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PARSONS**

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Golders Hill Park Accessible Car Park Improvement Options Report

Golders Hill Park Accessible Car Park
North End Way, London, NW3 7HD

for

City of London
A21149

November 2021

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1.0 Introduction and Background

- 1.1 Patrick Parsons has been appointed by the City of London to investigate the current safety issues associated with the Golders Hill Park Accessible Car Park and potential options for improvement.
- 1.2 The car park is closed at the weekends due to congestion and overuse during peak times and the resultant safety concerns. There is a desire to open the car park seven days a week, but it will need to be safe to do so.
- 1.3 There is also an issue of abuse of the parking bays by non-blue badge holders and a lack of availability on busy days.
- 1.4 An IDACS survey was undertaken in August 2019. Survey respondents suggested a number of possible measures to improve the situation, including improved signage, speed bumps, further separation of vehicles and pedestrians and more staff to monitor the operation of the car park.

2.0 Constraints

2.1 There are a number of constraints which have been considered:

- Retain the existing footprint of the car park;
- The IDACS survey was undertaken in 2019, at which point the option to book online was not favoured by users. However, this option needs to be considered in light of the societal move towards online booking due to the pandemic;
- The solution needs to be in keeping with the parks setting;
- During the survey, there was clear opposition to a gated system. Users wanted to be able to use the car park spontaneously.

3.0 Potential Options for Improvement

3.1 Following analysis of the IDACS survey and a site meeting with the Client, we have developed a number of options for further consideration. These are not necessarily standalone measures and could be used in combination, depending on budget and the desired effect.

Option 1 – Greater separation of pedestrians and vehicles

3.2 In order to protect users, greater separation could be provided between them and vehicular traffic using the car park. This could be achieved in a number of ways:

- Kerb upstands to the existing pedestrian footways and / or more bollards;
- Create pedestrian walkways through the car park with the use of road markings and coloured surface dressing;
- Indicate to drivers, with the use of signage, that pedestrians take priority.

3.3 Our recommendation would be to rearrange the parking bays to provide a safe margin for pedestrians to walk or wheel from their car to the park footpath network. We have developed a drawing illustrating this, which is included within **Appendix A**.

3.4 The advantages and disadvantages of this option are outlined in the table below:

| Advantages | Disadvantages |
|--|---|
| <ul style="list-style-type: none"> • Relatively low-cost option • Would reduce pedestrian / vehicle conflict | <ul style="list-style-type: none"> • Will not reduce congestion within the car park • Lines will fade over time and will require refreshing every couple of years • Visually impaired users may struggle to follow the route |

3.5 As outlined in the benefits and disbenefits above, this option is a relatively low cost one. We estimate that the cost of remarking the existing parking bays and laying a coloured surface dressing to mark out a pedestrian safety margin would be in the region of £3,000.

Option 2 – Improved signage

3.6 Improved signage within and outside the car park would help to make it clear to potential users that the car park is for use by Blue Badge holders only.

3.7 We would recommend that improved signage is installed in tandem with Option 1 (above), to reinforce and raise awareness of the hazards.

3.8 Some examples of additional signing which could be installed are shown on the plan included within **Appendix B**.

3.9 The advantages and disadvantages of this option are outlined in the table below:

| Advantages | Disadvantages |
|--|---|
| <ul style="list-style-type: none"> • Relatively low-cost option • Would raise general awareness to vehicles entering the car park • Could reduce abuse of Blue Badge holder bays with clear signage | <ul style="list-style-type: none"> • Is unlikely to reduce congestion within the car park • Signs may lose their impact over time as regular users become unaware of them, or some users may ignore them altogether |

3.10 We estimate that the cost of producing and erecting this signage would be in the region of £1,500.

Option 3 – Parking occupancy sensors and real-time signage

3.11 Real-time signage could be provided outside of the car park to indicate to approaching traffic how many parking spaces are available within the car park, or if the car park is full. This could be implemented in two ways:

- A rising barrier system which records in and out movements, or;
- Sensors on or adjacent to the parking bays to monitor which ones are occupied.

3.12 Each option would have its advantages and disadvantages over the other one. The barrier system may need less maintenance than individual sensors on each parking bay, but the barriers may require widening of the access road into the car park, to allow two in and out barriers. The sensors system on the other hand would not require a barrier, or widening of the access and would accurately record which spaces are occupied at any given time. However, they may require more regular maintenance, to ensure that the sensors are kept clean and clear.

3.13 Our recommendation would be to install either bollards at the back of the parking bays, with sensors integrated within them or, alternatively, sensors integrated into or on the ground (within the parking bay). Either of these options would not require a barrier system. We have developed a drawing illustrating this option, which is included within **Appendix C**.

3.14 The advantages and disadvantages of this option are outlined in the table below:

| Advantages | Disadvantages |
|--|--|
| <ul style="list-style-type: none"> • Will inform drivers of the current occupancy of the car park, with the aim of reducing congestion within the car park • Should reduce pedestrian / vehicle conflict | <ul style="list-style-type: none"> • May be expensive to install, in the first instance • Will need fairly regular maintenance of the sensors, such as regular cleaning • Will not allow monitoring of use by non-Blue Badge holders, so abuse may continue |

3.15 We have made contact with a company called IoT Solutions Group, who produce Smart Parking solutions. They will provide the real-time information sign and sensors, which are then installed by an approved Contractor. They charge an upfront cost for the production of the sign and then the sensor equipment is charged at a nominal monthly charge of circa. £10 per month, per sensor. They usually provide a 36 month fixed term contract. This price includes for the upkeep of the system, 4G SIM and connectivity.

3.16 The sign will require a power supply from a street lamp, for example and will be equipped with 4G connectivity. IoT Solutions will control the sign in real-time via their cloud software platform. This enables them to update the sign indicating the number of free spaces, or whether the car park is full. They are also able to remotely detect if the sign has lost power or 4G connectivity.

3.17 In terms of the sensors, each device has a unique ID for provisioning, tracking and management. The device is enclosed in an IP68 casing, which means it is suitable for use in wet and cold environments and is powered by factory fitted lithium batteries, providing a minimum of 5 years battery life, up to 10 years depending on the message frequency, data rate and reporting. The sensors are screwed into the ground and are wirelessly connected to the cloud analytics and dashboard system, which then feeds the information into the sign.

3.18 During the contract period, they will provide the following:

- All hardware (vehicle presence sensor plus smart sign) and factory fitted SIM cards (and batteries where required);
- Connectivity between the devices and cloud infrastructure;
- Hardware replacements of any faulty equipment or expired batteries;
- Software user accounts for staff to access the dashboard.

3.19 The cost of the sign will be in the region of £3,000. A 36 month contract for 8 parking sensors will be in the region of £2,880. The cost of installation will be in the region of £1,500. There will also be a fee to apply to the Highway Authority to erect the sign on the public highway, which could be in the region of £2,000 - £3,000. In total, we estimate that the cost of installing and maintaining the sensors and real-time signage (at least for the first 36 months) would be in the region of £10,000.

Option 4 – Automatic Number Plate Recognition (ANPR)

- 3.20 ANPR at the entrance to the car park could have the dual benefit of recording in and out movements (which could be linked to real-time signage just outside the site) and recording which vehicles entered the car park.
- 3.21 Unfortunately, Blue Badges are assigned to a person, rather than a vehicle. So, in order for this option to work in practice, the individual would have to register the vehicle onto a central system (perhaps the day before, or on the day), which could then recognise that vehicle as being linked to a Blue Badge holder.
- 3.22 The advantages and disadvantages of this option are outlined in the table below:

| Advantages | Disadvantages |
|---|---|
| <ul style="list-style-type: none"> • Will inform drivers of the current occupancy of the car park, with the aim of reducing congestion within the car park • Should reduce pedestrian / vehicle conflict • Should reduce abuse by non-Blue Badge holders (if system is set up to allow Blue Badge holders to register their vehicle) | <ul style="list-style-type: none"> • May be expensive to install, in the first instance • If vehicles are clustered together, some vehicles may not be picked up • In order to recognise Blue Badge holders, users will have to register the vehicle beforehand, taking away the ad-hoc nature of the car park (effectively making it a pre-book car park) |

- 3.23 Given that ANPR may be unreliable if vehicles follow others closely into the car park and that, in order to fulfil the main purpose of this option (to eliminate abuse of the bays by non-Blue Badge holders), it would effectively require an online booking system, we would not recommend this option for further consideration.

Option 5 – Online booking system (advance booking)

- 3.24 An online booking system would require users of the car park to book a space in advance of their arrival. This would have to be implemented with a barrier system at the entrance, unless Automatic Number Plate Recognition (ANPR) is used to enforce it (see Option 4 above), or the car park is manually enforced by a designated person.
- 3.25 An online booking system was not favoured by users surveyed as part of the IDACS survey. The method of enforcement aside, the following two options could be considered, to help soften the perception of an online booking system:
 - Pre-booking could be limited to weekends and / or busy periods of the year only. This may not be desirable, as it would require additional signage and may complicate usage of the car park and cause confusion;

- The online booking system could be combined with a real-time tracking system of the car parks current usage. So, the real-time signage system could take account of booked spaces during a specific time period. As a result, people would have the freedom to arrive ad-hoc, but there would be a risk of no spaces being available.

3.26 The advantages and disadvantages of this option are outlined in the table below:

| Advantages | Disadvantages |
|--|---|
| <ul style="list-style-type: none"> • Will reduce pedestrian / vehicle conflict, by physically limiting who enters the car park • Could inform drivers of the current occupancy of the car park, with the aim of reducing congestion within the car park • Should reduce abuse by non-Blue Badge holders | <ul style="list-style-type: none"> • May be expensive to install and maintain • Users will have to register and then book a space in advance to guarantee themselves a space, which will prevent ad-hoc visits • Users of the car park may struggle to use the online booking system |

3.27 Given the confusion, and hence, inconvenience which this option may cause to some elderly users and the fact that it would take away the ability of users to turn up unplanned, we would not recommend this option for further consideration.

Option 6 – Widening entrance for two-way flow

3.28 Widening of the entrance to allow two-way free flow in and out of the car park. This would have to be combined with enhanced / additional pedestrian segregation, to ensure that when vehicles are turning, there is no, or limited risk to vulnerable users.

3.29 The main disadvantage of this option is that this may result in increased vehicle movements, unless combined with real-time information and/or an online booking system. As a standalone option, it does not address the problems within the car park. In addition, this option would require cutting into the landscaped area of the park, which is not an option which the Client would like to pursue.

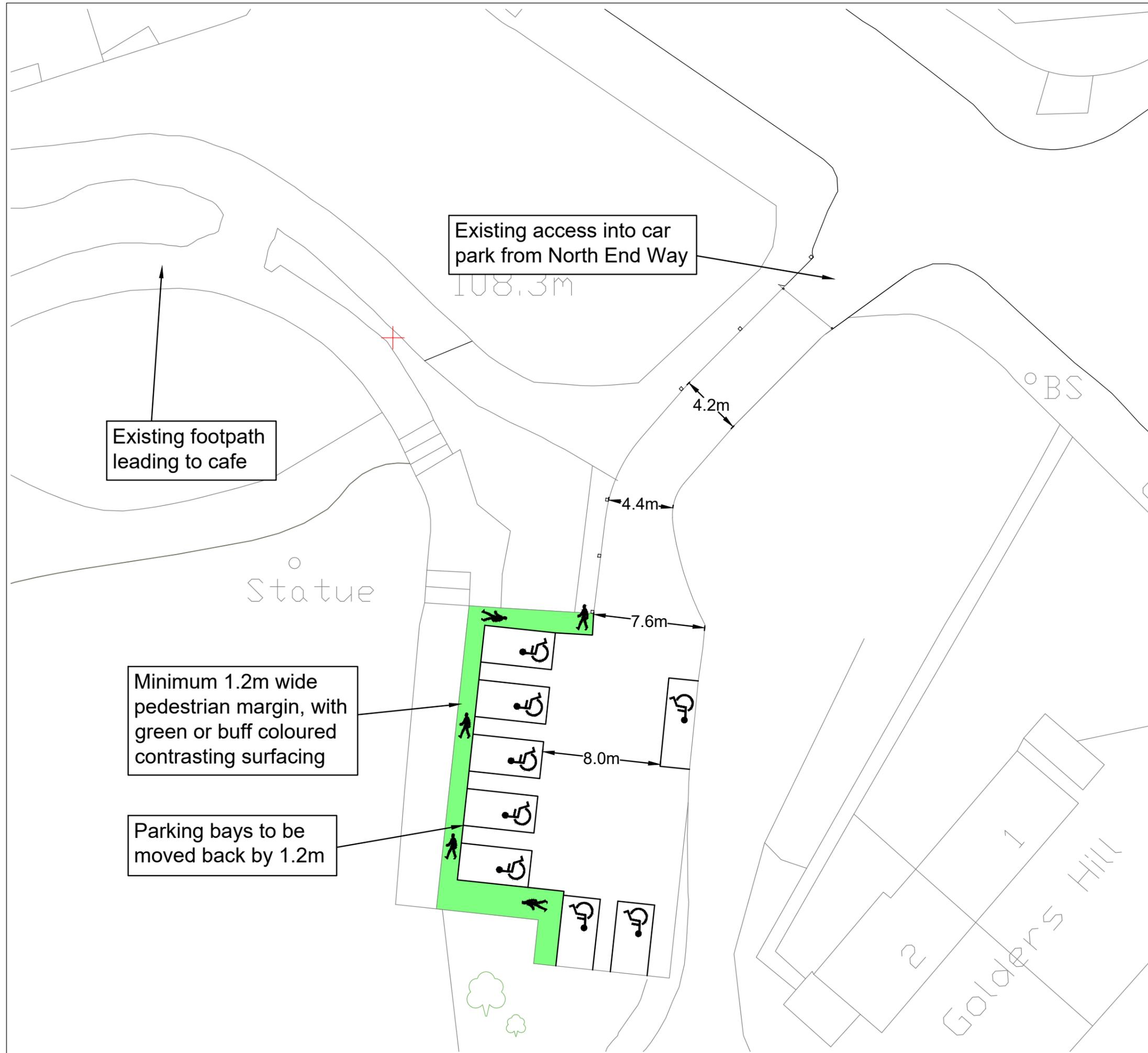
3.30 Given that this option would result in cutting into the landscaped area of the park (which the Client has stated is not desirable) and it would not solve the problem of congestion and risk to vulnerable users on its own, we would not recommend this option for further consideration.

4.0 Conclusions and Recommendations

- 4.1 We have developed a number of options for further consideration. Some of the options could be used in combination. However, we have recommended what we think should be done to improve safety for pedestrians and vulnerable users of the car park, within the car park, and improve the useability of the, without restricting it's use too much.
- 4.2 We would recommend that the road markings within the car park are modified to provide a safe route through the car park, away from moving traffic (**Option 1**) and possibly some enhanced signing (**Option 2**). In order to prevent over-use of the car park and congestion within it, we would recommend that real-time signage is installed at the entrance, to inform drivers when all or most of the spaces are occupied (**Option 3**). In order to prevent abuse of the parking bays, we would recommend that the car park is monitored frequently.

Appendix A

Option 1 – Pedestrian route around car park



GENERAL NOTES

- 1.1. THIS DRAWING IS COPYRIGHT AND SHOULD NOT BE REPRODUCED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF PPCE GROUP.
- 1.2. DO NOT SCALE FROM THIS DRAWING.
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Client
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Project
Golders Hill Accessible Car Park

Drawing
**Proposed Options for Improvements
 - Option 1**

Scales 1:250 At original size A3

Drawn JB
 Date Nov 2021
 Checked DB

Status **PRELIMINARY**

Drawing No. **A21149-01** Rev. **P1**

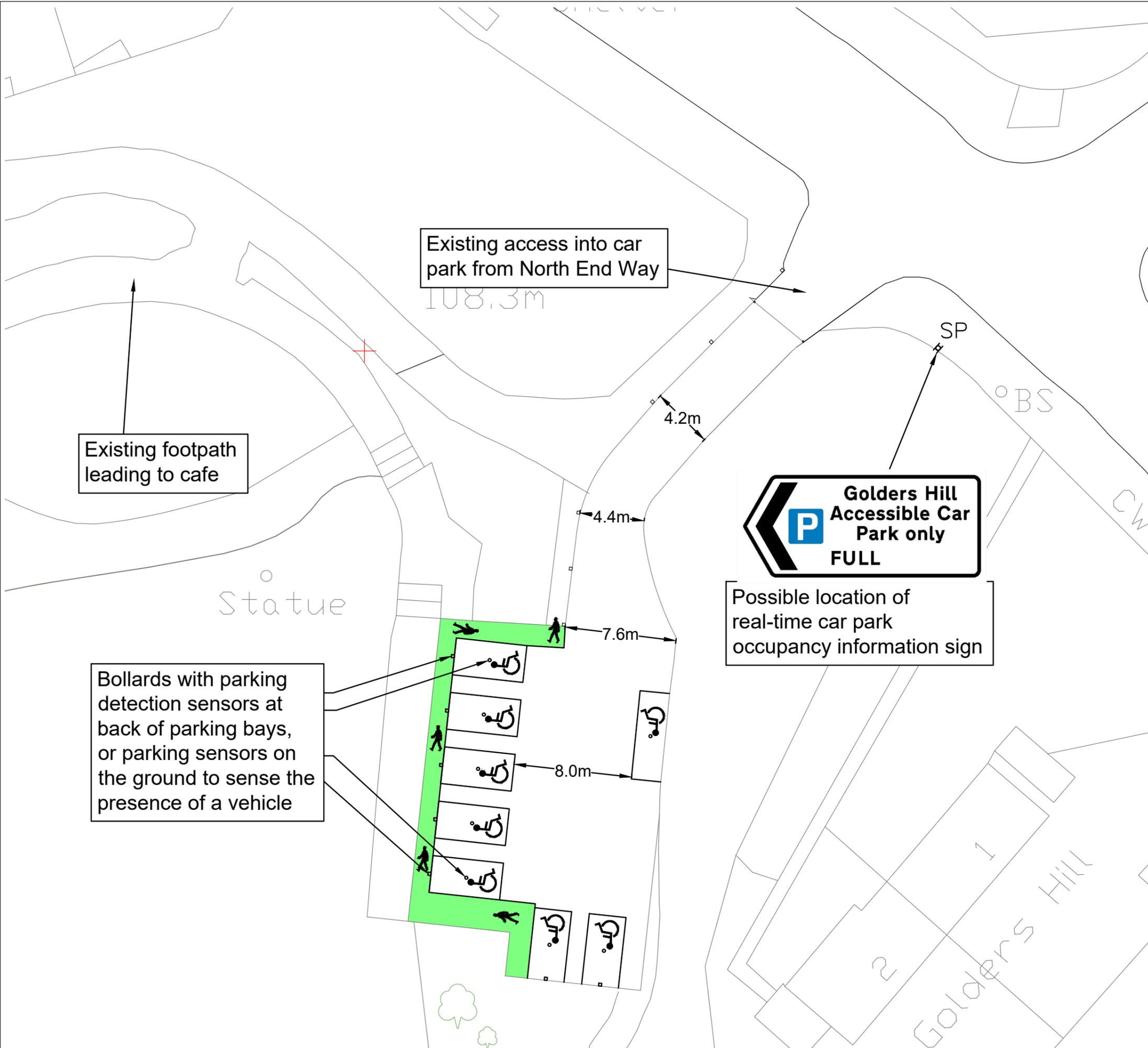
Appendix B

Option 2 – Improved signing



Appendix C

Option 3 – Real-time signage and parking sensors



Existing footpath leading to cafe

Existing access into car park from North End Way

Bollards with parking detection sensors at back of parking bays, or parking sensors on the ground to sense the presence of a vehicle

Golders Hill Accessible Car Park only FULL

Possible location of real-time car park occupancy information sign

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City of London Corporation (Hampstead Heath)

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Golders Hill Accessible Car Park

Drawing
Proposed Options for Improvements - Option 3

Scales 1:250 At original size A3

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UK Locations

Ash Vale
Birmingham
London
Wakefield

