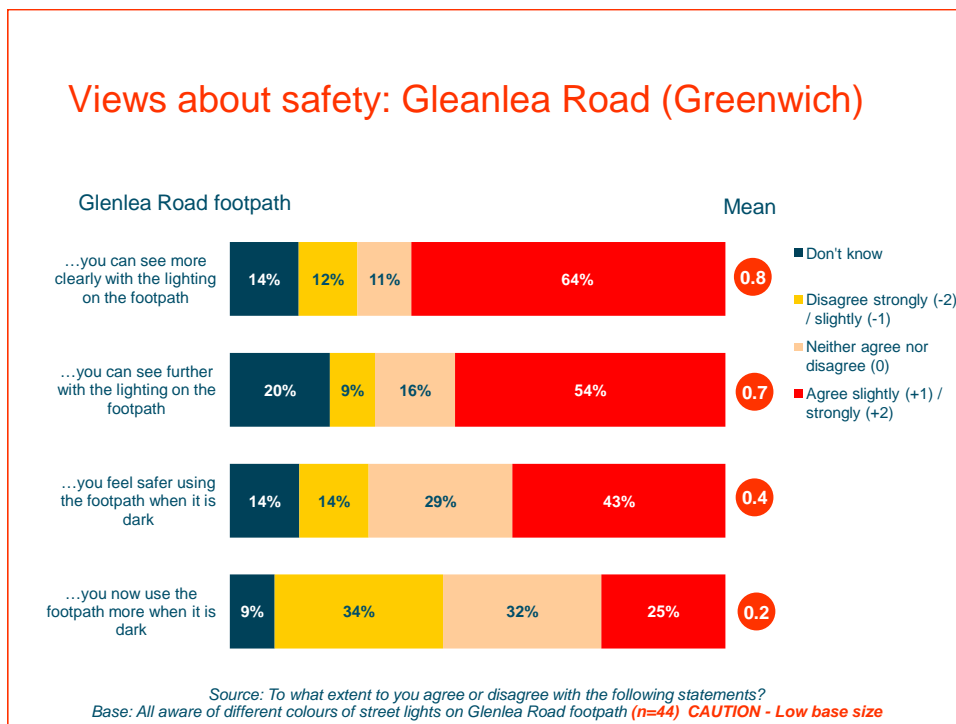
4.4.2 Glenlea Road footpath, Greenwich

Of those aware of changes to the street lights (37%)⁴, most agree that:

- that they could see more clearly with the new lighting (64% agree); and
- they can see further with the new lighting (64% agree).

⁴ Note that following figures are based on a low sample size (n=44)

Fewer agree that they feel safer using the footpath after dark (44% agree) or that they now use the footpath more after dark (25% agree.) Indeed, more (34%) disagree that they now use the footpath more after dark.



4.5 Summary of awareness and impacts of new street lighting among all residents surveyed

Overall, 37% of regular users of the footpaths are aware of changes to the street lighting. The new street lighting has some positive impacts on around three in ten (31%) residents around the Moat Crescent footpath (Barnet), and around one quarter (23%) of residents around the Glenlea Road footpath (Greenwich).

Key street lights measures among regular footpath users	Moat Crescent, Barnet	Glenlea Road, Greenwich
Noticed changes to street lights (unprompted)	12%	8%
Noticed changes to street lights (prompted)	32%	24%
Noticed any changes to or differences in street lights (prompted)	37%	37%
Noticed street lights are different colours (prompted)	39%	41%
New street lighting better (prompted)	23%	18%
Prefer green lights (prompted)	17%	18%
Can see more clearly (prompted)	31%	23%
Can see further (prompted)	25%	20%
Feel safer using the footpath when it is dark (prompted)	23%	16%
More likely to use when it is dark (prompted)	16%	9%
<p>Source: Q7/8 / Q9/10 / Q15 / Q12 / Q16 / Q14a/b/c/d Base: all residents local to footpaths who use the footpath at least once a month (Moat Crescent footpath, Barnet n=93 / Glenlea Road footpath, Greenwich n=120)</p>		

5. Recommendations

Given the relatively low awareness and impact of the new LED lighting, there is not a strong case for continuing or furthering the trial on the basis of safety gains alone. However, as the LED lights are generally preferred where they *are* noticed, this strengthens the case for development of LED (pedestrian) street lighting if it also brings other benefits (e.g. energy efficiency, reduction in maintenance).

Appendices

Appendix 1 – Questionnaire

INTRODUCTION - READ OUT

SAY Good morning / afternoon / evening. I am from Synovate, an independent market research company and we are currently conducting a research project on behalf of Transport for London. We are interested in the views of residents in this local area. The interview will only take a few minutes and the answers that you give will form part of a confidential market research study. Would you be willing to help us?

ASK ALL

Q1 How long have you lived in this area?

PROMPT USING ANSWERS BELOW IF NECESSARY
SINGLE CODE ONLY

Less than 1 year	1
1 to 2 years	2
2 to 5 years	3
6 to 10 years	4
More than 10 years	5
(Don't know)	X
(Refused)	V

ASK ALL

Q2 How often – if at all – do you use the Moat Crescent / Glenlea Road footpath?

SHOW MAP / PHOTOGRAPH
SINGLE CODE ONLY

5 or more days a week	1	CONTINUE
3 or 4 days a week	2	
2 days a week	3	
Once a week	4	
Once a fortnight	5	
Once a month	6	
Less often than once a month	7	THANK & CLOSE
Not in the last 12 months	8	
Never	0	
(Don't know)	X	

ASK ALL

Q3 Compared with last year, have you used the Moat Crescent / Glenlea Road footpath more often or less often this year?

SINGLE CODE ONLY

Use it more often this year (than last year)	1
Used it the same amount this year (as last year)	2
Used it less often this year (than last year)	3
(Didn't live around here to use it last year)	0
(Don't know)	X

ASK ALL

Q4 Do any other people in your household use the Moat Crescent / Glenlea Road footpath?

SINGLE CODE ONLY

Yes	1	ASK Q5 & Q6
No	2	
No other people in household	0	GO TO Q7
(Don't know)	X	

**ASK IF OTHER PEOPLE IN HOUSEHOLD USE FOOTPATH ('Yes' – CODE 1 – AT Q4)
OTHERS GO TO Q7**

Q5 Who else in your household uses the Moat Crescent / Glenlea Road footpath?

SHOW CARD

MULTICODES POSSIBLE

Partner / Spouse	1
Child / Children (aged under 11)	2
Child / Children (aged 11 to under 16)	3
Child / Children (aged 16 or older)	4
Other adult(s) in household	5
(Don't know)	X

**ASK IF OTHER PEOPLE IN HOUSEHOLD USE FOOTPATH ('Yes' – CODE 1 – AT Q4)
OTHERS GO TO Q7**

Q6 Compared with last year, have these other people used the Moat Crescent / Glenlea Road footpath more often or less often this year?

SINGLE CODE ONLY

Use it more often this year (than last year)	1
Used it the same amount this year (as last year)	2
Used it less often this year (than last year)	3
(Didn't live around here to use it last year)	0
(Don't know)	X

ASK ALL

Q7 Have you noticed any changes to the Moat Crescent / Glenlea Road footpath and the area around it, in the last couple of years?

SINGLE CODE ONLY

Yes	1	ASK Q8
-----	---	---------------

	No	2	
	(Don't know)	X	GO TO Q9
	(Didn't live around here to use it last year)	0	

**ASK IF NOTICED ANY CHANGES ('Yes' – CODE 1 – AT Q7)
OTHERS GO TO Q9**

Q8 What changes have you noticed?

**WRITE IN AS MUCH DETAIL AS POSSIBLE
PROBE BUT DO NOT PROMPT**

ASK ALL

Q9 Have you noticed any changes to the lighting on the Moat Crescent / Glenlea Road footpath in the last couple of years?

SINGLE CODE ONLY

	Yes	1	ASK Q10
	No	2	
	(Don't know)	X	GO TO Q11
	(Didn't live around here to notice any changes)	0	

**ASK IF NOTICED ANY CHANGES ('Yes' – CODE 1 – AT Q9)
OTHERS GO TO Q11**

Q10 What changes have you noticed?

**WRITE IN AS MUCH DETAIL AS POSSIBLE
PROBE BUT DO NOT PROMPT**

ASK ALL

Q11 Have you noticed that some of the lighting on the Moat Crescent / Glenlea Road footpath is different from other street lights in the area?

SINGLE CODE ONLY

	Yes	1	ASK Q12
	No	2	CHECK ROUTING ABOVE Q12
	(Don't know)	X	Q12

ASK IF NOTICED CHANGES TO / DIFFERENCES IN THE STREET LIGHTING ON THE FOOTPATH ('YES' – CODE 1 – AT Q9 AND / OR Q11)

OTHERS GO TO Q15

Q12 Would you say that the lighting on the Moat Crescent / Glenlea Road footpath is better or worse, than other lighting?

SINGLE CODE ONLY

Better (than it was / than other lighting)	1	ASK Q13
The same (as it was / as other lighting)	2	GO TO Q14
Worse (than it was / than other lighting)	3	ASK Q13
(Don't know)	X	GO TO Q14

ASK IF LIGHTING IS BETTER OR WORSE (CODES 1 OR 3 AT Q12)

OTHERS GO TO Q14

Q13 Why do you say that?

**WRITE IN AS MUCH DETAIL AS POSSIBLE
PROBE BUT DO NOT PROMPT**

ASK IF NOTICED CHANGES TO / DIFFERENCES IN THE STREET LIGHTING ON THE FOOTPATH ('YES' – CODE 1 – AT Q9 AND / OR Q11)

OTHERS GO TO Q15

Q14 And thinking about the lighting on the Moat Crescent / Glenlea Road footpath, how strongly do you agree or disagree that...?

**READ OUT STATEMENT, IN QUESTIONNAIRE ORDER
SHOW CARD**

REPEAT FOR ALL STATEMENTS

		Agree strongly	Agree slightly	Neither / Nor	Disagree slightly	Disagree strongly	Don't know
a	...you can see further with the lighting on the footpath	1	2	3	4	5	V
b	...you can see more clearly with the lighting on the footpath	1	2	3	4	5	V
c	...you feel safer using the footpath when it is dark	1	2	3	4	5	V
d	...you now use the footpath more when it is dark	1	2	3	4	5	V

ASK ALL

Q15 Have you noticed that there are different colours of street lights used on the Moat Crescent / Glenlea Road footpath? Some give a green coloured light, while others give a more usual yellow-white light.

SINGLE CODE ONLY

Yes	1	ASK Q16
No	2	GO TO INSTRUCTION ABOVE Q17
(Don't know)	X	

ASK IF NOTICED GREEN STREET LIGHTING ON THE FOOTPATH ('YES' - CODE 1 - AT Q15)**OTHERS GO TO INSTRUCTION ABOVE Q17**

Q16 Do you prefer the green lighting, the yellow-white lighting, or do you have no preference?

SINGLE CODE ONLY

Prefer green lighting	1
Prefer yellow-white lighting	2
No preference	3
(Don't know)	X

READ OUT TO ALL

SAY I just need to ask you a few short questions about yourself. Please note that all answers will remain strictly confidential, and are only used for statistical purposes.

CODE FOR ALL – DO NOT ASK

Q17 Gender

Male	1
Female	2

ASK ALL

Q18 What age are you?

SINGLE CODE ONLY

Under 16	1
16 to 19	2
20 to 24	3
25 to 34	4
35 to 44	5
45 to 54	6
55 to 59	7
60 to 64	8
65 to 74	9
75 or older	0
(Don't know)	X
(Refused)	V

ASK ALL

Q19 To which of these ethnic groups do you consider you belong?

SHOW CARD
SINGLE CODE ONLY

White	1
Mixed	2
Asian or Asian British	3
Black or Black British	4
Any other ethnic group	5
(Don't know)	X
(Refused)	V

ASK ALL

Q20 Do you have any long-term physical or mental impairment which limits your daily activities or the work you can do?

SHOW CARD
CODE ALL MENTIONED

Mobility impairment	1
Age related mobility difficulties	2
Visual impairment	3
Hearing impairment	4
Learning difficulty	5
Mental health condition	6
Serious long term illness	7
Other	8
No / None of these	0
(Don't know)	X
(Refused)	V

Appendix 2 – Sample profiles

Q1. How long have you lived in this area?

	Moat Crescent (93) %	Glenlea Road (120) %
Less than 1 year	14	2
1 to 2 years	12	6
2 to 5 years	27	12
6 to 10 years	13	15
More than 10 years	34	66
(Don't know)	-	-
(Refused)	-	-

Q2. How often – if at all – do you use the Moat Crescent / Glenlea Road footpath?

	Moat Crescent (93) %	Glenlea Road (120) %
5 or more days a week	20	23
3 or 4 days a week	12	13
2 days a week	9	13
Once a week	13	19
Once a fortnight	13	8
Once a month	33	24

Q4. Do any other people in your household use the Moat Crescent / Glenlea Road footpath?

	Moat Crescent (93) %	Glenlea Road (120) %
Yes	49	63
No	45	33
No other people in household / Live alone	1	-
(Don't know)	4	4

