Gondar Gardens Reservoir Site, West Hampstead, London, NW6

Transport Statement

Linden Wates (West Hamstead) Limited

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Submission Document
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ROYAL HASKONING
Enhancing Society

HASKONING UK LTD.
PLANNING & TRANSPORT

Windsor House
37 Windsor Street
Chertsey KT16 8AT
United Kingdom
+44 1932 569 566 Telephone
01932 569531 Fax
info@chertsey.royalhaskoning.com E-mail
www.royalhaskoning.com Internet

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Drafted by	E Lyth	
Checked by	Elizabeth Lyth	
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Approved by	Ian Fielding	
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1 INTRODUCTION

1.1.1 This document has been prepared on behalf of Linden Wates (West Hampstead Ltd) in order to support the planning application of the introduction of residential development on the site of the former reservoir on Gondar Gardens within the London Borough of Camden.

1.1.2 The proposals comprise the construction of 28 residential dwellings comprising apartments, duplexes and town houses, together with an area of open space dedicated as a nature reserve with restricted public access. The location of the site is shown at plan RH1.

1.1.3 An application was submitted in 2011 (2011/0395/P) which sought permission for 16 four bedroom dwellings. The application was refused although this was not on highways grounds. The proposals have since changed and comments received from the last application have been considered within the proposals.

1.1.4 The development has been subject to an Environmental Impact Assessment (EIA) in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2011. This report, whilst intended to be a standalone document, also forms Technical Annex 10 of the Environmental Statement (ES) which is being submitted in support of the application

1.1.5 Communications have been established with the London Borough of Camden in order to discuss the transport and travel elements of the proposed development. The assessment methodology has been discussed and the approach of this document outlined.

1.1.6 The purpose of this report is to provide an assessment of the proposed development in terms of its ability to accord with both local and national guidance. The report will also consider the location of the site and access to sustainable modes of travel objectives set out by the London Borough of Camden.

1.1.7 This document has been compiled in order to address both the transport and travel aspects associated with the proposals. Guidance on the content of this report has been taken from the document provided by the Department for Transport within their document Guidance for Transport Assessments. The document stipulates thresholds that dictate the content of the report. The guidance sets out that for a development of this size a Transport Statement is required and as such this document will be prepared inline with this.

1.1.8 Further guidance is provided by Transport for London (TfL) within the document 'Transport Assessment Best Practise', (April 2010), which stipulates that developments deemed strategically important that require referral to the Mayor and are detailed within the Town and Country Planning (Mayor of London) Order 2008 require a full Transport Assessment. It is understood that this is not the case with these proposals and given the scope of the development it is correct that a Transport Statement is provided.

1.1.9 Inline with the above guidance documents, this Transport Statement will be structured as set out below:-

(i) Section 2 – will describe the existing site in terms of its current usage and location within the highway network. The existing conditions of the surrounding highway network especially those along Gondar Gardens will be provided.

(ii) Section 3 – will set out the sites level of accessibility in terms of opportunities to travel by sustainable modes.

(iii) Section 4 – will consider the transport policy context in relation to the proposals.

(iv) Section 5 – will describe the development proposals as they relate to transport.

(v) Section 6 – will set out the methodology undertaken to calculate the likely level of traffic that will be associated with the proposed development.

(vi) Section 7 – will set out the implication of the traffic associated with the proposals. The ability for residents' vehicles to access, egress and negotiate the development will be set out as well as the ability of service vehicles to access the site. The implications associated with the vehicles that will be used within the construction of the development will be discussed.

(vii) Section 8 – will provide a summary and conclusion to the report.

2 EXISTING SITE

2.1.1 The Gondar Gardens Reservoir Site, formerly known as Shoot-Up Hill Reservoir (the Site) comprises 3.07 acres of land. The front half of the site which faces Gondar Gardens contains a raised reservoir structure. Two thirds of the reservoir is below ground level with a third above, which is covered over with a shallow depth of topsoil and grass. The sides of the reservoir above ground are built up using soil banks and are grassed.

2.1.2 The Site is located at the top of hill. When the reservoir was constructed, completed in 1874, the whole area was farmland. The whole of the Site was purchased for use as a water utilities site. Historical records identify as does the investigation detailed above of the structure that the rear of the Site was retained following the construction of the reservoir, with the intention that this land be reserved should a second reservoir be required in this location; however the second reservoir did not come to fruition. The reservoir was taken out of use in the late 1990s and formally decommissioned in 2002. Subsequently Thames Water disposed of the Site in 2010.

2.1.3 The Site itself is open in appearance, the raised reservoir structure is grassed over and there is little evidence of the brick structure on the Site; however the topography of the side with sloping embankments to a flat roof, which includes vents along the top of the reservoir structure, demonstrates that this is man-made contoured land. To the west of the Site is the access point to the reservoir where the brick structure is visible. There is also a vented area and railings on the southern wall of the reservoir which is visible externally.

2.1.4 The grassed area of the Site is mown regularly, as part of a maintenance program for the reservoir land. The embankment to the east and south has longer grasses and some shrubs. There are also trees intermittent around the perimeter of the Site. Some trees on the southern boundary benefit from Tree Preservation Orders.

2.2 Existing Highway Network

2.2.1 This Site is located along Gondar Gardens, a road characterised by residential properties along its northern stretch with further residential properties being located along the southern stretch with a number of garages backing onto the properties located on the adjacent road to the west, Sarre Road. A 30mph speed restrictions is in place along the entire road.

2.2.2 Gondar Gardens is approximately 7m wide with parking bays located along the edge of the carriageway, the exact location have been detailed on plan RH2. The parking areas are subject to restrictions during the hours 10.00am and 12.00pm. Only permit holders are eligible to park within these areas during this 2 hour period.

2.2.3 Communications established with LBC have determined that the existing parking restrictions will be revisited some time in 2012. It is understood that there are plans to extend the hours within which parking is restricted to permit holders only. This is likely to take some time and will be subject to consultation and agreement of local residents.

2.2.4 Parking bays are located along most of the stretch of carriageway at the northern end of Gondar Gardens where residential properties front the road. At the southern end of Gondar Gardens, less residential properties front the road with a number of garages to the properties that front Sarre Road located across to the west from Gondar Gardens.

2.2.5 Good footway provisions are available along Gondar Gardens with footways present along both edges of the carriageway which are generally 2.5m wide. Where crossovers are present dropped kerbs are provided to enable continuous access by wheelchair and push chair users along the road.

2.2.6 Gondar Gardens connects by way of a priority junction to Agememnon Road in the north east, another road characterised by residential properties. The footways at the junction providing a dropped kerb to enable both wheelchairs users and those with push chairs easy access from one arm to another. Tactile paving is present to assist visually impaired pedestrians.

2.2.7 To the south Gondar Gardens connects to Mill Lane by way of a priority junction with Mill Lane running east to west. The junction is raised to enable a step free crossing as well as provide a traffic calming measure to all vehicles entering Gondar Gardens. Mill Lane is characterised by High Street type land uses such as convenience stores, pharmacies, public houses and other retail uses.

2.2.8 Mill Lane provides access to the A5 and Shoot Up Hill to the west which enables connection to the M1 to the north. To the east Mill Lane provides access to the B510 which provides access onto the A41 to the north which is part of transport for London's (TfL) strategic route network. The A41 also provides access to the M1 in the north and central London to the south.

2.2.9 Mill Lane varies in width along its length with the footways on average measuring 2.5m providing a wide area for a high volume of pedestrians which is characteristic of this area. Street lighting is well provided for, this coupled with the shop frontages provides a well lit footway at all times of the day.

2.2.10 Junctions off of Mill Lane are characterised by raised priority junction which combines traffic calming measures with increased mobility measures providing a step free crossing for wheel chair users and those with push chairs. Further increasing the accessibility of Mill Lane is the provision of tactile paving and signalised pedestrian crossings to aid the visually impaired.

2.3 Existing Traffic Conditions

2.3.1 In order to identify the existing traffic conditions, an Automatic Traffic Counter (ATC) was laid across Gondar Gardens for a week in order to ascertain the level of traffic travelling along the road. The ATC data was collected between Friday 16th October and Friday 22nd October 2010 and has been appended to this report at Appendix A.

2.3.2 Given that the traffic data is only a year old it is considered that it is still acceptable for use within this report. The DfT document 'Guidance on Transport Assessments' suggests that surveys can be used for up to three years after they have been undertaken.

2.3.3 The traffic survey enabled the calculation of 5 day average traffic flows throughout the 24 period. The 5 day average flows ascertained that during the AM peak (08.00 – 09.00) 14 vehicles travelled northbound and 14 vehicles travelled southbound. No heavy vehicles were recorded during this hour. During the PM peak (17.00 – 18.00) 14 vehicles were recorded to travel northbound and 12 southbound. This equates to two way traffic movements of one vehicle every 2 minutes during both the AM and PM peaks.

2.4 Parking Beat Survey

2.4.1 A parking beat survey was undertaken along Gondar Gardens on Tuesday the 19th October. The survey data has been appended to this report at Appendix B. The survey was undertaken to ascertain the level of parking demand currently experienced along the roads surrounding the site. The beat survey is undertaken at certain times of the day in order ensure the conditions at various times are known as parking demand can vary greatly over the course of a day. The times at which the survey was undertaken are as follows;

(i) 05.30

(ii) 10.00

(iii) 14.00

(iv) 18.00

(v) 23.00

2.4.2 The methodology incorporated the zoning of Gondar Gardens and determination of areas where people are able to park, the restrictions that are applicable and number of vehicles that can be parked within the area. These areas were then surveyed at the above times and the number of parked vehicles noted. The zones and areas used to survey the parking demand have been set out on plan RH2. It can be seen that areas 13 and 12 are located along the frontage of the site.

2.4.3 The survey identified that parking restrictions were in place along Gondar Gardens during the hours of 10.00 and 12.00 for use only by permit holders. After these hours parking is permitted for anybody within these areas. 1 disabled parking space is available along Gondar Gardens as well as two bays (areas 14 and 18) dedicated to motorcycle parking. The following observations can be made from the survey.

2.4.4 A general pattern was observed that the most spare capacity was available during the 10.00 and 14.00 beats which is logical given that this is when most people would be out conducting their everyday activities. The least spare capacity was available during the night time beat of 23.00 and 05.30, again as would be expected. The disabled space located at the north eastern section of Gondar Gardens close to the junction with Agamemnon Road remained utilised throughout the survey.

2.4.5 The motorcycle space located on the inside of the corner of Gondar Road remained fully utilised though 4 of the 5 beats. The other motorcycle space remained empty throughout the survey. It can therefore be concluded that the provision of motorcycle parking is sufficient along Gondar Gardens as whilst one space may be fully utilised the fact that the other is not highlights that there is no suppressed demand for the spaces at area 14 as if there was it would be fair to assume that residents would park their motorcycles in area 18.

2.4.6 With regard to the car parking, demand for spaces was shown to be highest in the north eastern section of Gondar Gardens close to the junction with Agamemnon Road with areas 1 to 3 and 19 to 20 reaching 100% during the 23.00 and 05.30 beats. Spare capacity for 1 vehicle was available during the 23.00 and 05.30 beats.

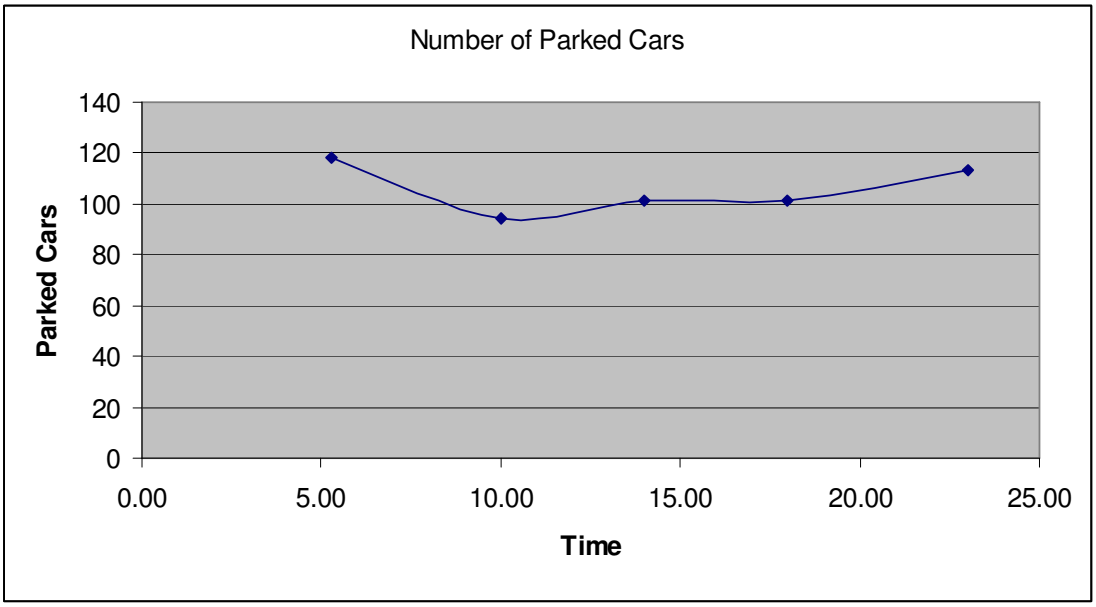
2.4.7 Areas 6, 8, 9, 10 and 13 did not reach full capacity at any time during the surveys. Areas 11 and 12 whilst located in the same area did reach full capacity during the 05.30 and 23.00 beats however only a small number of spaces were available. The data highlights that towards the southern end of Gondar Gardens towards the junction with Mill Lane, there is spare capacity available throughout the day and night.

2.4.8 These observations would appear logical as the area towards the north of the Gondar Gardens is lined by residential frontages (with no off street parking provision) and as such there would be regular demand for parking by the residents of these dwellings. Towards the southern end of Gondar Garden there are less residential properties fronting the road.

2.4.9 On the western edge of the carriageway the rear of properties that front Sarre Road, located to the west from Gondar Gardens, front the carriageway. A number of the garages of the properties along Sarre Road are accessed from Gondar Gardens. Garages that are accessed from Gondar Gardens are able to do so as the areas in front are lined. Parking is permitted along the remaining western edge of the carriageway which is fronted by the fences and walls of the Sarre Road properties gardens. The residents of Sarre Road would be expected to park either along Sarre Road or within their garages and as such the demand for parking spaces along the southern stretch is expected to be lower.

2.4.10 This pattern of areas 6, 8, 10 and 13 failing to reach maximum capacity at any time of the day and areas 7, 9, 12 and 15 only reaching capacity at one time during the survey highlights that there is spare capacity available along Gondar Gardens throughout the course of a day. It suggests that the parking provision is sufficient as whilst capacity may be close to maximum for the majority of the surveyed times along the northern stretch of Gondar Gardens it is unlikely that there is suppressed demand as there is much spare capacity at the southern end of Gondar Gardens which could be utilised by the residential dwellings at the northern end should they demand the spaces.

2.4.11 Further to this the data highlighted that the profile of the parked cars did not alter significantly over the survey. Graph 2.1 below shows the number of parked vehicles at each point in the survey.



Graph 2.1:- Parked Vehicles

2.4.12 The above graph highlights a relatively flat profile which, it is considered, highlights that most of the vehicles being parked along Gondar Gardens are not being used by residents for employment trips as there is little difference in the number of cars parked at 23.00 to those parked at 14.00. It would be more likely that if a large number of vehicles were being used for commuting purposes that the number of vehicles parked would decrease during the conventional working hours of 09.00 and 17.00.

2.4.13 In summary, the survey has provided a number of interesting observations about the parking behaviour along Gondar Gardens. Whilst it highlights that provision of spaces along Gondar Garden appears to be sufficient, it also highlights that the vehicles may not be used for commuting purposes as the daily profile appears to be relatively flat and therefore it would be likely that homeowners may own a vehicle for leisure purposes and not commuting purposes.

3 ACCESSIBILITY

3.1.1 This section will set out the site in terms of its access to sustainable transport infrastructure with regard to walking, cycling and public transport provisions.

3.2 Public Transport Accessibility Level

3.2.1 Transport for London has published guidelines on Public Transport Accessibility Levels (PTAL) providing criteria for the identification of public transport access points (i.e. stops, stations) that are within walking distance of a development site.

3.2.2 The PTAL criteria for walking distance to a site are set out below:

(i) 640m to a bus stop

(ii) 960m to a train/tube station

3.2.3 There are 2 bus stops within 640m walking distance of the site, offering reasonably frequent services that have been included in the PTAL assessment.

3.2.4 The PTAL rating for the development site varies according to where the assessment is undertaken along the site frontage. The PTAL ranges between 1b and 2 indicating a low level of accessibility to local public transport. PTAL ratings range from 1-6 with 6 being high and 1 being low. The full output of the PTAL assessments can be seen in Appendix C of this report.

3.2.5 The PTAL scoring system is regarded as an effective way to obtain a consistent accessibility score for sites throughout Central and Greater London. However, this system is not without its limitations. Should a bus service be located 641m from a development site or a train station located 961m then it is omitted from the equation but there is nothing to suggest that someone would not walk an extra metre or even 100 metres to access a transport service. This point was acknowledged by the Highways Authority within the Delegated Report that was prepared in relation to the previous application.

3.2.6 A second PTAL assessment was undertaken some 160m to the south of the site on the corner of Gondar Gardens and Mill Lane. This is approximately 2 minutes walk for most people. This location scored a PTAL 4, considerably more than was scored at the access to the proposed site. A PTAL of 4 suggests a ‘good’ level of accessibility according to TfL best practise guidelines. Therefore whilst the proposed site may initially appear to be located in an area considered relatively poor in terms of access it is in fact proximate to a much wider provision of public transport.

3.2.7 It has therefore been demonstrated that whilst PTAL provides a method to consistently calculate accessibility across London it is not without its limitations and common sense should be applied when making decisions based on the scores achieved. Both PTAL output reports have been appended to this report at Appendix C.

3.3 Pedestrian and Cycle Access

3.3.1 Travel on foot and by cycle is greatly encouraged within London and plans to increase safety for pedestrians and cyclists features as part of the Mayors objectives for the future. Distances which are deemed acceptable to those on foot have been set out by the Institution for Highways and Transport (IHT) within their paper, 'Providing for Journeys on Foot'. A distance of 500m is described as desirable whilst a distance of 2,000m is still considered acceptable yet described as the maximum walking distance that would be undertaken by the average person.

3.3.2 Applying this knowledge to the proposed development it can be seen that a large number of services and amenities are within the acceptable walking distances set out by the IHT. The nature of the urban layout with a high number of connected streets enables pedestrians and cyclists to travel close to their desire lines which in turn enables them to reach further destinations over a shorter distance i.e. they are able to travel closer to the 'as the crow flies' desire lines. As such access to a number of local health, education, and leisure and convenience facilities is high.

3.3.3 Mill Lane, accessed from Gondar Gardens, locates a number of shops and services, with a convenience store located approximately 10m from the junction of Mill Lane and Gondar Gardens. Various banking facilities are available as well as a chemist. Approximately 30m east of the junction there is a signalised crossing providing a safe pedestrian crossing point from the north side of Mill Lane to the south.

3.3.4 The junction of Mill Lane with Gondar Gardens, Hillfield Road, and Ravenshaw Street, are raised to enable a step free crossing increasing access within the area for disabled travellers and those with push chairs. Tactile paving is also present as well as rotating cones on the signalised crossing to aid the visually impaired again increasing access for all users in the area.

3.3.5 With regard to cycling, recommended distances are also provided by the IHT which sets out that 5,000m is considered an acceptable distance. There are no designated cycleways in the vicinity of Gondar Gardens however due to the urban layout of the locality a large catchment area can be accessed from within 5,000m in turn making the site accessible by cycle from a variety of destinations.

3.4 Public Transport Accessibility

3.4.1 As detailed above the site achieves two very different PTAL scores at points only a short distance apart. The PTAL system only includes rail travel that can be accessed from within 960m, however, West Hampstead train station is located just over 1,000m from the site. A distance of 40m is unlikely to deter future residents from walking to the train station if they are already prepared (according to the assumptions made by PTAL) to walk 960m.

3.4.2 West Hampstead train station is serviced by trains provided by first capital connect. The line runs from Bedford to the north to Brighton in the south with a variety of services running a frequency of 7 services every hour throughout the day.

3.4.3 West Hampton and Kilburn tube station are also located just in excess of 1,000m from the site. Both stations are located on the Jubilee line which provides access to Stanmore in the north then through the central areas of London and back out to the north eastern areas terminating at Stratford.

3.4.4 The Jubilee line provides a service every 2 to 3 minutes with Kilburn station providing stepped free access to the platforms. The Jubilee line provides access to a number of other interchanges such as London Waterloo and London Bridge which provides further options of onward travel by over ground rail.

3.4.5 A number of bus services are located within the vicinity of Gondar Gardens. Stops are located along Mill Lane, Westbere Road and the B510 providing access to a number of services. The buses that service these stops have been set out below in Table 3.1.

Service	Route	Service Frequencies (services per hour) - One Way			
		AM Peak (08:00 - 09:00)	Daytime	PM Peak (17:00 - 18:00)	Saturday
C11	Archway Station - Swiss Cottage - West Hampstead Thameslink - Westbere Road - Brent Cross Shopping Centre	7	7	7	7
16	Mora Road - Mill Lane - Edgeware Road - Marble Arch - London Hilton Hotel - Hyde Park Corner - Victoria	10	10	10	10
32	Kilburn Park - Mill Lane - Cricklewood Bus Garage - Staples Corner - Edgeware Community Hospital - Edgware	7	7	7	6
189	Brent Cross Shopping Centre - Mill Lane - Baker Street - Selfridges - Marble Arch	8	8	8	8
316	White City Bus Station - Shepherds Bush - Mill Lane - Longley Way	8	8	8	7
332	Paddington Station - St Marys Hospital - Kilburn Station - Mill Lane - Cricklewood Bus Garage - Brent Park Tesco	6	6	6	6
632	Kilburn Park - Mill Lane - Cricklewood Bus Garage - Staples Corner - West Hendon Sainsburys - Royal Air Force Museum - Grahame Park	1 service per day Mon - Fri			
N16	Edgware - Staples Corner - Cricklewood Bus Garage - Mill Lane - Marble Arch - Dorchester Hotel - London Hilton Hotel - Hyde Park Corner - Victoria	Nightbus - 3 services per hour Mon - Sun			

Table 3.1:- Bus services in the vicinity of Gondar Gardens

3.4.6 The above table highlights that 46 one way services an hour throughout the day are accessible from the site providing access to a number of destinations such as Paddington and Victoria stations which also offer further onward travel by rail. This decreases to 45 on a Saturday.

3.5 Car Club Availability

3.5.1 Car clubs provide an excellent alternative to car ownership. They provide a car for the few journeys where the car really is the most convenient option. As discussed above, the parking survey identified that the level of parked cars was not dramatically reducing from the 05.30 survey to the 10.00 survey. This highlighted that residents were probably not using their cars for commuting purposes and more likely having a car for leisure trips undertaken outside of work hours.

3.5.2 Using a car clubs is an excellent way of having a vehicle for leisure trips but without having to incur the up keep costs of owning your own vehicle. Instead of having a vehicle parked outside your place of residence depreciating in value, costing money to insure, tax, maintain and fuel one can have access to a modern safe vehicle as and when required for only the cost of that journey.

3.5.3 A number of car club cars are available within the vicinity of the proposed development. The car club company Zipcar (formerly Streetcar) have two vehicles located within the locality. One is located along Mill Lane some 250m from the proposed development and a further vehicle is located along Fortune Green Road approximately 550m to the east of the development.

3.5.4 City Car have a further two vehicles within the locality with one situated on Argamemnon Road, approximately 300m from the development site and a further vehicle on Sumatra Road some 500m from the development site. Connect by Hertz also provide a car located on Achilles Road approximately 500m from the development site.

3.5.5 It can be seen that there are a number of car club vehicles located within the locality of the development providing all future residents with the option to use these vehicles in place of owning their own.

3.6 Summary

3.6.1 In summary, this section has demonstrated that the site is located in area accessible by public transport. Mill Lane, located approximately 160m to the south of the site is characterised by retail frontages, public houses and bus stops. This ensures that there is a good provision of services and amenities within an accepted walking and cycle distance from the development site (IHT).

3.6.2 A site such as the location of development site is therefore considered to discourage car ownership and in turn lower the number of associated vehicle trips.

4 PLANNING POLICY CONTEXT

4.1 National Planning Policy

4.2 Planning Policy Guidance 13: Transport

4.2.1 National planning guidance in respect to Transport is set out in Planning Policy Guidance Note 13 (March 2001; Ref 6.1). Emphasis lies on the importance of integrating transport and planning locating sites in areas highly accessible through a number of sustainable transport modes and in areas close to key services and amenities. It states that local authorities should focus land uses which are major generators of travel demand in city, town and district centres and near to major public transport interchanges.

4.3 Planning Policy Statement 3: Housing

4.3.1 With regard to the residential element, Planning Policy Statement 3 (PPS3) (June 2010, Ref 6.2) should be consulted. PPS3 provides guidance to encourage sustainable housing development and has particular relevance to transport. Paragraph 16 of PPS3 sets out specific objectives; the following makes particular reference to transport which requires that development sites should be:-

> *"….easily accessible and well connected to public transport and community facilities and services"*

4.3.2 Therefore, the location in which the development is situated will play a major role in enabling the development to be 'sustainable'. The access that the site can provide to wider services and facilities as well as transport links should be paramount when deciding where to locate a development. In turn Local Authorities should ensure that development is controlled and occurs in areas that can support the needs of the site users reinforcing the principals set out in this guidance.

4.4 Regional Planning Policy

4.5 London Plan

4.5.1 The London Plan (2008) provides policies to integrate transport and land-use planning within Greater London. Policy 3C.1, under the heading "Closer integration of Transport and Spatial development states that the Mayor will work with the Borough Councils on the following:-

> *"Encouraging patterns and forms of development that reduce the need to travel especially by car"*

4.5.2 Seeking to improve public transport capacity and accessibility where it is needed, for areas of greatest demand and areas designated for development and regeneration.

4.5.3 In general, supporting high trip generating development only at locations with both high levels of public transport accessibility and capacity, sufficient to meet the transport requirements of the development. Parking provision should reflect levels of public transport accessibility."

Local Planning Policy

London Borough of Camden – Core Strategy 2010 – 2025

London Borough of Camden – Camden Development Policies 2010 – 2025

Camden Planning Guidance CPG7 Transport

4.5.4 London Borough of Camden provide specific guidance in relation to transport matters concerning development. Policy CS11 of the Core Strategy seeks to ensure private travel can become more sustainable. Specific transport policies are provided at policies DP16 – DP21 with supplementary Guidance provided within the document CPG7.

4.5.5 Generally the ethos of these Development Plan documents is to ensure the introduction of development that facilitates sustainable travel options, that limits private parking provision and which does not result in additional on street parking pressure through the introduction of car capping policies. Developments should be served by appropriate forms of access with suitable provision made for service and delivery requirements.

4.5.6 With regard to car parking, the document Camden Development Policies provides details of the standards required. The standards are maximum standards and a range of 0.5 – 1 space per dwelling is required. With regard to cycle parking, 1 storage or parking space per unit is required and these are minimum requirements

5 PROPOSED DEVELOPMENT

5.1.1 The development proposals seek the introduction of 28 units of a variety of type and tenure. This section will describe the development proposals as they relate to transport matters.

5.1.2 In terms of the mix of development, the application seeks to introduce the following: -

Number of Bedrooms	Private	Affordable
1	4	0
2	11	5
3	2	3
4	2	1
Totals	**19**	**9**

Table 4.1: - Schedule of Accommodation

5.1.3 With regard to access, it is proposed to serve the site by way of a 4.9m access road which would form a priority junction with Gondar Gardens. This would essentially be a shared surface with pedestrian zones of 1.3 metres provided immediately adjacent to the new street. The pedestrian zones would be defined by a strip of granite setts. The adequacy of the access is considered in Section 7 of this report.

5.1.4 The access would lead up to a ramp which would serve two car lifts down to a basement car park at ground level -2. It is anticipated that one of the lifts will be used for the majority of the time with the second to be used in the event of a maintenance issue. The adequacy of the car lift is considered later in this report.

5.1.5 The basement car park would serve a total of 21 car parking spaces. In terms of assignment, 19 spaces would be conveyed to the private dwellings. The remaining 2 spaces would be set aside for disabled drivers. No spaces would be provided for the affordable units. Overall this reflects a ratio of 0.75 spaces per dwelling.

5.1.6 It should be noted that a “Car Capping” strategy would be introduced. This requirement of the Local Authority would prevent future residents of the development from being eligible for on street parking permits. This will apply to all future residents including those residents of the affordable dwellings. This will ensure that essentially the affordable dwellings are car free.

5.1.7 In relation to cycle parking, whilst the standards require a provision of 1 space per dwelling plus a further 1 space per 10 dwellings, the proposals seek to introduce a greater number of spaces. each of the dwellings that provide 1 – 3 bedrooms would provide once cycle space per dwelling however 2 cycle spaces per dwelling will be provided for the four bedroom units. The additional visitor cycle parking provision will also be provided.

5.1.8 With regard to the servicing of the site, this would take place directly from Gondar Gardens. Refuse stored in the basement areas would be brought up to surface level by the Management Company on a weekly basis.

6 TRIP GENERATION

6.1.1 In order to calculate the traffic impact associated with the proposals a forecast of the likely number of vehicles that will be generated by the development has been undertaken. Traffic volumes have been forecast using the TRAVL database; a database that provides information on the level of traffic generated from a variety of land uses throughout Central and Greater London.

6.1.2 In relation to the previous proposals, some discussions were held with LBC in relation to the methodology adopted in order to calculate the development traffic. This culminated in the preparation of a Supplementary Technical Note during the application determination period which looked at a number of further TRAVL sites as an alternative means to calculate the development traffic as a sensitivity test. Following the submission of this sensitivity test, the Highway Authority accepted the assessment of the trip generation associated with the proposals as clarified in the Delegated Report.

6.1.3 Pre application discussions have been held with LBC in relation to the amended proposals in relation to the trip generation methodology that should be adopted. In the view of the Highway Authority, TRAVL sites scoring a PTAL of 1 and those with a parking provision of less than one space per dwelling were deemed comparable with the proposals and should be adopted for assessment purposes.

6.1.4 Three sites within the TRAVL database accorded with this criterion. These TRAVL sites have been included at Appendix D. The sites all scored a PTAL of 1 and have a parking provision of equal to or less than one space per dwelling. Table 6.1 below sets out the peak hour trips rates obtained from these sites and the resultant trips shown to occur with the proposed development.

	Trip Rate			Trips		
	Arrivals	**Departures**	**Total**	**Arrivals**	**Departures**	**Total**
08.00 - 09.00	0.038	0.084	0.122	1	2	3
17.00 - 18.00	0.067	0.029	0.095	2	1	3
Daily	0.79463	0.83985	1.63450	22	24	46

Table 6.1:- Initial TRAVL selection

6.1.5 The above table shows of threw vehicle trips (2 way) during both peak hours and 46 vehicle trips (2 way) over the day.

6.1.6 However, the above trip rates are lower than those set out within the supplementary Technical Note provided with the last application.

6.1.7 In the interests of a robust assessment, it is therefore proposed that the trip rates provided within the Supplementary Technical Note that was submitted during the determination of the previous application are used in order to determine the likely level of traffic associated with the proposals.

6.1.8 The sites generally accord with the above criterion in terms of scoring a PTAL of 1 but two of the 4 sites have a parking provision which exceeds one space per dwelling. The sites are a mixture of private and affordable developments.

6.1.9 The sites used have been summarised within Appendix E. Table 6.2 below sets out the trip rates obtained and the resultant number of trips.

	Trip Rate			Trips		
	Arrivals	**Departures**	**Total**	**Arrivals**	**Departures**	**Total**
08.00 - 09.00	0.073	0.192	0.265	2	5	7
17.00 - 18.00	0.116	0.075	0.191	3	2	5
Daily	1.485	1.399	2.884	42	39	81

Table 6.2:- Proposed trip rates and trip generation

6.1.10 The above table shows that by applying the trip rates set out within the previous Technical Note the proposals will result in 7 two way movements during the AM peak hour and 5 two way movements during the PM peak hour.

6.2 Cumulative Effects

6.2.1 It has been established that a number of other developments have been permitted with the vicinity of Gondar Gardens. Development on land adjacent to the railway bridge on Mill Lane is currently under construction whilst a further smaller scheme is also permitted along Mill Lane. It is not envisaged that these sites will result in an impact on the proposed development. It is unlikely that vehicles would travel along Gondar Gardens as it is not considered a route of local importance in terms of a traffic distribution function.

6.2.2 Permission has been granted for the construction of 4 dwellings along the southern section of Gondar Gardens close to its junction with Mill Lane. The proposals will be not result in an increase in parking. Residents will also be prohibited from obtaining a residents parking permit to discourage car ownership. In terms of traffic the development will not generate more than the existing site and is therefore negligible.

6.2.3 In terms of the cumulative impacts associated with other permitted developments, it is considered that given the above, this will be negligible.

7 TRANSPORT IMPLICATIONS

7.1.1 This section considers the implications of the development in terms of the transport elements of the proposed development. It therefore addresses the following points:-

- the traffic changes associated with the development
- the ability to create an appropriate site access
- the implications to existing on street parking availability
- servicing & deliveries
- the adequacy of the internal car park arrangements
- construction traffic

7.2 Traffic Impact

7.2.1 In terms of traffic movements, it is considered that the principle route used by traffic associated with the development would be either towards or from Mill Lane. As set out in Section 6, the maximum level of traffic shown to occur as a consequence of the proposals does not exceed a total of 7 arrivals and departures during peak periods.

7.2.2 For the purposes of this assessment, it has been assumed that all of these traffic movements would either arrive from the south or depart towards the south. As set out previously, traffic flows using Gondar Gardens are currently low during peak periods. In terms of the additional traffic associated with the scheme, this is set out in Table 7.1.

Direction	**Existing Traffic Flow (vehicles per hour)**		**Traffic Flow With Development (vehicles per hour)**	
	AM Peak	**PM Peak**	**AM Peak**	**PM Peak**
Northbound	14	14	16	17
Southbound	14	12	19	14

Table 7.1: - Traffic flow changes arising from proposals

7.2.3 As is shown in Table 6.2, the maximum increase in traffic arising from the development would occur during the AM peak hour with 5 additional vehicles shown to occur on the northbound section of Gondar Gardens. In terms of traffic impact, this would equate to one additional traffic movement every 12 minutes. This is not considered to represent a material impact.

7.2.4 In terms of car usage, it should be noted that this is expected to be relatively low during the week as residents who choose to own a car may not use their vehicle for everyday purposes given the availability of public transport. It is, however, necessary to provide parking for dwellings of the nature proposed for viability reasons as future residents may wish to use a vehicle during the weekends for example and for occasional use during the week.

7.3 Site Access

7.3.1 This section provides details of the proposed site access arrangements that are proposed in order to serve the site. The proposed access arrangement is shown on drawing 9V6975/02 Revision B which indicates access to the site by way of a simple priority junction. The width of the access is provided at 4.9 metres which connects to a ramp down to the lower ground floor. This ramp is provided at an average gradient of 1:11 (or 9%). This ramp then connects to a level area in front of the proposed car lifts which serve the basement car park. The length of the car lifts are 5.5 metres which is sufficient to accommodate a 4x4 vehicle.

7.3.2 It is necessary to consider the ability to create a suitable access junction with Gondar Gardens in terms of design requirements. With this in mind, the advice contained within the documents Manual for Streets and Manual for Streets 2 has been considered.

7.3.3 In terms of the introduction of the access, this requires the loss of 27 metres of the existing on street parking areas that are shown adjacent to the south bound carriageway of Gondar Gardens. The implications of this are considered in greater detail later in this section.

7.3.4 Advice is given in respect of the visibility requirements of priority junctions which requires that this is based upon the known speed of traffic using the major arm of the junction which in this case is Gondar Gardens. Details of traffic speed have been obtained from the ATC survey that was undertaken, as provided at Appendix A. It is necessary to adjust the speeds recorded by the survey for design purposes as traffic speeds during typical conditions should be used and which should be in free flow. Therefore the speeds recorded during the weekday periods between 0900 – 1700 have been used for design purposes and these have been adjusted to reflect wet weather conditions.

7.3.5 On this basis, 85th percentile traffic speeds of 30 kph are shown for northbound traffic and 29 kph for southbound traffic. The calculations in this regard are provided at Appendix F and it is these speeds that are used for determining visibility requirements.

7.3.6 The Guidance set out in Manual for Streets 2 provides details of the formula that is required in order to calculate visibility splays. The formula does include an allowance for the longitudinal gradient of the street carriageway however as Gondar Gardens is at a consistent level, this is not necessary to incorporate into the calculations. Details of the calculations carried out in order to calculate the visibility splays are provided at Appendix E and show that visibility splays of 23 metres and 22 metres are required to the south and north respectively.

7.3.7 Given that the applicant seeks to minimise the disruption to existing on street parking availability, the access to the site has been carefully considered in this respect. Advice given in Manual for Streets 2 (MfS2) states that in certain circumstances, where traffic speeds are low, which is the case in this instance, obstructions to visibility can be present such as on street parking. Section 10.7 of the document states that *"in urban junctions where visibility is limited by buildings and parked cars, drivers of vehicles on the minor arm tend to nose out carefully until they can see oncoming traffic and vice versa"* The extract of this document is provided at Appendix F.

7.3.8 With this in mind, it has been assumed that traffic associated with the development would edge out onto the carriageway in the way described in Section 10.7 of MfS2.

7.3.9 In terms of the deliverability of the visibility splays, these have been measured from the drivers eye position as a vehicle would exit the site access, which is from a point set back 2.4m level with the outer edge of the on street parking bays.

7.3.10 To the north, the visibility splay of 22 metres has been measured to the drivers' eye position of an oncoming vehicle that is 1.5 metres from the outer edge of the parking bays adjacent to the southbound carriageway.

7.3.11 To the south, a visibility splay of 23 metres has been measured to the drivers eye position, this being 1.5 metres from the outer edge of the parking bays adjacent to the southbound carriageway. These visibility splays are shown on drawing 9V6975/02 Revision B together with the areas of on street parking which would need to be removed which are shown hatched.

7.3.12 Measuring the required visibility splays in this way limits the implications to on street parking whilst ensuring that a safe access can be provided. It is also important to note that the parking spaces will not be in use at all times therefore they will not constitute a permanent obstruction and at times greater levels of visibility will be available.

7.3.13 This approach was adopted in respect to site access matters in relation to the previous application and was considered acceptable as set out in the Delegated report.

7.3.14 In terms of the route to the basement car park, the design of the ramp meets the design guidance provided by the Institute of Structural Engineers, as set out in the document "Design recommendations for multi-storey and underground car parks". Here, the guidance states that where sections of ramps are steeper than 1:10, transition ramps should be sited at the top and bottom in order to reduce the risk of grounding. In this case, the gradients of the transition sections are half the gradient of the ramp.

7.3.15 In terms of the width of the access, there is sufficient space to allow one vehicle to pass another vehicle when travelling in the opposite direction. This is an important point given that vehicles may need to wait from time to time whilst other vehicles exit the car lift. Sufficient space is available within the curtilage of the site in order to allow vehicles to pull clear of the public highway in the event that they have to wait for another vehicle to exit the car lift. This is however not expected to be a regular occurrence given that traffic levels associated with the site are expected to be low and parking is limited to 21 spaces.

7.3.16 Vehicles can manoeuvre straight into and out of the lift provided without the need to turn.

7.3.17 Drawing 9V6975/TR45 indicates that a 4x4 car can satisfactorily enter and exit the site access from all directions. Drawing 9V6975/TR46 shows that there is sufficient space on the ramp to allow a vehicle to wait whilst another vehicle is exiting the car lift.

7.3.18 Within the Basement car park, drawings 9V6975/TR39 – TR44 show that the layout can accommodate satisfactory vehicle movement into / out of the car lift whilst ensuring parking spaces can be accessed.

7.4 Implications to existing on street parking availability

7.4.1 As stated the proposals will require a small loss of parking along Gondar Gardens in order to provide the site access. A length of on street parking totalling 27 metres would need to be removed along the site frontage. However, as the existing access to the site would be closed, this would provide the opportunity to provide a replacement section of on street parking if required by the Local Authority. This section would allow a further 7 metres of on street parking to be provided.

7.4.2 Therefore the net reduction in on street parking availability would extend to a length of 20 metres. On the basis of a typical dimension of a 6 metre length parking bay, this would amount to 3 - 4 parking spaces. This loss of parking has been considered when analysing the data collected during the parking beat survey.

7.4.3 The parking beat survey identified that a number of the parking bays did not reach maximum capacity at any time of the survey. It also identified that there is unlikely to be suppressed parking demand along Gondar Gardens as if this were the case the spaces to the south of Gondar Gardens would be utilised during the periods of highest demand which were those associated during the evening and early morning when residents were home, that is at 23.00 and 05.30.

7.4.4 Areas, 6, 8, 10 and 13 did not reach full capacity at any time during the survey. Area 13 is located along the frontage of the site and was observed to have between 1 and 5 spaces vacant during the 5 surveyed periods. Area 6 located on the opposite edge of the carriageway to area 13 and also in front of the proposed developed was surveyed to have between 1 and 3 spaces vacant during all 5 survey periods. Areas 8 and 10 located just south of the site were also surveyed to have between 1 to 2 and 1 to 4 spaces available during all five survey periods respectively.

7.4.5 Given the above figures it has been demonstrated that within the parking areas in proximity to the site there are between 4 and 14 spaces vacant throughout the course of a day. Areas 9 and 12 were only recorded to reach peak capacity at one point during the survey highlighting further available parking capacity in the vicinity of the site.

7.4.6 In light of the above it is considered that the loss of 3 - 4 spaces will not have an adverse effect on the parking provision located along Gondar Gardens and any displaced parking provision can be accommodated by way of the existing on street parking areas.

7.4.7 To further preserve the level of parking along Gondar Gardens residents will be prohibited from obtaining residents parking permits. This will be secured though a section 106 agreement in the event that the planning application is successful.

7.4.8 In order to further discourage car ownership within the development the developer will explore the feasibility of providing residents with free membership to a car club. As mentioned within section 3.5, Streetcar have a car club car located within proximity to the site on Mill Lane, approximately 250m from the site. A further Streetcar space is located along Aldred Road to the east of the site.

7.4.9 It should be noted that no objection was raised in relation to the previous proposals which were shown to result in a net reduction of 2 – 3 spaces.

7.5 Servicing & Deliveries

7.5.1 With regard to servicing this will consist of refuse collection which will take place on street. Given the frontage nature of the scheme deliveries would be made to the site via the on street parking bays or vehicles could reverse back into the site access. Given the projected frequency of use of the site access and the low traffic volumes and speeds of traffic using Gondar Gardens this is considered an acceptable approach.

7.6 Construction Traffic

7.6.1 LB Camden require particular consideration be given to the construction of the development including access by construction related vehicles. A Construction Access Plan will be agreed in line with the Highways Authority.

7.6.2 With this in mind, the applicant has prepared a Construction Management Strategy in order to consider the arrangements that will be put in place in order to minimise the impact of the construction of the development proposals. This is based upon their experience of sites located in similar areas.

7.6.3 One matter to be addressed is the issue of construction traffic particularly movements by large vehicles to and from the site. It is understood that the delivery of materials, and plants to the site and the removal of any material from the site will be undertaken by rigid delivery vehicles rather than articulated vehicles. This is due to the constraints of the street network serving the development. Such vehicles would be limited to the key elements of the construction phase that is the demolition, groundwork's and superstructure phases. It is understood that construction would take in the order of 24 months to complete.

7.6.4 It is understood that movement by such vehicles for deliveries to/from the site would be limited to 5 – 10 arrivals and departures per day. These vehicles would arrive at Gondar Gardens from the south via Mill Lane and A5. Routing Restrictions can be implemented if required by LB Camden.

7.6.5 In relation to staff, all construction workers would be advised of the parking restrictions surrounding the site prior to commencement work on site and be encouraged to travel by non car modes. This will be supplemented by a restricted regime of on site parking.

7.6.6 In relation to the internal fit out of the scheme, this will consist of activity associated with contractors with in the order of 8 – 10 arrivals and departures per day although this will concern smaller vehicles such as Transit type vans.

7.6.7 It is proposed that the developer obtains a temporary parking suspension for the duration of the construction period. This will affect the parking bays immediately in front of the site which is a stretch of 65m, the length of approximately 11 cars.

7.6.8 As described earlier within this report a survey was undertaken to establish the current parking situation along Gondar Gardens. It was concluded that parking demand was higher along the northern section of Gondar Gardens due to the higher number of residential dwellings fronting the road. The southern section of Gondar Gardens was shown to have spare capacity at all times of the day.

7.6.9 Plan RH2 shows the sections of parking surveyed. Sections 4 – 13 are located along the southern section of Gondar Gardens proximate to the proposed development. The survey has shown that at the 5.30 beat 10 parking spaces are free. Between 10.00 and 18.00 there are on average 17 to 18 spaces free throughout these sections. At 23.00 there are 13 spaces free.

7.6.10 The loss of 11 parking spaces would result in parking demand being close to capacity during the night time hours. During the day time the survey shows that there is sufficient capacity available to not result in a material negative impact on the parking provision during the construction phase.

8 SUMMARY AND CONCLUSION

8.1.1 This Transport Statement has been prepared on behalf of Linden Wates (West Hamstead) Ltd in order to support a planning application for the introduction of residential development on the site of the former reservoir on Gondar Gardens within the London Borough of Camden.

8.1.2 The proposals comprise the construction of 28 residential dwellings comprising apartments, duplexes and town houses, together with an area of open space dedicated as a nature reserve with restricted public access. 21 car parking spaces are proposed. Future residents would not be eligible for on street parking permits.

8.1.3 The report has shown that an acceptable form of access can be introduced in order to serve the site in terms of design. Whilst the proposed access would result in the loss of a section of existing on street parking, it has been demonstrated from data collected during a parking beat survey that the loss of these spaces will not adversely affect the parking availability along Gondar Gardens.

8.1.4 The site has been shown to benefit from a good level of accessibility which affords the opportunity to travel by modes of travel other than the private car. The site is also well placed in relation to shops, services and everyday amenities. The report has also shown that the site can be serviced in an acceptable manner.

8.1.5 Given the above, it is considered that there are no highways or transportation reasons why the proposals should not proceed.

Plans

TITLE: SITE LOCATION PLAN	PROJECT: GONDAR GARDENS, WEST HAMPSTEAD SITE LOCATION PLAN	ROYAL HASKONING — HASKONING UK LTD TRANSPORT UK. Windsor House, 37 Windsor Street Chertsey Surrey KT16 8AT +44 (0)1932 569999 Telephone +44 (0)1932 569931 Fax info@chertsey.royalhaskoning.com E-mail www.royalhaskoning.com Internet	DRAWN: DH; SCALE: 1:25,000; DATE: JAN 12; CHKD: IRF; DRG No.: 9V6975/RH1

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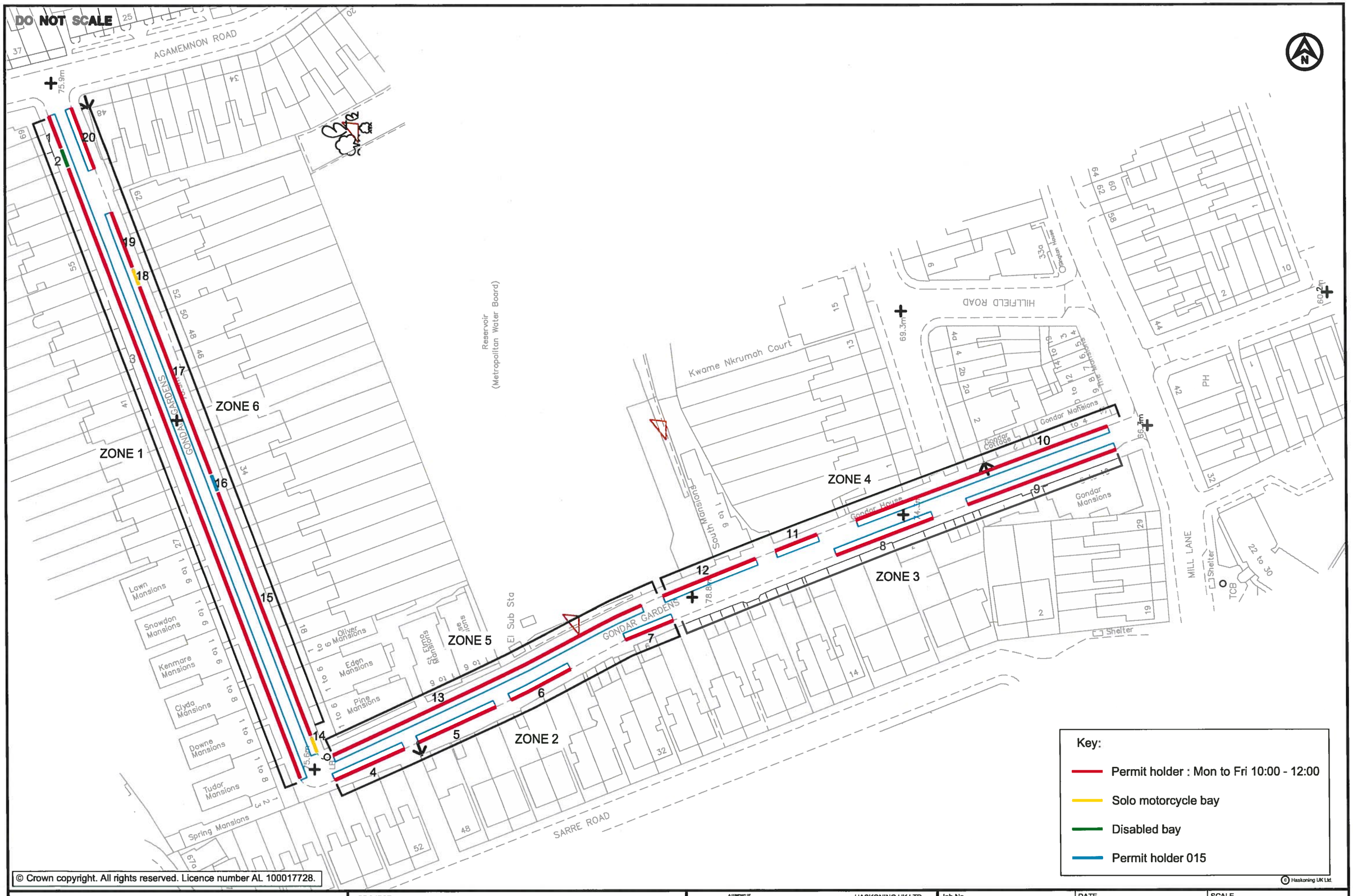

Key:

- Permit holder : Mon to Fri 10:00 - 12:00
- Solo motorcycle bay
- Disabled bay
- Permit holder 015

TITLE	LOCATION OF PARKING BAYS
PROJECT	GONDAR GARDENS, WEST HAMPSTEAD

ROYAL HASKONING

HASKONING UK LTD
TRANSPORT UK
Windsor House, 37 Windsor Street
Chertsey
Surrey KT16 8AT
+44 (0)1932 569566 Telephone
+44 (0)1932 569531 Fax
info@chertsey.royalhaskoning.com E-mail
www.royalhaskoning.com Internet

Job No. 9V6975	DATE JAN 12	SCALE 1:1000	
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Drawings

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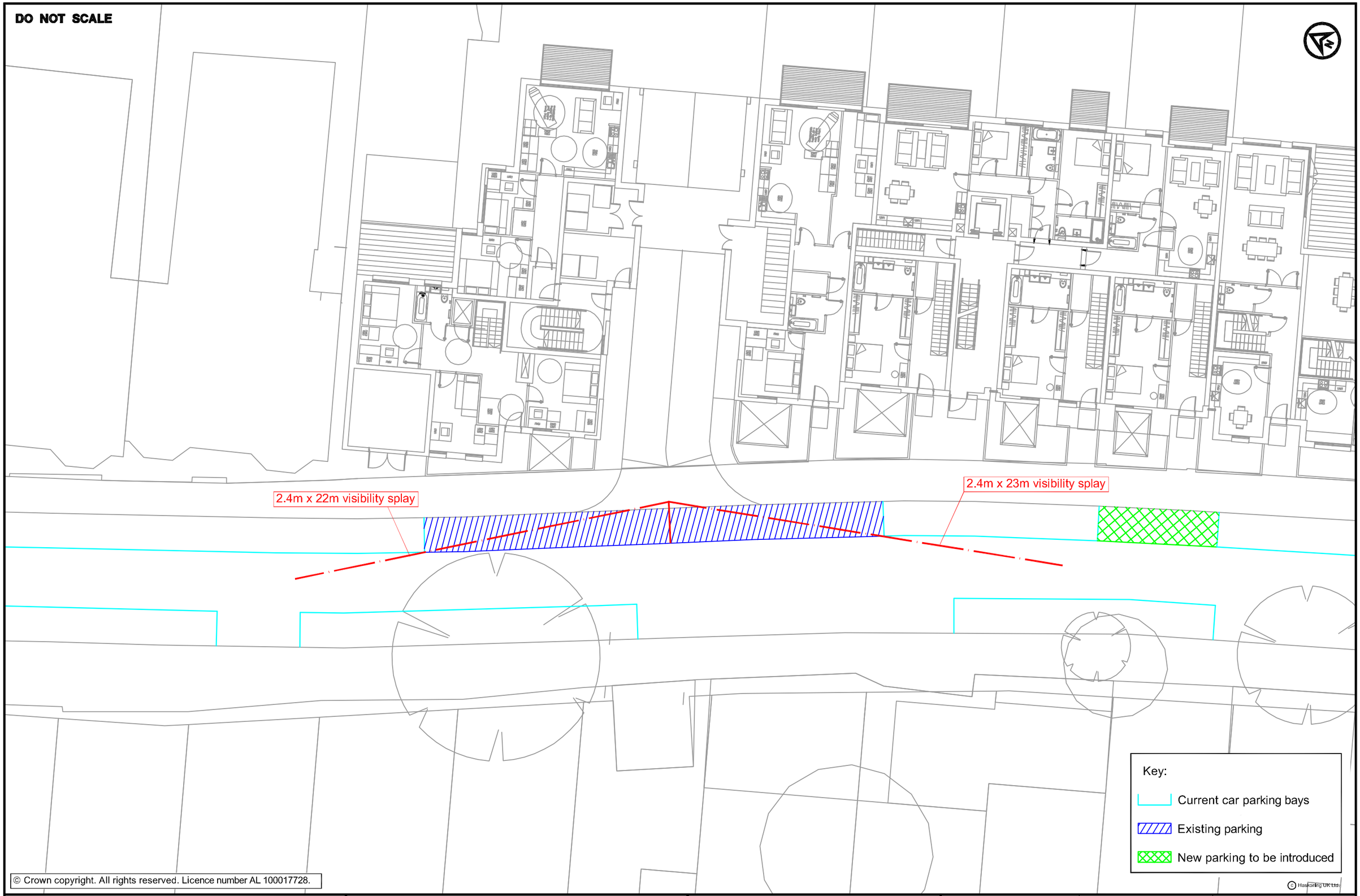

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A COMPANY OF
ROYAL HASKONING
Windsor House, 37 Windsor Street
Chertsey
Surrey KT16 8AT
+44 (0)1932 569566 Telephone
+44 (0)1932 569531 Fax
Info@chertsey.royalhaskoning.com E-mail
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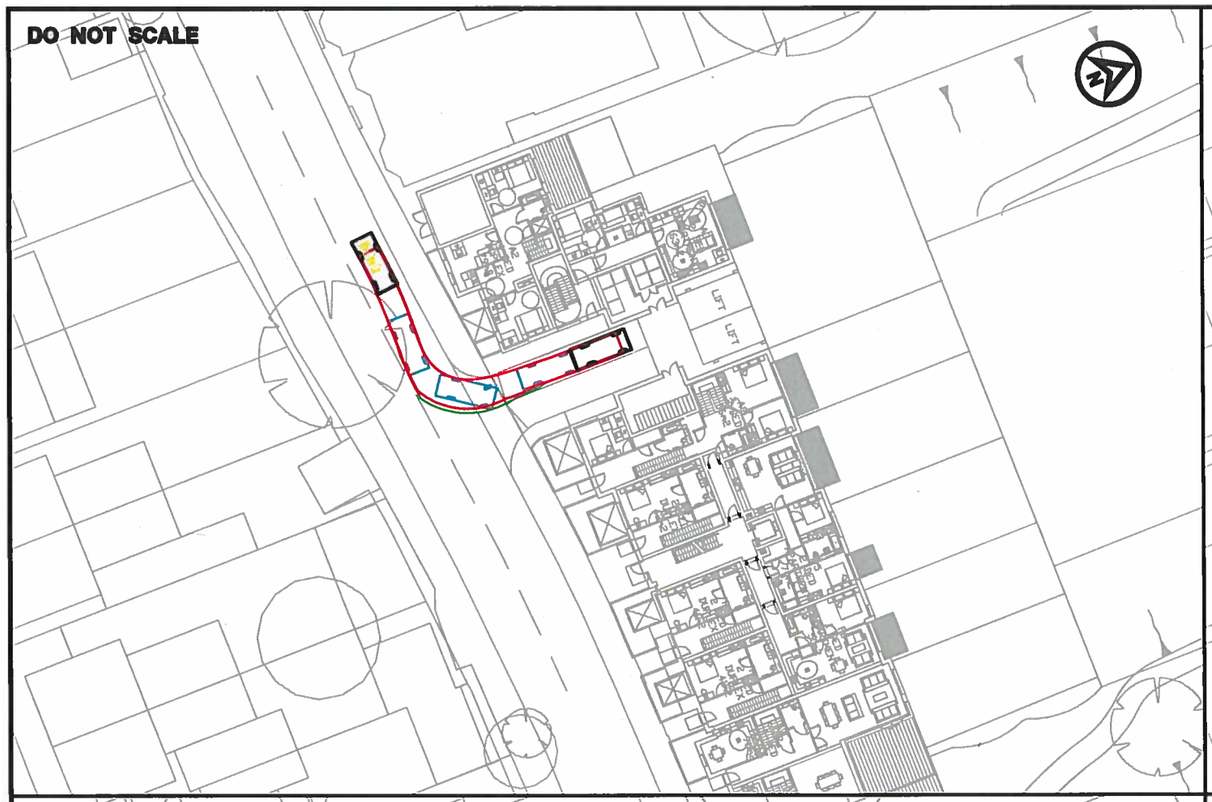

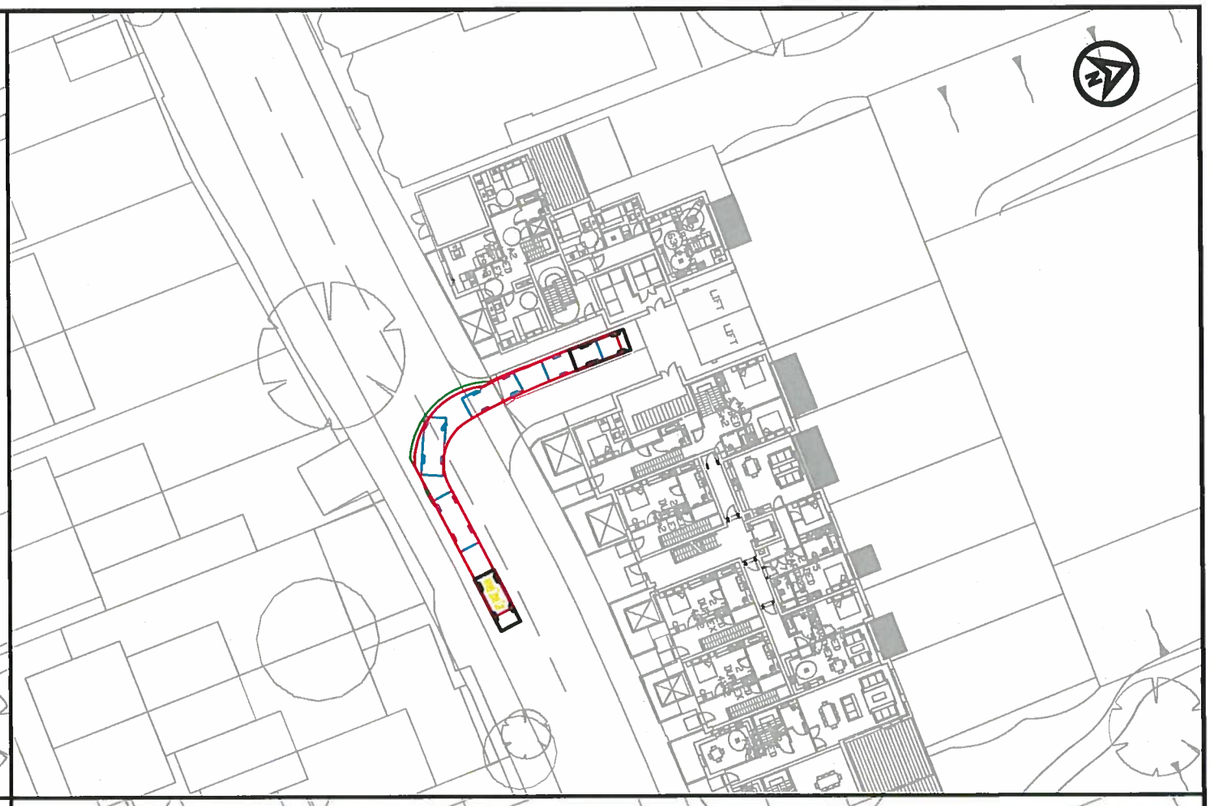

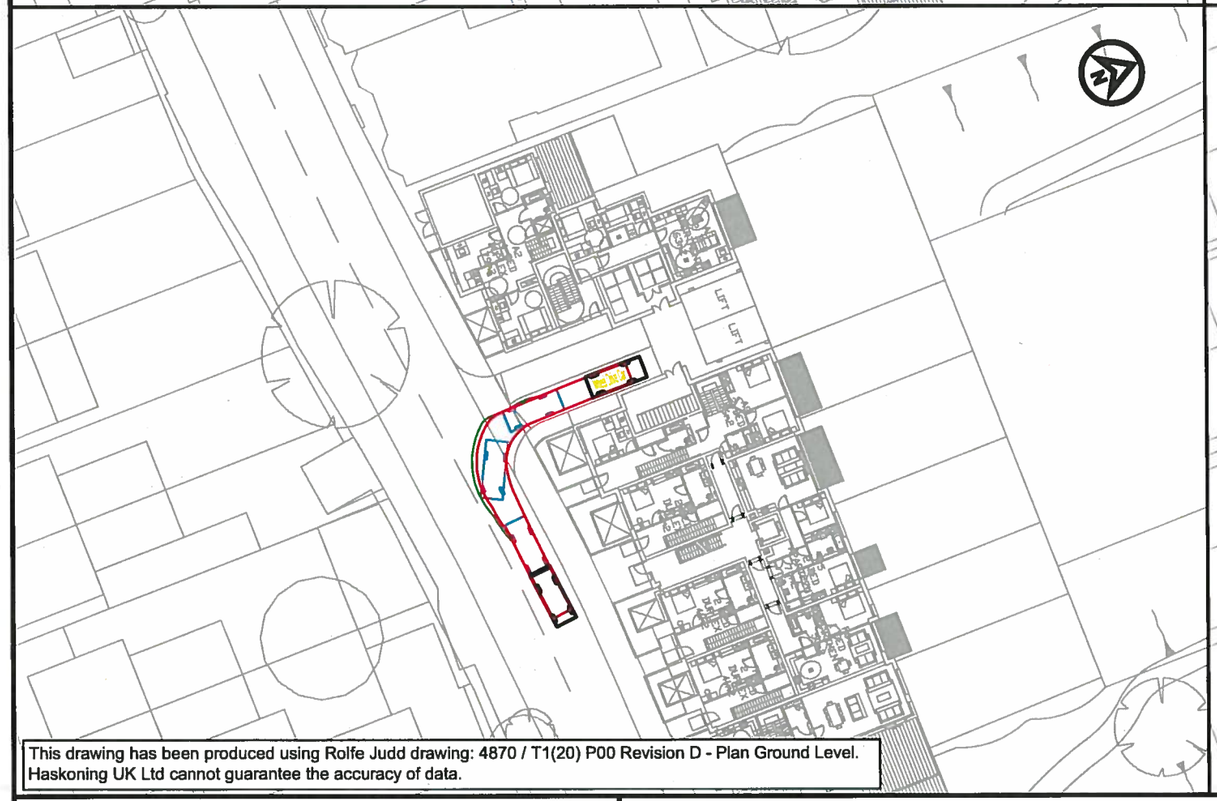

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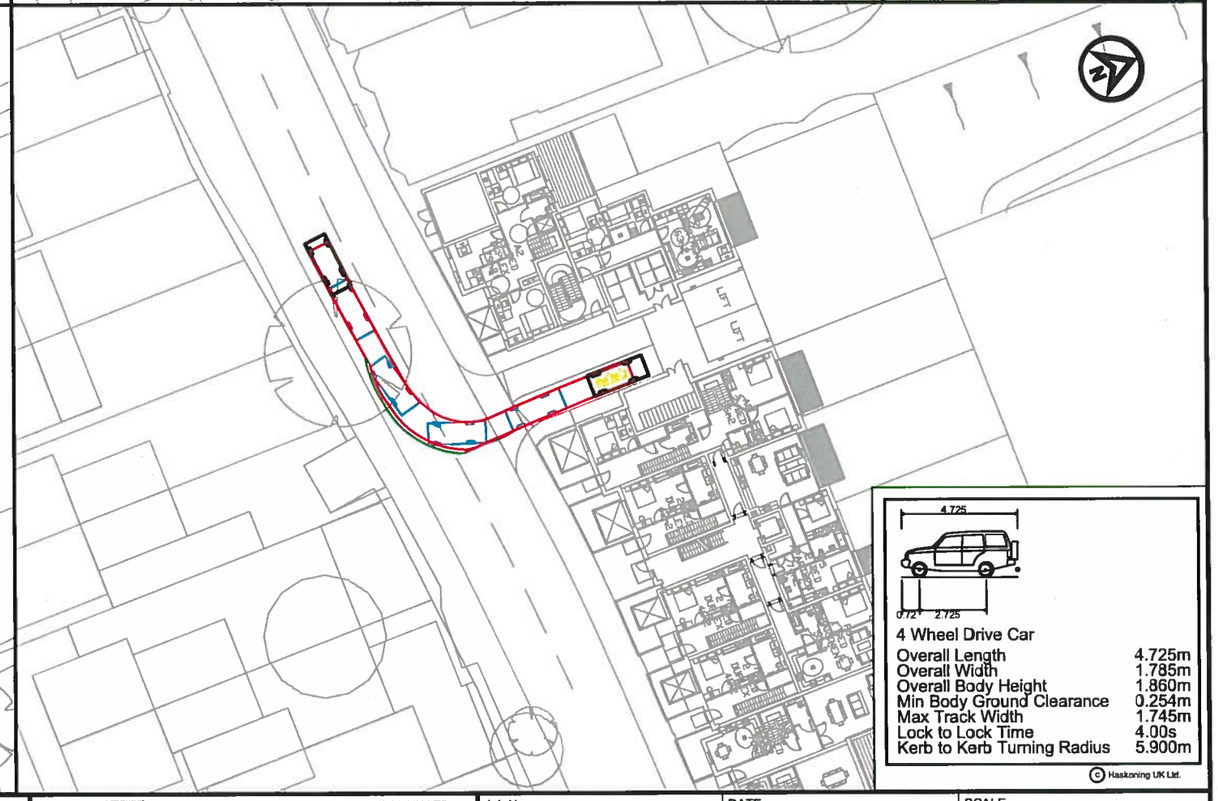

4 Wheel Drive Car

Overall Length	4.725m
Overall Width	1.785m
Overall Body Height	1.860m
Min Body Ground Clearance	0.254m
Max Track Width	1.745m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.900m

TITLE

SWEPT PATH ANALYSIS -
4 WHEEL DRIVE CAR

PROJECT

GONDAR GARDENS, WEST HAMPSTEAD

A COMPANY OF
ROYAL HASKONING

HASKONING UK LTD
TRANSPORT UK
Windsor House, 37 Windsor Street
Chertsey
Surrey KT16 8AT
+44 (0)1932 569566 Telephone
+44 (0)1932 569531 Fax
info@chertsey.royalhaskoning.com E-mail
www.royalhaskoning.com Internet

Job No. 9V6975	DATE JAN 12	SCALE 1:200	
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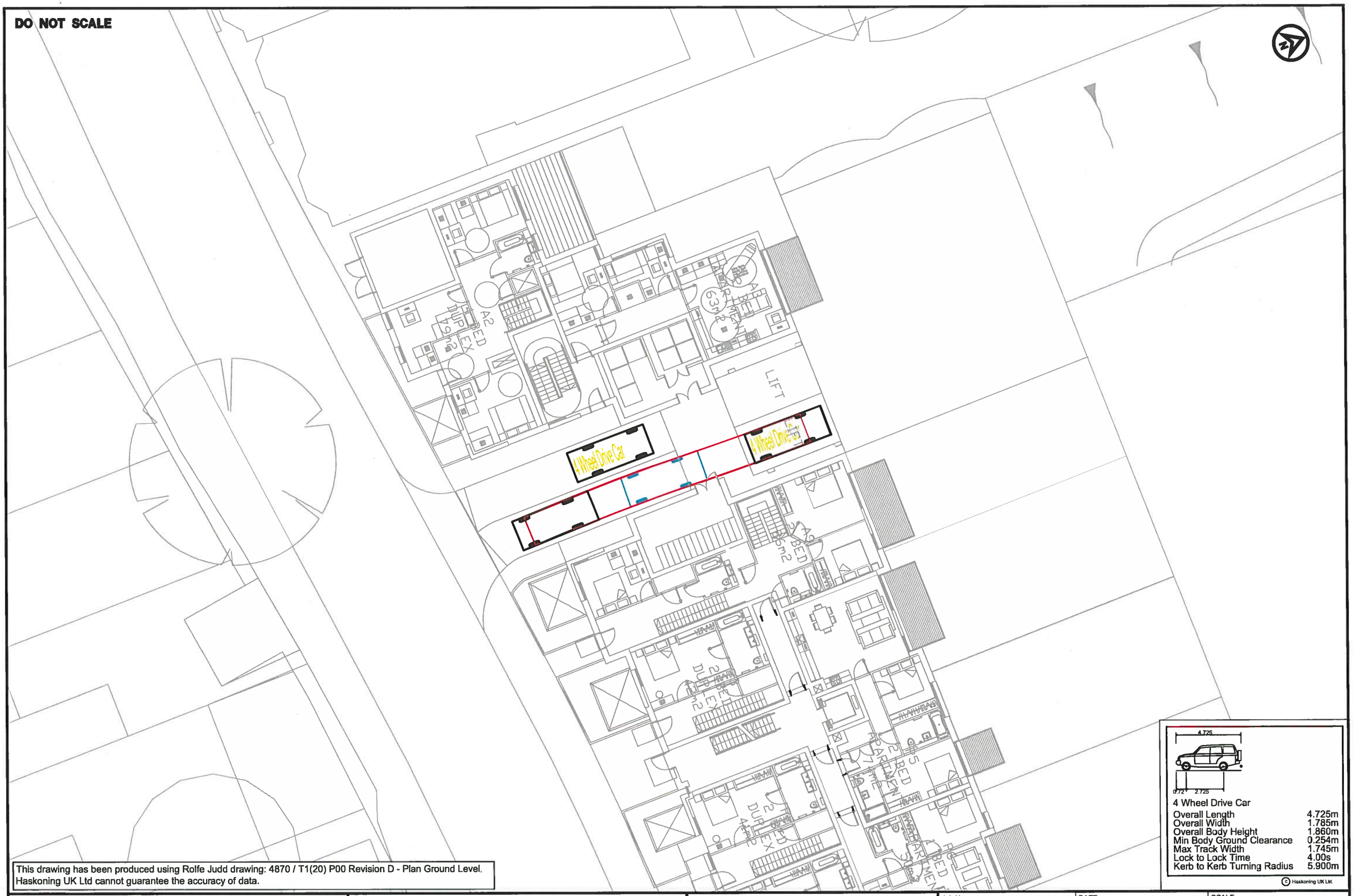

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SWEPT PATH ANALYSIS -
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HASKONING UK LTD
TRANSPORT UK
Windsor House, 37 Windsor Street
Chertsey
Surrey KT16 8AT
+44 (0)1932 569568 Telephone
+44 (0)1932 569531 Fax
info@chertsey.royalhaskoning.com E-mail
www.royalhaskoning.com Internet

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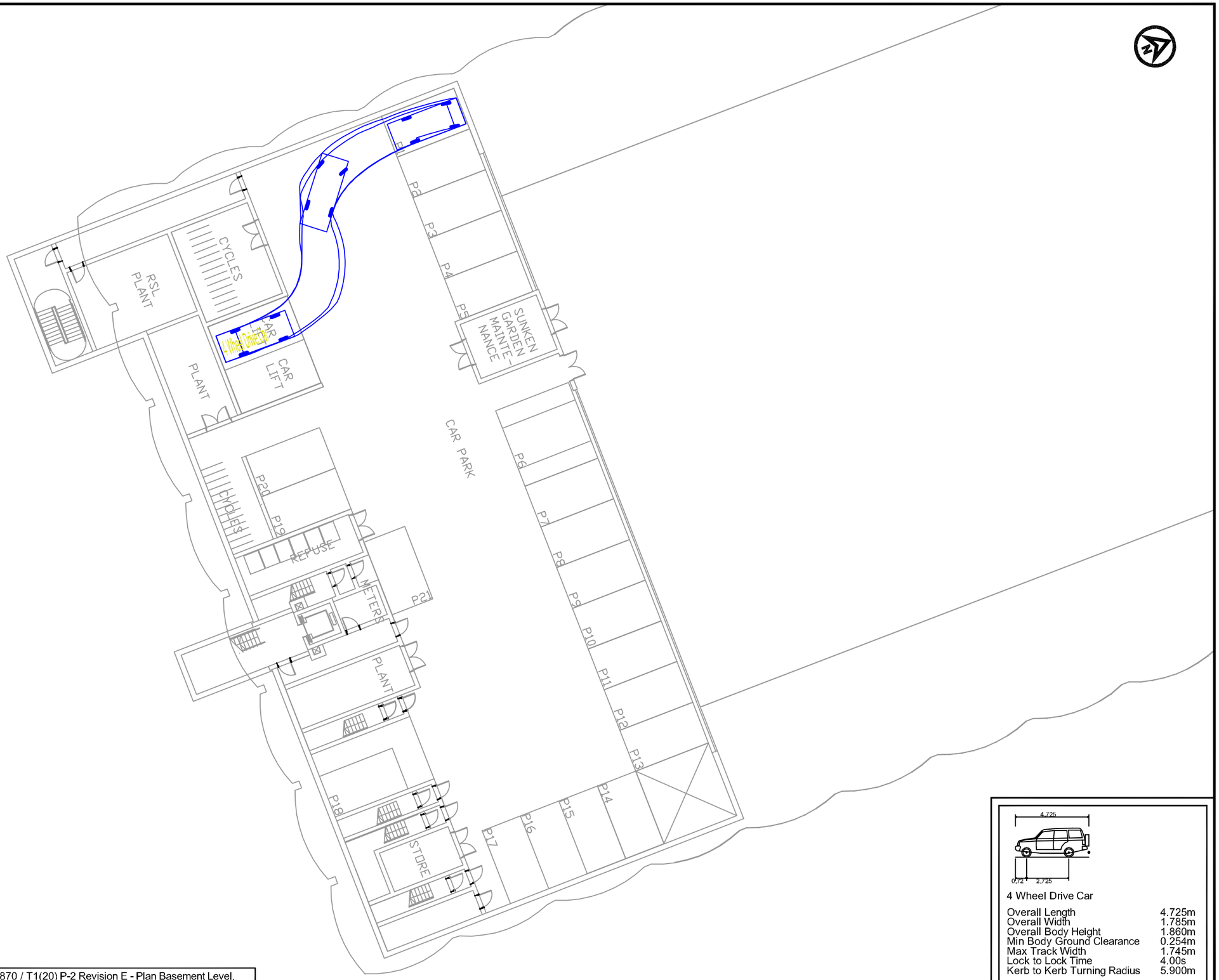

4 Wheel Drive Car

Overall Length	4.725m
Overall Width	1.785m
Overall Body Height	1.860m
Min Body Ground Clearance	0.254m
Max Track Width	1.745m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.900m

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TITLE

SWEPT PATH ANALYSIS -
4 WHEEL DRIVE CAR

PROJECT

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A COMPANY OF
ROYAL HASKONING

HASKONING UK LTD
TRANSPORT UK
Windsor House, 37 Windsor Street
Chertsey
Surrey KT16 8AT
+44 (0)1932 569568 Telephone
+44 (0)1932 569531 Fax
Info@chertsey.royalhaskoning.com E-mail
www.royalhaskoning.com Internet

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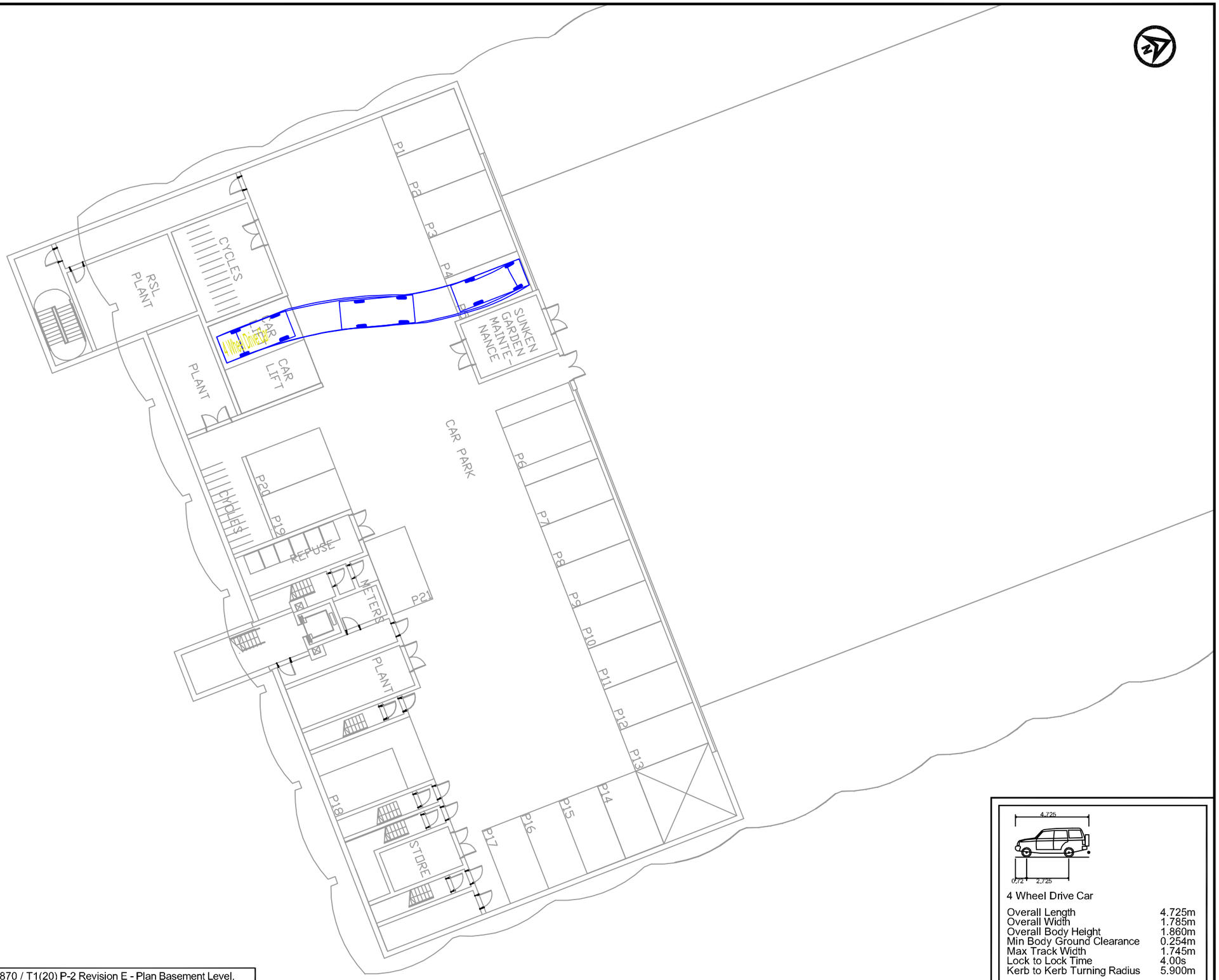

4 Wheel Drive Car

Overall Length	4.725m
Overall Width	1.785m
Overall Body Height	1.860m
Min Body Ground Clearance	0.254m
Max Track Width	1.745m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.900m

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TITLE
SWEPT PATH ANALYSIS -
4 WHEEL DRIVE CAR

PROJECT
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HASKONING UK LTD
TRANSPORT UK
Windsor House, 37 Windsor Street
Chertsey
Surrey KT16 8AT
+44 (0)1932 569568 Telephone
+44 (0)1932 569531 Fax
Info@chertsey.royalhaskoning.com E-mail
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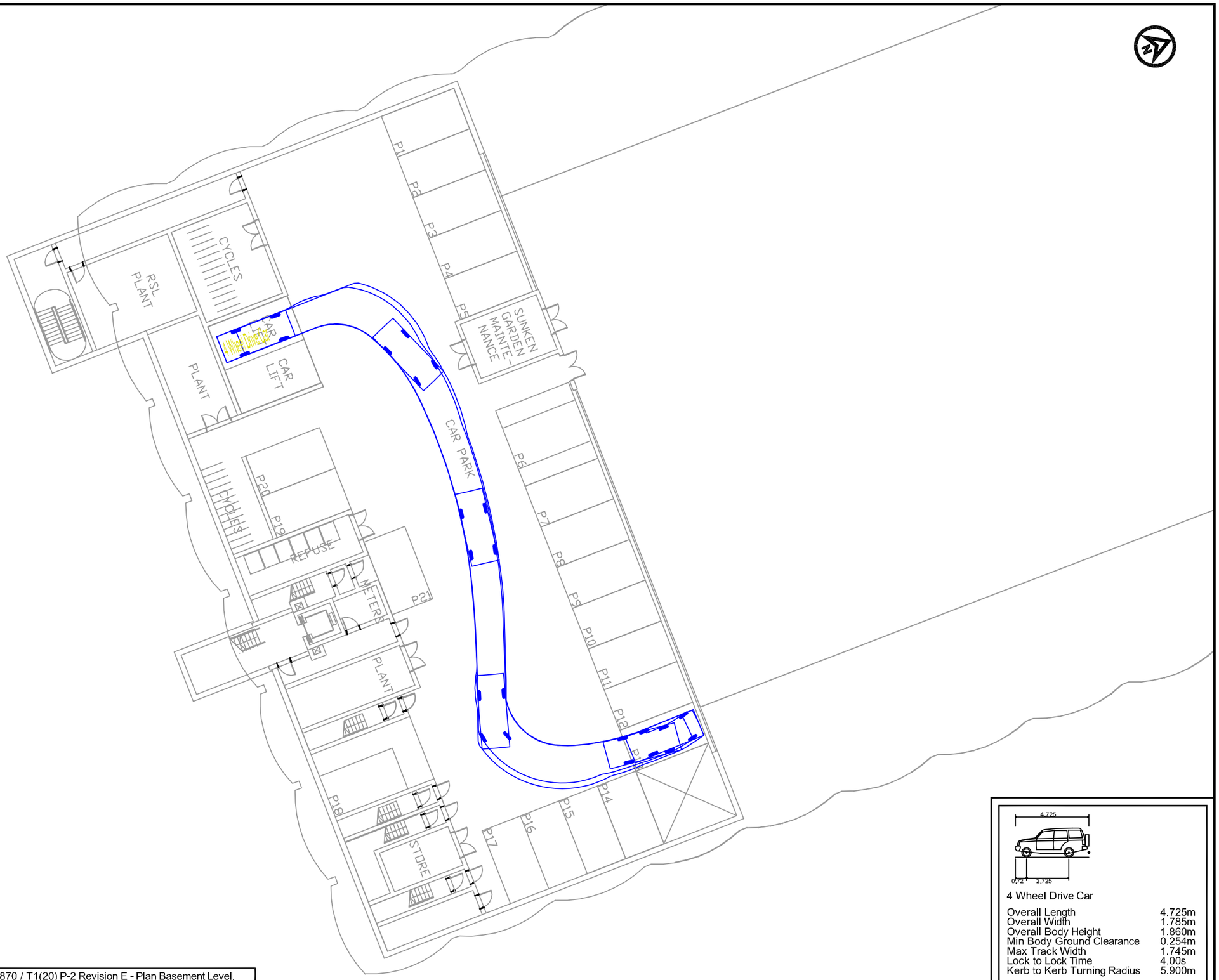

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Lock to Lock Time	4.00s
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TITLE

SWEPT PATH ANALYSIS -
4 WHEEL DRIVE CAR

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HASKONING UK LTD
TRANSPORT UK
Windsor House, 37 Windsor Street
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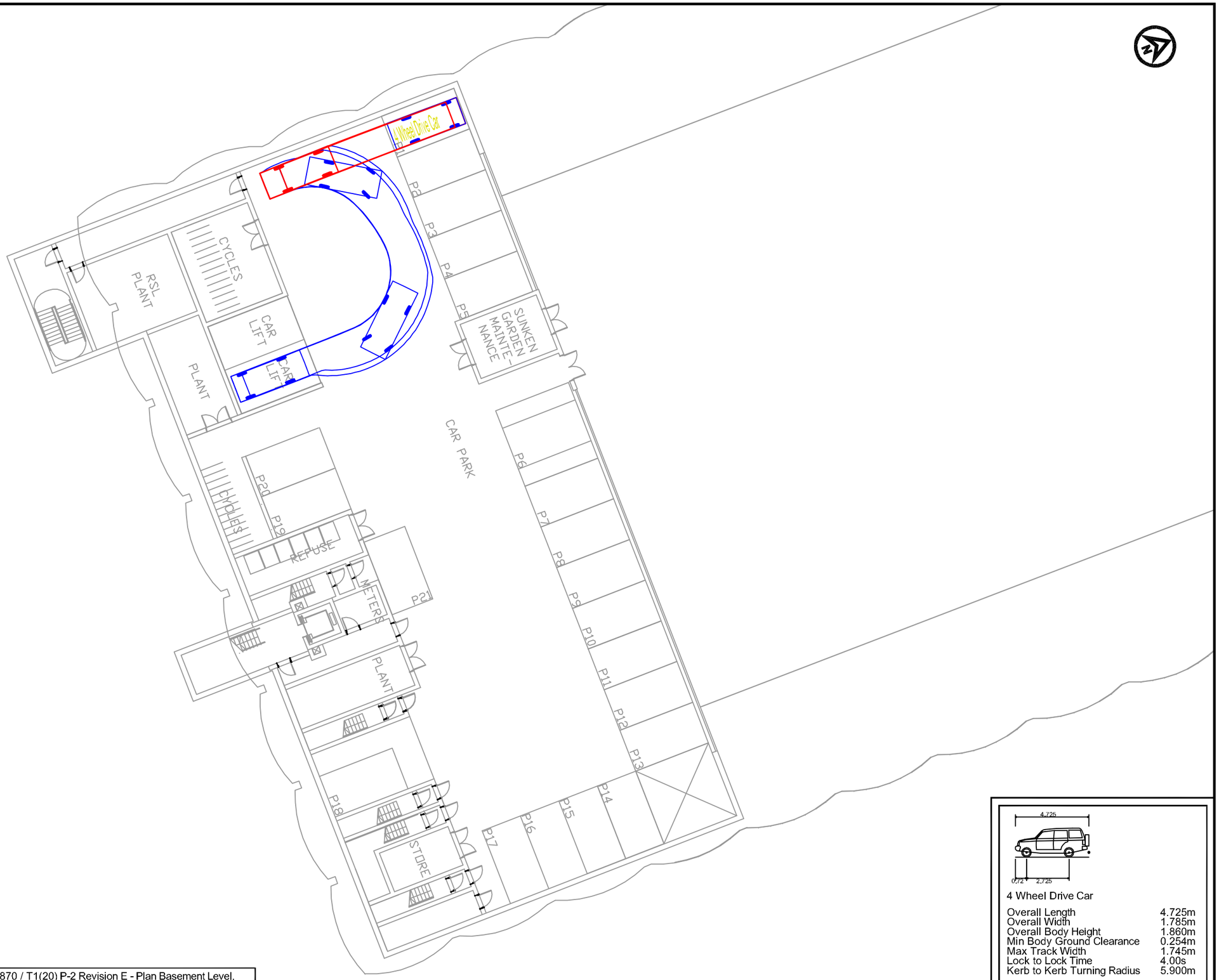
+44 (0)1932 569568 Telephone
+44 (0)1932 569531 Fax
Info@chertsey.royalhaskoning.com E-mail
www.royalhaskoning.com Internet

Job No. 9V6975	DATE JAN 12	SCALE 1:250	
ACAD Ref.	CHECKED IRF	PASSED IRF	
DRAWN DH	DRG No. 9V6975/TR41		REV

DO NOT SCALE



4 Wheel Drive Car

Overall Length	4.725m
Overall Width	1.785m
Overall Body Height	1.860m
Min Body Ground Clearance	0.254m
Max Track Width	1.745m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.900m

This drawing has been produced using Rolfe Judd drawing: 4870 / T1(20) P-2 Revision E - Plan Basement Level.
Haskoning UK Ltd cannot guarantee the accuracy of data.

TITLE

SWEPT PATH ANALYSIS -
4 WHEEL DRIVE CAR

PROJECT

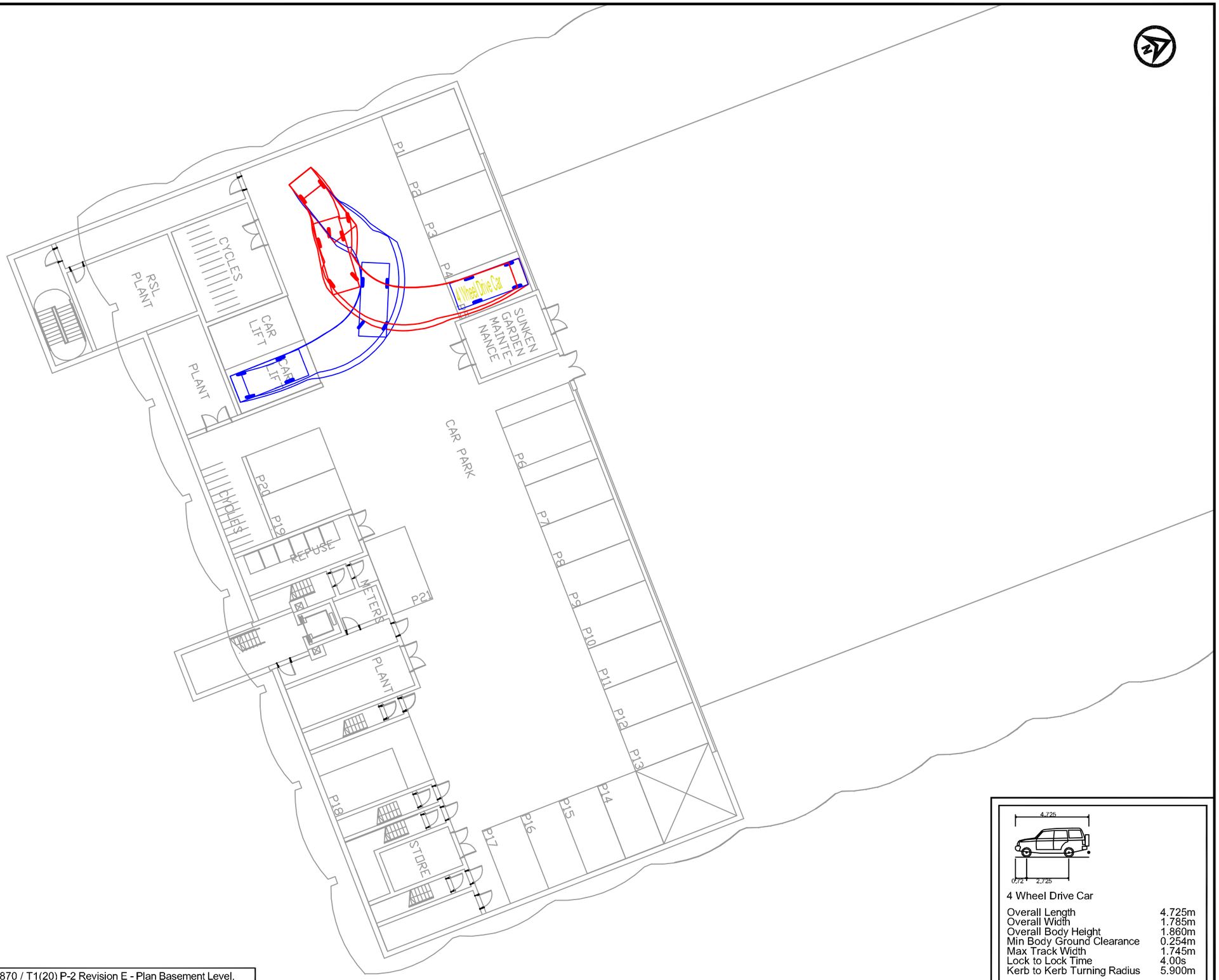
GONDAR GARDENS, WEST HAMPSTEAD

A COMPANY OF
ROYAL HASKONING

HASKONING UK LTD
TRANSPORT UK
Windsor House, 37 Windsor Street
Chertsey
Surrey KT16 8AT
+44 (0)1932 569566 Telephone
+44 (0)1932 569531 Fax
Info@chertsey.royalhaskoning.com E-mail
www.royalhaskoning.com Internet

Job No. 9V6975	DATE JAN 12	SCALE 1:250	
ACAD Ref.	CHECKED IRF	PASSED IRF	
DRAWN DH	DRG No. 9V6975/TR42		REV

DO NOT SCALE



4 Wheel Drive Car

Overall Length	4.725m
Overall Width	1.785m
Overall Body Height	1.860m
Min Body Ground Clearance	0.254m
Max Track Width	1.745m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.900m

This drawing has been produced using Rolfe Judd drawing: 4870 / T1(20) P-2 Revision E - Plan Basement Level.
Haskoning UK Ltd cannot guarantee the accuracy of data.

TITLE

SWEPT PATH ANALYSIS -
4 WHEEL DRIVE CAR

PROJECT

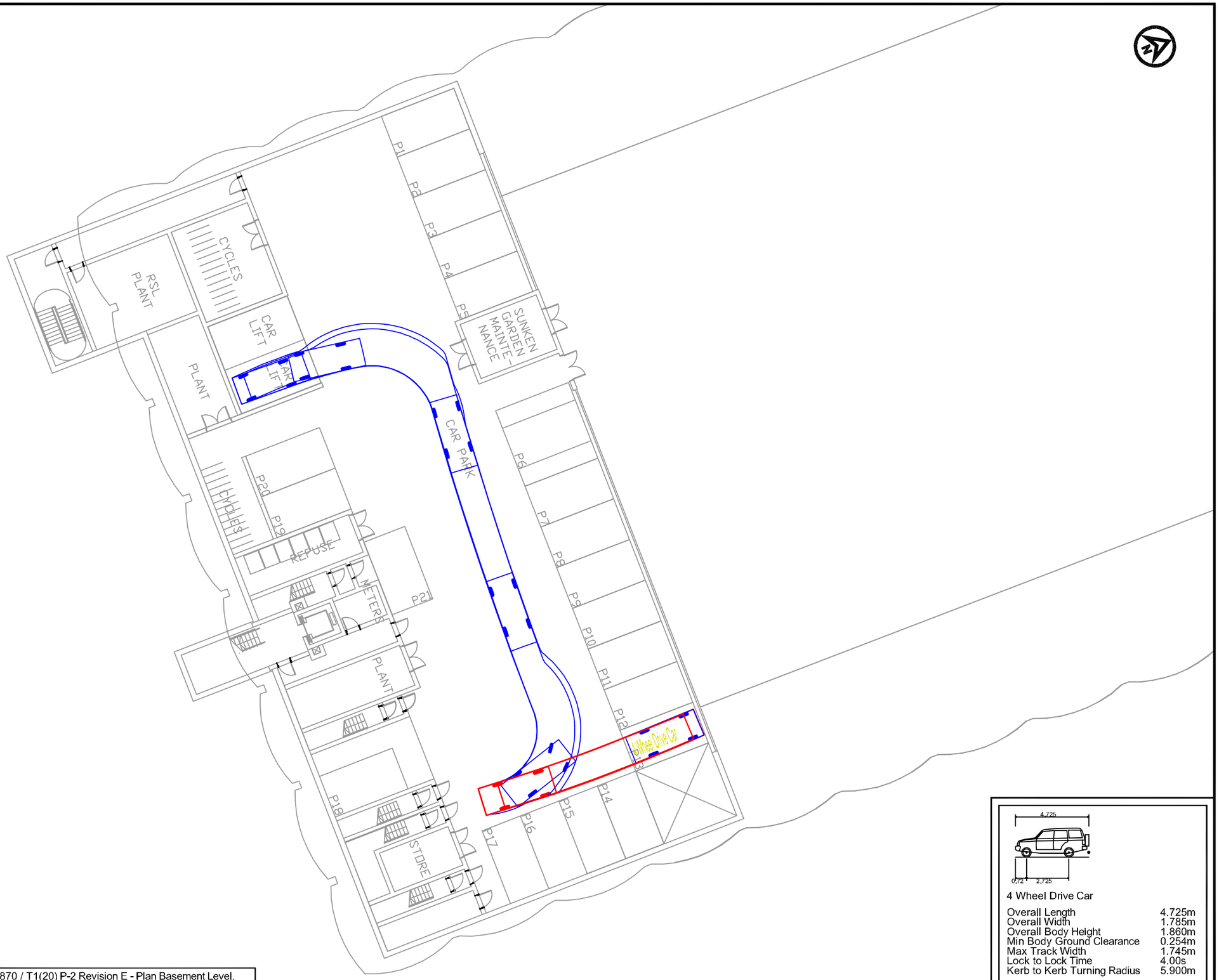
GONDAR GARDENS, WEST HAMPSTEAD

A COMPANY OF
ROYAL HASKONING

HASKONING UK LTD
TRANSPORT UK
Windsor House, 37 Windsor Street
Chertsey
Surrey KT16 8AT
+44 (0)1932 569568 Telephone
+44 (0)1932 569531 Fax
Info@chertsey.royalhaskoning.com E-mail
www.royalhaskoning.com Internet

Job No. 9V6975	DATE JAN 12	SCALE 1:250	
ACAD Ref.	CHECKED IRF	PASSED IRF	
DRAWN DH	DRG No. 9V6975/TR43		REV

DO NOT SCALE



This drawing has been produced using Rolfe Judd drawing: 4870 / T1(20) P-2 Revision E - Plan Basement Level.
Haskoning UK Ltd cannot guarantee the accuracy of data.

4 Wheel Drive Car

Overall Length	4.725m
Overall Width	1.785m
Overall Body Height	1.860m
Min Body Ground Clearance	0.254m
Max Track Width	1.745m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.900m

TITLE

SWEPT PATH ANALYSIS -
4 WHEEL DRIVE CAR

PROJECT

GONDAR GARDENS, WEST HAMPSTEAD

A COMPANY OF
ROYAL HASKONING

HASKONING UK LTD
TRANSPORT UK
Windsor House, 37 Windsor Street
Chertsey
Surrey KT16 8AT
+44 (0)1932 569568 Telephone
+44 (0)1932 569531 Fax
Info@chertsey.royalhaskoning.com E-mail
www.royalhaskoning.com Internet

Job No. 9V6975	DATE JAN 12	SCALE 1:250	
ACAD Ref.	CHECKED IRF	PASSED IRF	
DRAWN DH	DRG No. 9V6975/TR44		REV