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## **Goodman Developments Limited**

### **Proposed Development at Purfleet Commercial Park Stonehouse Lane Purfleet**

### **Travel Plan**

September 2020

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## Section 1 Introduction

### 1.1 Background

This Report has been prepared in response to a request by the Planning Authority at Thurrock for a Travel Plan with respect to development proposals for the development of Land at Purfleet Commercial Park, Stonehouse Lane, Purfleet (**Figure 1 & Appendix A** refer). The Report will form part of the documentation required for the continued development of the site over time.

*The Purfleet Commercial Park Travel Plan* (referred to as *The TP*, *The Travel Plan* or *The Plan* herein) has been developed by *Goodman Real Estate UK Limited* (Goodman) and is based on sustainable transport principles which are aimed firstly at reducing dependency on private car use and then secondly encouraging a switch to electric vehicles for those who do need to drive. *The Plan* promotes public transport, walking, cycling and car sharing as the main initiatives in order to reduce traffic congestion resulting from the site. At this stage, *The Plan* is presented in outline and a series of sustainable transport proposals are provided in principal. The decisions on which should be implemented and to what levels the Planning and Highways Authorities will require their support are left for further discussion at this stage. It is in any event considered that the implementation of sustainable travel proposals will include a process of monitoring on an annual basis to establish *The Plan's* overall effectiveness and to ensure that targets established are realistic and are being met.

Whilst much commercial development already exists close to the site (as shown on **Figure 2**) until they are in occupation, a new end-user is always reluctant to enter into specific and time consuming discussions on TP issues. In terms of delivering the final *Travel Plan* therefore, it is envisaged that this will be done and agreed with the Highways Authorities post-planning, but prior to occupation of the site. Since construction will not commence until most likely the spring of 2020 with completion a year later, this will allow specific information regarding existing staff movements to be gathered; that information collated and a comprehensive travel plan formulated by the occupier based in this outline document. A bespoke *Travel Plan* will then follow, with the occupier being required to submit and agree such a document within 6 months of occupying any new floor-space within the development.

### 1.2 Nature and Extent of the Development

The site is located to the north-west of the Dartford Crossing and lies to the north of the River Thames, close to the existing Trading Estate. Goodman wishes to develop a B8 Use Class development on the former Quarry and the building so constructed will employ approximately 450 staff, in the following category:-

		<u>Proposed</u>
B8 Logistics Park	-	350
Ancillary Offices	-	100
	<b>Total</b>	<b>450</b>

With respect to sustainable travel, it is proposed that the total number of car parking spaces related to the building will be approximately **265** including 50 visitor spaces, in line with **Appendix D**. The likely split is expected to be as shown below for a three-shift system, but a two-shift option is also provided within the Appendix:-

		<u>Spaces</u>	<u>Max Ratio (Staff)</u>	
B1 Ancillary Offices	-	50	0.50	(100)
B2/B8 (Early Shift)	-	65	0.46	(140)
B2/B8 (Afternoon Shift)	-	65	0.46	(140)
B2/B8 (Late Shift)	-	35	0.50	(70)
Visitors & Servicing	-	50	N/A	
<b>Total</b>		<b>265</b>	<b>1 per 1.7 Staff</b>	

As a consequence, the circumstances will exist in the future for the promotion of sustainable transport initiatives and the delivery of a less car dependant mode of operation within this part of Essex.

### 1.3 Sustainable Development

The parking policy and sustainable travel initiatives pursued by the Planning Authorities are founded in the political desire to reduce congestion along the M25 and A282 and in the local area. The emphasis is, therefore, on managing the system rather than expanding it further, using a variety of techniques as highlighted in this Report.

In addition, the need to minimise harmful noise and air-borne emissions associated with conventionally powered cars has come to the fore in recent years and is fully supported by Goodman. To aid a switch to electric power for those who do need to drive, Goodman has incorporated various measures into the development. These include full electric ducting in carb parks and service yards, as well as:-

- A minimum of 6 electric car spaces, and;
- Enhanced roofs to enable full solar panel provision to aid sustainable charging.

### 1.4 The Travel Plan Proposals

The main reason for introducing a *Travel Plan* arises from the planning priorities for the site and the parking and travel demands emanating from it. The TP therefore necessitates the identification of a range of alternative transport means to the site and also other ways of reducing car usage in overall terms. Proposals thus include:-

- Measures to provide more travel choice;
- An implementation strategy for the proposals;
- Suggested targets for travel by various modes;
- A series of commitments on the part of Goodman;
- Proposals for monitoring the TP.

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## Section 2 Transport Policy Context

### 2.1 Current Policy Initiatives

A number of policy initiatives have been adopted over the past decade or so at National and European level to implement a new approach to transport policy. Many of the initiatives relate to emission standards, the development of new technologies and traffic management. At a local level, the most significant influences applicable to the development are:-

- Development Plans, Transport Plans and Initiatives prepared by Thurrock Council (The Council) including the Core Strategy and Policies for Management of Development (CSTTP14, CSTTP15 & PMD10);
- *The National Planning Policy Framework (NPPF)* which seeks to assist growth and promote economic revival through sustainable development.

### 2.2 Future Policy Initiatives

Despite the passage of the *Road Traffic Reduction Act*, the pressure remains to further minimise the impact of road traffic. Some of the issues being discussed include:-

- Further equalisation of the cost between road and other forms of transport;
- Vehicle taxation and increased fuel duties, together with congestion charging;
- Limitations on non-residential car parking;
- Reform of the company car taxation system;
- Tax concessions for sustainable commuter initiatives;
- Public transport tax incentives and improvements to Public Transport (PT) services through further bus de-regulation and competition;
- The promotion of *Travel Plans*.

Some of these initiatives are already being tested and implemented along with further measures, including company based strategies such as *Company Travelwise*. The adoption of *The Travel Plan* by Goodman is therefore less of a matter of desirability and more a matter of good strategic planning, which Goodman supports. The specific measures outlined in subsequent sections of this Report are therefore based both on the developing transport strategies and the aspiration locally to limit traffic growth on the M25 and A282 strategic corridor.

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## Section 3      Travel Plans

### 3.1      Introduction

*Transport Plans, Commuter Plans and Company Travel Plans* are some of the key instruments designed to meet the demands of transport policy. Essentially they are all means by which organisations can manage the transport needs of their staff in a more environmentally sensitive way. These plans identify a package of measures encompassing all alternative modes of transport. They allow employers progressively to persuade members of their staff to choose non-car based forms of transport or to favour those who require use of their car, such as the disabled.

In support of *The Plan*, Goodman has carried out work in relation to the implementation and operation of sustainable forms of transport. Whilst there is a need to co-ordinate this work where appropriate, the defined targets and modal share predictions contained within this Report are based on a known level of employment and can be implemented knowing that sufficient resources and staff numbers exist to make such proposals work.

### 3.2      Benefits

As indicated above, the benefits of an integrated *Travel Plan* need to be captured in commercial as well as environmental terms. *The Travel Plan* will therefore provide:-

- Reductions in the typical levels of car usage associated with the development types proposed;
- Improved quality of employee journeys to and from work;
- A demonstration of the environmental credentials of Goodman;
- Reduced congestion and improved safety along the M25 and A282 corridor and at Junction 31 in particular;
- An incentive to recruiting and retaining staff;
- Increased quality and prestige associated with the location;
- Improved accessibility for all staff;
- Reduced infrastructure costs associated with car parking;
- An improved compliance within the Local Authority planning context.

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## Section 4 Overall Development Transport Policy

### 4.1 Point of Contact

This *Travel Plan* and the transport policies contained within it have been developed by Goodman in association with their Transport Consultants, Lawrence Walker Limited (LWL). They are intended for implementation as part of the development proposals for the site. All responsibilities for *The Plan*, its policies and its ultimate implementation rest with LWL, who's nominated point of contact is:-

Mr. Steven Johnstone  
Lawrence Walker Limited  
Church Farm  
Leamington Hastings  
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### 4.2 Travel Patterns

Purfleet Commercial Park is currently being filled to raise the future building levels above the River Thames Flood Plain and so no uniform travel patterns exist to establish a definitive set of measures for inclusion in *The Travel Plan*. However, as any prospective occupier will most likely be relocating or expanding out from other existing sites and as the site itself is surrounded by existing and successful commercial development, records do exist of how employees currently travel to work in the area, which have been established over a long period of time. These include home postcode data, which can be employed within the limits of the *Data Protection Act* to help identify travel demand patterns. These patterns will, for a time after relocation of a particular company, be in a state of flux as employees adjust their journeys to work to suit the new requirements. The details established in the early years of the site will therefore need to be sensitive to such changes, but can be referenced against existing modal split characteristics to monitor progress against the proposed targets.

Due to the location of the site on the urban fringe adjacent to good highways links, there will always be a desire for employees and visitors to access the development by car. Indeed traffic surveys carried out as part of the evaluation process indicate that at present, around 80% of all local employees based on the adjacent Trading Estate travel to and from their existing workplace by private car as single occupants, whilst nationally for those working in distribution the figure is no better. To help to resolve the potential problems that this would create if repeated on the new development, the establishment of travel patterns through staff surveys will be the first measure included within the TP. By this means measures provided by the Developer and occupier as part of *The Plan* can be targeted against known requirements, thereby maximising the potential take-up. An example of a previous survey produced and used by Lawrence Walker Limited on a similar site is appended as **Appendix C** to this report for reference.

Since travel surveys are accurate for only a relatively short period of time following their instigation, it is Goodman's intention that the survey process be repeated for the development in accordance to ensure that the information held is up-to-date (see below). The results of each survey will then be used to review progress against current day and targeted modal splits, as well as a means of testing the effectiveness of new measures as required.

### 4.3 Targets

The setting of national road traffic reduction targets has been a contentious issue. The case for local traffic reduction targets however is a matter of political consensus that has been reinforced by the passage of the *Road Traffic Reduction Act*. The level of parking proposed in the Planning Application will, in itself, achieve the road traffic reduction targets which have been set for the site as outlined below. This restraint, which assumes the density of occupation will be no less than that which occurs in similar existing buildings elsewhere, results in only 60% of employees being able to park on the site following development at any one time. This compares to an average for *all* employment types in local B8 facilities of some 80%, so represents a significant reduction when compared to the current situation. Nationally the picture for B8 uses is one of almost total car dependency too, which is reflected in the accompanying *Transport Statement (TS)*. It assumes a worst-case with respect to car traffic, whereby some 90% of employees are assumed to drive to work by themselves. The primary target of the *Travel Plan* is thus to achieve a 30% reduction in the trip generation values assumed in the TS, through the achievement of 40% non-car usage. This is an ambitious target for the types of development proposed.

The target led approach will give a focus to the *Travel Plan*. It will provide inherent incentives and objectives and is essential to the credibility of the TP as far as "external audiences" are concerned.

When targets are first set, they are at their least certain and their achievability will need to be reviewed in the light of experience. With this in mind, the initial targets outlined above and below have been established by Goodman (based on the parking supply and the average number of employees likely to be present on the site) and centre round achieving a 40% mode-share for non-car based transport modes to the site by full occupation. They will apply from first occupation onwards on a graduated basis, but will be reviewed once the results of the first staff survey are available. That data will then be used a benchmark to establish, in conjunction with The Council, the most realistic targets for the site going forward.

- 2025 - 60% Drive, 15% Car Share, 10% Public Transport, 15% Walk/Cycle.

Further targets could be set which improve the walk/cycle mode-share following implementation of the overall transport strategy for the site, but at present, these targets cannot be established until such proposals have reached a greater level of maturity.

The precise details of the initiatives outlined below aimed at delivering the above targets will be agreed with The Council once the occupier has taken-up occupation and the first set of surveys have been completed.

In addition to the above numerical targets for the various travel modes considered, it is Goodman's intention to also implement a number of key "*Headline*" initiatives as the development progresses to assist in their delivery.

These "Action" type targets will take the form of specific commitments that can be conditioned by the relevant authorities to ensure their delivery. They will ultimately be specific, measurable, achievable and time-bound, but at this stage can only be indicative as it is not known when Planning Consent on the site will be issued, nor indeed when exactly development will start and on which component. These details will include:-

- New cycle links as identified in the TP to serve the development;
- The installation of at least 30 covered cycle stands (60 spaces) upon site completion. Stands will be secure and located in visible, well lit and safe locations;
- The provision of changing facilities and showers within the building or part thereof constructed on the site for use by cyclists upon opening;
- The provision of up-to-date cycle and walking maps and associated health advice by the first occupation of any building, together with new signage and a mobile cycle repair "*Workshop*" provided in conjunction with a local specialist;
- Encouragement of the provision of pool cycles & electric pool cars by employers;
- The setting-up of a care-share initiative by the time the first unit becomes operational. The initiative will be linked to priority reserved car parking spaces with a hierarchy favouring car-share users and will served by the by the national Liftshare scheme at [www.liftshare.com/uk](http://www.liftshare.com/uk);
- The appointment of a Travel Plan Co-ordinator for the site by the end of 2020, thereby ensuring that he/she will be in position prior to the occupation of any part of the site.

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#### 4.4 Objectives

The transportation policy objectives which apply to the development will be as follows:-

- To incorporate within the development pedestrian and cycle access ways which are convenient and safe and which connect to the local community and transport centres, particularly those relating to existing bus routes;
- To promote car-share initiatives as a means of reducing use of the private car;
- To incorporate facilities for the disabled;
- To promote the development of commuting patterns which are compatible with the overall strategy to reduce car dependency;
- To reduce road congestion by reducing demand for peak hour journeys and;
- To provide benefits in terms of reduced traffic flows for the area as a whole;
- To provide on-site facilities for pedestrians and cyclists;
- To minimise the impact of occupier related activities on the local road network, community and environment.

#### 4.5 Management Support

Travel Plans can fail to operate properly if there is inadequate consultation between the participants or if the TP in question fails to enjoy management support. A number of measures will therefore be included by Goodman and these will be given their continuing and full support through an undertaking to provide:-

- Monitoring of the cycleway to and from the site;
- Monitoring of the cycling and walking facilities in collaboration with the Highways and Planning Authorities;
- Support for a Travel Plan Co-ordinator. This will include direct management of the Co-ordinator by LWL, although in matters of delivery, the Travel Plan Co-ordinator will enjoy full responsibility for the TP;
- A commitment to actively pursue, support and promote car-sharing as an effective means of reducing single occupancy car usage.

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## Section 5 Specific Travel Plan Proposals

### 5.1 Principles

Whilst the targets for modal share for work trips have been established for the development, they would in part be subject to influence by Goodman as part of their ongoing development process. The main principle will nevertheless be to ensure that the parking provided is managed correctly. This will require forward planning and knowledge of the future workforce's travel patterns.

A successful *Travel Plan* will involve changing established or desired travel modes. The concept of senior staff leading by example, extensive consultation and staff involvement are therefore important. In addition, *The Plan* will require continual promotion and frequent monitoring if it is to be successful in meeting targets and providing long term benefits.

### 5.2 Mechanisms

#### 5.2.1 Staff Travel Surveys

Indicative historic staff travel surveys of the travel patterns and modal split of employees based at existing adjacent facilities is already in existence. The results need to be confirmed as relevant after occupancy of the new building or part thereof on the site to determine the reasons for car dependency locally and the possibilities for reducing it in favour of more sustainable transport modes. The best options for reducing car usage can then be determined so that sufficient alternatives are provided. Therefore:-

- Staff travel surveys will be carried out by Goodman of their new development as the building is occupied and these will be repeated at initially six monthly intervals. An example travel survey developed by LWL is included herein at **Appendix B**, which itself includes information on the levels of car ownership to ensure that appropriate provisions are maintained across the site.

#### 5.2.2 Travel Plan Co-ordination

*The Travel Plan* will need to be monitored to ensure that it meets targets. This would normally be carried out by a Travel Plan Co-ordinator who will be solely dedicated to the initiation and publicising of the various *Travel Plan* initiatives.

Goodman will appoint and directly fund such a Travel Plan Co-ordinator for the site on a unilateral basis within six months of commencement of the development, but by the end of 2020 in any event. This will ensure that a co-ordinated function can be provided for the site from the outset.

The post will remain fully funded and supported for a minimum period of six years following its establishment, but will continue for at least five years after the occupation of the building or part thereof on the site irrespective of overall duration.

The primary duties of the Travel Co-ordinator will need to be agreed with The Council prior to occupation of the development, but will primarily be:-

- To review, develop and oversee the implementation of initiatives outlined in the TP and the achievement of the modal shift targets specified therein;
- To monitor progress of the TP, develop and commission a proposed methodology for measuring mode split and detecting trends in change against targets and report to the participating organisation(s), including The Council;
- To co-ordinate the production of *Company Travel Plans* with each new occupation to develop sustainable travel options and ensure continuity and compliance with the *Travel Plan*;
- To liaise with equivalent employees in participating organisations and to represent Goodman at relevant forums;
- To oversee the promotion and marketing of the TP;
- To prepare “*Welcome Packs*” for all employees that will be handed out as they take up employment;
- To administer the car-share scheme.

### 5.2.3 Bus Services

The site is strategically well placed to be served by existing bus services without addition, which currently comprise predominately the *Route 44* service operated by Ensign as shown on **Figure 3**. The service operates at a 15 minute peak frequency between Grays and Lakeside, making it very desirable from both a commuting and higher-order shopping perspective. The nearest bus stops to the development are located on Arterial Road; a distance of less than 50m from the site entrance. There is however no direct footpath link at present, which is discussed later in the TP.

Public Transport (PT) currently provides 5% of local travel and will be expected to cater for **10%** of peak hour movements to and from the development in the future.

Based on the above, Goodman undertakes to:-

- Liaise with The Council to seek to deliver the best possible footpath link to the existing bus stops at Arterial Road, and;
- Provide access to the Ensign “*Real-Time Travel Information App*” (RTI) and supplement with “*Welcome Packs*” for use by the building (or part thereof) upon occupation, to ensure that information relating to bus travel options is available in both a quick and convenient format.

#### 5.2.4 Rail Services

The nearest Railway Station to the site is Purfleet, which can be reached by Bus Service 44 from the site and is also within ten minutes cycle time of the development. The Station is served by at least a 30 minute frequency service to and from London, together with numerous other direct trains to the east and south. It is therefore both desirable and accessible from a commuting point of view. There are a number of ways by which the proposed transport links between the main station and the site could be improved to further to encourage usage, in addition to the new footpath link noted above. These include:-

- By the guaranteed provision of timetable information for all staff and visitors to the site, from the initial occupation of any building;
- By the provision of access to a web-based information system regarding rail travel;
- By the inclusion of (and improvement to) cycle links to the Station and changing facilities including showers within the site to ensure that maximum use of cycles is made.

It is intended that the Travel Plan Co-ordinator will progress each of the above options, with a view to securing the best, most cost effective means of transferring passengers between the site and the Railway Station.

#### 5.2.5 Passenger Information

For rail and bus travel, the provision of passenger information is important to ensure that employees will view public transport as a viable alternative to the car. A major task of the Travel Plan Co-ordinator will thus be to disseminate information effectively and provide a “*Bulletin Board*” within the site complex. This will be made available both physically and electronically to all employees, with the information displays provided for public transport additionally being used to display train times.

Therefore:-

- Travel notice boards, a “*Real-Time Travel Information App*” (RTI) via Ensign and “*Welcome Packs*” will be provided within the building or part thereof upon occupation to ensure that information relating to travel options is available in both a quick and convenient manner. Information provided via each mode will be updated by the Travel Plan Co-ordinator on a regular basis;
- The Travel Plan Co-ordinator will, as a matter of priority, establish a new dedicated *Web Site*, which will provide information on travel and the use of non-car modes via the Internet on an RTI basis.

## 5.2.6 Car Parking

In line with the car parking appraisal for the site (**Appendix D**) around 215 employee car parking spaces will be made available uniformly across the scheme, with 50 additionally assigned for visitors and servicing needs, bringing the total to approximately 265. This represents an allocation of car parking across the site for 60% of employees, assuming the travel patterns identified. The spaces so provided should be allocated in favour of disabled and car-share or high occupancy users, pool cars and other needy groups as a priority, with at least 13% of all spaces being allocated in total to the former two categories close to entrances and walkways, on a building-by-building basis (or part thereof). The number of disabled spaces included within the total and their location will be agreed with The Council.

Both these, and any additional spaces provided for motorcyclist, will adhere to current Council guidelines with the latter also being located close to building entrances. Parking areas for motorcyclists will additionally include rigid fixings to enable motorcycles and mopeds to be secured to the ground when parked.

It is suggested that other travel options (particularly car sharing and public transport) could be used over a period of time to reduce the targeted 60% figure still further, although it is recognised that the former would not necessarily lead to an overall reduction in the number of employees actually *arriving* by car. The bus proposal is consistent with the targets proposed in **Section 4.3** of this Report.

Careful planning of the development and use of the spaces provided will be required. The occupier will be required to sign-up to the targeted 60% *Single Occupancy Car Driver* (SOCD) initiative and contribute towards its delivery.

The Travel Plan Co-ordinator will, on behalf of Goodman, be responsible for managing car parking and ensuring that employees with a defined need (e.g. - the disabled) are given priority. Priority will also be given to car-share vehicles (those involved in the on-site car-share scheme) pool cars and employees for whom other travel modes are not an option. Allocation of remaining spaces will be by rotation.

The Travel Co-ordinator will therefore, on Goodman's behalf, undertake to:-

- Develop a general *Car Parking Management Strategy* which will be available to potential occupiers for their guidance at least 3 months prior to the building or part thereof on the site becoming operational;
- Ensure that employees of tenants who have over spill car parking problems do not park on other adjacent tenants car parks or in communal areas;
- Seek to have illegally parked vehicles close to the site removed via referral to the Highways Authorities;
- Seek to direct available car parking spaces within each building plot away from able-bodied employees who live less than 2km from the site.

Public transport usage can be linked to parking permits to encourage reduced car usage. For example, if car commuters travel by train one day a week as opposed to the private car, then the car driver could be issued with a parking permit for the remainder of the week as a 'perk'. By this means, car usage can be reduced by 20% over a normal working week. The system would be supported by the issuing of five differently coloured permits (representing each day of the week) to allow flexibility.

- Goodman will undertake to encourage occupier(s) to implement this kind of system aimed at persuading the use of rail or bus transport by car users who would otherwise not choose public transport as their first option.

Whilst ultimately car parking charges maybe implemented as part of a Government wide national strategy, they do not form part of *The Travel Plan*. This is because without sufficient survey information to support the case, car parking charges could unfairly penalise those who have no public transport or other suitable option.

### 5.2.7 Car Sharing

Car sharing can be an effective means of reducing the number of cars driven to the work place and is particularly useful in doing so amongst shift workers. For this reason, it forms an important component of *The Travel Plan* and is expected to cater for **15%** of total commuter movements. The prevalent figure is about 8%.

The Travel Plan Co-ordinator will take overall responsibility for all car sharing initiatives on the site.

Starting with the establishment of a database of potential car users prior to the occupation of the building or part thereof within the site, he/she will specifically target potential car sharers by co-ordinating employees with similar travel patterns. By this means, staff with the potential to share lifts can be linked very early on, producing the best environment for car sharing to flourish.

If car sharing is to be successful however, then the concept of a "*Guaranteed Ride Home*" (a means of getting home if a car-share driver has to leave the site for any reason during the day and is then not available to take a passenger home) if is of importance. Passengers who travel to work with drivers who subsequently have to leave during the day in an emergency or for other reasons may, for example, require a free taxi ride home. There are other situations when this free ride home may also be required and clear guidance is a necessary pre-requisite for the introduction of car sharing. With this in mind, the following proposals for car sharing are included as part of the overall TP:-

- Joining of existing web-based car share initiative via the national [www.liftshare.com/uk/community/essex](http://www.liftshare.com/uk/community/essex) scheme through the setting up of a private group licence for the site.

- Once operational, the Travel Plan Co-ordinator will be responsible for maximising car sharing take-up amongst employees. To achieve this, he will be required to contact individual employees on a regular basis to maximise the numbers sharing journeys on a daily basis. To help in this goal, he will be provided with funding on an occasional basis to enable a safety net to be made available to all employees. This will be well publicised, thereby guaranteeing lifts home in the event of emergencies or other problems. He will also have the authority to allocate priority car parking spaces close to the main building to high occupancy cars, or those forming part of the car sharing scheme. By this means, rewards in the form of easier parking and shorter transfer distances can be made available to those joining the system.

### 5.2.8 Motorcycles

Motorcycles are generally seen as providing a more sustainable option than the private car in terms of commuting, so their use within the site will be encouraged by Goodman. The following measures will therefore be included as part of the TP to facilitate motorcyclists:-

- The provision of 10 secure parking spaces within a dedicated area in accordance with Council guidelines, located close to a building entrance. The Parking area for motorcyclists will additionally include rigid fixings to enable motorcycles and mopeds to be secured to the ground when parked;
- A requirement to provide changing and shower facilities for motorcyclist within the building.

### 5.2.9 Company Cars & Business Mileage

The provision of company cars (or loans to purchase cars) offered to staff as part of their remuneration package plays a significant role in the making of travel decisions. Employers within any particular site who offer perks do so generally without considering whether other forms of transport should be offered instead.

Cars essential for work should be the only ones which are provided and business mileage rates and policies should be reviewed to minimise the financial gain to staff if they choose to travel by car instead of by train or bus to their normal place of work.

- Irrespective of any statutory action that may be taken by the Government to restrict the extent of the provision of company cars, Goodman will undertake as part of *The Travel Plan* to discuss company car usage with the occupier.

### 5.2.10 Cycling & Walking

The layout of the development in general has been designed to include cycleway and footway connections to all entrances from the local road and footpath network. Many existing areas and facilities are within easy walking and cycling distance of the site (Figures 4 & 5) and as a result, the plot layout has been used to help encourage foot and cycle use through good design.

In terms of off-site provisions, the key component is the footway/cycleway running past the site as shown on **Appendix A**. Its provision is covered by a previous third-party Section 106 Agreement and it will help deliver the targeted **15%** mode share for walking and cycling combined, against the prevalent 9%.

- Goodman undertakes to work with The Council to seek to deliver the best option for the missing section of footway/cycleway running past the site along Arterial Road.

In addition to the physical infrastructure identified above, information about safe cycle routes and the encouragement of employees to use cycles will be promoted by the Travel Plan Co-ordinator as part of the overall *Travel Plan*. As a consequence:-

- Goodman will ensure the provision of at least 30 covered cycle stands (60 spaces) upon site completion. Stands will be secure and located in visible, well lit and safe locations. The building will provide shower facilities for cyclist, together with changing areas and secure storage lockers;
- Goodman will provide suitable illumination of the off-site footpath link and any cycleways constructed between the site and the surround public infrastructure.
- As part of *The Travel Plan*, Goodman will promote cycling as a means of travelling to work, highlighting the health benefits thereof,

Other important aspects of cycling are security, maintenance and marketing. This is particularly true where the maintenance of lighting is concerned, which should be provided and repaired immediately in order to ensure that cycle routes enjoy the maximum patronage. One of the roles of the Travel Plan Co-ordinator will therefore be to ensure that cycleways both in and around the site are maintained and the vulnerability of those using them minimised as a consequence.

Another key part of cycling is knowledge, encompassing both routes and the use of cycles themselves. This is particularly true where employees may be unfamiliar with routes around the site that have been newly added as part of the development, or simply where would-be cyclists need a bit of encouragement to make the leap from car to cycle. With this and the previous context in mind, Goodman undertakes to:-

- Provide up-to-date cycle maps (encompassing both new productions and existing publications by The Council) and improved signage in and around the site to encourage the use of cycles as a means of travel;
- Establish a *Cycle Group* within the development to allow users to share common thoughts and worries about cycling, including a cycle “*Buddy*” scheme. This will be promoted as part of the “*Welcome Pack*” to allow employees to sign-up on the day of induction onto the site;
- Raise awareness of the national sustainable travel events such as “*Bike Week*”, together with incentive schemes like “*In Town without My Car*” that incorporate free lunch and breakfast vouchers;

- Goodman will work with local specialists to deliver a mobile cycle repair “*Workshop*”, which will visit the site on a fixed and regular timetable basis;
- The Travel Plan Co-ordinator will be responsible for ensuring that lighting to cycleways in and around the site is maintained to a high standard. This will be publicised as a key benefit of the cycle network and released as part of an overall marketing campaign aimed at cyclists;
- The Travel Plan Co-ordinator will additionally put together a *Cycling Scheme* booklet, which will include all of the above mentioned initiatives. This will be done prior to the occupation of any unit and will cover all aspects of cycling for inclusion in the “*Welcome Pack*”.

Walking to the site is to be encouraged and there are currently numerous routes linking the surrounding residential areas to it by both recreational and more direct means (**Figure 4**). To maximise the potential of such routes, Goodman will:-

- Provide all employees with maps indicating safe walking routes throughout the area, including condition of surfacing, widths, distances and times to popular locations (such as Lakeside) lighting provisions and major road crossing locations;
- Provide new pedestrian signage from the site to the main destinations;
- Raise awareness of the health benefits of walking for all through organised national, team and company walking challenges, marketing campaigns in line with schemes such as [walkit.com](http://walkit.com), “*Walk to Work Week*” or “*Walk Week*” and via “*Measured Mile*” schemes incorporating free issue pedometers and alarms;
- Encourage walking (and cycling) by discouraging car parking spaces from being allocated to able-bodied employees who live within 2km of the site.

#### 5.2.11 Timescales

Specific timescales attached to several major initiatives contained within this TP are identified in **Section 4.3** as part of the “Action” target strategy. In addition, however (and to ensure early take-up of the *Travel Plan* and development of the specific initiatives centred within it) it will also be necessary to make each building aware of its existence and the need for co-operation individually. To achieve this, Goodman proposes to implement the following basic programme at the start of 2021 so that the maximum early take-up of the available non-car options for the site can be achieved:-

Appoint of a Travel Plan Co-ordinator	by end of 2020
Agree and undertake baseline staff survey	3 months
Provide information pack for both staff and visitors	3 months
Provide travel information board	3 months
Provide bus timetable information	3 months
Consider and design a car-share scheme	6 months
Formulate priority car parking proposals	6 months
Follow up and publish first Annual Statement	12 months

### 5.2.12 Monitoring & Review

Monitoring of *The Travel Plan* will be the responsibility of the Travel Plan Co-ordinator, who will hold regular meetings with all interested parties in the pursuance of this responsibility. Apart from receiving regular updates from Goodman on the site and liaising with The Council on transport related matters, the main monitoring process will involve staff surveys in line with the example provided at **Appendix C**.

Since travel surveys are accurate for only a relatively short period of time following their instigation, it is Goodman's intention that the survey process be repeated on regular basis. This will ensure that the information held is up-to-date. The results of each survey will then be discussed at a meeting between the Travel Plan Co-ordinator and The Council's Travel Plan Officer to review progress against targeted modal splits and assess the effectiveness of, and need for, new measures as required. To do this, the Travel Plan Co-ordinator will be required to calculate the percentage share of all travel modes to the site, based on all available information. This will then be presented on a rolling annual basis to The Council, as well as LWL for review. Where targets are not met, remedial actions will be proposed, agreed and then monitored for effect.

The figures calculated will additionally take account of known parameters (such as car movements) which will be calculable independently to ensure the robustness of the information provided.

- Goodman undertakes to provide an *Annual Monitoring and Review Report* for the site to The Council (at no cost to The Council), having first met with the The Council's Travel Plan Officer to review the most recent survey data. The report will include a comparison of achievements against targets and remedial proposals for improvement where required. It will also include a summary of changes to personnel, any new or changed partnerships and outline plans and proposals for the coming year. In addition, survey results will be circulated to all employees and visitors upon the completion of each survey;
- The format of the reporting will initially be based on the TfL "iTrace" Travel Plan monitoring database as a guide; the details of which can be found at <https://london.itrace.org.uk>, but will then be subject to agreement with The Council;
- Goodman will provide a comprehensive evaluation of effectiveness of *The Travel Plan* as part of their third *Annual Monitoring and Review Report*;
- Goodman agrees that the monitoring period for the site will be extended should the TP fail to meet its targets within two years of full occupation. The length of any extension will be agreed with The Council and also Highways England, at the appropriate time.

The issue of non-compliance and (hence remedial measures) is sensible to at least consider at this stage, and in this respect LWL's approach for the later stages of the development are described below.

---

Based on progressively implementing additional measures to those currently described in the TP to deal with under-achievement, Goodman will consider:-

- Providing free daily bus passes to targeted employees for a period of six months, based on the number of car trips being made above the agreed target.

#### 5.2.13 Reducing Travel Demand

To encourage reductions in the overall travel demand associated with the site, a number of measures will be promoted. These will include incentives to work from home on an occasional or even regular basis via video links; the introduction of flexi-time and compressed working weeks. To help secure this:-

- Goodman will seek to minimise the need to travel to and from the development by investigating options such as flexi-time, home working and compressed working weeks with the occupier. These will be aimed at normal office staff, where attendance within a particular shift hierarchy is not a condition of employment. The provision of equipment and virtual additions such as Broadband connections to allow staff to work from home will also be sought;
- All office areas will be equipped with fibre optic Broadband as part of the development's construction. To make sure that maximum use of this facility is made, free Wi-Fi "Hotspots" will be created and built-in throughout the site to enable easy connection.

#### 5.2.14 Personalised Travel Planning

The Travel Plan Co-ordinator will be available to assist with personalised travel planning and each employee will be entitled to a one-on-one individual session prior to taking up his or her employment. Additional measures will then include:-

- Tailored walking and cycling maps, including landmarks familiar to the individual alongside other easy to recognise destinations;
- An up-to-date travel booklet, showing all currently available travel options.

#### 5.2.15 Marketing

Lawrence Walker's track record in promoting travel options for sites with which they are involved is good and as a consequence, take-up of non-car modes within them is generally high. This experience stems most recently from their work on Goodman's *London Medway Commercial Park (LMCP)* near Chatham in Kent.

The key to marketing travel options at LMCP is the site's Web Site, which covers all transport issues and can be accessed from any standard computer with an Internet connection at <http://travelguide.londonmedwaycp.com>. Several years in the development, the Web Site covers all aspects of travel and offers advice to all in an easy to follow manner. Its existence is promoted by the Travel Plan Co-ordinator for the site on a regular basis.

---

Based on the LMCP approach:-

- Goodman will develop and maintain in conjunction with LWL a working travel Web Site for the development, which will be operational prior to the occupation of the building on the site (or part thereof);
- The Web Site will serve as the main marketing tool for *The Travel Plan* and will provide detailed travel information free of charge to all users. Its existence will be made known by a series of “Fliers” on a regular basis and by the one-off “*Welcome Packs*”, which will be given to each employee upon taking-up their employment for the first time.

In addition to the Web Site, there are a number of other measures that have proved popular at locations where LWL is involved, including regular on-site events. These measures are likely to include:-

- The scheduling of regular events within the site aimed at improving sustainability;
- The production of a regular *News Letter*, including things like a “*Bulletin Board*” and appropriate cases studies on businesses within the site;
- Publication of the survey data on a regular basis, an a “*How Well We Are Doing?*” basis;
- Participation in National events such as “*In Town Without My Car Day*” and others aimed at reducing car dependency on a fun basis;
- Updates on new initiatives comprising Press Releases, the release of new maps, posters, email shots, and other measures to keep sustainable travel at the forefront of employee’s minds.

---

## Section 6 Summary and Recommendations

### 6.1 Summary

*The Travel Plan* aims to promote sustainable transport through a number of initiatives. It is the framework by which Goodman will actively commit, both in the short term and long term, to meeting the objectives of a more sustainable transport policy. *The Travel Plan* sets out targets for realising a tangible modal shift from car to other more sustainable modes, including a new bus stop footpath link, cycling, walking and car sharing initiatives. It also defines the means by which the targets can be met and establishes a response to various factors including:-

- Recognition of the fact that a partnership approach between users, transport operators and the Local Authorities to transport issues is important, and;
- The need to take a pro-active approach to the development and implementation of a sustainable travel strategy for the management of travel demand in line with Government policies.

### 6.2 Recommendations

The future involvement of Goodman is regarded as an important component to the overall success of the TP. Nevertheless, LWL targets the reduction of car-borne single occupancy traffic to no more than 60% of all travel modes upon full occupation of the development as the principal objective of the sustainable travel strategy.

Essential to the formulation and successful implementation of this plan is a thorough understanding of the travel patterns of all future employees. This knowledge will allow *The Travel Plan* to be formulated and reviewed to achieve the optimum results.

In this context, and in conjunction with Thurrock Council, Goodman will:-

- Commission staff travel surveys as outlined in the *Travel Plan* and at a frequency described there-in, including the reporting and monitoring thereof;
- Appoint a *Travel Plan Co-ordinator* to oversee all travel policies and implement *The Travel Plan*. The role and duties of the Travel Plan Co-ordinator will be as defined in **Section 5.2.2** of *The Plan*;
- Seek to tailor the prescribed third-party footway/cycleway to serve the development in accordance with **Section 5.2.3** of *The Plan*. Bus travel will be promoted as the prime surface transport option to the development wherever possible following this;
- Provide access to the Ensign “*Real-Time Travel Information App*” (RTI) and supplement with “*Welcome Packs*” within the building (or part thereof) upon occupation, to ensure that information relating to travel options is available in both a quick and convenient format;

- 
- Establish a new dedicated *Web Site*, which will provide information on travel and the use of non-car modes via the Internet on an RTI basis;
  - Implement a controlled parking regime in accordance with **Section 5.2.6** above;
  - Initiate a *Car-Share Scheme* as defined in **Section 5.2.7** of *The Plan*;
  - Deliver a *Walking & Cycling Initiative* as described in **Section 5.2.10** of *The Plan*, including mobile cycle repair facilities;
  - Seek to reduce the need to travel through a *Travel Reduction Policy* comprising a number of initiatives as outlined within **Section 5.2.13** of *The Plan*;
  - Actively market *The Travel Plan* in accordance with the methodologies described therein and outlined in particular within **Section 5.2.15**;
  - Provide all secondary and complementary measures described in *The Plan* to help deliver no more than 60% single occupancy car use upon full occupation.

The above forms the basis of *The Travel Plan* proposed for the development; the details of which remain to be agreed with the officers of The Council and Highways England. It is submitted for approval on this basis.

## Figures





**NOTES**

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**KEY**

Rev	Date	Description	Drawn
A	12.05.19	ISSUED FOR USE	SPJ

**AMENDMENTS**

LAWRENCE WALKER LIMITED  
 CHURCH FARM  
 LEAMINGTON  
 HASTINGS  
 WARKS  
 CV23 8DZ

Client  
 GOODMAN REAL ESTATE (UK) LIMITED

Project Title  
 PURFLEET COMMERCIAL PARK  
 STONEHOUSE LANE  
 PURFLEET

Drawing Title  
 LOCAL HIGHWAY NETWORK

Scale As Noted	Date 12.05.19	Drawn by SPJ
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Drawing Status  
 Planning

Drawing No: Figure 2	Revision A
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**KEY**

- Existing Ensign Route 44 Service (15 min)
- Existing Bus Stops

Rev	Date	Description	Drawn
A	12.05.19	ISSUED FOR USE	SPJ

**AMENDMENTS**

LAWRENCE WALKER LIMITED  
 CHURCH FARM  
 LEAMINGTON  
 HASTINGS  
 WARKS  
 CV23 8DZ

Client  
 GOODMAN REAL ESTATE (UK) LIMITED

Project Title  
 PURFLEET COMMERCIAL PARK  
 STONEHOUSE LANE  
 PURFLEET

Drawing Title  
 LOCAL BUS NETWORK & BUS STOPS

Scale: As Noted    Date: 12.05.19    Drawn by: SPJ

Drawing Status: Planning

Drawing No: Figure 3    Revision: A



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**KEY**

— Approximate Distance to Centre of Site

Rev	Date	Description	Drawn
A	12.05.19	ISSUED FOR USE	SPJ

**AMENDMENTS**

LAWRENCE WALKER LIMITED  
 CHURCH FARM  
 LEAMINGTON  
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 WARKS  
 CV23 8DZ

Client  
 GOODMAN REAL ESTATE (UK) LIMITED

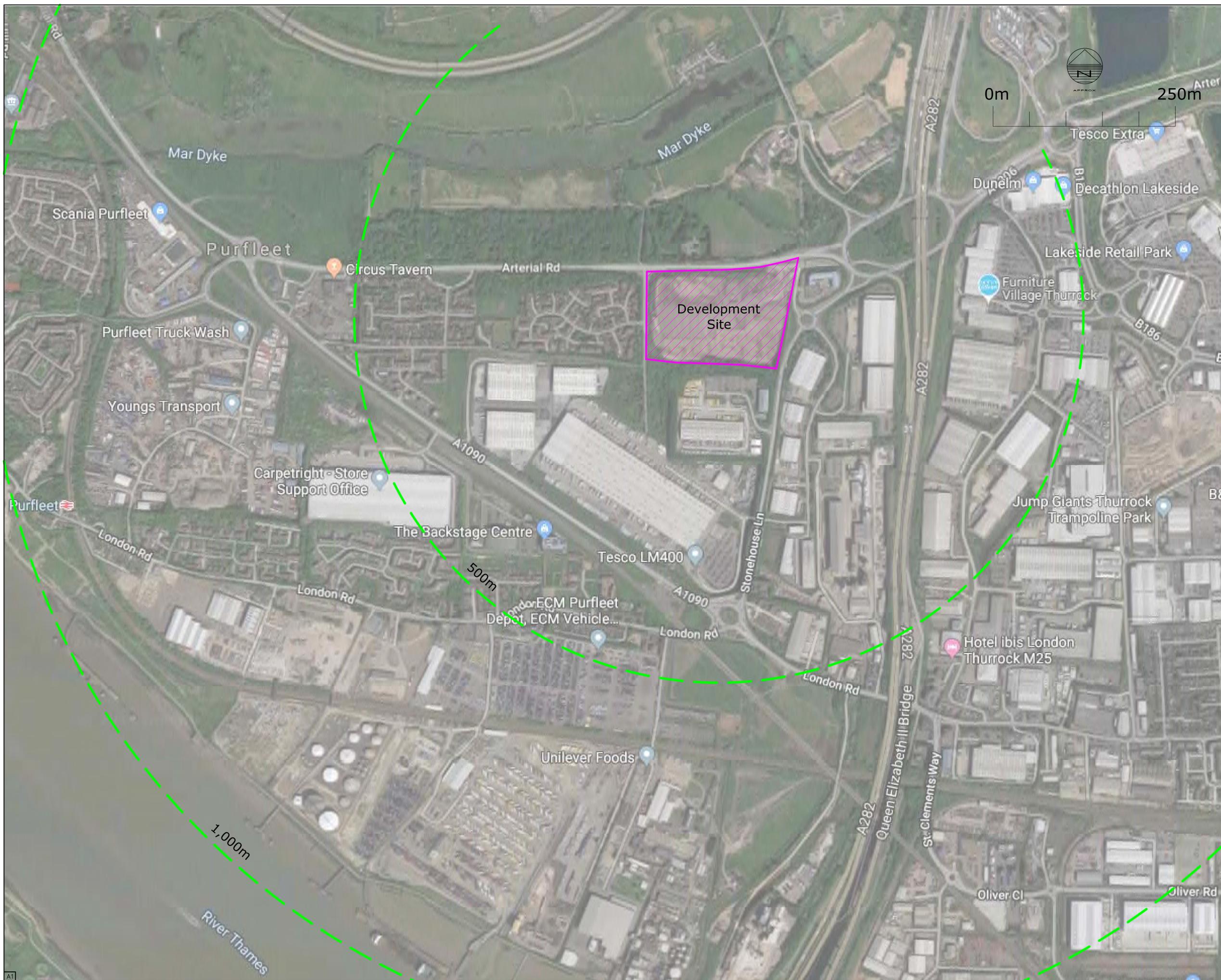
Project Title  
 PURFLEET COMMERCIAL PARK  
 STONEHOUSE LANE  
 PURFLEET

Drawing Title  
 WALKING ISOCHRONES

Scale As Noted	Date 12.05.19	Drawn by SPJ
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 Planning

Drawing No: Figure 4	Revision A
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**KEY**

— Approximate Distance to Centre of Site

Rev	Date	Description	Drawn
A	12.05.19	ISSUED FOR USE	SPJ

**AMENDMENTS**

LAWRENCE WALKER LIMITED  
 CHURCH FARM  
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 CV23 8DZ

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 GOODMAN REAL ESTATE (UK) LIMITED

Project Title  
 PURFLEET COMMERCIAL PARK  
 STONEHOUSE LANE  
 PURFLEET

Drawing Title  
 CYCLING ISOCHRONES

Scale As Noted	Date 12.05.19	Drawn by SPJ
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Drawing Status  
 Planning

Drawing No: Figure 5	Revision A
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# **Appendix A**

## **Development Masterplan**

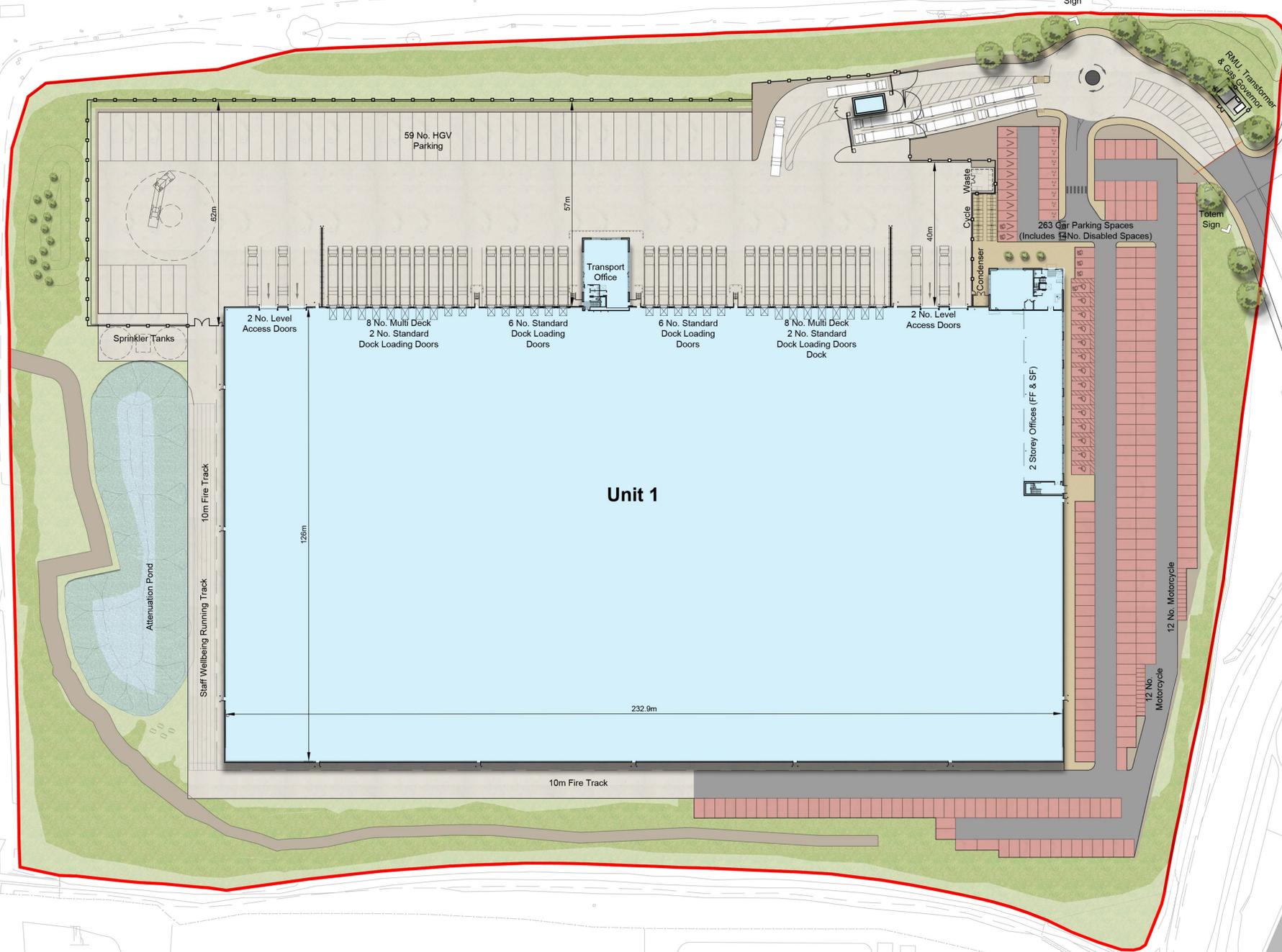
Dimensions are in millimeters, unless stated otherwise.  
 Scaling of this drawing is not recommended.  
 It is the recipient's responsibility to print this document to the correct scale.  
 All relevant drawings and specifications should be read in conjunction with this drawing.



**SCHEDULE OF ACCOMMODATION**

<b>Unit 1</b>	
Net Warehouse Area	- 308,710 sq ft (28,680 m <sup>2</sup> )
Warehouse Undercroft	- 5,371 sq ft (499m <sup>2</sup> )
GF Core / Office	- 2,842 sq ft (264m <sup>2</sup> )
2 Storey Office	- 16,000 sq ft (1,485 m <sup>2</sup> )
2 Storey Transport Office	- 5,000 sq ft (464 m <sup>2</sup> )
Gatehouse	- 344 sq ft (32 m <sup>2</sup> )
<b>Total Area</b>	- <b>338,267 sq ft (31,424m<sup>2</sup>)</b>
<b>Loading Docks</b>	- <b>32 Total</b>
	(16 Multi Deck Dock)
	(16 Standard Deck Dock)
<b>Level Access</b>	- 4
<b>HGV Parking</b>	- 59
<b>Car Parking</b>	- 263 (Incl 14 accessible)
<b>Cycle Spaces</b>	- 60
<b>Motorcycle Spaces</b>	- 24
<b>Electrical Charging Spaces</b>	- 6
<b>Car Sharing Spaces</b>	- 9
<b>Visitor Spaces</b>	- 11 (inc 2 N° EC Spaces)
<b>Plot Area</b>	- 19.80 Acres (8.01 Hectares)

- Key:**
- denotes car charging spaces
  - denotes car share spaces
  - denotes visitor spaces



**PLANNING**

rev amendments by ckd date

**Purfleet Commercial Park**  
Site Plan



Newark Station Innovation Centre, California Way, Newark, Nottinghamshire NG24 0TN  
 +44 (0)1529 615207 +44 (0)1529 615210 [info@umcarchitects.com](mailto:info@umcarchitects.com)

<b>Drawing Status:</b>	Planning
Drawn / Checked:	HJ / JRM
Date:	04/06/2019
Scale:	1:500 @ A0
Drawing no:	Revision:
16040 P0002	F

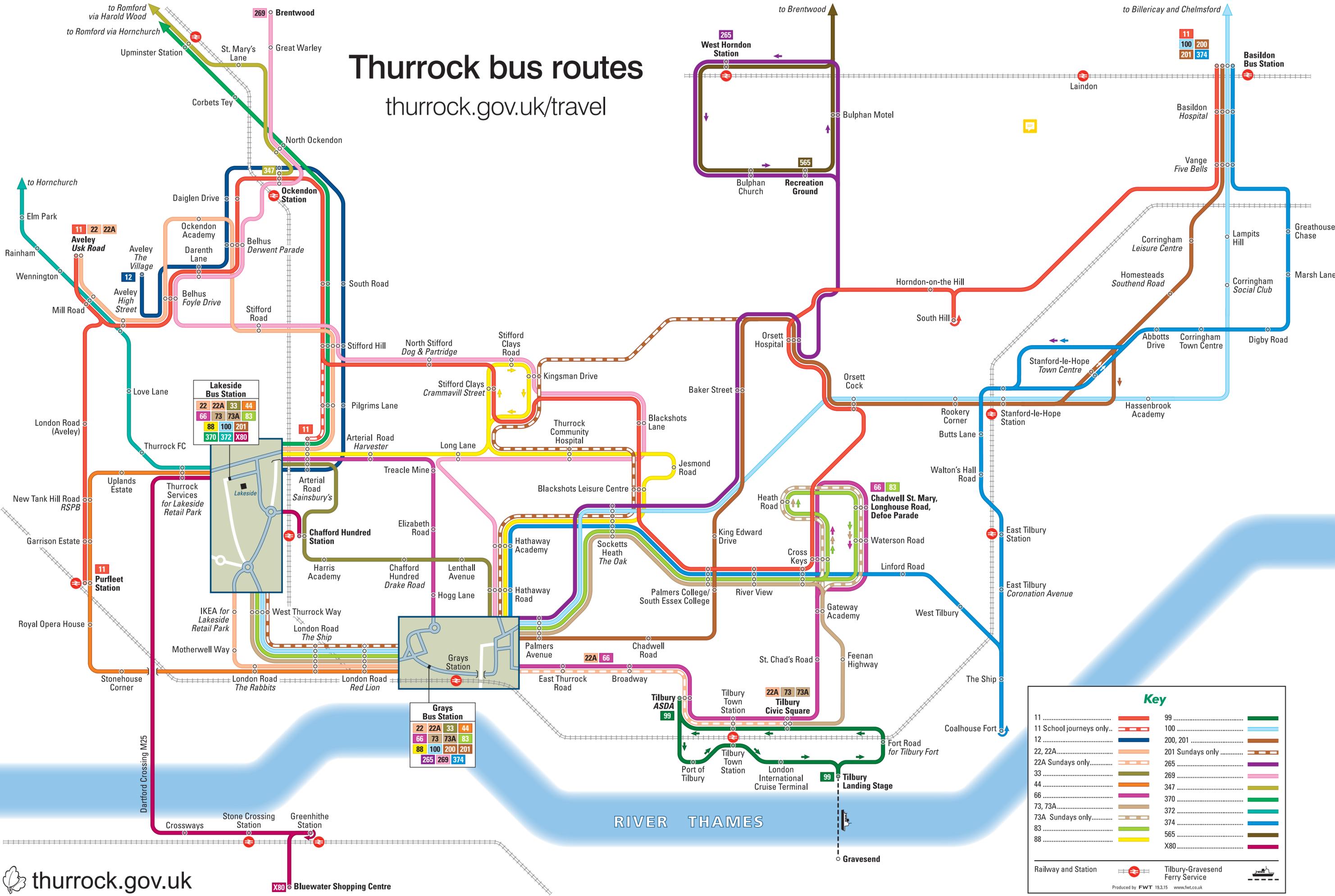
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## **Appendix B**

### **Existing Transport Links**

# Thurrock bus routes

thurrock.gov.uk/travel



**Lakeside Bus Station**

22	22A	33	44
66	73	73A	83
88	100	200	201
370	372	X80	

**Grays Bus Station**

22	22A	33	44
66	73	73A	83
88	100	200	201
265	269	374	

**Key**

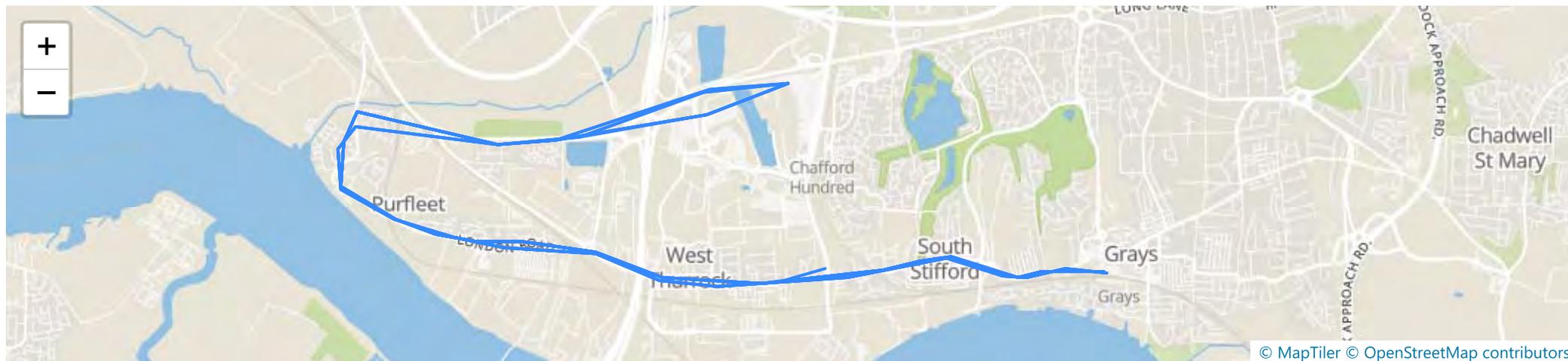
11	99	
11 School journeys only..	100	
12	200, 201	
22, 22A	201 Sundays only	
22A Sundays only	265	
33	269	
44	347	
66	370	
73, 73A	372	
73A Sundays only	374	
83	565	
88	X80	

Railway and Station Tilbury-Gravesend Ferry Service

Produced by FWT 19.3.15 www.fwt.co.uk

# 44 - Lakeside - Purfleet - Grays

A bus service operated by Ensign Bus



Thursday 9 May 2019 ▼

## Lakeside - Purfleet - Grays

Lakeside Bus Station (Bay A)														07:22	07:52	then	13:52	14:22	then
Lakeside, at Tesco														07:24	07:54	every	13:54	14:24	every
Purfleet, on Watts Crescent			05:20	05:55		06:22	06:57							07:29	07:59	30	13:59	14:29	minutes
Purfleet Marlow Avenue (S-bound)	04:44	04:54	05:23	05:58	06:14	06:25	06:49	07:00	07:15	07:34	07:45	08:04			until	14:04	14:34	until	
Purfleet Saladin Drive (S-bound)	04:45	04:55	05:24	05:59	06:15	06:26	06:50	07:01	07:16	07:36	07:46	08:06				14:06	14:36		
Purfleet Railway Station (E-bound)	04:47	04:57	05:26	06:01	06:17	06:28	06:52	07:03	07:18	07:38	07:48	08:08				14:08	14:38		
Purfleet, after Stonehouse Corner	04:50	05:00	05:30	06:05	06:21	06:32	06:56	07:08	07:23	07:43	07:53	08:13				14:13	14:43		
W Thurrock The Rookery (E-bound)	04:52	05:02	05:32	06:07	06:23	06:34	06:58	07:10	07:25	07:45	07:55	08:15				14:15	14:45		
W Thurrock West Thurrock Way (N-bound)																			

W Thurrock The Ship (E-bound)	04:55	05:05	05:35	06:10	06:26	06:37	07:01	07:13	07:28	07:48	07:58	08:18	14:18	14:48
Grays Bus Station (Bay 5)	05:00	05:10	05:42	06:17	06:33	06:44	07:08	07:20	07:35	07:55	08:05	08:25	14:25	14:58

Advertisement

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## Grays - Purfleet - Lakeside

Grays Bus Station (Bay 3)	06:46		17:46	18:00	18:16	18:46	19:00	19:25	19:45	20:05	21:45
W Thurrock The Ship (W-bound)	06:53		17:53	18:07	18:23	18:53	19:07	19:32	19:51	20:11	21:51
W Thurrock, adj The Rabbits	06:56		17:56	18:10	18:26	18:56	19:10	19:35	19:54	20:14	21:54
Purfleet, before Stonehouse Corner	06:58		17:58	18:12	18:28	18:58	19:12	19:37	19:56	20:16	21:56
Purfleet Railway Station (W-bound)	07:02		18:02	18:16	18:32	19:02	19:16	19:41	20:00	20:20	22:00
Purfleet Comet Close (N-bound)	07:04	then every 30 minutes until	18:04	18:18	18:34	19:04	19:18	19:43	20:02	20:22	22:02
Purfleet Marlow Avenue (N-bound)	07:04		18:04		18:34	19:05			20:03	20:22	22:02
Purfleet, on Watts Crescent	07:08		18:08		18:38					20:26	22:06
Lakeside, at Tesco	07:13		18:13		18:43					20:31	22:11
Lakeside Bus Station (Bay A)	07:15		18:15		18:45					20:33	22:13

## More information

- [Ensign Bus website](#)
- [@EnsignBusCo on Twitter](#)
- [Timetable on the Traveline website](#)

## **Appendix C**

### **Model Staff Travel Survey**

PURFLEET COMMERCIAL PARK

STAFF TRAVEL SURVEY

(Confidential)

Please TICK relevant boxes

1 Title of your job .....

2 How many hours a week do you normally work? .....

3 What hours do you normally work?

..... am/pm till ..... am/pm

4 How do you mostly travel to work? Tick one of the following:

- |  |                                    |   |
|--|------------------------------------|---|
| <input type="checkbox"/> bus                   | <input type="checkbox"/> rail      | <input type="checkbox"/> cycle            |
| <input type="checkbox"/> walk                  | <input type="checkbox"/> motorbike | <input type="checkbox"/> car, on your own |
| <input type="checkbox"/> car, with other(s)    |                                    |   |
| <input type="checkbox"/> other (specify) ..... |                                    |   |

5 Which one of the following do you occasionally use instead of your usual form of transport?

- |   |                                    |   |
|---|------------------------------------|---|
| <input type="checkbox"/> bus                      | <input type="checkbox"/> rail      | <input type="checkbox"/> cycle            |
| <input type="checkbox"/> walk                     | <input type="checkbox"/> motorbike | <input type="checkbox"/> car, on your own |
| <input type="checkbox"/> car, with other(s)       |                                    |   |
| <input type="checkbox"/> other (specify) .....    |                                    |   |
| <input type="checkbox"/> don't use an alternative |                                    |   |

6 Do you have a disability that affects your travel?

- |                              |                             |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

7 How far do you travel to work?

- |                                       |  |  |
|---------------------------------------|--|--|
| <input type="checkbox"/> up to 1 mile | <input type="checkbox"/> 1 – 2 miles   | <input type="checkbox"/> 2 – 4 miles   |
| <input type="checkbox"/> 4 - 10 miles | <input type="checkbox"/> 10 - 20 miles | <input type="checkbox"/> over 20 miles |

8 How long does it usually take you to travel to work?

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> up to 15 minutes | <input type="checkbox"/> 16 – 30 minutes | <input type="checkbox"/> 31 – 60 minutes |
| <input type="checkbox"/> 61 – 90 minutes  | <input type="checkbox"/> over 90 minutes |  |

9 If you do not cycle now, which of the following changes would encourage you to cycle to work? Please tick no more than three.

- improved cycle paths on the journey to work
- general improvements in road safety (e.g. more traffic calming)
- improved cycle parking at work
- showers and changing facilities (should you need to change clothes)
- lockers for clobber (e.g. helmet, clothes)
- cycle training to improve confidence when cycling to work
- arrangements to buy a bike at a discount
- free taxi home in emergencies
- other (please specify) .....

10 If you already cycle, what improvements would you most like to see?

.....

.....

.....

11 Which of the following changes would encourage you to use public transport for your journey to work? (If you already use public transport which would you most like to see). Please tick no more than four.

- more direct bus routes
- more frequent bus service
- more frequent train service
- earlier/later buses/trains to fit in with my shift hours
- better lighting at bus stops
- provision of bus shelters
- provision of seating at bus stops
- new bus link from station (which? .....
- provision of better public transport information at work
- interest-free season ticket/travelcard loan
- discount fares
- free bus travel at lunchtimes for shopping
- other (please specify) .....

12 Which of the following changes would encourage you to walk to work? (If you already walk, which would you most like to see?). Please tick no more than two.

- better maintained pavements
- safer road crossings
- more street lighting
- free taxi home in emergencies
- other (please specify) .....

13 Do you qualify for a company car?

- Yes
- No

14 If yes, do you use it to get to work?

- Yes  No

15 Could you work from home occasionally if you had the necessary IT equipment?

- all the time  most of the time  occasionally  never

16 How interested would you be in exploring home-working?

- very interested  fairly interested  not interested

PLEASE COMPLETE QUESTIONS 17 – 20 IF YOU OWN AND INTEND TO USE A CAR TO WORK

17 What are your main reasons for using a car to work?

- need to use it during the day on business
- need to use it during lunchtimes for shopping
- drop/collect children
- you get or give a lift
- for personal security
- lack of an alternative
- other, please specify .....

If you ticked the first box, how many days a week on average do you need it for business?

.....

and, how many hours are you normally away from the office at a time? .....

18 Where do you usually park?

- on site, SITE NAME / CAR PARK NAME
- OTHER NAMED LOCATION RELEVANT TO YOU
- free parking in nearby streets
- other, please specify .....

19 Would you be prepared to car share?

- yes  no  I already car share

20 Which of the following would most encourage you to car share? (If you already car share which would you most like to see?). Please tick no more than two.

- help in finding car share partners with similar work patterns
- free taxi home if let down by car driver or in an emergency
- reserved parking, closest to entrance for car sharers
- other, please specify .....
- none of these



## **Appendix D**

### **Car Parking Profile**

## BLUELANDS QUARRY (Two Shift)

### EMPLOYEE TRAFFIC GENERATION

#### FIRST PRINCIPLES

##### SHIFT TIMES AND TRAVEL DEMAND

EMPLOYMENT GROUP	TOTAL STAFF
B1 Office Employees	100
B2 & B8 Employees	350
Other	0
<b>TOTAL STAFF</b>	<b>450</b>

##### SHIFT DISTRIBUTION

Of the B2/B8 shift-working employees, data for the Qinetiq site in Farnborough provides a suitable breakdown.

B1 staff assumed to work standard hours. Other staff assumed to comprise shift and non-shift. Shift staff = 100%

B2/B8 Staff	Shift times	Qinetiq	B2/B8 %	B2/B8
Office and other non-shift staff:	09:00 to 17:00	0	0%	0
Factory and other staff DAY shift	07:00 to 19:00	50	50%	175
Factory and other staff NIGHT shift	19:00 to 07:00	50	50%	175
Factory and other staff late shift	N/A	0	0%	0
<i>Total Warehouse and Other Shift Staff</i>		<i>100</i>	<i>100%</i>	<i>350</i>
<b>TOTAL STAFF</b>		<b>100</b>	<b>100%</b>	

##### TOTAL TRAVEL DEMAND

Gross figures are before adjustment to account for part-time working, peak spreading, sickness and holidays.

Net figures are subject to the following discounts:

Discounts	Applies to	%
Part-time staff not travelling every day	All staff	10%
Staff on leave or sick	All staff	15%
Staff choosing flexi/off-peak times of travel	Remaining non-shift staff	10%

##### GROSS TRAVEL DEMAND

ELEMENT	TIME	GROSS		Net of P.T, leave and sick		Net of staff travelling off-peak	
		DEP	ARR	DEP	ARR	DEP	ARR
<b>B2 &amp; B8 Industrial</b>	Pre-AM peak	0	175	0	131	0	131
	AM peak	0	0	0	0	0	0
	Shift Cross-Over	175	175	131	131	131	131
	PM peak	0	0	0	0	0	0
	Post PM peak	175	0	131	0	131	0
<b>B1 Office</b>	Pre-AM peak	0	0	0	0	0	0
	AM peak	0	100	0	75	0	68
	Shift Cross-Over	0	0	0	0	0	0
	PM peak	100	0	75	0	68	0
	Post PM peak	0	0	0	0	0	0
<b>Others</b>	Pre-AM peak	0	0	0	0	0	0
	AM peak	1	0	0	0	0	0
	Shift Cross-Over	0	0	0	0	0	0
	PM peak	0	0	0	0	0	0
	Post PM peak	0	0	0	0	0	0
<b>TOTAL NET TRAVEL DEMAND</b>	<i>Pre-AM peak</i>	<i>0</i>	<i>175</i>	<i>0</i>	<i>131</i>	<i>0</i>	<i>131</i>
	<i>AM peak</i>	<i>1</i>	<i>100</i>	<i>0</i>	<i>75</i>	<i>0</i>	<i>68</i>
	<i>Shift Cross-Over</i>	<i>175</i>	<i>175</i>	<i>131</i>	<i>131</i>	<i>131</i>	<i>131</i>
	<i>PM peak</i>	<i>100</i>	<i>0</i>	<i>75</i>	<i>0</i>	<i>68</i>	<i>0</i>
	<i>Post PM peak</i>	<i>175</i>	<i>0</i>	<i>131</i>	<i>0</i>	<i>131</i>	<i>0</i>

Total 330 330

Total Two-Way Staff Movements per Day to Work = 660

Total Two-Way Staff Movements per Day during Day = 132

\* Visitor Movements per Day = 350

All Movements = 1143

Maximum Two-Way Movements per Day = 1,500

##### CAR DRIVER MODAL SHARE

Baseline %	Target %
80%	60%

Baseline figures are derived from TRICS.  
Target figure is in accordance with the Travel Plan.

\* Based on Car Parking Allocation (see adjacent Spreadsheet)

## BLUELANDS QUARRY (Two Shift)

### CAR PARKING DEMAND

#### FIRST PRINCIPLES

##### SHIFT TIMES - DISTRIBUTION OPERATIONS

SHIFT	START	END
Day Shift	7:00	19:00
Night Shift	19:00	7:00
Other Shift	-	-

##### CAR TRAVEL DEMANDS

Figures obtained from traffic generation calcs.

##### GROSS TRAVEL DEMAND

ALL TRIPS = 100%

ELEMENT	PERIOD	TIME	DEP	ARR	ACC	PEAK
<b>B2 &amp; B8 Industrial</b>	Pre-AM peak	Pre 7:00	0	131	131	131
	AM peak	-	0	0	131	131
	Shift Cross-Over	Day/Night	131	131	131	263
	PM peak	-	0	0	131	131
	Post PM peak	Post 19:00	131	0	0	131
<b>B1 Office</b>	Pre-AM peak	Pre 7:00	0	0	0	0
	AM peak	-	0	68	68	68
	Shift Cross-Over	Day/Night	0	0	68	68
	PM peak	-	68	0	0	0
	Post PM peak	Post 19:00	0	0	0	0
<b>Others</b>	Pre-AM peak	Pre 7:00	0	0	0	0
	AM peak	-	0	0	0	0
	Shift Cross-Over	AM/PM	0	0	0	0
	PM peak	-	0	0	0	0
	Post PM peak	Post 19:00	0	0	0	0

##### CAR TRAVEL DEMAND (NO TP)

CAR DRIVER = 80%

ELEMENT	PERIOD	TIME	DEP	ARR	ACC	PEAK
<b>B2 &amp; B8 Industrial</b>	Pre-AM peak	Pre 7:00	0	105	105	105
	AM peak	-	0	0	105	105
	Shift Cross-Over	Day/Night	105	105	105	210
	PM peak	-	0	0	105	105
	Post PM peak	Post 19:00	105	0	0	105
<b>B1 Office</b>	Pre-AM peak	Pre 7:00	0	0	0	0
	AM peak	-	0	54	54	54
	Shift Cross-Over	Day/Night	0	0	54	54
	PM peak	-	54	0	0	0
	Post PM peak	Post 19:00	0	0	0	0
<b>Others</b>	Pre-AM peak	Pre 7:00	0	0	0	0
	AM peak	-	0	0	0	0
	Shift Cross-Over	Day/Night	0	0	0	0
	PM peak	-	0	0	0	0
	Post PM peak	Post 19:00	0	0	0	0

##### CAR TRAVEL DEMAND (WITH TP)

CAR DRIVER = 60%

ELEMENT	PERIOD	TIME	DEP	ARR	ACC	PEAK
<b>B2 &amp; B8 Industrial</b>	Pre-AM peak	Pre 7:00	0	79	79	79
	AM peak	-	0	0	79	79
	Shift Cross-Over	Day/Night	79	79	79	158
	PM peak	-	0	0	79	79
	Post PM peak	Post 19:00	79	0	0	79
<b>B1 Office</b>	Pre-AM peak	Pre 7:00	0	0	0	0
	AM peak	-	0	41	41	41
	Shift Cross-Over	Day/Night	0	0	41	41
	PM peak	-	41	0	0	0
	Post PM peak	Post 19:00	0	0	0	0
<b>Others</b>	Pre-AM peak	Pre 7:00	0	0	0	0
	AM peak	-	0	0	0	0
	Shift Cross-Over	Day/Night	0	0	0	0
	PM peak	-	0	0	0	0
	Post PM peak	Post 19:00	0	0	0	0

**CAR PARKING DEMAND (MAXIMUM ACCUMULATION)**

Max No. of Cars on Site	B2/B8	B1 Hi-Tech	Other	TOTAL
No Travel Plan	210	68	0	278
With Travel Plan	158	41	0	198

**CAR PARKING DEMAND (ACTUAL DEMAND WITH TP)**

For Industrial, car parking provision needs to be assessed on the basis of the 3 shift system, with each shift being allocated a separate car park to ensure maximum efficiency at shift change-over times.

ELEMENT	PERIOD	TIME	ARR	CAR PARKING AREA		
				1	2	3
B2 & B8 Industrial (With Travel Plan)	Pre-AM peak	Pre 7:00	79	79	0	-
	AM peak	-	0	-	0	-
	Shift Cross-Over	Day/Night	79	-79	-	79
	PM peak	-	0	-	0	-
	Post PM peak	Post 19:00	0	-	0	-79
<b>TOTAL NUMBER OF SPACES REQUIRED IN EACH PARKING AREA</b>				<b>79</b>	<b>0</b>	<b>79</b>

<b>TOTAL NUMBER OF SPACES REQUIRED FOR INDUSTRIAL OPERATIONS</b>	<b>158</b>
--	------------

**ALLOWANCE FOR SPACE SEARCHING AND DYNAMIC CAPACITY REQUIREMENTS**

Additional allowances need to be applied to identified staff demands to ensure that spare capacity exists within each car park to allow for dynamic capacity and space-searching requirements.

*Note that this requirement is reduced for the Industrial staff car parks where allocation of spaces by shift and permit should ensure that arrival and departure times do not coincide, and that employees are able to find allocated spaces rapidly. This should ensure efficient filling and emptying of each parking area.*

**THEORETICAL CAR PARKING PROVISION**

ELEMENT	Demand	Allowance	Required
B2 & B8 Industrial	158	2.5%	161
B1 Office	41	11.1%	45
Others	0	11.1%	0
<b>TOTAL</b>	<b>198</b>	<b>-</b>	<b>206</b>

Nominal allowance for emergency use.  
Desirable demand to capacity ratio of 0.9, therefore  $1 / 0.9 = 1.11$   
Desirable demand to capacity ratio of 0.9, therefore  $1 / 0.9 = 1.11$

**ALLOWANCE FOR VISITOR AND OTHER OPERATIONAL PARKING**

ELEMENT	Requirement	Allowance	Visitors
B2 & B8 Industrial	161	11.1%	18
B1 Office	45	33.3%	15
Others	0	-	0
<b>TOTAL</b>	<b>206</b>	<b>-</b>	<b>33</b>

Industry practice is to provide visitor spaces at a rate of 10% of total provision.  
Industry practice is to provide visitor spaces at a rate of 33% of total provision.  
Estimate

**PROPOSED CAR PARKING PROVISION**

Proposals based on identified demand with TP in place, and assuming that TP meets its targets.  
 Visitor and other "operational" parking provided at a rate of approximately 10% of total provision.

<b>With Travel Plan</b>	<b>Staff</b>	<b>Visitors/other</b>	<b>Total</b>
B2 & B8 Industrial	165	25	190
B1 Office	50	25	75
Others	0	0	0
<b>Total</b>	<b>215</b>	<b>50</b>	<b>265</b>

Visitor Movements

- 25 x B2/B8 spaces @ 3 occupations per day
- 25 x B1 spaces @ 4 occupations per day
- 0 x Other spaces @ 5 occupation per day

# BLUELANDS QUARRY (Two Shift)

## CAR PARKING ACCUMULATION

### B2 & B8 USES (LIGHT VEHICLE TRIPS)

HOUR COMMENCING	Traffic Flow		Accumulation				
	ARR	DEP	TOTAL	AREA 1	AREA 2	AREA 3	Areas 1-3
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	79	0	79	79	0	0	79
6:00	0	0	79	79	0	0	79
7:00	0	0	79	79	0	0	79
8:00	0	0	79	79	0	0	79
9:00	0	0	79	79	0	0	79
10:00	0	0	79	79	0	0	79
11:00	0	0	79	79	0	0	79
12:00	0	0	79	79	0	0	79
13:00	79	0	158	79	0	79	158
14:00	0	79	79	0	0	79	79
15:00	0	0	79	0	0	79	79
16:00	0	0	79	0	0	79	79
17:00	0	0	79	0	0	79	79
18:00	0	0	79	0	0	79	79
19:00	0	0	79	0	0	79	79
20:00	0	0	79	0	0	79	79
21:00	0	0	79	0	0	79	79
22:00	0	79	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>158</b>	<b>158</b>					
<b>MAXIMUM ACCUMULATION</b>			<b>158</b>	<b>79</b>	<b>0</b>	<b>79</b>	<b>158</b>

	Early Shift
	Afternoon Shift
	Late shift
	Non-Shift

Vehicles on site at midnight: 0

## BLUELANDS QUARRY (Two Shift)

### CAR PARKING ACCUMULATION

#### B1 OFFICE USES

HOUR COMMENCING	Traffic Flow		
	ARR	DEP	ACC
0:00	0	0	0
1:00	0	0	0
2:00	0	0	0
3:00	0	0	0
4:00	0	0	0
5:00	0	0	0
6:00	0	0	0
7:00	0	0	0
8:00	41	0	41
9:00	0	0	41
10:00	0	0	41
11:00	0	0	41
12:00	0	0	41
13:00	0	0	41
14:00	0	0	41
15:00	0	0	41
16:00	0	0	41
17:00	0	41	0
18:00	0	0	0
19:00	0	0	0
20:00	0	0	0
21:00	0	0	0
22:00	0	0	0
23:00	0	0	0
<b>TOTAL</b>	<b>41</b>	<b>41</b>	
<b>MAXIMUM ACCUMULATION</b>			<b>41</b>

Vehicles on site at midnight: 0

## BLUELANDS QUARRY (Two Shift)

### CAR PARKING ACCUMULATION

#### OTHER STAFF

HOUR COMMENCING	Traffic Flow		
	ARR	DEP	ACC
0:00	0	0	0
1:00	0	0	0
2:00	0	0	0
3:00	0	0	0
4:00	0	0	0
5:00	0	0	0
6:00	0	0	0
7:00	0	0	0
8:00	0	0	0
9:00	0	0	0
10:00	0	0	0
11:00	0	0	0
12:00	0	0	0
13:00	0	0	0
14:00	0	0	0
15:00	0	0	0
16:00	0	0	0
17:00	0	0	0
18:00	0	0	0
19:00	0	0	0
20:00	0	0	0
21:00	0	0	0
22:00	0	0	0
23:00	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>MAXIMUM ACCUMULATION</b>			<b>0</b>

	Early Shift
	Afternoon Shift
	Late shift
	Non-Shift

Vehicles on site at midnight: 0

## BLUELANDS QUARRY (Two Shift)

### CAR PARKING ACCUMULATION

#### ALL EMPLOYEES

HOUR COMMENCING	Traffic Flow		
	ARR	DEP	ACC
0:00	0	0	0
1:00	0	0	0
2:00	0	0	0
3:00	0	0	0
4:00	0	0	0
5:00	79	0	79
6:00	0	0	79
7:00	0	0	79
8:00	41	0	119
9:00	0	0	119
10:00	0	0	119
11:00	0	0	119
12:00	0	0	119
13:00	79	0	198
14:00	0	79	119
15:00	0	0	119
16:00	0	0	119
17:00	0	41	79
18:00	0	0	79
19:00	0	0	79
20:00	0	0	79
21:00	0	0	79
22:00	0	79	0
23:00	0	0	0
<b>TOTAL</b>	<b>198</b>	<b>198</b>	
<b>MAXIMUM ACCUMULATION</b>			<b>198</b>

Vehicles on site at midnight: 0

## BLUELANDS QUARRY (Three Shift)

### EMPLOYEE TRAFFIC GENERATION

#### FIRST PRINCIPLES

##### SHIFT TIMES AND TRAVEL DEMAND

EMPLOYMENT GROUP	TOTAL STAFF
B1 Office Employees	100
B2 & B8 Employees	350
Other	0
<b>TOTAL STAFF</b>	<b>450</b>

##### SHIFT DISTRIBUTION

Of the B2/B8 shift-working employees, data for the Qinetiq site in Farnborough provides a suitable breakdown.

B1 staff assumed to work standard hours. Other staff assumed to comprise shift and non-shift. Shift staff = 40%

B2/B8 Staff	Shift times	Qinetiq	B2/B8 %	B2/B8
Office and other non-shift staff:	09:00 to 17:00	60	15%	53
Warehouse and other staff AM shift	06:00 to 14:00	125	31%	109
Warehouse and other staff PM shift	14:00 to 22:00	125	31%	109
Warehouse and other staff late shift	22:00 to 06:00	90	23%	79
<i>Total Warehouse and Other Shift Staff</i>		<i>340</i>	<i>85%</i>	<i>298</i>
<b>TOTAL STAFF</b>		<b>400</b>	<b>100%</b>	

##### TOTAL TRAVEL DEMAND

Gross figures are before adjustment to account for part-time working, peak spreading, sickness and holidays.

Net figures are subject to the following discounts:

Discounts	Applies to	%
Part-time staff not travelling every day	All staff	10%
Staff on leave or sick	All staff	15%
Staff choosing flexi/off-peak times of travel	Remaining non-shift staff	10%

##### GROSS TRAVEL DEMAND

ELEMENT	TIME	GROSS		Net of P.T, leave and sick		Net of staff travelling off-peak	
		DEP	ARR	DEP	ARR	DEP	ARR
<b>B2 &amp; B8 Industrial</b>	Pre-AM peak	79	109	59	82	59	82
	AM peak	0	53	0	39	0	35
	PM shift change	109	109	82	82	82	82
	PM peak	53	0	39	0	35	0
	Post PM peak	109	79	82	59	82	59
<b>B1 Office</b>	Pre-AM peak	0	0	0	0	0	0
	AM peak	0	100	0	75	0	68
	PM shift change	0	0	0	0	0	0
	PM peak	100	0	75	0	68	0
	Post PM peak	0	0	0	0	0	0
<b>Others</b>	Pre-AM peak	0	0	0	0	0	0
	AM peak	0	0	0	0	0	0
	PM shift change	0	0	0	0	0	0
	PM peak	0	0	0	0	0	0
	Post PM peak	0	0	0	0	0	0
<b>TOTAL NET TRAVEL DEMAND</b>	<i>Pre-AM peak</i>	<i>79</i>	<i>109</i>	<i>59</i>	<i>82</i>	<i>59</i>	<i>82</i>
	<i>AM peak</i>	<i>0</i>	<i>153</i>	<i>0</i>	<i>114</i>	<i>0</i>	<i>103</i>
	<i>PM shift change</i>	<i>109</i>	<i>109</i>	<i>82</i>	<i>82</i>	<i>82</i>	<i>82</i>
	<i>PM peak</i>	<i>153</i>	<i>0</i>	<i>114</i>	<i>0</i>	<i>103</i>	<i>0</i>
	<i>Post PM peak</i>	<i>109</i>	<i>79</i>	<i>82</i>	<i>59</i>	<i>82</i>	<i>59</i>

Total 326 326

Total Two-Way Staff Movements per Day to Work = 652

Total Two-Way Staff Movements per Day during Day = 123

\* Visitor Movements per Day = 350

All Movements = 1126

Maximum Two-Way Movements per Day = 1,500

##### CAR DRIVER MODAL SHARE

Baseline %	Target %
80%	60%

Baseline figures are derived from TRICS.  
Target figure is in accordance with the Travel Plan.

\* Based on Car Parking Allocation (see adjacent Spreadsheet)

## BLUELANDS QUARRY (Three Shift)

### CAR PARKING DEMAND

#### FIRST PRINCIPLES

##### SHIFT TIMES - DISTRIBUTION OPERATIONS

SHIFT	START	END
Early Shift	6:00	14:00
Afternoon Shift	14:00	22:00
Late Shift	22:00	6:00

##### CAR TRAVEL DEMANDS

Figures obtained from traffic generation calcs.

##### GROSS TRAVEL DEMAND

ALL TRIPS = 100%

ELEMENT	PERIOD	TIME	DEP	ARR	ACC	PEAK
<b>B2 &amp; B8 Industrial</b>	Pre-AM peak	05:30-06:30	59	82	82	141
	AM peak		0	35	117	117
	PM shift change	13:30-14:30	82	82	117	200
	PM peak		35	0	82	82
	Post PM peak	21:30-22:30	82	59	59	141
<b>B1 Office</b>	Pre-AM peak	05:30-06:30	0	0	0	0
	AM peak		0	68	68	68
	PM shift change	13:30-14:30	0	0	68	68
	PM peak		68	0	0	0
	Post PM peak	21:30-22:30	0	0	0	0
<b>Others</b>	Pre-AM peak	05:30-06:30	0	0	0	0
	AM peak		0	0	0	0
	PM shift change	13:30-14:30	0	0	0	0
	PM peak		0	0	0	0
	Post PM peak	21:30-22:30	0	0	0	0

##### CAR TRAVEL DEMAND (NO TP)

CAR DRIVER = 80%

ELEMENT	PERIOD	TIME	DEP	ARR	ACC	PEAK
<b>B2 &amp; B8 Industrial</b>	Pre-AM peak	05:30-06:30	47	66	66	113
	AM peak		0	28	94	94
	PM shift change	13:30-14:30	66	66	94	160
	PM peak		28	0	66	66
	Post PM peak	21:30-22:30	66	47	47	113
<b>B1 Office</b>	Pre-AM peak	05:30-06:30	0	0	0	0
	AM peak		0	54	54	54
	PM shift change	13:30-14:30	0	0	54	54
	PM peak		54	0	0	0
	Post PM peak	21:30-22:30	0	0	0	0
<b>Others</b>	Pre-AM peak	05:30-06:30	0	0	0	0
	AM peak		0	0	0	0
	PM shift change	13:30-14:30	0	0	0	0
	PM peak		0	0	0	0
	Post PM peak	21:30-22:30	0	0	0	0

##### CAR TRAVEL DEMAND (WITH TP)

CAR DRIVER = 60%

ELEMENT	PERIOD	TIME	DEP	ARR	ACC	PEAK
<b>B2 &amp; B8 Industrial</b>	Pre-AM peak	05:30-06:30	35	49	49	85
	AM peak		0	21	70	70
	PM shift change	13:30-14:30	49	49	70	120
	PM peak		21	0	49	49
	Post PM peak	21:30-22:30	49	35	35	85
<b>B1 Office</b>	Pre-AM peak	05:30-06:30	0	0	0	0
	AM peak		0	41	41	41
	PM shift change	13:30-14:30	0	0	41	41
	PM peak		41	0	0	0
	Post PM peak	21:30-22:30	0	0	0	0
<b>Others</b>	Pre-AM peak	05:30-06:30	0	0	0	0
	AM peak		0	0	0	0
	PM shift change	13:30-14:30	0	0	0	0
	PM peak		0	0	0	0
	Post PM peak	21:30-22:30	0	0	0	0

**CAR PARKING DEMAND (MAXIMUM ACCUMULATION)**

Max No. of Cars on Site	B2/B8	B1 Hi-Tech	Other	TOTAL
No Travel Plan	160	68	0	227
With Travel Plan	120	41	0	160

**CAR PARKING DEMAND (ACTUAL DEMAND WITH TP)**

For Industrial, car parking provision needs to be assessed on the basis of the 3 shift system, with each shift being allocated a separate car park to ensure maximum efficiency at shift change-over times.

ELEMENT	PERIOD	TIME	ARR	CAR PARKING AREA		
				1	2	3
B2 & B8 Industrial (With Travel Plan)	Pre-AM peak	05:30-06:30	49	49	-35	0
	AM peak		21	-	21	-
	PM shift change	13:30-14:30	49	-49	-	49
	PM peak		-21	-	-21	-
	Post PM peak	21:30-22:30	35	-	35	-49
<b>TOTAL NUMBER OF SPACES REQUIRED IN EACH PARKING AREA</b>				<b>49</b>	<b>35</b>	<b>49</b>

<b>TOTAL NUMBER OF SPACES REQUIRED FOR INDUSTRIAL OPERATIONS</b>	<b>134</b>
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**ALLOWANCE FOR SPACE SEARCHING AND DYNAMIC CAPACITY REQUIREMENTS**

Additional allowances need to be applied to identified staff demands to ensure that spare capacity exists within each car park to allow for dynamic capacity and space-searching requirements.

*Note that this requirement is reduced for the Industrial staff car parks where allocation of spaces by shift and permit should ensure that arrival and departure times do not coincide, and that employees are able to find allocated spaces rapidly. This should ensure efficient filling and emptying of each parking area.*

**THEORETICAL CAR PARKING PROVISION**

ELEMENT	Demand	Allowance	Required
B2 & B8 Industrial	134	2.5%	137
B1 Office	41	11.1%	45
Others	0	11.1%	0
<b>TOTAL</b>	<b>174</b>	<b>-</b>	<b>182</b>

Nominal allowance for emergency use.  
Desirable demand to capacity ratio of 0.9, therefore  $1 / 0.9 = 1.11$   
Desirable demand to capacity ratio of 0.9, therefore  $1 / 0.9 = 1.11$

**ALLOWANCE FOR VISITOR AND OTHER OPERATIONAL PARKING**

ELEMENT	Requirement	Allowance	Visitors
B2 & B8 Industrial	137	11.1%	15
B1 Office	45	33.3%	15
Others	0	-	0
<b>TOTAL</b>	<b>182</b>	<b>-</b>	<b>30</b>

Industry practice is to provide visitor spaces at a rate of 10% of total provision.  
Industry practice is to provide visitor spaces at a rate of 33% of total provision.  
Estimate

**PROPOSED CAR PARKING PROVISION**

Proposals based on identified demand with TP in place, and assuming that TP meets its targets.  
 Visitor and other "operational" parking provided at a rate of approximately 10% of total provision.

<b>With Travel Plan</b>	<b>Staff</b>	<b>Visitors/Other</b>	<b>Total</b>
B2 & B8 Industrial	165	25	190
B1 Office	50	25	75
Others	0	0	0
<b>Total</b>	<b>215</b>	<b>50</b>	<b>265</b>

Visitor Movements

- 25 x B2/B8 spaces @ 3 occupations per day
- 25 x B1 spaces @ 4 occupations per day
- 0 x Other spaces @ 5 occupation per day

# BLUELANDS QUARRY (Three Shift)

## CAR PARKING ACCUMULATION

### B2 & B8 USES (LIGHT VEHICLE TRIPS)

HOUR COMMENCING	Traffic Flow		Accumulation				
	ARR	DEP	TOTAL	AREA 1	AREA 2	AREA 3	Areas 1-3
0:00	0	0	35	0	35	0	35
1:00	0	0	35	0	35	0	35
2:00	0	0	35	0	35	0	35
3:00	0	0	35	0	35	0	35
4:00	0	0	35	0	35	0	35
5:00	49	0	85	49	35	0	85
6:00	0	35	49	49	0	0	49
7:00	0	0	49	49	0	0	49
8:00	21	0	70	49	21	0	70
9:00	0	0	70	49	21	0	70
10:00	0	0	70	49	21	0	70
11:00	0	0	70	49	21	0	70
12:00	0	0	70	49	21	0	70
13:00	49	0	120	49	21	49	120
14:00	0	49	70	0	21	49	70
15:00	0	0	70	0	21	49	70
16:00	0	0	70	0	21	49	70
17:00	0	21	49	0	0	49	49
18:00	0	0	49	0	0	49	49
19:00	0	0	49	0	0	49	49
20:00	0	0	49	0	0	49	49
21:00	35	0	85	0	35	49	85
22:00	0	49	35	0	35	0	35
23:00	0	0	35	0	35	0	35
<b>TOTAL</b>	<b>155</b>	<b>155</b>					
<b>MAXIMUM ACCUMULATION</b>			<b>120</b>	<b>49</b>	<b>35</b>	<b>49</b>	<b>120</b>

	Early Shift
	Afternoon Shift
	Late shift
	Non-Shift

Vehicles on site at midnight: 35

## BLUELANDS QUARRY (Three Shift)

### CAR PARKING ACCUMULATION

#### B1 OFFICE USES

HOUR COMMENCING	Traffic Flow		
	ARR	DEP	ACC
0:00	0	0	0
1:00	0	0	0
2:00	0	0	0
3:00	0	0	0
4:00	0	0	0
5:00	0	0	0
6:00	0	0	0
7:00	0	0	0
8:00	41	0	41
9:00	0	0	41
10:00	0	0	41
11:00	0	0	41
12:00	0	0	41
13:00	0	0	41
14:00	0	0	41
15:00	0	0	41
16:00	0	0	41
17:00	0	41	0
18:00	0	0	0
19:00	0	0	0
20:00	0	0	0
21:00	0	0	0
22:00	0	0	0
23:00	0	0	0
<b>TOTAL</b>	<b>41</b>	<b>41</b>	
<b>MAXIMUM ACCUMULATION</b>			<b>41</b>

Vehicles on site at midnight: 0

## BLUELANDS QUARRY (Three Shift)

### CAR PARKING ACCUMULATION

#### OTHER STAFF

HOUR COMMENCING	Traffic Flow		
	ARR	DEP	ACC
0:00	0	0	0
1:00	0	0	0
2:00	0	0	0
3:00	0	0	0
4:00	0	0	0
5:00	0	0	0
6:00	0	0	0
7:00	0	0	0
8:00	0	0	0
9:00	0	0	0
10:00	0	0	0
11:00	0	0	0
12:00	0	0	0
13:00	0	0	0
14:00	0	0	0
15:00	0	0	0
16:00	0	0	0
17:00	0	0	0
18:00	0	0	0
19:00	0	0	0
20:00	0	0	0
21:00	0	0	0
22:00	0	0	0
23:00	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>MAXIMUM ACCUMULATION</b>			<b>0</b>

	Early Shift
	Afternoon Shift
	Late shift
	Non-Shift

Vehicles on site at midnight: 0

## BLUELANDS QUARRY (Three Shift)

### CAR PARKING ACCUMULATION

#### ALL EMPLOYEES

HOUR COMMENCING	Traffic Flow		
	ARR	DEP	ACC
0:00	0	0	35
1:00	0	0	35
2:00	0	0	35
3:00	0	0	35
4:00	0	0	35
5:00	49	0	85
6:00	0	35	49
7:00	0	0	49
8:00	62	0	111
9:00	0	0	111
10:00	0	0	111
11:00	0	0	111
12:00	0	0	111
13:00	49	0	160
14:00	0	49	111
15:00	0	0	111
16:00	0	0	111
17:00	0	62	49
18:00	0	0	49
19:00	0	0	49
20:00	0	0	49
21:00	35	0	85
22:00	0	49	35
23:00	0	0	35
<b>TOTAL</b>	<b>196</b>	<b>196</b>	
<b>MAXIMUM ACCUMULATION</b>			<b>160</b>

Vehicles on site at midnight: 35