

123 Grove Park

Transport Statement

Report

September 2010

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1 Introduction

Background

- 1.1 Steer Davies Gleave are commissioned by KSR Architects and Citrus Healthcare Limited to produce a transport statement for the development at 123 Grove Park in the London Borough of Southwark.
- 1.2 The site for 123 Grove Park was previously used as a youth offending centre, managed by the National Offending Management Services Estates (NOMS). The Southwark Council adopted the Supplementary Planning Document (SPD) in 2007 for the site at 123 Grove Park. The primary objectives of the 123 Grove Park SPD are to:
 - Facilitate the re-use of the site, maximising its potential, whilst protecting its conservation value, consistent with strategic policies 14 (sustainable buildings) and 15 (open space and biodiversity) of the Southwark Plan
 - Ensure that any development preserves or enhances the character and appearance of the Camberwell Grove conservation area, consistent with strategic policy 13 (design and heritage) of the Southwark Plan
 - Ensure that new development maximises the social, economic and environmental potential of the site.
- 1.3 The SPD forms the basis for the development proposals for the site.

Development Proposals

- 1.4 The proposals for the site include redevelopment of the existing building while maintaining the historic character of the existing structure. It is proposed that the existing building fronting Grove Park will be converted into seven residential units. Additionally five new residential units are proposed towards the north of the existing building within landscaped surrounding.
- 1.5 There are in total 14 car parking spaces provided and there are 40 cycle parking spaces proposed as part of the development for the 12 residential units. Of the 14 car parking spaces, two will for the use by disabled users and two to be potentially developed into car-club spaces. Figure 1.1 presents the proposed site layout for 123 Grove Park.

Scope and Structure of the Transport Statement

1.6 The scope of the Transport Statement was discussed with the London Borough of Southwark and was subsequently approved. This chapter forms the Introduction and provides a brief background of the proposals. Subsequent chapters are stated below:

- Chapter 2 details the existing transport conditions for the site and its surrounding road network;
- Chapter 3 sets the national, regional and local policy context for the development;
- Chapter 4 details the development proposals and provides the proposed parking, pedestrian, private vehicle and service & delivery vehicle access arrangements;
- Chapter 5 details the number of person and vehicle trips generated by the proposed development and the impact assessment; and
- Chapter 6 concludes the Transport Statement.

2 Existing Conditions

Existing Site Use and Location

- 2.1 The site is located on Grove Park, to the east of Camberwell Grove and approximately 720 mts from the Denmark Hill station in southeast London. The site comprises of a large late 19th century / early 20th century detached mansion housing a former nursing home and recently a probation centre. The existing building is not listed but the site lies in the Camberwell Grove Conservation Area.
- 2.2 The neighbouring property to the west of the site is a grade II listed building, 124/125 Grove Park. The rear of the site is bounded to the west by the extensive rear gardens of properties at 163 to 185 Grove Crescent. To the south of the site, a number of additional key unlisted buildings lie along Grove Park of a similar period and construction to 123 Grove Park. To the north of the site, and outside of the conservation area, an embankment drops significantly to the level of the railway line, where a former industrial estate has been redeveloped into a private residential estate called Groveland Close¹.
- 2.3 Figure 2.1 presents the location of the site in the local context and Figure 2.2 presents the location of the site in the context of south east London.

Existing Road Network

- 2.4 The site fronts on to Grove Park which is a single carriageway road with on-street parking on both sides. Grove Park connects to Camberwell Grove to the west. Camberwell Grove is a two-lane single carriageway road with parking on the western side of the carriageway.

¹ 123 Grove Park, Adopted Supplementary Planning Document



Existing Parking

- 2.5 Camberwell Grove has parking on the western side of the carriageway. There are approximately 36 car parking spaces on Camberwell Grove. These spaces are restricted to permit holders only from Monday to Friday, 08:30 AM to 06:30 PM. There is parking space for solo motorcycles on Camberwell Grove for approximately eight motorcycles to the north of junction with Grove Park. There is one disabled parking space on Camberwell Grove south of the junction with Stories Road.
- 2.6 Grove Park has parking on both sides of the carriageway. There are no parking restrictions on Grove Park. The parking capacity on both sides of Grove Park is approximately 99 car parking spaces. There is one disabled parking space east of the eastern access to 123 Grove Park.
- 2.7 Parking beat surveys were conducted from 1600 hours to 2000 hours on 4th August to assess the maximum parking demand by the residents. On subsequent discussions with London Borough of Southwark, it was concluded that overnight parking surveys will be required to assess the worst case parking demand and also to assess the parking generated by commuters accessing Denmark Hill station.
- 2.8 Subsequently parking beat surveys were conducted on 3rd November from 0800 hours to 1100 hours. This was conducted to ascertain the impact of commuters parking on Grove Park during the day. In addition parking beat surveys were conducted on 4th November from midnight to 0500 hours to determine the maximum demand generated by all the residences on Grove Park.
- 2.9 The extent of parking survey covered the Camberwell Grove, between Grovelands Close and Grove Hill Road and the entire stretch of Grove Park from Camberwell Close to Chadwick Road. A schematic diagram of the sections surveyed along with their annotations are presented in the Figure 2.3. Table 2.1 presents the parking surveys results. The complete survey information is presented in Appendix A.

FIGURE 2.3 SCHEMATIC DIAGRAM SHOWING THE EXTENT OF PARKING SURVEY

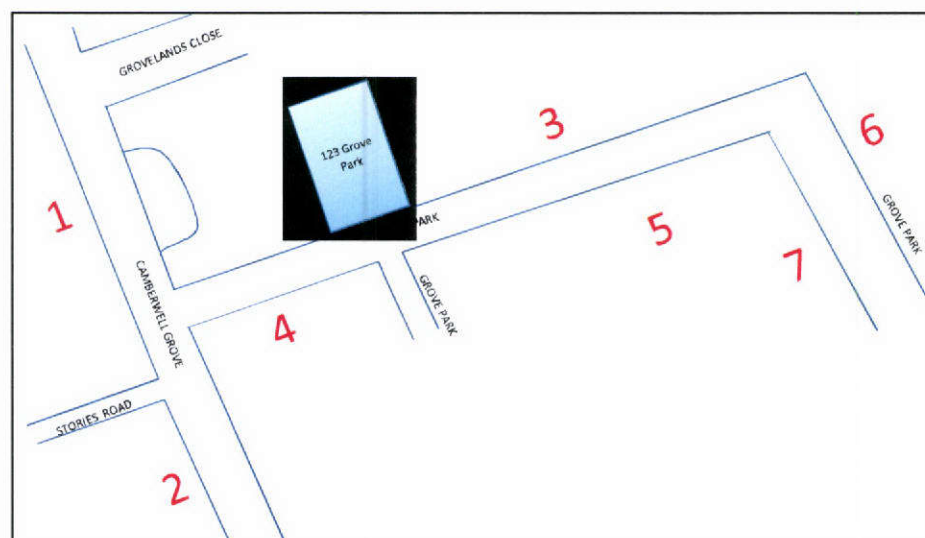


TABLE 2.1 CAR PARKING CAPACITY AND DEMAND AROUND GROVE PARK

Section	Approximate Max. Capacity	Max. Number of Vehicles Parked			Difference between Capacity and Max. Parking Demand		
		0800- 1100	1600- 2000	Midnight to 0500	0800- 1100	1600- 2000	Midnight to 0500
1. Camberwell Grove (from Groveland Close to Stories Road)	32	16	15	25 (+3 mc)	16	17	6
2. Camberwell Grove (from Stories Road to Grove Hill Road)	20	15	18	14 (+2 mc)	5	5	5
3. Grove Park (northern side of carriageway)	55	55	50	31	0	0	24
4. Grove Park (southern side of carriageway, from Camberwell Grove to Southbound Grove Park)	17	14	16	14 (+1 mc)	3	3	3
5. Grove Park (southern side of carriageway, from Southbound Grove Park till the end where Grove Park finally turns southbound to join with Chadwick Road)	27	20	26	21 (+2 mc)	7	7	6
6. Grove Park (eastern side of the carriageway)	19	19	16	12	0	3	7
7. Grove Park (western side of the carriageway)	19	18	15	14	1	4	5
Total	189	157	156	131 (+8mc)	16	17	58

mc = motorcycles

- 2.10 As can be seen in Table 2.1, the total maximum number of cars parked during the morning peak period was 157. In total these roads provide an approximate capacity of 189 vehicle parking spaces. Therefore in total, in all the sections there is spare capacity of 16 car parking spaces from 0800 to 1100 hours.
- 2.11 The total maximum number of cars parked from midnight to 0500 hours was 139 including eight motorcycles. It was observed that in total, in all the sections there is spare capacity of 58 car parking spaces from midnight to 0500 hours.

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- 2.12 The difference between the available spare capacity in the overnight car parking surveys and the morning peak period car parking survey suggests that there is some element of commuter parking taking place at Grove Park. It was also observed that some of the vehicles accessing Grove Park between 0800 to 1100 were deliveries, decorators and other maintenance vehicles, hence it is not realistic to assume that all vehicles arriving between 0800 to 1100 hours are vehicles coming from elsewhere to use this area for commuter parking.
- 2.13 Further research is needed to ascertain the exact usage of car parking spaces on Grove Park for commuter parking. London Borough of Southwark have confirmed that there will be further study into the use of car parking spaces on Grove Park.

Public Transport

London Buses

- 2.14 The nearest bus stops to the site are on Grove Lane approximately three minutes walk from the access to Grove Park. There are four bus services stopping here. These are 40, 45, 185 and 484. These connect the site to various locations in central London and south east London such as Kings Cross, Tottenham Court Road, Penge, Victoria and Lewisham. Table 2.2 presents the bus services in the vicinity of the site along with peak hour frequencies and their main connections.

TABLE 2.2 BUS ROUTES SERVING 123 GROVE PARK

Bus Route	Connections	Peak Hour Frequency	Off-Peak Frequency
40	Aldgate- Denmark Hill- Grove Lane- Dulwich	8	7
45	Kings Cross- Denmark Hill- Grove Lane- Streatham	8	7
185	Victoria- Denmark Hill- Grove Lane- Lewisham	6	6
484	Denmark Hill- Grove Lane- Lewisham	8	6
Overall		32	26

- 2.15 Overall these services provide a combined frequency of 32 buses per hour in the peak hour and 26 buses per hour in the off peak hour.

National Rail Service

- 2.16 Denmark Hill rail station is in close proximity to the site on Windsor Walk, approximately seven minutes walk from Grove Park. There are 15 arrivals and departures from Denmark Hill in the morning peak hour. Trains from Denmark Hill connect to Sevenoaks, Orpington, Gillingham and Dartford in the south east;

London Victoria, London Bridge and London Blackfriars central London interchange stations along with Luton, Bedford and St Albans in the north.

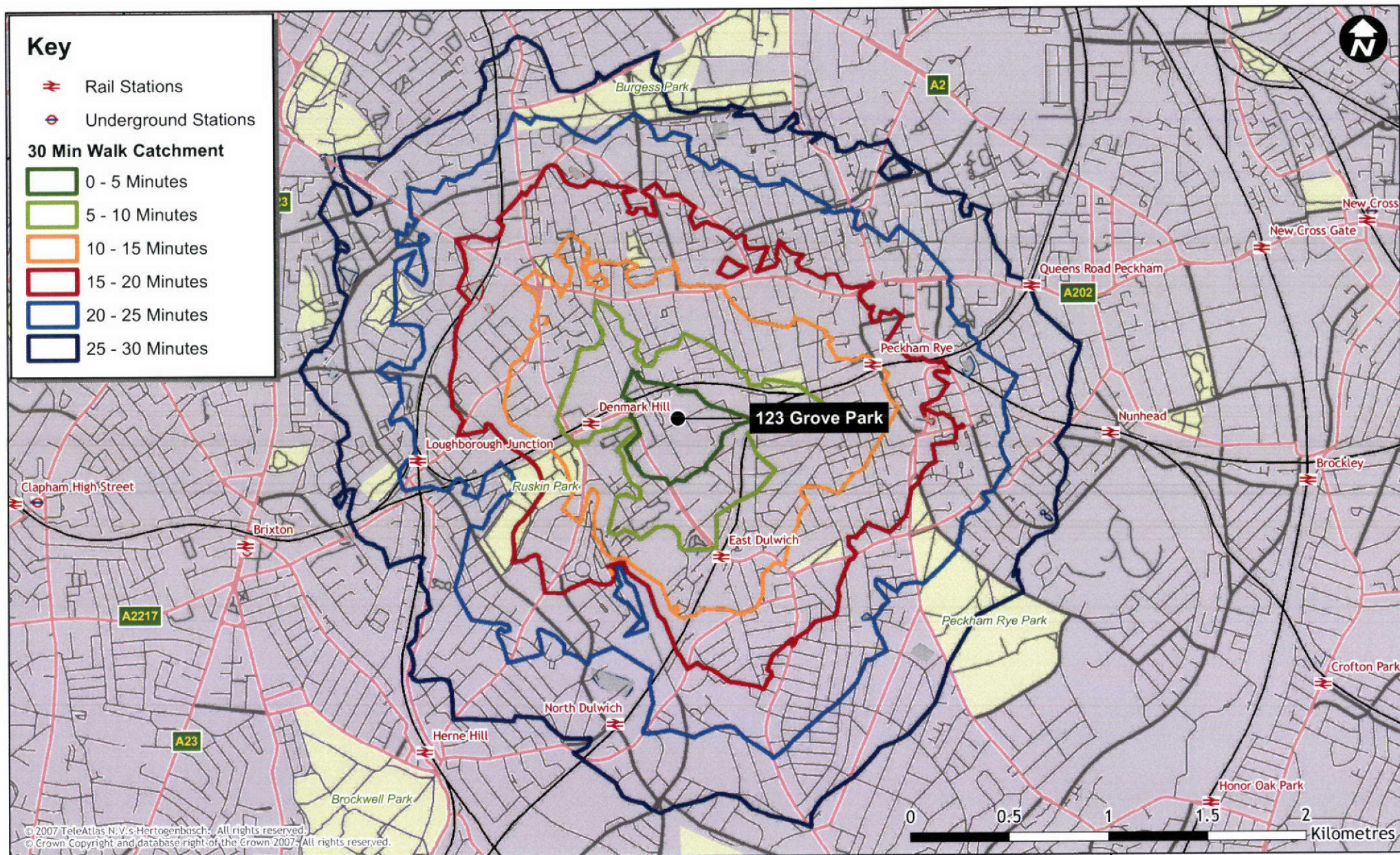
- 2.17 The station can be accessed via Grove Park, Camberwell Grove and Windsor Walk. Figure 2.1 presents the location of Denmark Hill station in context of the site.
- 2.18 In addition to Denmark Hill, East Dulwich station is approximately 12 minutes walk from the site to the south. East Dulwich has 11 arrivals and departures in the morning peak hour and in addition to destinations served by connections from Denmark Hill, East Dulwich connects to Sutton, West Croydon and Beckenham Junction in the south.
- 2.19 In total, both these train stations provide a combined frequency of 26 arrivals in the morning peak hour. Figure 2.1 also presents the location of East Dulwich station in the context of the site.

Public Transport Accessibility

- 2.20 There are no London Underground stations within walking distance from the Grove Park site. The nearest underground station is Brixton which is approximately 37 minutes bus ride away. The combined service provision of buses and trains from Denmark Hill and East Dulwich have been used to calculate the Public Transport Accessibility Level (PTAL) for Grove Park.
- 2.21 PTALs are a measure of the accessibility of a point to the public transport network, taking into account walk access time and service availability. The method is essentially a way of measuring the density of the public transport network for a site.
- 2.22 The PTAL is categorized in 6 levels, 1 to 6 where 6 represents a high level of accessibility and 1 a low level of accessibility. Levels 1 and 6 have been further sub-divided into 2 sub-levels to provide greater clarity.
- 2.23 The details of the PTAL calculations are presented in Appendix B. The calculations state that the PTAL for the site is 3 which is considered moderate. PTAL was also established from the Transport for London's Planning Information Database (<http://webpid.elgin.gov.uk/>). The PTAL rating 3 was also reflected in TfL's results. These results are also presented in Appendix B.

Pedestrian and Cycle Facilities

- 2.24 There are good quality footways on both sides of Grove Park. Whilst they are not wide enough at certain points due to street furniture and trees, they are sufficient for the local pedestrian trips generated by the surrounding land uses. There are no islands or pedestrian crossing points on Grove Park but the traffic being primarily local does not warrant any dedicated crossing points.
- 2.25 Figure 2.4 presents the walk catchments for the site at Grove Park. As seen in Figure 2.4, the mainline stations of Denmark Hill and East Dulwich are within 10 and 15 minute walk distance from the site, respectively.
- 2.26 There are no cycle parking spaces in the existing site. Camberwell Grove forms part of the existing cycle route 23. Figure 2.5 presents the London Borough of Southwark, London Cycle Network. Figure 2.6 presents the 10, 20, 30 and 40 minute cycle catchment for the 123 Grove Park site. As can be seen, a number of destinations and junction stations are within a reasonable cycling time from the site.



123 Grove Park Transport Statement

Figure 2.4: Walk Catchment for 123 Grove Park

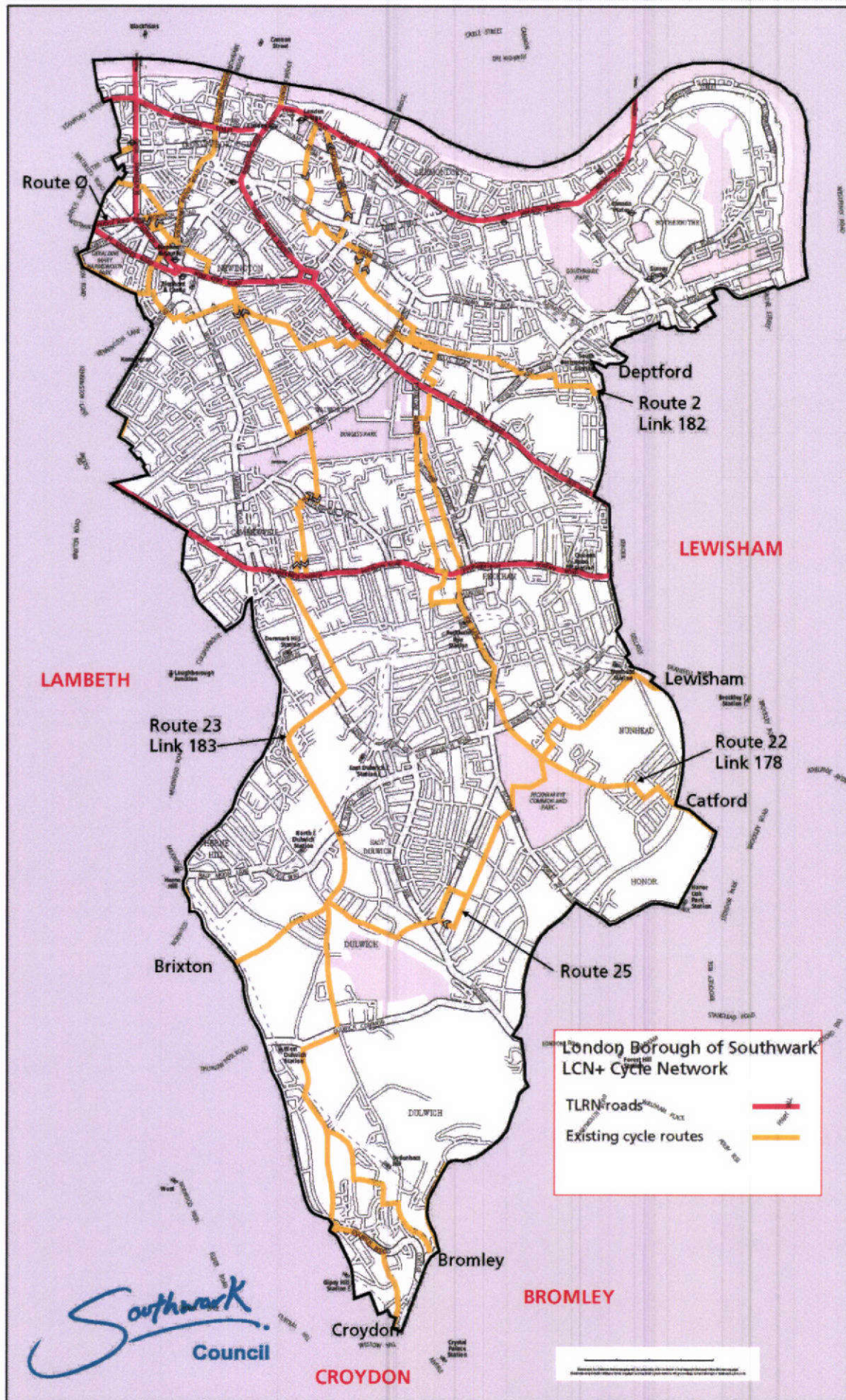
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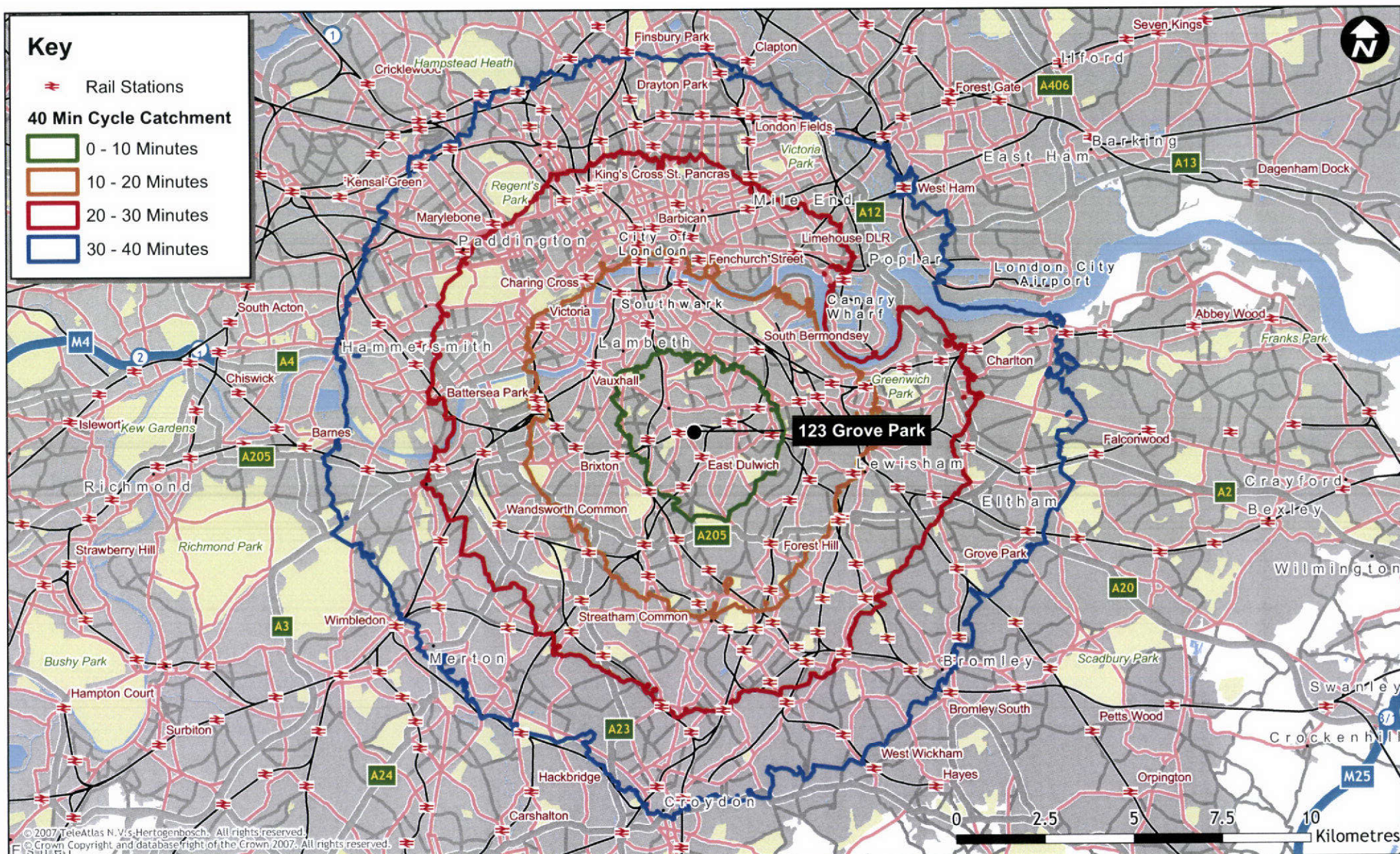
Figure 2.5: London Borough of Southwark Cycle Route Network



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123 Grove Park Transport Statement

Figure 2.6: Cycle Catchment for 123 Grove Park

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3 Policy Context

Introduction

- 3.1 The planning application is for the development of 12 residential units at 123 Grove Park. The relevant national, regional and local transport policies for such a development are reviewed and presented below.

National Policy

Transport White Paper 'The Future of Transport'

- 3.2 Transport White Paper 'The Future of Transport' The Future of Transport White Paper was published in July 2004. This paper sets out a long term strategy for a modern, efficient and sustainable transport system backed up by high levels of investment over the next 15 years. It states that:

"We need a transport network that can meet the challenges of a growing economy and the increasing demand for travel, but can also achieve our environmental objectives. This means coherent transport networks with (inter-alia):

- The road network providing a more reliable and freer-flowing service for both personal travel and freight, with people able to make informed choices about how and when they travel;*
- The rail network providing a fast, reliable and efficient service, particularly for interurban journeys and commuting into large urban areas;*
- Bus services that are reliable, flexible, convenient and tailored to local needs; and*
- Making walking and cycling a real alternative for local trips"*

Planning Policy Guidance 13: Transport (PPG13)

- 3.3 Planning Policy Guidance Note 13: Transport (PPG13 - March 2001) aims to deliver the Government's ten-year plan for transport.

- 3.4 PPG13 encourages the integration of planning and transport at all levels, from national to local, and is underpinned by three stated objectives:

- to promote more sustainable transport choices for both people and for moving freight;*
- to promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling; and*
- to reduce the need to travel, especially by car.*

- 3.5 PPG13 recognises that the availability of car parking has a major influence on the means of transport people choose for their journeys. PPG13 states that reducing the amount of parking in new developments is essential, as part of a package of planning and transport measures to promote sustainable travel choices.

Regional Policy

The London Plan (Spatial Development Strategy) - Consultation Draft Replacement Plan (October 2009)

- 3.6 The Mayor published 'A new plan for London - Proposals for the Mayor's London Plan in April 2009 which was open to comments until June 2009. The full consultation draft of The London Plan was published in October 2009 for public consultation.

- 3.7 The emerging plan addresses the key trends and challenges that London will have to address up to 2031. One of the fundamental objectives of the new plan in terms of transport is to ensure that London is:

"A city where it is easy, safe and convenient for everyone to access jobs, opportunities and facilities with an efficient and effective transport system, which actively encourages walking and cycling and makes better use of the Thames."

The London Plan (Spatial Development Strategy) - Consolidated with Alterations since 2004 (2008)

- 3.8 The London Plan - Consolidated with Alternations since 2004 (Feb 2008) was adopted in 2008 and includes some changes to transport policies from the 2004 publication. The Plan defines parking standards for residential and commercial developments, including provision for disabled parking and cycle parking. Some of the policies within the London Plan (2008) which are relevant to the proposed development are as follows:

Policy 2A.1 Sustainability Criteria

- 3.9 The Mayor will, and boroughs and other stakeholders should promote, support and encourage the development of London, using the following criteria (inter alia) in implementing the London Plan and when considering UDP's and planning proposals:

- I** *Optimising the use of previously developed land and vacant or underused buildings;*
- I** *Ensuring that development occurs in locations that are accessible by public transport, walking and cycling;*
- I** *Ensuring that development occurs in locations accessible to town centres, employment, housing, shops and services; and*
- I** *Ensuring that development takes account of capacity of infrastructure, including public transport.*

Policy 3C.22 Parking Strategy

- 3.10 The Mayor will seek to ensure that on-site car parking at new developments is the minimum necessary and that there is no over-provision that could undermine the use of more sustainable non-car modes. The only exception to this approach will be to ensure that developments are accessible for disabled people.

The Mayor's Transport Strategy

- 3.11 The current adopted transport strategy was published in 2001 and sets out a policy framework for transport across London. Its integrated policies and proposals cover all modes of transport across the capital for a period of 10 years, or more for some major projects.
- 3.12 The 2001 Mayor's Transport Strategy is the current statutory policy guidance. However, the emerging Mayor's Transport Strategy (addressed later in this chapter) which is at public consultation will replace the 2001 document over a phased period of time.
- 3.13 The strategy provides the context for more detailed plans by agencies including Transport for London, London Boroughs and the Strategic Rail Authority. The plan is designed to work in conjunction with the Mayor's London Plan (Spatial Development Strategy) so that London's transport and development can be planned in harmony.
- 3.14 The Mayor published the 'Mayor's Transport Strategy: Statement of Intent' in May 2009 which was open to comments until July 2009. The full draft Mayor's Transport Strategy was published early October 2009 for public consultation.
- 3.15 The proposed changes identify that, without committed additional investment in transport infrastructure and services beyond 2017, the future economic, social and environment success of London could be threatened. The emerging strategy therefore aims at: changing land uses assumptions and promotes strategic Outer London Development Centres; increasing capacity to cater to the increased demand for transport of 2 million trips per day by 2031; and managing demand for transport using travel plans, congestion charging etc.

London Borough of Southwark

Southwark Plan 2007

- 3.16 The Southwark Plan (2007) sets out a vision for Southwark and explains how this vision will be achieved. The vision is (inter-alia):
 - *For Southwark to be a borough with high environmental quality, that is attractive, sustainable and performs well on environmental measures; and*
 - *Southwark as a place with a diverse housing mix that exemplifies high quality design and accessibility for existing and incoming residents*
- 3.17 The policies set within the Southwark Plan provide the basis for the overall strategy, targets, implementation, and the SPDs. Strategic Policy 3 details the proposals related to 'Quality and Accessibility' and states that *"All developments should be accessible, improving people's life chances by achieving the highest possible quality developments with all of the infrastructure required to meet people's needs within Southwark."*
- 3.18 SP 18 details the policy related to Sustainable Transport and states that *"All developments should promote more sustainable transport choices for all members of the community, in order to reduce congestion, pollution and increase ease of movement"*.

- 3.19 Policy 5.2 of the Southwark Plan states that planning permission will be granted for development unless (amongst others) *adequate provision has not been made for servicing, circulation and access to, from and through the site*. Policy 5.3 further states that planning permission will be granted unless:
- *There is adequate provision for pedestrians and cyclists within the development, and where practicable within the surrounding area; and/or*
 - *There is good design, location and access arrangements, including restrictions on parking, and the promotion of walking and cycling, with particular emphasis on disabled people and the mobility impaired; and/or*
 - *The development creates or contributes towards more direct, safe and secure walking and cycling routes, integrating with surrounding networks where possible, furthering the delivery of the London Cycle Network Plus and strategic walking routes (including the Jubilee Walkway and the Thames Path); and*
 - *There is provision of convenient, secure and weatherproof cycle parking to the minimum cycle parking standards...*

Core Strategy

- 3.20 The Southwark Core Strategy will set out the developments in Southwark up to 2026. On 26 March 2010, the draft core strategy was submitted to the Secretary of State for Communities and Local Government. The core strategy will be adopted and published in January 2011.

4 Proposed Development

Description of Proposals

- 4.1 The proposed development comprises the renovation of the existing building fronting Grove Park to provide seven residential units. In addition, five separate residential houses are proposed towards the north of the existing buildings. The schedule for development is presented in Table 4.1.

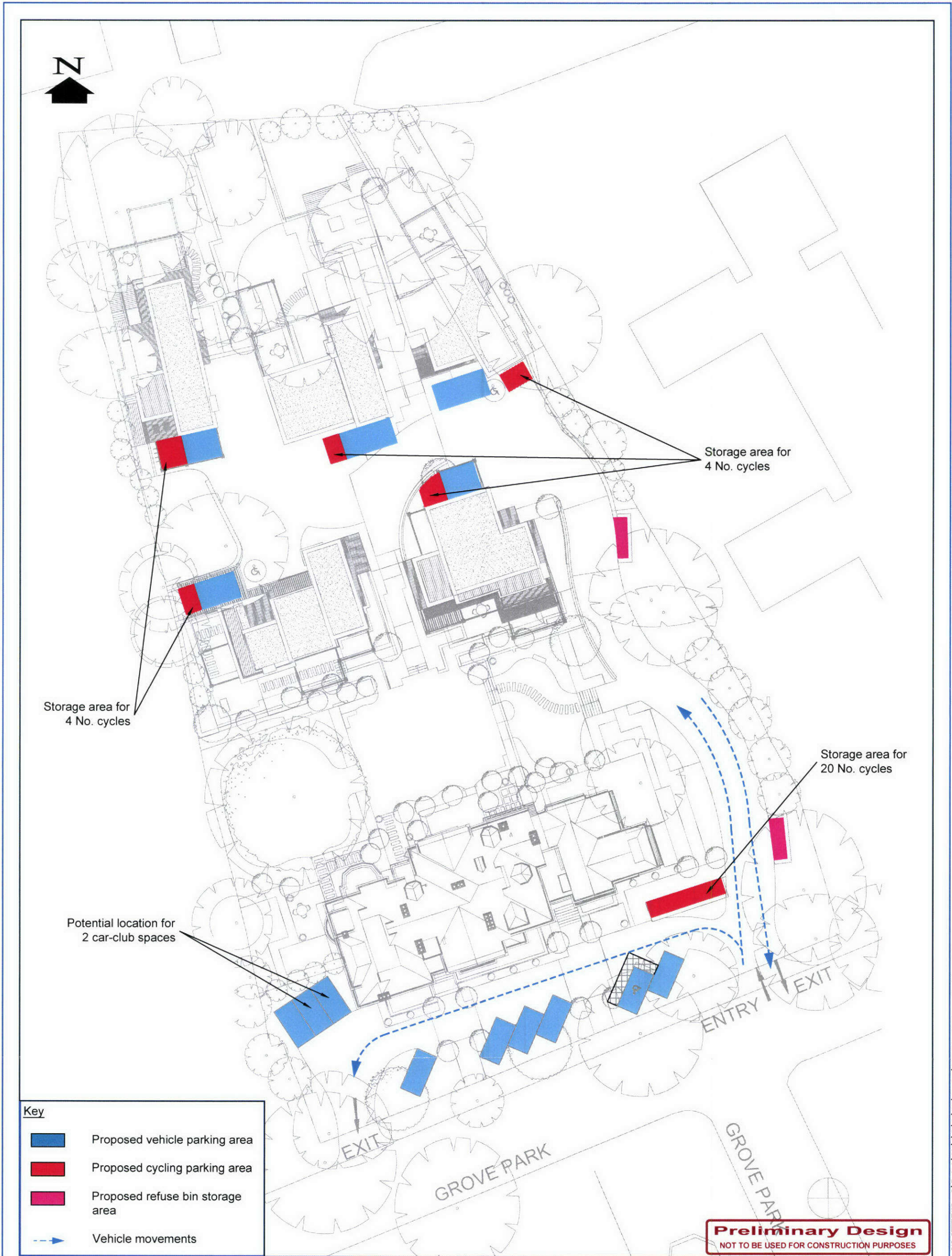
TABLE 4.1 DEVELOPMENT SCHEDULE

Unit Size	Number of Units
One bedroom unit	1
Two bedroom unit	1
Three bedroom units	3
Four bedroom houses	7
Total	12

- 4.2 Two of these residential units are designed for the use by disabled users. The seven units fronting Grove Park have their associated car parking across the access road within the site. The five residential units towards the north of these sites have associated car parking spaces next to the entrance of the units.

Access Arrangements

- 4.3 The seven residential units fronting the site are proposed to be accessed through the eastern access. The five residential units proposed to the north of the existing building will be accessed through a two-way access road to the east of the site. Pedestrians and cyclists can access the site from either of these two accesses. The eastern access will also be used by the service and delivery vehicles. Figure 4.1 presents the access for pedestrians, cyclists and vehicles to 123 Grove Park.



Key

- Proposed vehicle parking area
- Proposed cycling parking area
- Proposed refuse bin storage area
- Vehicle movements

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Client:

KSR Architects

Title

Grove Park Residential Development

Figure 4.1

Access Arrangement, Vehicle and Cycle Parking at 123 Grove Park

Rev.	Date	Comments	Ckd	App
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Vehicle Parking

- 4.4 It is proposed that there will be one car parking space per household within the development. In addition there are two dedicated car club spaces. Census data was analysed to ascertain the car ownership of the households within the South Camberwell ward. According to the Census 2001, there are a total of 4,829 households within the ward. 48% of the total houses within this ward do not have access to a car and 52% have access to one or more car. The car ownership of the ward was found to be 0.65. Applying the Census car ownership to the proposed development of 12 residential units, there is a requirement for eight car parking spaces.
- 4.5 It is proposed that 14 car parking spaces will be provided for the proposed development. There are nine car parking spaces fronting the site interspersed with landscape as show in Figure 4.1. Two of these spaces will be dedicated for car club spaces. One of the nine spaces are provided for disabled users.
- 4.6 The five residential units proposed towards the north of the site have car parking spaces adjacent to and near the entrance of the individual units. The location of the vehicle parking spaces for all the units and different kind of parking spaces is presented in Figure 4.1.
- 4.7 Swept path analysis has been conducted on each of the parking spaces to ascertain that these are easily accessible with minimal manoeuvring. These are presented in Figures 4.2 and 4.3.

Cycle Parking

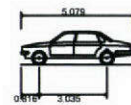
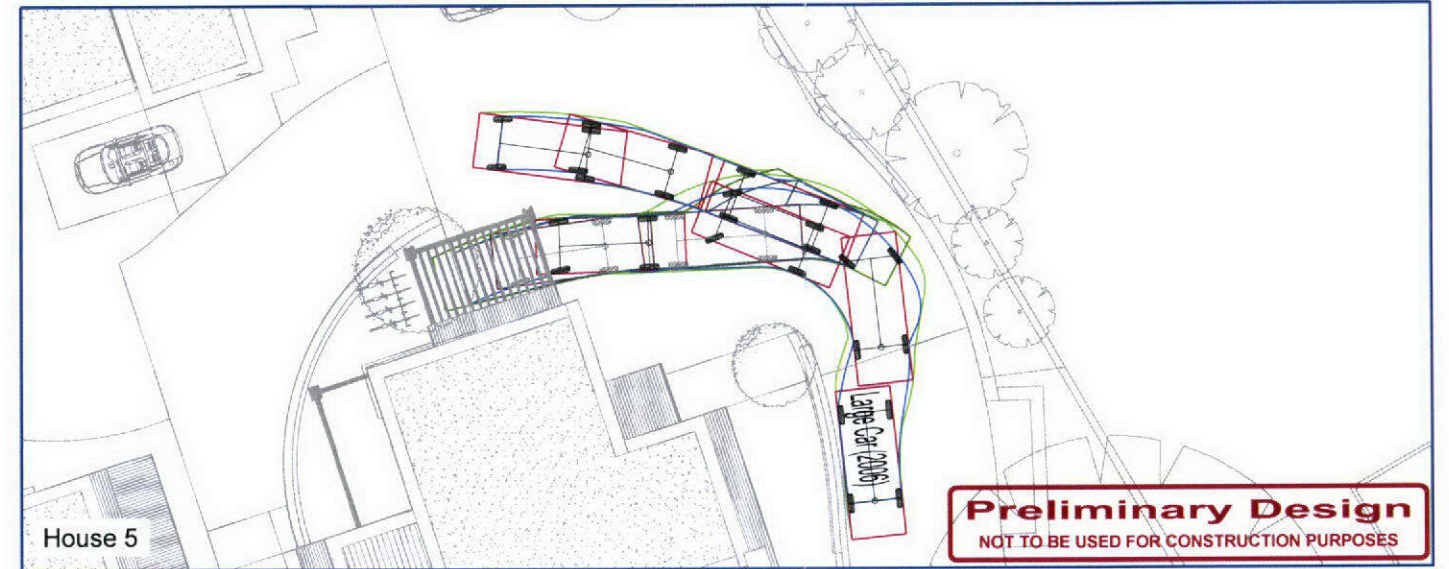
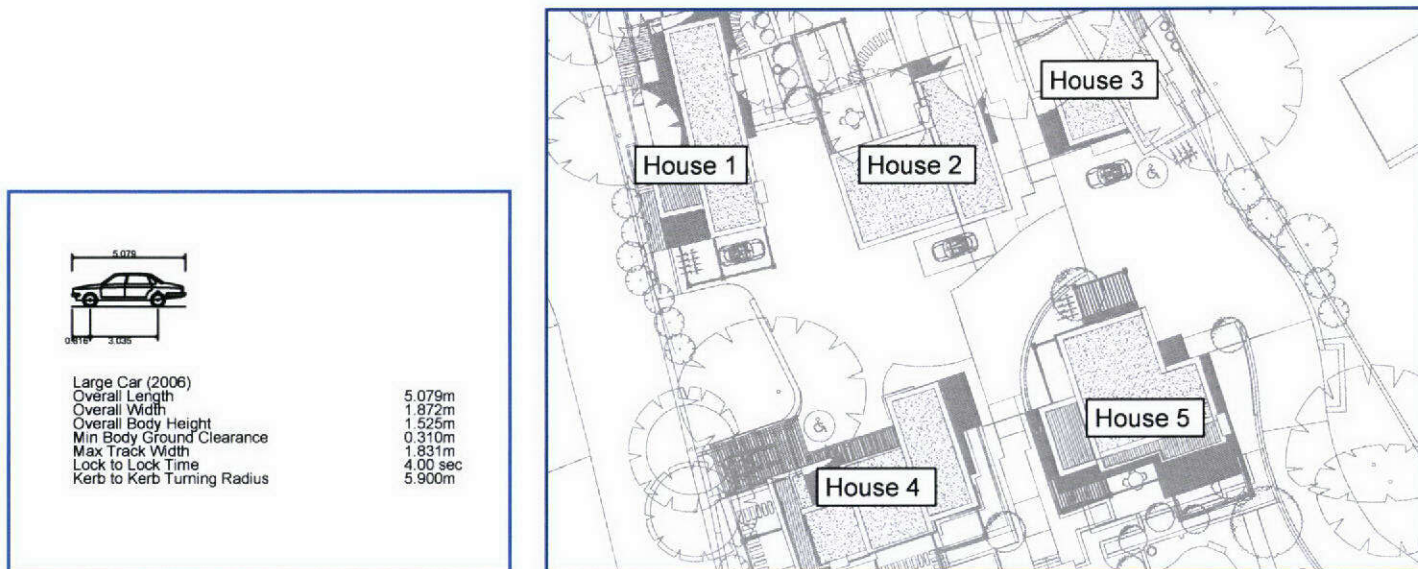
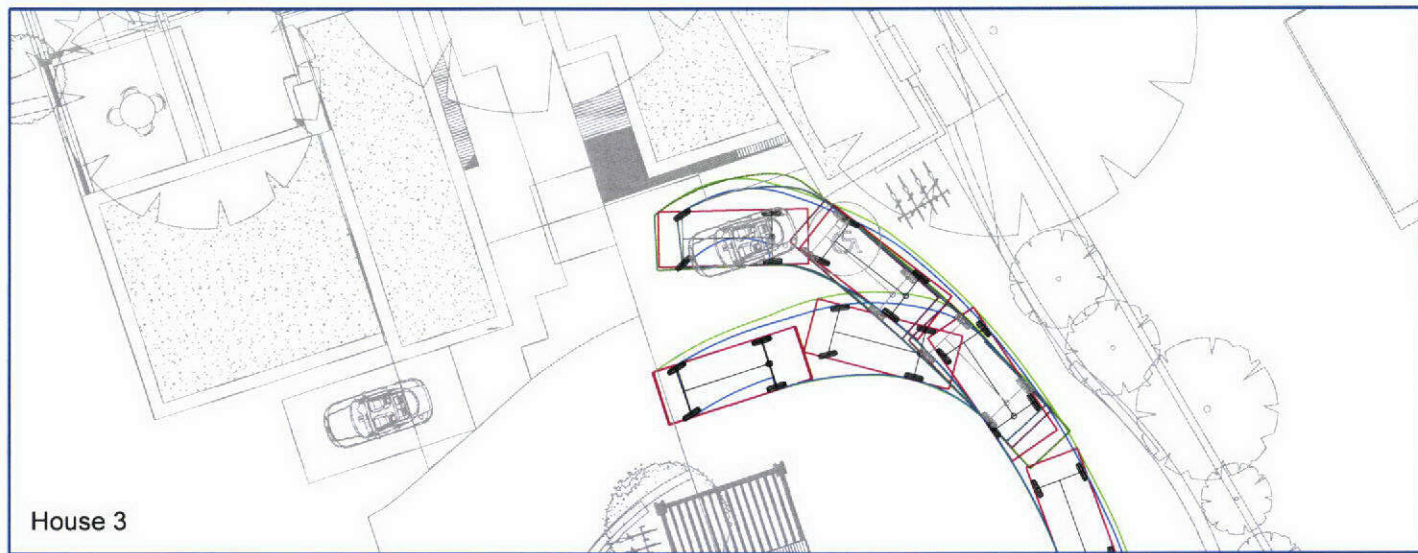
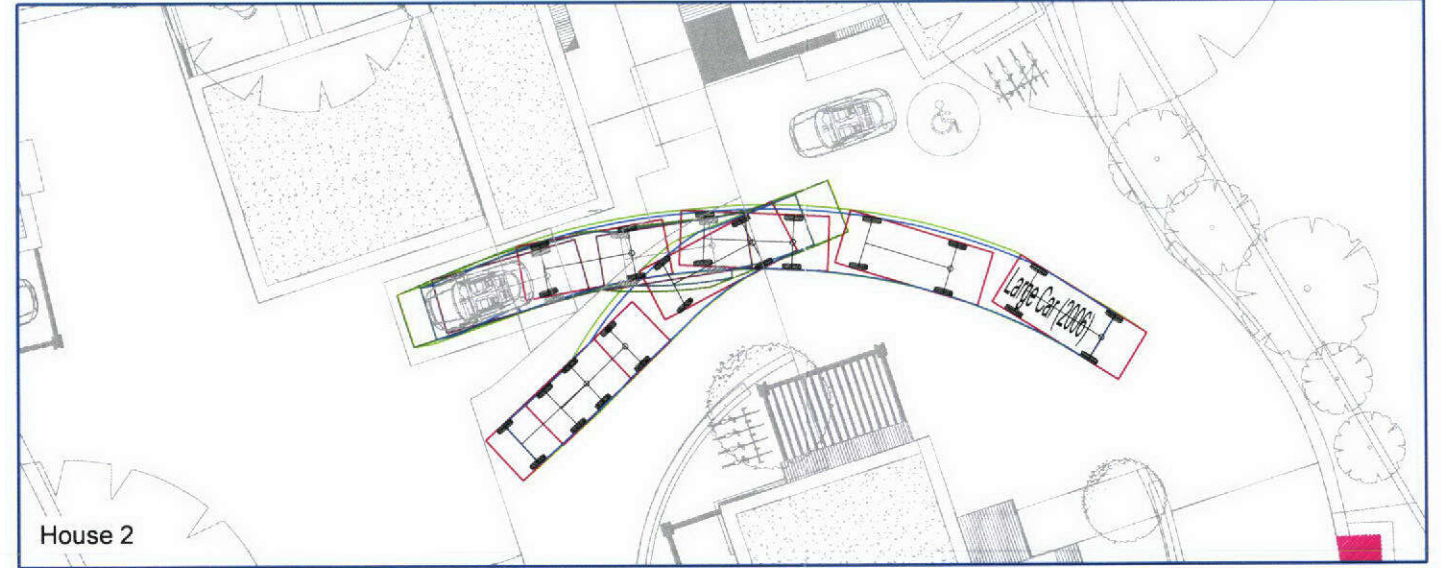
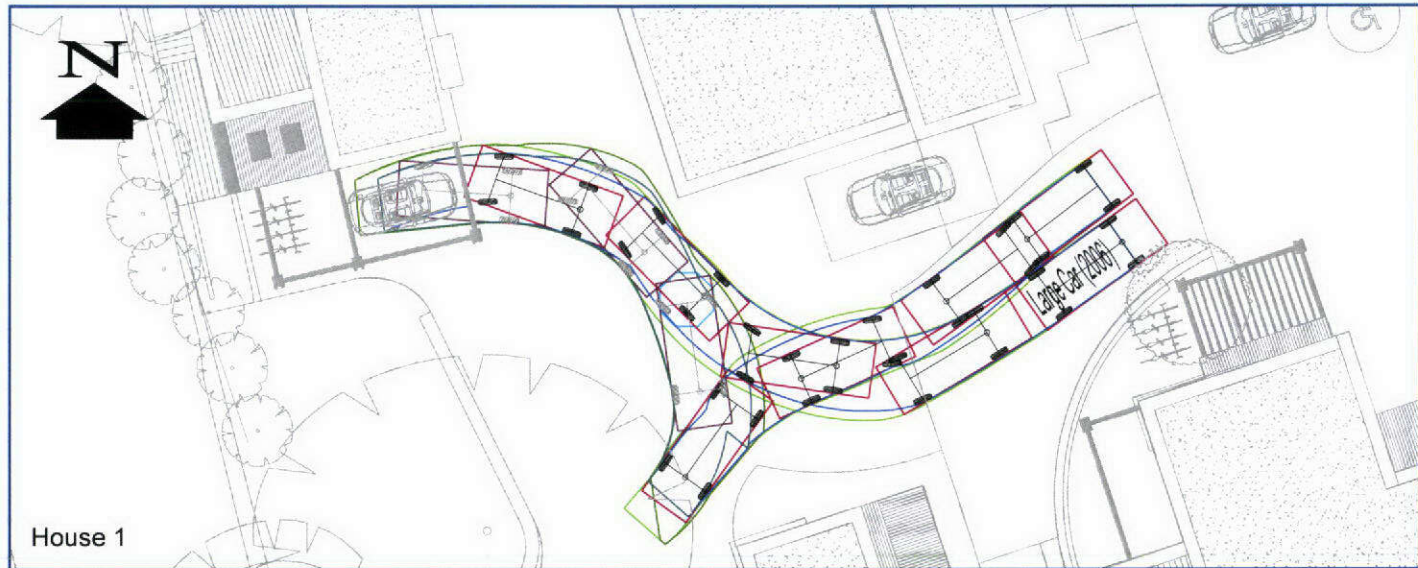
- 4.8 There is a proposed provision of 40 cycle parking spaces for the development, approximately one space per bedroom. 20 of these spaces are located near the eastern access of the site in a bicycle storage area. 20 of these spaces are located within the remaining five residential houses at the rate of four per house. The location of cycle parking spaces is presented in Figure 4.1.

Service and Delivery Vehicle Access

- 4.9 The main access and egress route to the east of the site will also act as the main access for service and delivery vehicles. There are two refuse collection points as shown in the Figure 4.1. the access road is proposed to be 5.5 mt wide at its narrowest point. This will enable two way movement of vehicles in and out of the site. There is a vehicle lay-by near the first refuse collection point as shown in Figure 4.1. This is to enable a car to pass by a parked refuse vehicle collecting the refuse from the collection point.
- 4.10 Vehicle swept path analysis was conducted to ensure that a 10 mt refuse vehicle can access the site, turn back around and access the refuse bins at the two locations shown in Figure 4.1. The swept path analysis for the refuse vehicle accessing the site is presented in Figure 4.4.

Visibility Splays

- 4.11 Visibility is also checked at the junction between the eastern access road and Grove Park. The proposed layout is used to check the horizontal visibility to ensure that the views are not obscured by vertical obstructions. The minimum forward visibility required is based on the speed at the location being considered.
- 4.12 The visibility splay for the junction between the exit roads from the development and Grove Park is presented in Figure 4.5.



Large Car (2006)
Overall Length
Overall Width
Overall Body Height
Min Body Ground Clearance
Max Track Width
Lock to Lock Time
Kerb to Kerb Turning Radius

5.079m
1.872m
1.525m
0.310m
1.831m
4.00 sec
5.900m

Preliminary Design
NOT TO BE USED FOR CONSTRUCTION PURPOSES

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28-32 Upper Ground, London SE1 9PD
Tel: 020 7910 5000 Fax: 020 7910 5001

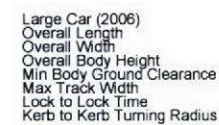
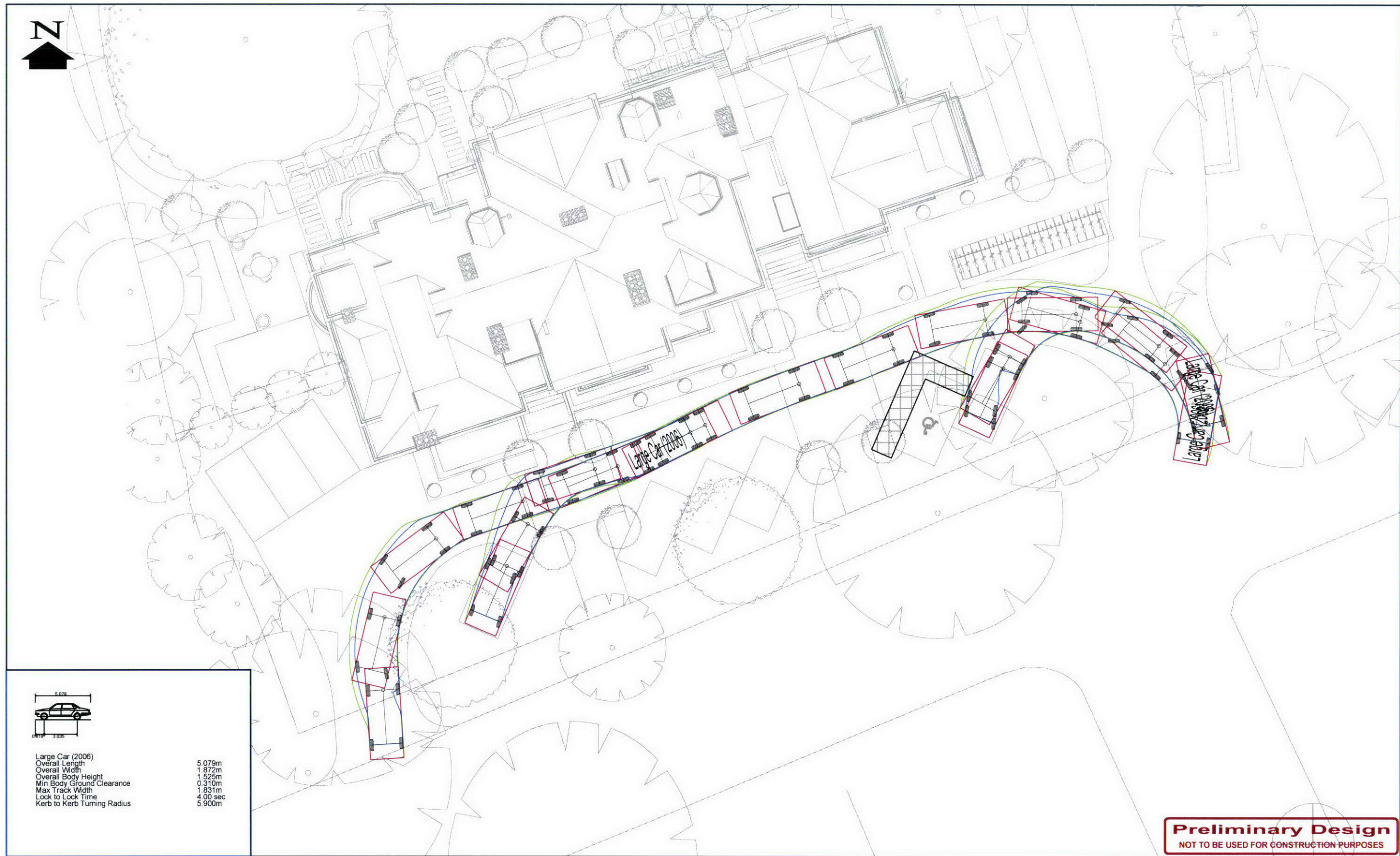
Client: **KSR Architects**

Title:

Grove Park Residential Development
Figure 4.2
Swept Path Analysis for Access to Car Parking Spaces

Rev	Date	Comments	Ckd	App
-	17/11/10	ORIGINAL ISSUE	MSB	MAD

Drawn YPL	Scale 1:500	@ A3	Rev. -
Drawing No. 223071_101	Sheet No. 03 of 05		



5.079m
1.872m
1.525m
0.310m
1.831m
4.00 sec
5.900m

Preliminary Design
NOT TO BE USED FOR CONSTRUCTION PURPOSES



Title

Figure 4.3
Swept Path Analysis for Large Vehicle

Rev	Date	Comments	Ckd	App	Drawn YPL	Scale. 1:200	@ A3	Rev. -
					Drawing No. 223071_201		Sheet No. 04 of 05	
-	17/11/10	ORIGINAL ISSUE	MSB	MAD				

PLOT DATE: 18/11/2010 08:11
 CAD REFERENCE: P:\Projects\223\0171\01\CAD\Drawings\22307101_201.dwg - Sheet 4 - Fig.3



Drawn YPL	Scale. 1:500	@ A3	Rev. -
Drawing No. 223071_201		Sheet No. 04 of 05	



Key

2.4m x 43m Visibility splay, based on Stopping Sight Distances with 30mph speed limit from Manual for Streets

Preliminary Design
NOT TO BE USED FOR CONSTRUCTION PURPOSES

steer daves gleave
28-32 Upper Ground, London, SE1 9PD
Tel: 020 7910 5000 Fax: 020 7910 5001

Client: **KSR Architects**

Title: **Grove Park Residential Development**

Figure 4.5
Visibility Splay

Rev	Date	Comments	Ckd	App	Drawn	Scale		Rev.
					YPL	NTS	@ A3	-
-	17/11/10	ORIGINAL ISSUE	MSB	MAD	Drawing No. 223071_201		Sheet No. 05 of 05	

5 Trip Generation & Impact Assessment

Introduction

- 5.1 Trip generation methodology was discussed with the London Borough of Southwark. The trip generation analysis is conducted to understand the impact of the proposed development on all the modes of transport.

Methodology

- 5.2 TRAVL (V8.12a) was used to find the trip rates for similar sites. The development is proposed to comprise of 12 residential units and has PTAL of 2. Sites with similar PTAL values and location in inner London Boroughs were chosen from TRAVL for trip generation analysis. Table 5.1 presents the sites chosen for analysis. There were no sites in TRAVL with PTAL 2 and smaller number of residential units, therefore the sites presented in TABLE 5.1 are considered most appropriate. Appendix C presents the details of the TRAVL sites used along with the half hourly trip rates for all the chosen sites. The peak hour and total daily trip rates for the above sites are presented in Table 5.2.

TABLE 5.1 TRAVL SITES CHOSEN FOR TRIP GENERATION

TRAVL Site	Postcode	No. of Residential Units	PTAL
Lee Conservancy Road	E9 5HW	119	2/3
Porter Square	N19 4DY	40	
Rootes Estate	W10	297	

TABLE 5.2 TRIP RATES FOR ALL MODES

Time Period	Arrival Trip Rate	Departure Trip Rate	Total
08:00 - 09:00	0.4	1.3	1.7
17:00 - 18:00	0.7	0.5	1.2
Total Daily	7.1	7.1	14.2

- 5.3 The mode splits are also found from TRAVL for these sites. These are compared to the mode splits obtained from Census 2001 for the South Camberwell ward which contains the site. The mode splits obtained from TRAVL and Census are presented in Table 5.3.

- 5.4 As can be seen in Table 5.3, the mode split obtained from Census for car driver and public transport mode split is similar to the car driver and public transport mode split obtained from TRAVL. TRAVL however does not give a break up between the public transport modes. Hence mode split obtained from Census has been used to obtain the trips generated by mode to obtain a worst case assessment.

TABLE 5.3 MODE SPLIT- CENSUS AND TRAVL SITES

Mode	Census	TRAVL
Underground	11%	59%
Train	26%	
Bus	22%	
Taxi	0%	0%
Driving a car or van	23%	26%
Passenger in a car or van	1%	12%
Motorcycle, scooter or moped	2%	1%
Bicycle	4%	2%
On foot	10%	0%
Total	100%	100%

- 5.5 The mode splits from Table 5.3 are applied to the total trip generated by the development. Table 5.4 presents the trips generated by mode for the morning evening peak hours and the total daily trips.

TABLE 5.4 TRIPS GENERATED BY THE PROPOSED DEVELOPMENT

Mode/ Time	AM Peak Hour			PM Peak Hour			Total Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
Underground	1	2	3	1	1	2	9	9	18
Train	1	4	5	2	1	3	23	23	46
Bus, minibus or coach	1	4	5	2	1	3	19	19	38
Taxi or minicab	0	0	0	0	0	0	1	0	1
Driving a car or van	1	4	5	2	1	3	20	20	40
Passenger in a car or van	0	0	0	0	0	0	1	1	2
Motorcycle, scooter or moped	0	0	0	0	0	0	2	2	4
Bicycle	0	1	1	1	0	1	4	4	8
On foot	1	2	3	1	1	2	8	8	16
Total	5	17	22	9	5	14	87	86	173

Impact on Road Network

- 5.6 As can be seen from Table 5.4, the total development will generate five additional vehicle trips in the morning peak hour, three additional vehicle trips in the evening peak hour and 40 additional vehicle trips during the day.
- 5.7 The increase in vehicles during the peak hours and during the day due to the development is negligible.

Impact on Public Transport

- 5.8 There will be an additional three passengers on the Underground and five additional passengers in the trains and buses due to the development in the morning peak hour.
- 5.9 There will be additional two passengers in the underground and three additional passengers in the trains and buses due to the development in the evening peak hour.
- 5.10 Overall during a typical day, there will be an increase of 18 passenger in the Underground, 46 passengers on the train and 38 passengers on the buses. The Underground passengers shown as part of the trip generation analysis is assumed to be primarily bus passengers and interchanging to Underground. The increase in the public transport passengers due the proposed development is considered negligible.

Impact on Pedestrian and Cycle Facilities

- 5.11 The proposed development will lead to an additional 16 pedestrians in the morning peak hour and 10 pedestrians in the evening peak hour. Overall during the day there will be an increase of 118 pedestrians on the existing facilities due to the proposed development. This is considered negligible.
- 5.12 The proposed development will lead to an additional one cyclist in the morning peak hour and one cyclist in the evening peak hour. Overall during the day there will be an increase of eight cyclists on the existing facilities due to the proposed development. This is considered negligible.

6 Conclusion

- 6.1 The 123 Grove Park site is on Grove Park within the Camberwell Grove Conservation Area. The development comprises of 12 residential units, seven of these units will be within the existing building on the site. Five new residential units are proposed towards the north of the existing building.
- 6.2 In addition to the residential units, the proposed development will comprise of 14 car parking spaces and 40 cycle parking spaces. Of the total car parking spaces, three will be for the use by disabled users and two have the potential to be developed as dedicated car-club spaces.
- 6.3 The access road has been shown to accommodate large refuse vehicles in order to service all properties.
- 6.4 The impact of this development on the transport network was assessed in this report. The development will generate a total of 22 additional person trips during the morning peak hour, 14 person trips during the evening peak hour and a total of 173 person trips during a typical day. The impact of the development on the transport network was concluded to be negligible.
- 6.5 The proposed development is in accordance with the national policies, regional policies and the policies of London Borough of Southwark.

Do not delete this section break

APPENDIX

A

PARKING SURVEY DATA



Evening peak period	SECTION 1	SECTION 2	SECTION 3	SECTION 4	SECTION 5	SECTION 6	SECTION 7
MAX CAPACITY	32	20	55	17	27	19	19
PERIOD	CARS PARKING	CARS PARKING	CARS PARKING	CARS PARKING	CARS PARKING	CARS PARKING	CARS PARKING
4.00 - 4.30	15	12	46	15	22	9	11
4.30 - 5.00	14	12	44	13	23	9	11
5.00 - 5.30	15	12	40	13	21	9	12
5.30 - 6.00	14	12	39	16	21	8	8
6.00 - 6.30	13	12	42	16	21	10	12
6.30 - 7.00	15	16	41	16	23	12	10
7.00 - 7.30	22	16	46	16	26	14	13
7.30 - 8.00	15	18	50	16	26	16	15

Morning peak period	SECTION 1	SECTION 2	SECTION 3	SECTION 4	SECTION 5	SECTION 6	SECTION 7
MAX CAPACITY	32	20	55	17	27	19	19
PERIOD	CARS PARKED	CARS PARKED	CARS PARKED	CARS PARKED	CARS PARKED	CARS PARKED	CARS PARKED
08:00-08:30	16	15	52	14	19	18	17
08:30-09:00	16	15	53	13	19	18	17
09:00-09:30	16	14	55	14	18	18	17
09:30-10:00	15	15	53	14	19	19	17
10:00-10:30	15	15	53	14	19	18	18
10:30-11:00	15	14	54	14	20	18	17
MAX	16	15	55	14	20	19	18

Overnight	SECTION 1	SECTION 2	SECTION 3	SECTION 4	SECTION 5	SECTION 6	SECTION 7
MAX CAPACITY	32	20	55	17	27	19	19
PERIOD	CARS PARKING	CARS PARKING	CARS PARKING	CARS PARKING	CARS PARKING	CARS PARKING	CARS PARKING
0110-0140	25 (+3 motorcycles)	14 (+2 motorcycles)	30	14 (+1 motorcycles)	21 (+2 motorcycles)	11	14
0215-0245	25 (+3 motorcycles)	14 (+2 motorcycles)	31	14 (+1 motorcycles)	21 (+2 motorcycles)	12	14
0250-0320	25 (+3 motorcycles)	14 (+2 motorcycles)	31	14 (+1 motorcycles)	21 (+2 motorcycles)	12	14

APPENDIX

B

PTAL CALCULATIONS

Project name	Grove Park
Sheet name	Service Information
Scenario	1
Version number	v1

Bus Services	Service	Distance to Stop (metres)	Peak Headway (minutes)	Off-Peak Headway (minutes)
	40	240	8	9
	45	240	8	9
	185	240	10	10
	484	240	8	10

Underground Services	Service	Distance to Stop (metres)	Peak Headway (minutes)	Off-Peak Headway (minutes)

Rail Services	Service	Distance to Stop (metres)	Peak Headway (minutes)	Off-Peak Headway (minutes)
	thameslink denmark hill	560	4.0	4.0
	southeastern east dulwich	800	5	5

Boat Services	Service	Distance to Stop (metres)	Peak Headway (minutes)	Off-Peak Headway (minutes)

Project name	Grove Park
Sheet name	Development PTAL Summary
Scenario	[link to Scenario sheet as appropriate]
Version number	[link to Version sheet as appropriate]

PTAL	Service	Peak PTAI	Off-Peak PTAI
	Bus	8.4	7.8
	Underground	0.0	0.0
	Rail	4.2	4.2
	Boat	0.0	0.0
	Development PTAI	12.5	12.0
	Development PTAL	3	3

Development Summary	Grove Park		
	The PTAL level of the development during the period	8-9am and 5-6pm	is level 3
	This level of Public Transport Accessibility is Moderate		
	The PTAL level of the development during the period	Daytime	is level 3
	This level of Public Transport Accessibility is Moderate		

PTAI Study Report File Details

Date 09/11/2010 13:52

Day of week M-F

Time period AM peak

Walk speed 4.8 kph

Walk file PLSQLTest

POI Name: 533265, 176085

Bus Services

Reliability factor for this mode is 2

Maximum walk time for this mode is 8 minutes

Maximum walk distance for this mode is 640.0 metres

Stop DENMARK HILL STATION

Walk time to stop from POI is 7.52 minutes

Walk distance to stop from POI is 601.91 metres

Route 40 Direction OUT Frequency 7.5 giving AWT of 4.0 minutes

Route 40 Direction BACK Frequency 7.5 giving AWT of 4.0 minutes

Route 176 Direction OUT Frequency 7.5 giving AWT of 4.0 minutes

Route 185 Direction OUT Frequency 6.0 giving AWT of 5.0 minutes

Route 484 Direction OUT Frequency 6.0 giving AWT of 5.0 minutes

Stop GROVE LN CHAMPION GROVE

Walk time to stop from POI is 7.52 minutes

Walk distance to stop from POI is 601.92 metres

Route 40 Direction OUT Frequency 7.5 giving AWT of 4.0 minutes

Route 40 Direction BACK Frequency 7.5 giving AWT of 4.0 minutes

Route 176 Direction OUT Frequency 7.5 giving AWT of 4.0 minutes

Route 185 Direction OUT Frequency 6.0 giving AWT of 5.0 minutes

Route 484 Direction OUT Frequency 6.0 giving AWT of 5.0 minutes

Stop DOG KENNEL HILL

Walk time to stop from POI is 5.76 minutes

Walk distance to stop from POI is 460.82 metres

Route 40 Direction OUT Frequency 7.5 giving AWT of 4.0 minutes

Route 40 Direction BACK Frequency 7.5 giving AWT of 4.0 minutes

Route 176 Direction OUT Frequency 7.5 giving AWT of 4.0 minutes

Route 185 Direction OUT Frequency 6.0 giving AWT of 5.0 minutes

Route 484 Direction OUT Frequency 6.0 giving AWT of 5.0 minutes
Stop GROVE HILL RD DOG KEN HL
Walk time to stop from POI is 4.57 minutes
Walk distance to stop from POI is 365.88 metres
Stop MALFORT ROAD
Walk time to stop from POI is 6.47 minutes
Walk distance to stop from POI is 517.4 metres
Stop Grove Ln Champion Grove
Walk time to stop from POI is 7.59 minutes
Walk distance to stop from POI is 607.01 metres
Route 40 Direction OUT Frequency 7.5 giving AWT of 4.0 minutes
Route 40 Direction BACK Frequency 7.5 giving AWT of 4.0 minutes
Route 176 Direction OUT Frequency 7.5 giving AWT of 4.0 minutes
Route 185 Direction OUT Frequency 6.0 giving AWT of 5.0 minutes
Route 484 Direction OUT Frequency 6.0 giving AWT of 5.0 minutes

TATs for this mode

Route 40 Stop DOG KENNEL HILL TAT 11.76 minutes EDF 2.55
Route 176 Stop DOG KENNEL HILL TAT 11.76 minutes EDF 2.55
Route 185 Stop DOG KENNEL HILL TAT 12.76 minutes EDF 2.35
Route 484 Stop DOG KENNEL HILL TAT 12.76 minutes EDF 2.35

Best EDF is 2.55
Half of all other EDFs is 3.63

AI for this mode is 6.18

Underground Services

Reliability factor for this mode is .75
Maximum walk time for this mode is 12 minutes
Maximum walk distance for this mode is 960.0 metres

** No stops found within buffer for this POI

Rail Services

Reliability factor for this mode is .75
Maximum walk time for this mode is 12 minutes
Maximum walk distance for this mode is 960.0 metres

Stop EAST DULWICH

Walk time to stop from POI is 11.31 minutes

Walk distance to stop from POI is 904.86 metres

Route LONDON LONDON BRIDGE BR to LONDON LONDON BRIDGE BR Direction T248-T248 Frequency 0.33 giving AWT of 90.91 minutes

Route WIMBLEDON BR to LONDON LONDON BRIDGE BR Direction T512-T248 Frequency 0.6 giving AWT of 50.0 minutes

Route LONDON LONDON BRIDGE BR to WEST CROYDON Direction T248-T412 Frequency 0.33 giving AWT of 90.91 minutes

Route LONDON LONDON BRIDGE BR to SMITHAM Direction T248-T387 Frequency 1.0 giving AWT of 30.0 minutes

Route LONDON LONDON BRIDGE BR to WEST CROYDON Direction T248-T412 Frequency 1.33 giving AWT of 22.56 minutes

Route CRYSTAL PALACE to LONDON LONDON BRIDGE BR Direction T369-T248 Frequency 1.0 giving AWT of 30.0 minutes

Route LONDON LONDON BRIDGE BR to EAST CROYDON BR Direction T248-T368 Frequency 0.33 giving AWT of 90.91 minutes

Route WIMBLEDON BR to LONDON LONDON BRIDGE BR Direction T512-T248 Frequency 0.33 giving AWT of 90.91 minutes

Route LONDON LONDON BRIDGE BR to WIMBLEDON BR Direction T248-T512 Frequency 1.0 giving AWT of 30.0 minutes

Route NORWOOD JUNCTION to LONDON LONDON BRIDGE BR Direction T382-T248 Frequency 0.67 giving AWT of 44.78 minutes

Route EAST CROYDON BR to LONDON LONDON BRIDGE BR Direction T368-T248 Frequency 1.0 giving AWT of 30.0 minutes

Route LONDON LONDON BRIDGE BR to BECKENHAM JUNCTION BR Direction T248-T161 Frequency 1.33 giving AWT of 22.56 minutes

Stop DENMARK HILL

Walk time to stop from POI is 8.98 minutes

Walk distance to stop from POI is 718.6 metres

Route DARTFORD to LONDON VICTORIA BR Direction T207-T426 Frequency 1.0 giving AWT of 30.0 minutes

Route SEVENOAKS to LONDON BLACKFRIARS Direction T227-T217 Frequency 0.33 giving AWT of 90.91 minutes

Route SEVENOAKS to LONDON CITY THAMESLINK Direction T227-T224 Frequency 0.33 giving AWT of 90.91 minutes

Route SLADE GREEN to LONDON VICTORIA BR Direction T254-T426 Frequency 0.33 giving AWT of 90.91 minutes

Route BARNEHURST BR to LONDON VICTORIA BR Direction T195-T426 Frequency 0.33 giving AWT of 90.91 minutes

Route BROMLEY SOUTH to LONDON BLACKFRIARS Direction T175-T217 Frequency 0.33 giving AWT of 90.91 minutes

Route SEVENOAKS to LONDON CITY THAMESLINK Direction T227-T224 Frequency 0.33 giving AWT of 90.91 minutes

Route LONDON BLACKFRIARS to SEVENOAKS Direction T217-T227 Frequency 2.0 giving AWT of 15.0 minutes

Route BROMLEY SOUTH to LONDON BLACKFRIARS Direction T175-T217 Frequency 0.33 giving AWT of 90.91 minutes

Route LONDON LONDON BRIDGE BR to LONDON VICTORIA BR Direction T248-T426 Frequency 2.0 giving AWT of 15.0 minutes

Route ORPINGTON to LONDON BLACKFRIARS Direction T225-T217 Frequency 0.33 giving AWT of 90.91 minutes

Route SEVENOAKS to LONDON BLACKFRIARS Direction T227-T217 Frequency 0.33 giving AWT of 90.91 minutes

Route ORPINGTON to LONDON BLACKFRIARS Direction T225-T217 Frequency 0.33 giving AWT of 90.91 minutes

Route LONDON BLACKFRIARS to TONBRIDGE Direction T217-T299 Frequency 0.33 giving AWT of 90.91 minutes

TATs for this mode

Route LONDON LONDON BRIDGE BR to LONDON LONDON BRIDGE BR Stop EAST DULWICH TAT 102.97 minutes EDF 0.29

Route WIMBLEDON BR to LONDON LONDON BRIDGE BR Stop EAST DULWICH TAT 62.06 minutes EDF 0.48

Route LONDON LONDON BRIDGE BR to WEST CROYDON Stop EAST DULWICH TAT 102.97 minutes EDF 0.29

Route LONDON LONDON BRIDGE BR to SMITHAM Stop EAST DULWICH TAT 42.06 minutes EDF 0.71

Route LONDON LONDON BRIDGE BR to WEST CROYDON Stop EAST DULWICH TAT 34.62 minutes EDF 0.87

Route CRYSTAL PALACE to LONDON LONDON BRIDGE BR Stop EAST DULWICH TAT 42.06 minutes EDF 0.71

Route LONDON LONDON BRIDGE BR to EAST CROYDON BR Stop EAST DULWICH TAT 102.97 minutes EDF 0.29

Route WIMBLEDON BR to LONDON LONDON BRIDGE BR Stop EAST DULWICH TAT 102.97 minutes EDF 0.29

Route LONDON LONDON BRIDGE BR to WIMBLEDON BR Stop EAST DULWICH TAT 42.06 minutes EDF 0.71

Route NORWOOD JUNCTION to LONDON LONDON BRIDGE BR Stop EAST DULWICH TAT 56.84 minutes EDF 0.53

Route EAST CROYDON BR to LONDON LONDON BRIDGE BR Stop EAST DULWICH TAT 42.06 minutes EDF 0.71

Route LONDON LONDON BRIDGE BR to BECKENHAM JUNCTION BR Stop EAST DULWICH TAT 34.62 minutes EDF 0.87

Route DARTFORD to LONDON VICTORIA BR Stop DENMARK HILL TAT 39.73 minutes EDF 0.76

Route SEVENOAKS to LONDON BLACKFRIARS Stop DENMARK HILL TAT 100.64 minutes EDF 0.3

Route SEVENOAKS to LONDON CITY THAMESLINK Stop DENMARK HILL TAT 100.64 minutes EDF 0.3

Route SLADE GREEN to LONDON VICTORIA BR Stop DENMARK HILL TAT 100.64 minutes EDF 0.3
Route BARNEHURST BR to LONDON VICTORIA BR Stop DENMARK HILL TAT 100.64 minutes EDF 0.3
Route BROMLEY SOUTH to LONDON BLACKFRIARS Stop DENMARK HILL TAT 100.64 minutes EDF 0.3
Route SEVENOAKS to LONDON CITY THAMESLINK Stop DENMARK HILL TAT 100.64 minutes EDF 0.3
Route LONDON BLACKFRIARS to SEVENOAKS Stop DENMARK HILL TAT 24.73 minutes EDF 1.21
Route BROMLEY SOUTH to LONDON BLACKFRIARS Stop DENMARK HILL TAT 100.64 minutes EDF 0.3
Route LONDON LONDON BRIDGE BR to LONDON VICTORIA BR Stop DENMARK HILL TAT 24.73 minutes EDF 1.21
Route ORPINGTON to LONDON BLACKFRIARS Stop DENMARK HILL TAT 100.64 minutes EDF 0.3
Route SEVENOAKS to LONDON BLACKFRIARS Stop DENMARK HILL TAT 100.64 minutes EDF 0.3
Route ORPINGTON to LONDON BLACKFRIARS Stop DENMARK HILL TAT 100.64 minutes EDF 0.3
Route LONDON BLACKFRIARS to TONBRIDGE Stop DENMARK HILL TAT 100.64 minutes EDF 0.3

Best EDF is 1.21
Half of all other EDFs is 6.0

AI for this mode is 7.22

Total AI for this POI is 13.4. X: 533265, Y: 176085.

PTAL Rating is 3.

APPENDIX

C

TRAVL DATA FOR TRIP GENERATION

TRAVL - Average Trip Rate by Mode and Time

List of Surveys:

Name	Address	Postcode	Survey Date
Lee Conservancy Road	Lee Conservancy Road	E9 5HW	05/05/1999
Porter Square	455 Hornsey Road	N19 4DY	14/07/1999
Rootes Estate	off Barbby Road	W10	16/07/1997

Number of sites considered

3

Counts By Mode:

Mode: All Modes

Time Band	No of Sites	Trip Rate In	Trip Rate Out	Total Trip Rate	Predicted Trips In	Predicted Trips Out	Predicted Trips Total
07:00-07:3	3	0.14693	0.14693	0.29386	14.7	14.7	29.4
07:30-08:0	3	0.16447	0.30702	0.47149	16.4	30.7	47.1
08:00-08:3	3	0.19079	0.65132	0.84211	19.1	65.1	84.2
08:30-09:0	3	0.25439	0.68202	0.93640	25.4	68.2	93.6
09:00-09:3	3	0.21930	0.34649	0.56579	21.9	34.6	56.6
09:30-10:0	3	0.10746	0.19737	0.30482	10.7	19.7	30.5
10:00-10:3	3	0.14035	0.18421	0.32456	14.0	18.4	32.5
10:30-11:0	3	0.12500	0.22149	0.34649	12.5	22.1	34.6
11:00-11:3	3	0.13158	0.16667	0.29825	13.2	16.7	29.8
11:30-12:0	3	0.15570	0.18860	0.34430	15.6	18.9	34.4
12:00-12:3	3	0.11404	0.21930	0.33333	11.4	21.9	33.3
12:30-13:0	3	0.17105	0.21272	0.38377	17.1	21.3	38.4
13:00-13:3	3	0.16009	0.14912	0.30921	16.0	14.9	30.9
13:30-14:0	3	0.15351	0.20175	0.35526	15.4	20.2	35.5
14:00-14:3	3	0.13816	0.13816	0.27632	13.8	13.8	27.6
14:30-15:0	3	0.19956	0.19737	0.39693	20.0	19.7	39.7
15:00-15:3	3	0.16886	0.25000	0.41886	16.9	25.0	41.9
15:30-16:0	3	0.55263	0.17544	0.72807	55.3	17.5	72.8
16:00-16:3	3	0.40132	0.20833	0.60965	40.1	20.8	61.0
16:30-17:0	3	0.25219	0.20833	0.46053	25.2	20.8	46.1
17:00-17:3	3	0.37281	0.20833	0.58114	37.3	20.8	58.1
17:30-18:0	3	0.35307	0.24781	0.60088	35.3	24.8	60.1
18:00-18:3	3	0.37281	0.21711	0.58991	37.3	21.7	59.0
18:30-19:0	3	0.26974	0.19079	0.46053	27.0	19.1	46.1
19:00-19:3	3	0.26754	0.21053	0.47807	26.8	21.1	47.8
19:30-20:0	3	0.24561	0.11184	0.35746	24.6	11.2	35.7
20:00-20:3	3	0.26096	0.22149	0.48246	26.1	22.1	48.2
20:30-21:0	3	0.20395	0.13816	0.34211	20.4	13.8	34.2
21:00-21:3	3	0.23246	0.10746	0.33991	23.2	10.7	34.0
21:30-22:0	3	0.16447	0.11623	0.28070	16.4	11.6	28.1
22:00-22:3	3	0.13816	0.10088	0.23904	13.8	10.1	23.9
22:30-23:0	3	0.13377	0.12500	0.25877	13.4	12.5	25.9
23:00-23:3	3	0.08772	0.04605	0.13377	8.8	4.6	13.4
23:30-24:0	3	0.05921	0.03509	0.09430	5.9	3.5	9.4

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Page 1 of 11

Printed On 26/10/2010 Predictor Type : No of Dwellings TRAVL Version : 8.12a

Mode: All Modes

Time Band	No of Sites	Trip Rate In	Trip Rate Out	Total Trip Rate	Predicted Trips In	Predicted Trips Out	Predicted Trips Total
Peak Period For	All Modes						
In	15:30-16:00						0.55
Out	08:30-09:00						0.68
Total	08:30-09:00						0.94

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Printed On 26/10/2010 Predictor Type : No of Dwellings TRAVL Version : 8.12a

Mode: Car Driver + Passengers

Time Band	No of Sites	Trip Rate In	Trip Rate Out	Total Trip Rate	Predicted Trips In	Predicted Trips Out	Predicted Trips Total
07:00-07:3	3	0.07456	0.05263	0.12719	7.5	5.3	12.7
07:30-08:0	3	0.07237	0.09430	0.16667	7.2	9.4	16.7
08:00-08:3	3	0.07456	0.16447	0.23904	7.5	16.4	23.9
08:30-09:0	3	0.08333	0.19956	0.28289	8.3	20.0	28.3
09:00-09:3	3	0.08772	0.12939	0.21711	8.8	12.9	21.7
09:30-10:0	3	0.05044	0.05702	0.10746	5.0	5.7	10.7
10:00-10:3	3	0.06140	0.07895	0.14035	6.1	7.9	14.0
10:30-11:0	3	0.04825	0.11404	0.16228	4.8	11.4	16.2
11:00-11:3	3	0.04167	0.07456	0.11623	4.2	7.5	11.6
11:30-12:0	3	0.08333	0.09649	0.17982	8.3	9.6	18.0
12:00-12:3	3	0.04605	0.11404	0.16009	4.6	11.4	16.0
12:30-13:0	3	0.08333	0.09868	0.18202	8.3	9.9	18.2
13:00-13:3	3	0.05044	0.06798	0.11842	5.0	6.8	11.8
13:30-14:0	3	0.07675	0.08553	0.16228	7.7	8.6	16.2
14:00-14:3	3	0.07018	0.05263	0.12281	7.0	5.3	12.3
14:30-15:0	3	0.06798	0.07675	0.14474	6.8	7.7	14.5
15:00-15:3	3	0.05702	0.09211	0.14912	5.7	9.2	14.9
15:30-16:0	3	0.10965	0.07237	0.18202	11.0	7.2	18.2
16:00-16:3	3	0.06140	0.05263	0.11404	6.1	5.3	11.4
16:30-17:0	3	0.09430	0.06579	0.16009	9.4	6.6	16.0
17:00-17:3	3	0.14035	0.05044	0.19079	14.0	5.0	19.1
17:30-18:0	3	0.12281	0.10088	0.22368	12.3	10.1	22.4
18:00-18:3	3	0.11184	0.06798	0.17982	11.2	6.8	18.0
18:30-19:0	3	0.07675	0.07237	0.14912	7.7	7.2	14.9
19:00-19:3	3	0.11184	0.10307	0.21491	11.2	10.3	21.5
19:30-20:0	3	0.10965	0.05263	0.16228	11.0	5.3	16.2
20:00-20:3	3	0.14693	0.09649	0.24342	14.7	9.6	24.3
20:30-21:0	3	0.07018	0.06140	0.13158	7.0	6.1	13.2
21:00-21:3	3	0.14035	0.04825	0.18860	14.0	4.8	18.9
21:30-22:0	3	0.05482	0.05921	0.11404	5.5	5.9	11.4
22:00-22:3	3	0.08553	0.03728	0.12281	8.6	3.7	12.3
22:30-23:0	3	0.05921	0.04167	0.10088	5.9	4.2	10.1
23:00-23:3	3	0.03728	0.01754	0.05482	3.7	1.8	5.5
23:30-24:0	3	0.03509	0.01316	0.04825	3.5	1.3	4.8

Peak Period For Car Driver + Passengers

In 20:00-20:30
Out 08:30-09:00
Total 08:30-09:00

0.15
0.20
0.28

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Printed On 26/10/2010 Predictor Type : No of Dwellings TRAVL Version : 8.12a

Mode: Car Driver							
Time Band	No of Sites	Trip Rate In	Trip Rate Out	Total Trip Rate	Predicted Trips In	Predicted Trips Out	Predicted Trips Total
07:00-07:3	3	0.05044	0.03947	0.08991	5.0	3.9	9.0
07:30-08:0	3	0.05044	0.06140	0.11184	5.0	6.1	11.2
08:00-08:3	3	0.05044	0.09868	0.14912	5.0	9.9	14.9
08:30-09:0	3	0.06579	0.13158	0.19737	6.6	13.2	19.7
09:00-09:3	3	0.06579	0.08114	0.14693	6.6	8.1	14.7
09:30-10:0	3	0.03947	0.03509	0.07456	3.9	3.5	7.5
10:00-10:3	3	0.04605	0.05263	0.09868	4.6	5.3	9.9
10:30-11:0	3	0.03728	0.07018	0.10746	3.7	7.0	10.7
11:00-11:3	3	0.03509	0.04825	0.08333	3.5	4.8	8.3
11:30-12:0	3	0.06360	0.06360	0.12719	6.4	6.4	12.7
12:00-12:3	3	0.04386	0.07895	0.12281	4.4	7.9	12.3
12:30-13:0	3	0.06140	0.07675	0.13816	6.1	7.7	13.8
13:00-13:3	3	0.04167	0.05702	0.09868	4.2	5.7	9.9
13:30-14:0	3	0.05263	0.05702	0.10965	5.3	5.7	11.0
14:00-14:3	3	0.04167	0.03947	0.08114	4.2	3.9	8.1
14:30-15:0	3	0.05044	0.04825	0.09868	5.0	4.8	9.9
15:00-15:3	3	0.04167	0.06798	0.10965	4.2	6.8	11.0
15:30-16:0	3	0.06360	0.04825	0.11184	6.4	4.8	11.2
16:00-16:3	3	0.04386	0.04167	0.08553	4.4	4.2	8.6
16:30-17:0	3	0.04825	0.03947	0.08772	4.8	3.9	8.8
17:00-17:3	3	0.09649	0.03728	0.13377	9.6	3.7	13.4
17:30-18:0	3	0.08553	0.07675	0.16228	8.6	7.7	16.2
18:00-18:3	3	0.07675	0.04825	0.12500	7.7	4.8	12.5
18:30-19:0	3	0.05044	0.05482	0.10526	5.0	5.5	10.5
19:00-19:3	3	0.07456	0.06360	0.13816	7.5	6.4	13.8
19:30-20:0	3	0.07237	0.03947	0.11184	7.2	3.9	11.2
20:00-20:3	3	0.09211	0.06579	0.15789	9.2	6.6	15.8
20:30-21:0	3	0.04825	0.03728	0.08553	4.8	3.7	8.6
21:00-21:3	3	0.08991	0.03070	0.12061	9.0	3.1	12.1
21:30-22:0	3	0.03289	0.03728	0.07018	3.3	3.7	7.0
22:00-22:3	3	0.05482	0.02632	0.08114	5.5	2.6	8.1
22:30-23:0	3	0.04167	0.02412	0.06579	4.2	2.4	6.6
23:00-23:3	3	0.03289	0.01316	0.04605	3.3	1.3	4.6
23:30-24:0	3	0.03070	0.01096	0.04167	3.1	1.1	4.2
Peak Period For		Car Driver					
In	17:00-17:30				0.10		
Out	08:30-09:00				0.13		
Total	08:30-09:00				0.20		

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Mode: Car Passenger

Time Band	No of Sites	Trip Rate In	Trip Rate Out	Total Trip Rate	Predicted Trips In	Predicted Trips Out	Predicted Trips Total
07:00-07:3	3	0.02412	0.01316	0.03728	2.4	1.3	3.7
07:30-08:0	3	0.02193	0.03289	0.05482	2.2	3.3	5.5
08:00-08:3	3	0.02412	0.06579	0.08991	2.4	6.6	9.0
08:30-09:0	3	0.01754	0.06798	0.08553	1.8	6.8	8.6
09:00-09:3	3	0.02193	0.04825	0.07018	2.2	4.8	7.0
09:30-10:0	3	0.01096	0.02193	0.03289	1.1	2.2	3.3
10:00-10:3	3	0.01535	0.02632	0.04167	1.5	2.6	4.2
10:30-11:0	3	0.01096	0.04386	0.05482	1.1	4.4	5.5
11:00-11:3	3	0.00658	0.02632	0.03289	0.7	2.6	3.3
11:30-12:0	3	0.01974	0.03289	0.05263	2.0	3.3	5.3
12:00-12:3	3	0.00219	0.03509	0.03728	0.2	3.5	3.7
12:30-13:0	3	0.02193	0.02193	0.04386	2.2	2.2	4.4
13:00-13:3	3	0.00877	0.01096	0.01974	0.9	1.1	2.0
13:30-14:0	3	0.02412	0.02851	0.05263	2.4	2.9	5.3
14:00-14:3	3	0.02851	0.01316	0.04167	2.9	1.3	4.2
14:30-15:0	3	0.01754	0.02851	0.04605	1.8	2.9	4.6
15:00-15:3	3	0.01535	0.02412	0.03947	1.5	2.4	3.9
15:30-16:0	3	0.04605	0.02412	0.07018	4.6	2.4	7.0
16:00-16:3	3	0.01754	0.01096	0.02851	1.8	1.1	2.9
16:30-17:0	3	0.04605	0.02632	0.07237	4.6	2.6	7.2
17:00-17:3	3	0.04386	0.01316	0.05702	4.4	1.3	5.7
17:30-18:0	3	0.03728	0.02412	0.06140	3.7	2.4	6.1
18:00-18:3	3	0.03509	0.01974	0.05482	3.5	2.0	5.5
18:30-19:0	3	0.02632	0.01754	0.04386	2.6	1.8	4.4
19:00-19:3	3	0.03728	0.03947	0.07675	3.7	3.9	7.7
19:30-20:0	3	0.03728	0.01316	0.05044	3.7	1.3	5.0
20:00-20:3	3	0.05482	0.03070	0.08553	5.5	3.1	8.6
20:30-21:0	3	0.02193	0.02412	0.04605	2.2	2.4	4.6
21:00-21:3	3	0.05044	0.01754	0.06798	5.0	1.8	6.8
21:30-22:0	3	0.02193	0.02193	0.04386	2.2	2.2	4.4
22:00-22:3	3	0.03070	0.01096	0.04167	3.1	1.1	4.2
22:30-23:0	3	0.01754	0.01754	0.03509	1.8	1.8	3.5
23:00-23:3	3	0.00439	0.00439	0.00877	0.4	0.4	0.9
23:30-24:0	3	0.00439	0.00219	0.00658	0.4	0.2	0.7

Peak Period For Car Passenger

In 21:00-21:30

Out 08:00-08:30

Total 08:00-08:30

0.05

0.07

0.09

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Mode: Coach							
Time Band	No of Sites	Trip Rate In	Trip Rate Out	Total Trip Rate	Predicted Trips In	Predicted Trips Out	Predicted Trips Total
07:00-07:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
07:30-08:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
08:00-08:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
08:30-09:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
09:00-09:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
09:30-10:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
10:00-10:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
10:30-11:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
11:00-11:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
11:30-12:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
12:00-12:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
12:30-13:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
13:00-13:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
13:30-14:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
14:00-14:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
14:30-15:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
15:00-15:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
15:30-16:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
16:00-16:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
16:30-17:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
17:00-17:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
17:30-18:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
18:00-18:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
18:30-19:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
19:00-19:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
19:30-20:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
20:00-20:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
20:30-21:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
21:00-21:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
21:30-22:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
22:00-22:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
22:30-23:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
23:00-23:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
23:30-24:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
Peak Period For Coach							
In	21:00-21:30				0.00		
Out	08:00-08:30				0.00		
Total	08:00-08:30				0.00		

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Printed On 26/10/2010 Predictor Type : No of Dwellings TRAVL Version : 8.12a

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Mode: Motor Cycle

Time Band	No of Sites	Trip Rate In	Trip Rate Out	Total Trip Rate	Predicted Trips In	Predicted Trips Out	Predicted Trips Total
07:00-07:3	3	0.00219	0.00658	0.00877	0.2	0.7	0.9
07:30-08:0	3	0.00000	0.00219	0.00219	0.0	0.2	0.2
08:00-08:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
08:30-09:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
09:00-09:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
09:30-10:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
10:00-10:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
10:30-11:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
11:00-11:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
11:30-12:0	3	0.00439	0.00658	0.01096	0.4	0.7	1.1
12:00-12:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
12:30-13:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
13:00-13:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
13:30-14:0	3	0.00219	0.00219	0.00439	0.2	0.2	0.4
14:00-14:3	3	0.00219	0.00219	0.00439	0.2	0.2	0.4
14:30-15:0	3	0.00219	0.00219	0.00439	0.2	0.2	0.4
15:00-15:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
15:30-16:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
16:00-16:3	3	0.00219	0.00219	0.00439	0.2	0.2	0.4
16:30-17:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
17:00-17:3	3	0.00658	0.00439	0.01096	0.7	0.4	1.1
17:30-18:0	3	0.00219	0.00219	0.00439	0.2	0.2	0.4
18:00-18:3	3	0.00219	0.00219	0.00439	0.2	0.2	0.4
18:30-19:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
19:00-19:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
19:30-20:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
20:00-20:3	3	0.00219	0.00219	0.00439	0.2	0.2	0.4
20:30-21:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
21:00-21:3	3	0.00219	0.00000	0.00219	0.2	0.0	0.2
21:30-22:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
22:00-22:3	3	0.00219	0.00219	0.00439	0.2	0.2	0.4
22:30-23:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
23:00-23:3	3	0.00000	0.00219	0.00219	0.0	0.2	0.2
23:30-24:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0

Peak Period For Motor Cycle

In 17:00-17:30

Out 08:00-08:30

Total 17:00-17:30

0.01

0.01

0.01

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Printed On 26/10/2010 Predictor Type : No of Dwellings TRAVL Version : 8.12a

Mode: Other							
Time Band	No of Sites	Trip Rate In	Trip Rate Out	Total Trip Rate	Predicted Trips In	Predicted Trips Out	Predicted Trips Total
07:00-07:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
07:30-08:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
08:00-08:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
08:30-09:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
09:00-09:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
09:30-10:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
10:00-10:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
10:30-11:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
11:00-11:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
11:30-12:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
12:00-12:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
12:30-13:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
13:00-13:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
13:30-14:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
14:00-14:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
14:30-15:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
15:00-15:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
15:30-16:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
16:00-16:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
16:30-17:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
17:00-17:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
17:30-18:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
18:00-18:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
18:30-19:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
19:00-19:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
19:30-20:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
20:00-20:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
20:30-21:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
21:00-21:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
21:30-22:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
22:00-22:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
22:30-23:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
23:00-23:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
23:30-24:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
Peak Period For		Other					
In		17:00-17:30			0.00		
Out		08:00-08:30			0.00		
Total		17:00-17:30			0.00		

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Mode: Pedal Cycle

Time Band	No of Sites	Trip Rate In	Trip Rate Out	Total Trip Rate	Predicted Trips In	Predicted Trips Out	Predicted Trips Total
07:00-07:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
07:30-08:0	3	0.00000	0.00219	0.00219	0.0	0.2	0.2
08:00-08:3	3	0.00000	0.01096	0.01096	0.0	1.1	1.1
08:30-09:0	3	0.00439	0.00219	0.00658	0.4	0.2	0.7
09:00-09:3	3	0.00000	0.00877	0.00877	0.0	0.9	0.9
09:30-10:0	3	0.00000	0.00219	0.00219	0.0	0.2	0.2
10:00-10:3	3	0.00000	0.00219	0.00219	0.0	0.2	0.2
10:30-11:0	3	0.00000	0.00219	0.00219	0.0	0.2	0.2
11:00-11:3	3	0.00439	0.00439	0.00877	0.4	0.4	0.9
11:30-12:0	3	0.00219	0.00439	0.00658	0.2	0.4	0.7
12:00-12:3	3	0.00219	0.00000	0.00219	0.2	0.0	0.2
12:30-13:0	3	0.00877	0.00658	0.01535	0.9	0.7	1.5
13:00-13:3	3	0.00219	0.00219	0.00439	0.2	0.2	0.4
13:30-14:0	3	0.00439	0.00439	0.00877	0.4	0.4	0.9
14:00-14:3	3	0.01096	0.00658	0.01754	1.1	0.7	1.8
14:30-15:0	3	0.00658	0.00658	0.01316	0.7	0.7	1.3
15:00-15:3	3	0.00000	0.00439	0.00439	0.0	0.4	0.4
15:30-16:0	3	0.01096	0.00658	0.01754	1.1	0.7	1.8
16:00-16:3	3	0.00439	0.00658	0.01096	0.4	0.7	1.1
16:30-17:0	3	0.00219	0.00219	0.00439	0.2	0.2	0.4
17:00-17:3	3	0.00877	0.00439	0.01316	0.9	0.4	1.3
17:30-18:0	3	0.01535	0.01316	0.02851	1.5	1.3	2.9
18:00-18:3	3	0.00658	0.00658	0.01316	0.7	0.7	1.3
18:30-19:0	3	0.01096	0.00439	0.01535	1.1	0.4	1.5
19:00-19:3	3	0.00877	0.00439	0.01316	0.9	0.4	1.3
19:30-20:0	3	0.00439	0.00219	0.00658	0.4	0.2	0.7
20:00-20:3	3	0.00219	0.00877	0.01096	0.2	0.9	1.1
20:30-21:0	3	0.00877	0.00658	0.01535	0.9	0.7	1.5
21:00-21:3	3	0.01096	0.00000	0.01096	1.1	0.0	1.1
21:30-22:0	3	0.00439	0.00658	0.01096	0.4	0.7	1.1
22:00-22:3	3	0.00000	0.00658	0.00658	0.0	0.7	0.7
22:30-23:0	3	0.00000	0.00439	0.00439	0.0	0.4	0.4
23:00-23:3	3	0.00877	0.00219	0.01096	0.9	0.2	1.1
23:30-24:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0

Peak Period For Pedal Cycle

In	17:30-18:00	0.02
Out	17:30-18:00	0.01
Total	17:30-18:00	0.03

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Mode: Taxi							
Time Band	No of Sites	Trip Rate In	Trip Rate Out	Total Trip Rate	Predicted Trips In	Predicted Trips Out	Predicted Trips Total
07:00-07:3	3	0.00219	0.00000	0.00219	0.2	0.0	0.2
07:30-08:0	3	0.00000	0.00658	0.00658	0.0	0.7	0.7
08:00-08:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
08:30-09:0	3	0.00439	0.00000	0.00439	0.4	0.0	0.4
09:00-09:3	3	0.00219	0.00000	0.00219	0.2	0.0	0.2
09:30-10:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
10:00-10:3	3	0.00000	0.00219	0.00219	0.0	0.2	0.2
10:30-11:0	3	0.00000	0.00219	0.00219	0.0	0.2	0.2
11:00-11:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
11:30-12:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
12:00-12:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
12:30-13:0	3	0.00000	0.00219	0.00219	0.0	0.2	0.2
13:00-13:3	3	0.00219	0.00439	0.00658	0.2	0.4	0.7
13:30-14:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
14:00-14:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
14:30-15:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
15:00-15:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
15:30-16:0	3	0.00219	0.00219	0.00439	0.2	0.2	0.4
16:00-16:3	3	0.00219	0.00219	0.00439	0.2	0.2	0.4
16:30-17:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
17:00-17:3	3	0.00219	0.00000	0.00219	0.2	0.0	0.2
17:30-18:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
18:00-18:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
18:30-19:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
19:00-19:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
19:30-20:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
20:00-20:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
20:30-21:0	3	0.00219	0.00219	0.00439	0.2	0.2	0.4
21:00-21:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
21:30-22:0	3	0.00219	0.00000	0.00219	0.2	0.0	0.2
22:00-22:3	3	0.00219	0.00219	0.00439	0.2	0.2	0.4
22:30-23:0	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
23:00-23:3	3	0.00000	0.00000	0.00000	0.0	0.0	0.0
23:30-24:0	3	0.00219	0.00219	0.00439	0.2	0.2	0.4
Peak Period For Taxi							
In	23:30-24:00				0.00		
Out	07:30-08:00				0.01		
Total	07:30-08:00				0.01		

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Mode: Walk & PT

Time Band	No of Sites	Trip Rate In	Trip Rate Out	Total Trip Rate	Predicted Trips In	Predicted Trips Out	Predicted Trips Total
07:00-07:3	3	0.06798	0.08772	0.15570	6.8	8.8	15.6
07:30-08:0	3	0.09211	0.20175	0.29386	9.2	20.2	29.4
08:00-08:3	3	0.11623	0.47588	0.59211	11.6	47.6	59.2
08:30-09:0	3	0.16228	0.48026	0.64254	16.2	48.0	64.3
09:00-09:3	3	0.12939	0.20833	0.33772	12.9	20.8	33.8
09:30-10:0	3	0.05702	0.13816	0.19518	5.7	13.8	19.5
10:00-10:3	3	0.07895	0.10088	0.17982	7.9	10.1	18.0
10:30-11:0	3	0.07675	0.10307	0.17982	7.7	10.3	18.0
11:00-11:3	3	0.08553	0.08772	0.17325	8.6	8.8	17.3
11:30-12:0	3	0.06579	0.08114	0.14693	6.6	8.1	14.7
12:00-12:3	3	0.06579	0.10526	0.17105	6.6	10.5	17.1
12:30-13:0	3	0.07895	0.10526	0.18421	7.9	10.5	18.4
13:00-13:3	3	0.10526	0.07456	0.17982	10.5	7.5	18.0
13:30-14:0	3	0.07018	0.10965	0.17982	7.0	11.0	18.0
14:00-14:3	3	0.05482	0.07675	0.13158	5.5	7.7	13.2
14:30-15:0	3	0.12281	0.11184	0.23465	12.3	11.2	23.5
15:00-15:3	3	0.11184	0.15351	0.26535	11.2	15.4	26.5
15:30-16:0	3	0.42982	0.09430	0.52412	43.0	9.4	52.4
16:00-16:3	3	0.33114	0.14474	0.47588	33.1	14.5	47.6
16:30-17:0	3	0.15570	0.14035	0.29605	15.6	14.0	29.6
17:00-17:3	3	0.21491	0.14912	0.36404	21.5	14.9	36.4
17:30-18:0	3	0.21272	0.13158	0.34430	21.3	13.2	34.4
18:00-18:3	3	0.25219	0.14035	0.39254	25.2	14.0	39.3
18:30-19:0	3	0.18202	0.11404	0.29605	18.2	11.4	29.6
19:00-19:3	3	0.14693	0.10307	0.25000	14.7	10.3	25.0
19:30-20:0	3	0.13158	0.05702	0.18860	13.2	5.7	18.9
20:00-20:3	3	0.10965	0.11404	0.22368	11.0	11.4	22.4
20:30-21:0	3	0.12281	0.06798	0.19079	12.3	6.8	19.1
21:00-21:3	3	0.07895	0.05921	0.13816	7.9	5.9	13.8
21:30-22:0	3	0.10307	0.05044	0.15351	10.3	5.0	15.4
22:00-22:3	3	0.04825	0.05263	0.10088	4.8	5.3	10.1
22:30-23:0	3	0.07456	0.07895	0.15351	7.5	7.9	15.4
23:00-23:3	3	0.04167	0.02412	0.06579	4.2	2.4	6.6
23:30-24:0	3	0.02193	0.01974	0.04167	2.2	2.0	4.2

Peak Period For Walk & PT

In 15:30-16:00

Out 08:30-09:00

Total 08:30-09:00

0.43

0.48

0.64

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CONTROL SHEET

Project/Proposal Name 123 Grove Park
Document Title Transport Statement
Client Contract/Project No.
SDG Project/Proposal No. 22307101

ISSUE HISTORY

Issue No.	Date	Details
1	18/11/2010	Draft to KSR
2	22/11/2010	Final Draft
3	25/11/2010	Final to KSR

REVIEW

Originator Manu Dwivedi
Other Contributors
Review by: Print Hannah Shrimpton
Sign 

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