

**86 – 90 DUKE STREET OFFICE
DEVELOPMENT, LIVERPOOL CITY
CENTRE**

TRANSPORT ASSESSMENT

Client	
Langtree Group Plc	



Infrastructure Planning and Design Limited

86-90 DUKE STREET OFFICE DEVELOPMENT, LIVERPOOL CITY CENTRE TRANSPORT ASSESSMENT

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1 Introduction

- 1.1 This document has been prepared by Infrastructure Planning and Design Ltd (IPaD) on behalf of the Langtree Group in support of proposals to develop land at 86-90 Duke Street located within the southern quadrant of Liverpool City Centre.
- 1.2 In accordance with the pre-application scoping request provided by the Local Planning Authority, this document sets out the transportation issues associated with delivery of this development in accordance with the level of detail required within a Transport Assessment (TA). The principles of best practice as set out within DfT's 'Guidance on Transport Assessment 2007' have been followed to inform the content of this document.
- 1.3 This document will be submitted alongside a full site specific Travel Plan for the development which in accordance with existing policy will assist towards mitigation of the residual traffic impact generated by development by seeking to encourage sustainable travel choices within the workforce and reduce car usage.
- 1.4 The site location plan and red line boundary is presented in **Appendix A**.

Development Proposals

- 1.5 The site is located on land at the corner of Duke Street and Suffolk Street with frontage onto both streets and to the rear onto Henry Street.
- 1.6 The site is currently unoccupied and the buildings currently on-site have remained vacant for a considerable length of time. The site is consequently considered to be an abandoned and redundant site in planning terms. The sites former uses were varied and included former industrial vinegar manufacturing warehouse that fronted onto Henry Street, a former café that previously fronted onto Suffolk Street, and a former public house that fronted onto Duke Street.
- 1.7 The site sits within a conservation area in an area of industrial character previously linked with the City's historic shipping and port uses. The application is to be submitted in full with Conservation Area Consent to demolish part of the existing buildings on the site given both the designated area protection and its proximity to adjacent listed buildings.
- 1.8 The new development proposals compose of 40,000 sq.ft (3,716 sq.m) gross internal floor area B1 office building housed within four floor levels with floor plates providing flexible and efficient space, capable of being sub-divided into a maximum of tenants on each floor. The scheme seeks to retain the existing vinegar warehouse building on Henry Street and proposes a contemporary frontage to Duke Street which provides a modern interpretation of local buildings and typologies in the Duke Street Conservation Area.
- 1.9 The main pedestrian access into the building is via a new courtyard from Duke Street with a ramped access basement car park to accommodate 42 parking spaces with direct access off Henry Street to the rear of the site frontage.

Contents

- 1.10 This document has been prepared in accordance with the requirements for assessment detailed within the Department for Transport's 'Guidance on Transport Assessment' 2007 (GTA) and will cover the following key headings:
 - ◆ **Chapter 2** – Review of background conditions and existing accessibility of the site by alternative travel modes;

- ✦ **Chapter 3** – Review of all relevant national and regional transport policy documents that have informed the proposals and assessment requirements;
- ✦ **Chapter 4** - Detailing the approach taken to calculate the likely travel demand generated by the site proposals across all travel modes to include a baseline assessment of person trip generation within the peak periods of operation;
- ✦ **Chapter 5** –Setting out the methodology utilised to derive vehicular traffic distribution to/from the development to identify the likely impact of development traffic across the wider network;
- ✦ **Chapter 6** –Summary and concluding statements.

2 Background Conditions

Existing Highway Network

- 2.1 The frontage of the site is located off Duke Street which provides the primary route of vehicular access into the development site regardless of wider routing. Duke Street is a two way 20mph urban single carriageway with active site frontage to include restaurants and commercial usage. To the west, Duke Street connects to the B5339 Hanover Street via a three armed priority crossroad junction with right turn bay facilities.
- 2.2 Hanover Street routes to the north of the Duke Street Junction towards the City Centre, and to the south connects onto Paradise Street via a three arm signalised junction. Paradise Street routes into Liver Street which connects directly onto the A5036 Dual Carriageway at the Liver Street/ Strand Street/ Wapping Street signalised interchange. The A5036 is a key corridor into and out of the City Centre for locations towards the north of the site and to the south and west via the Mersey Tunnel.
- 2.3 To the east, Duke Street connects to the A5038 corridor at the Duke Street/ Berry Street/ Upper Duke Street/ Great George Street signalised crossroads. The A5038 Berry Street routes northwards away from the Duke Street junction towards the City Centre, Liverpool Lime Street Rail Station, and provides the most direct path away from the site towards the M62 via a connection onto the A5047.
- 2.4 The A5038 Great George Street routes towards the south from the Duke Street Junction and connects onto the primary A562 Dual Carriageway corridor. The A562 provides a key arterial route into and out of the City from directions to the east, and south east.
- 2.5 Access into the site car park will be provided off Henry Street which routes along the rear of the site. Access onto Henry Street for incoming vehicles routing off Duke Street is provided via York Street or Suffolk Street depending upon the direction of arriving traffic.
- 2.6 Given the one way traffic routing restrictions in place along Suffolk Street, outgoing traffic arising from the development wishing to gain access to Duke Street east and the A5038 corridor would be required to route eastwards along Henry Street and then travel northwards along Kent Street connecting onto Duke Street via a 3 arm priority junction arrangement.
- 2.7 To the south of the site, both Suffolk Street and Kent Street provide vehicular access into the adjacent residential areas.

Walking and Cycling

- 2.8 Given that the site is located within the City Centre, the surrounding street environments are well suited for journeys by foot and cycle. The designated traffic speed restrictions along Duke Street and streets surrounding the site are designated as 20 mph routes providing safe environments for walking and cycling, the footways are sufficiently wide, lit, and there are plentiful controlled crossing points located at regular intervals.
- 2.9 To the west of Duke Street, immediate access is provided onto the pedestrianised streets within the City Centre to include the major shopping districts and the bars and leisure facilities located within the Cavern Quarter district.
- 2.10 There are safe pedestrian connections from the site to a number of large public transport interchange points to include major railway interchanges and bus stations. All are located within the same urban environment and some can be accessed via pedestrian only links.

- 2.11 There are numerous connecting marked cycleways that route through the city centre within easy reach of the site. Duke Street itself forms part of the on-road section of the signed National Cycle Trail Route 56 which connects Liverpool City Centre to local districts to the south east including Toxteth, Sefton, and Childwall. Route 56 eventually connects onto National Cycle Trail Route 62 (Trans Pennine Trail) to the east of the city. Route 56 continues out to the west of the City onto the Wirral peninsular via the Mersey Ferry eventually connecting through to Chester.
- 2.12 In addition to the National Trails, there are regular approved on-road cycle trails along a number of streets within the vicinity of the site that connect the City Centre district to surrounding urban residential areas. Of these, the nearest routes located to the site route along the A561 Park Lane and Paradise Street to the south west of the site and to the north along Oxford Street through the University and out to the east.
- 2.13 There are plentiful on-street public cycle parking facilities located in the vicinity of Duke Street to include secure parking bays immediately to the north located off Seel Street and within the vicinity of the Cathedral located off Upper Duke Street.

Existing Public Transport Networks

- 2.14 There are existing bus stops located to the east of the development located off Upper Duke Street and Great George Street. These nearest stops are around 400 metres walk distance from the site entrance and are comprised of simple flagpole stops with pull-in bus bays. These stops are served by the following services which comprise of a mix of circular services and arterial routes out towards the south eastern districts of the city and wider area:

Table 2.1 Bus Services within 400 metres Walk Distance to the site

Service Number	Key Destinations	Weekday Peak Frequency
C1, C3	CityLink Service Canada Boulevard Circular via Royal Hospital and Albert Dock	30 mins
184	City Centre – Toxteth – Moseley Hill Hospital – Penny Lane	Hourly
82, 82D	City Centre – Toxteth – Dingle – Aigburth Vale – Garston – Liverpool South Parkway	10 mins
82B	City Centre – Dingle – Aigburth Vale – Garston – Airport – Speke – Widness – Runcorn – Halton Hospital	30 mins

- 2.15 In addition to the nearest stops, there are two major bus stations within 1 kilometre walk distance from the site. At the far end of Duke Street located approximately 500 metres walk distance from the development off Paradise Street is located the Liverpool One Bus Station Interchange facility. This forms the major interchange and terminus facility for most of the arterial and circular bus routes within Liverpool. Direct access is provided to the station on routes out to all major districts within the wider urban area to include routes out to the Wirral via the Queensway Mersey Tunnel.
- 2.16 In addition, the Queen Square Bus Station facility to the north of the City Centre off Hood Street is located within 1 kilometre walk distance which serves as the terminus for a number of radial services including peak hour services out towards the north and north east of the district including Southport, Netherton, Bootle, Skelmersdale, and Waddicar.

Rail

- 2.17 There are a number of existing rail stations located within 1 kilometre walk distance from the site which together provide access to both regional and national rail services.
- 2.18 The nearest rail station to the development is the Liverpool Central Station which is located 600 metres walk distance from the development site. This regional station is served by trains operated by Merseyrail which include all services on both the Northern and Wirral Line services out of the city. Direct access is provided from this station to locations including Birkenhead, Ellesmere Port, and Chester on the Wirral line, and to locations such as the Airport, Southport, Ormskirk, and Kirkby on the Northern Line. Services operating at this station typically provide up to 4 services per hour to / from outlying stations within the peak periods.
- 2.19 Liverpool Lime Street station is located approximately 800 metres walk distance from the development site. This station provides both regional and national connecting rail services to wider destinations. The station is served by regional line services that currently serve the Merseyrail City and Wirral Lines which directly connect the station to wider destinations including Blackpool, Preston, Wigan, Newton-le-Willows, Warrington, Runcorn, Manchester, and Crewe to name a small sample.
- 2.20 In addition, Lime Street Station serves as the terminus of a branch of the West Coast Main Line from London Euston and TransPennine Express trains. Virgin and London Midland operators operate services along the West Coast Mainline serving wider destinations such as Birmingham and London Euston. The East Midlands train operator provides services out towards Sheffield, Nottingham, and Norwich. TransPennine express services serve destinations out towards Leeds, and the North East. All of the above service lines operate services throughout weekday peak periods.

Accident Trends

- 2.21 Accident data was obtained via the CrashMap website (www.crashmap.co.uk). CrashMap uses STATS19 data collected by the police about road traffic crashes occurring on British roads where someone is injured. This data is approved by the National Statistics Authority and reported on by the Department for Transport each year.
- 2.22 Data has been extracted for the study area for a five year period (2007 to 2012) which represents the most recent period for which data is currently available from the STATS19 database.
- 2.23 The area from which data has been extracted covers the Duke Street corridor past the site up to the junction with Hanover Street to the west and the junction with the A5038 corridor to the east. The review also included a review of accidents that occurred in the surrounding streets to the rear of the development to include Henry Street, York Street, Suffolk Street, and Kent Street.
- 2.24 The findings of the accident review were as follows:
- 2.25 A total of 21 incidents were recorded within the study area during the 5 year survey period. Of these, 18 (86%) were classified as being 'slight' in nature and the remaining 3 (14%) were classified as being 'serious'. There were no recorded fatalities. The serious incidents that occurred were all located along Duke Street on the section between Henry Street and York Street junctions. 2 of the serious incidents involved collisions between vehicles and pedestrians and both occurred during late evening/ early morning periods at weekends. Alcohol consumption and the presence of bar/ club frontages onto Duke Street were causation factors involved with these incidents. The other serious incident involved a bus collision that occurred during off-peak times. There was a

cluster of 7 incidents that occurred along this section of Duke Street and the majority (5 in total) occurred between the times of 10pm and 4am.

- 2.26 There was a high incidence of recorded accidents between vehicles and pedestrians within the study area (9 in total), of this total, 8 occurred during weekend evening periods after 10pm and the remaining accident occurred early AM on Monday morning at around 3am. This would imply that alcohol consumption was the primary causation factor attributing to these accidents rather than any inherent safety issue present along Duke Street.
- 2.27 Of the total number of accidents recorded, only 1 occurred during conventional weekday peak periods of between 0800-0900 (AM peak) and 1700-1800 (PM Peak). This single accident occurred at the Duke Street/ Berry Street/ Gt George Street/ Upper Duke Street signalised crossroads junction and entailed of a side swipe incident between a bus and a HGV caused by the HGV in the act of turning left at the signals.
- 2.28 Other general trends within the accident data were as follows:
- ✦ 2 x rear end shunt type incidents along Duke Street;
 - ✦ 2 x accidents caused by collisions between vehicles in the act of performing u-turn manoeuvres along Duke Street;
 - ✦ Only 1 vehicle incident attributed to a collision between a vehicle emerging from a side street colliding with oncoming traffic.
 - ✦ There were no recorded accidents along Duke Street, Suffolk Street, York Street, or Kent Street.
- 2.29 The recorded accident data is presented in **Appendix B**.

Summary

- 2.30 In summary, the sites excellent level of existing accessibility and connectivity to other destinations via a wide range of sustainable transport modes ensures that the potential for travel to the site by modes other than private vehicle is high.
- 2.31 The majority of recorded accidents within the study area appear to be mainly attributable to driver/ pedestrian error with alcohol consumption being a causation factor rather than any underlying design, capacity, lighting or visibility issues being exacerbating factors. Only one incident occurred during conventional peak times and this was attributable to driver error.
- 2.32 In conclusion, there are no inherent dangers or observed trends that may be considered to worsen over time as a result of the opening of the proposed development.

3 Policy

National Policy

Localism Act

- 3.1 The previous government had been implementing the Regional Spatial Strategies (RSS) and Local Development Frameworks (LDF) to guide planning policy on an area wide basis. These policies were intended to replace the previous policies, which were based upon Local Plans and Structure Plans, formed at the start of this century.
- 3.2 Following the election, Secretary of State Eric Pickles used his Section 79 powers to revoke the RSS/LDF process and effectively abandoned the process that local authorities had been pursuing to guide development within their jurisdiction. In its place, the government has carried the new 'Localism Bill' through as an Act of Parliament with royal assent received in November 2011.
- 3.3 The key sections of the act are as follows:
- ★ **Part 5: Chapter 1 – 'Plans and Strategies':** The act abolishes Regional Spatial Strategies which in essence removes top-down central government led targets for housing and employment land use allocations for specified regional areas with move towards locally derived targets based upon need;
 - ★ **Part 5: Chapter 2 – 'Community Infrastructure Levy' (CIL):** The act calls for the requirement for local authorities to produce CIL charging schedules for independent examination. CIL is a charge applied for all new development to assist in the provision of new infrastructure required to support development;
 - ★ **Part 5: Chapter 3 – 'Neighbourhood Planning':** Under Schedule 9 of the Act, parish / town councils and local community groups will have the power to apply neighbourhood development orders and neighbourhood development plans. The plans set out the policies for development for a particular area, whilst the orders grant planning permission, enabling town and parish councils (or, in their absence, local community groups) to become decision-making bodies;
 - ★ **Part 5: Chapter 4 – 'Consultation':** Chapter four of the planning section makes pre-application consultation a statutory requirement. It will be crucial for developers to begin consultation at an early stage, ensuring objections can be minimised. Developers should 'have regard to any responses to the consultation' received. Upon submission of an application, applicants must document how they have complied with the above, what responses they have received and how they have taken account of those responses.

National Planning Policy Framework (NPPF)

- 3.4 In March 2012, national government brought into adoption new planning policy for England as set out within the National Planning Policy Framework. The new policy replaces a number of former policy documents and rationalises them into one framework document. Most pertinently, previous transport policy guidance set out within PPG13 has been fully replaced.
- 3.5 The NPPF constitutes guidance for local planning authorities and decision-takers both in drawing up plans and as a material consideration in determining applications. At its heart is a presumption in favour of sustainable development which means development that:
- ★ Contributes towards building a strong, responsive and competitive economy;

- ◆ Supports strong, vibrant and healthy communities by creating a high quality built environment, with accessible local services that reflect the community's needs;
 - ◆ Contributes towards protecting and enhancing the natural, built and historic environment.
- 3.6 Transport policies have an important role to play in facilitating sustainable development and contributing towards wider sustainability and health objectives and policy set out within NPPF advocates prioritisation towards developing and maximising sustainable transport opportunities.
- 3.7 In reference to supporting planning applications for large scale development, the policy makes clear that applications for developments likely to generate significant amounts of traffic should be supported by a Transport Statement or Transport Assessment and decisions on the acceptability of developments in transport terms should take account of whether:
- ◆ Opportunities for sustainable transport modes have been taken up depending upon the nature and location of the site, to reduce the need for major transport infrastructure;
 - ◆ Safe and suitable access to the site can be achieved for all people;
 - ◆ Where necessary, improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development;
 - ◆ Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.
- 3.8 A key tool in helping to facilitate improved access to developments via sustainable modes of transport will through delivery of a Travel Plan and therefore all developments which generate significant amounts of movement should be required to provide a Travel Plan.

Guidance on Transport Assessment

- 3.9 The Guidance on Transport Assessment (GTA) is designed to assist in determining when a Transport Assessment is required, and the level and scope of what the assessment should cover. It also provides guidance on the nature of the data that is required when undertaking a TA or TS for a site.
- 3.10 This Report has been prepared as a TA, within a pre-defined and agreed scope, in order to meet the requirements of the guidance.

Local Policy

Merseyside Local Transport Plan

- 3.11 The plan sets out the implementation plans in the short term to 2015 and looks to the longer term strategy for 2024 on how to improve transport in Merseyside.
- 3.12 The Third Local Transport Plan has the following vision;
- 'A city region committed to a low carbon future, which has a transport network and mobility culture that positively contributes to a thriving economy and the health and wellbeing of its citizens and where sustainable travel is the option of choice'.*
- 3.13 The Local Transport Plan has six goals of equal status;
- ◆ Help to create the right conditions for sustainable economic growth by supporting the priorities of the Liverpool City Region, the Local Enterprise Partnership and the Local Strategic Partnerships;

- ◆ Provide and promote a clean, low emission transport system which is resilient to changes to climate and oil availability;
- ◆ Ensure the transport system promotes and enables improved health and wellbeing and road safety;
- ◆ Ensure equality of travel opportunity for all, through a transport system that allows people to connect easily with employment, education, healthcare, other essential services and leisure and recreational opportunities;
- ◆ Ensure the transport network supports the economic success of the city region by the efficient movement of people and goods;
- ◆ Maintain our assets to a high standard.

Liverpool Local Development Policies

- 3.14 Liverpool City Council are currently in the process of developing their Local Plan for the District. The Local Plan will set out the spatial vision, spatial objectives and strategic policies based upon those set out within the accompanying Core Strategy document. The document will also set out detailed development management policies used to determine planning applications in the city.
- 3.15 A submission draft of the Core Strategy document has been published on the local authorities website. Within this document, the council set out their aims for redevelopment of the City Centre area for the next 15 year period.
- 3.16 It is stated within the draft plan that a key aim will be to encourage the City Centre zone as the primary focus for economic activity and job creation. Priority expansion in the City Centre will consist of financial, business and professional services, knowledge based, digital and creative industries.
- 3.17 The document states that development growth within the City Centre will be prioritised upon gentrification and redevelopment of the City's existing vacant and derelict land and buildings.
- 3.18 The document advocates strongly the importance of sustainable development and connectivity by promoting development in the most accessible locations such as the City Centre which have good public transport accessibility.
- 3.19 Until the Local Plan is finally adopted, the local authority will continue to base determination of forthcoming planning applications using the existing policies and objectives as set out within the Unitary Development Plan (UDP). This document similarly sets out the City Centre core district for prioritisation of further development and the Duke Street area is designated as being a zone appropriate for the delivery of mixed use developments.
- 3.20 In terms of transportation objectives, the UDP document advocates greater integration of land use and transport planning with the objective of reducing the length and number of motorised journeys. Accessible local provision of a range of activities can help to reduce the total number of journeys made (particularly by car), encourage less polluting modes of transport (walking and cycling), and generally improve the quality of the local and wider environment.

4 Baseline Person Trip Generation

Methodology

- 4.1 The person and vehicle trip generation assessments contained within this chapter represent the maximum levels of trip demand generated by the proposed development during conventional weekday peak periods of travel, namely as follows:
- ✦ **AM Weekday Peak** – Btw 08:00 and 09:00;
 - ✦ **PM Weekday Peak** – Btw 17:00 and 18:00.
- 4.2 The first stage towards assessment of the trip demand was to identify the total level of trip demand to the site during these time periods for all modes undertaken to the development. To achieve this, the TRICS online database was scrutinised to establish a set of peak hour total vehicle trip rates for each of the proposed land use types.

Person Trips

- 4.3 The total person trip generation rates across all modes of travel were extrapolated from other UK sample sites that have similar geographic characteristics to the proposed development using the following selection criteria:
- ✦ Town Centre sites only included within the survey sample;
 - ✦ Sites of similar size where available were utilised (Range between 1000 – 9000 sq.m GFA sites chosen to ensure adequate sample);
 - ✦ Sites within Greater London and Northern Ireland excluded from the sample.
- 4.4 Using the site selection criteria above, a total of five B1 office survey sites were extracted from the TRICS database upon which average person trip rates were derived. All of these sites were located in existing major urban centres including Manchester, Liverpool, Birmingham, Newcastle, and Middlesbrough. A sixth survey site was manually discounted from the survey sample as it was located within Wrexham and did not have comparable levels of accessibility by public transport as compared to the proposed development site.
- 4.5 Full TRICS outputs files are contained within **Appendix C**. A summary of the calculated person trip rates is provided in Table 4.1 below:
- 4.6 The person trip rate results calculated for the proposed development using the selection methodology above are presented in the following table:

Table 4.1 Peak Hour Total Person Trip Rates

Land Use	Person Trip Rates per 100 sq.m GFA (TRICS Derived)					
	AM			PM		
	Arrivals	Depart	2-Way	Arrivals	Depart	2-Way
B1 Office	3.63	0.24	3.87	0.11	3.07	3.18

- 4.7 Using the calculated trip rates presented above, the total person trip generation for the site across both peak periods can be identified and this is shown within the following table:

Table 4.2 Peak Hour Total Person Trip Generation

Land Use	Person Trip Generation (3,716 sq.m GFA B1 Office)					
	AM			PM		
	Arrivals	Depart	2-Way	Arrivals	Depart	2-Way
B1 Office	135	9	144	4	114	118

- 4.8 The analysis demonstrates that up to 144 two-way person trips will be generated by the site proposals within the AM peak hour (0800-0900) and up to 118 two-way person trips generated by the site proposals within the PM peak hour (1700-1800).

4.9 **Vehicle Trips**

- 4.10 Based upon the same set of sample sites that were utilised to generate the total person trip rates set out above, a set of vehicle trip generation rates were derived to demonstrate the likely baseline levels of vehicle traffic generation that would route to and from the site within both peak periods.

- 4.11 The vehicle trip generation rates and corresponding peak hour vehicle generation figures calculated are presented within the following tables:

Table 4.3 Peak Hour Vehicle Trip Rates

Land Use	Vehicle Trip Rates per 100 sq.m GFA (TRICS Derived)					
	AM			PM		
	Arrivals	Depart	2-Way	Arrivals	Depart	2-Way
B1 Office	0.93	0.09	1.02	0.05	0.91	0.96

Table 4.4 Peak Hour Total Vehicle Trip Generation

Land Use	Vehicle Trip Generation (3,716 sq.m GFA B1 Office)					
	AM			PM		
	Arrivals	Depart	2-Way	Arrivals	Depart	2-Way
B1 Office	35	3	38	2	34	36

- 4.12 The vehicle trip rates and traffic generation figures presented above are likely to be representative of a worst case scenario insofar as vehicle trip generation to and from the Duke Street site is concerned. This is due to the fact that the results generated from within TRICS are based upon existing sites that do not have active travel plans in operation and in some cases do not have the same highest level of accessibility by public transport as compared to the Duke Street site.

- 4.13 For example, despite all sample sites being centrally located, the Birmingham and Manchester sites within the sample fall outside of a 1 kilometre walk distance cordon to a major rail interchange stations and central bus stations. In comparison, as set out within Chapter 2, the Duke Street site falls well within 1 kilometre walk distance to two major rail stations (1 national and regional) and two major bus station interchanges.

- 4.14 Notwithstanding these issues, the vehicle traffic generation rates above have been utilised within the trip impact analysis set out in the following chapter to ensure that a worst case analysis has been considered.

Target Vehicle Trips

- 4.15 As stated, the worst case baseline traffic figures have been utilised to demonstrate a worst case trip analysis scenario on the surrounding network. It is however usual practice in accordance with an iterative approach towards assessment as advocated within existing best practice guidance to consider target deductions to the residual traffic generated by a development, being brought about by effective promotion and availability of alternative travel options.
- 4.16 As stated in Chapter 2 above, this site benefits from being located within an area of extremely high accessibility by non-car modes of transport sitting as it does within a City Centre hub of high quality public transport interchange facilities and high quality public realm walking and cycling environments. Consequently, the accessibility of the site is not bettered within the district, and is representative of the maximum achievable levels of connectivity to non-car modes of transport found within the UK outside of London.
- 4.17 In accordance with the high levels of accessibility by sustainable modes of travel offered to the site, it is anticipated that travel to the site by car will be limited to exceptional journeys rather than the rule and consequently on-site parking will be limited and managed accordingly with priority given on a needs basis. Consequently, travel to the site by car will generally be limited to employees who either have no other appropriate travel alternatives (either due to remoteness or other special need) or who require a car for flexible travel outside of peak times for example in the case of other work related journeys, part-time working, or those with home based caring responsibilities.
- 4.18 To further bolster and maximise travel to the site by non-car modes of transport, the development will be supported through the implementation of a site specific travel plan that will aim to encourage, promote, and build awareness of the emergent sustainable travel opportunities available to employees and site visitors alike. A version of this document has been submitted for approval as part of the planning submission.
- 4.19 Given the above, it is consequently expected that the vehicle traffic generation figures provided above for the peak periods will in real terms never be fully realised, and the applicant/ site occupier will strive to achieve reduced levels of vehicular traffic supported by a restricted parking policy.

5 Vehicle Trip Impact Analysis

- 5.1 The next stage of analysis was to determine how the vehicle traffic generated by the development would route through the network. By determining the way in which traffic will be dispersed across the off-site network it was possible to quantify where and what additional levels of traffic will impact upon existing off-site junctions to determine whether there was the potential for the development to generate a material impact on the existing network.
- 5.2 Requirement for further assessment to include additional junction capacity assessments may only have been considered necessary should the impact generated by the development at a given junction be of sufficient scale to warrant the view that the impact is material. Typically, many highways authorities including the Highways Agency quantify the level upon which further assessment may be considered necessary at the point where a new development generates more than 30 two way vehicle trips at an existing junction location within a given peak period.

Trip Distribution

- 5.3 The first stage towards identification of the spread and impact of vehicle trips undertaken to and from the development was to undertake a review of local census data to determine the pattern of existing trip routing in the surrounding area.
- 5.4 Census 2001 Journey to work data was therefore extracted from the daytime population dataset for the local ward of Abercrombie to determine the likely pattern of wider vehicle trip routing to and from the site.
- 5.5 From this analysis, journey to work origin and destination matching analysis was undertaken to identify the existing spatial distribution of work based trips undertaken to the Abercrombie ward and the key surrounding areas where these trips are borne from.
- 5.6 The top 10 returned home destinations for existing employees working within the Abercrombie ward is presented in Table 5.1 below. Full census O-D pairings are presented within the supporting appendix files.

Results of 2001 Census Journey to Work Analysis (Ward of Abercrombie 00BYFA)

Home Destination	% of Sample Reside Within
Sefton	14.7%
Wirral	13.7%
Knowsley	8.1%
Liverpool (Aigburth)	3.3%
Liverpool (Church)	3.1%
St Helens	2.8%
Liverpool (Grassendale)	2.6%
Cheshire West & Chester	2.6%
Liverpool (Arundel)	2.5%
Liverpool (Dingle)	2.5%

Trip Routing and Assignment

- 5.7 Using the spatial O-D matches, each O-D pair was assigned to the local and wider network using an internet based route finding application to determine the likely routing to the site from each origin point across the highways study area.
- 5.8 Careful consideration was given to the existing highways routing restrictions currently present on the surrounding highway network and in doing so the following inbound and outbound routing options were assigned for vehicle trips depending upon wider routing and the direction from which the site is approached. These were:

Inbound Journeys

- 5.9 For inbound journeys arriving from the directions to the north, north west, of the site and out towards the west and south crossing the River Mersey via the Mersey Tunnel:
- ✦ Approach via Liver Street/ Wapping Street/ Strand Street Signalised Junction;
 - ✦ North into Liver Street;
 - ✦ Continue North along Paradise Street;
 - ✦ Right into Duke Street at Duke Street/ Hanover Street Signalised Junction;
 - ✦ Travel East along Duke Street and turn right into York Street South;
 - ✦ Left into Henry Street West into Site.
- 5.10 For inbound journeys approaching the site from the east, north east, and south east including from the M62:
- ✦ Approach via Duke Street / Berry Street / Great George Street Signalised Junction;
 - ✦ Westbound into Duke Street;
 - ✦ Travel west along Duke Street and turn left into Suffolk Street;
 - ✦ Travel south along Suffolk Street and first right into Henry Street into Site.

Outbound Journeys

- 5.11 For outbound journeys leaving the site towards the north, north west, and west / south over the Mersey Tunnel:
- ✦ Right out of site along Henry Street west;
 - ✦ Right into York Street North;
 - ✦ Left into Duke Street West;
 - ✦ Turn left towards Paradise Street at the Duke Street / Hanover Street Junction;
 - ✦ Continue onto the Liver Street/ Wapping Street/ Strand Street Signalised Junction.
- 5.12 For outbound journeys leaving the site towards the east, north east, and south east including from the M62:
- ✦ Left out of site along Henry Street east;
 - ✦ Straight ahead along Henry Street east at Henry Street / Suffolk Street Junction;
 - ✦ Left into Kent Street north;

- ◆ Right onto Duke Street east;
- ◆ Continue onto the Duke Street / Berry Street / Great George Street Signalised Junction.

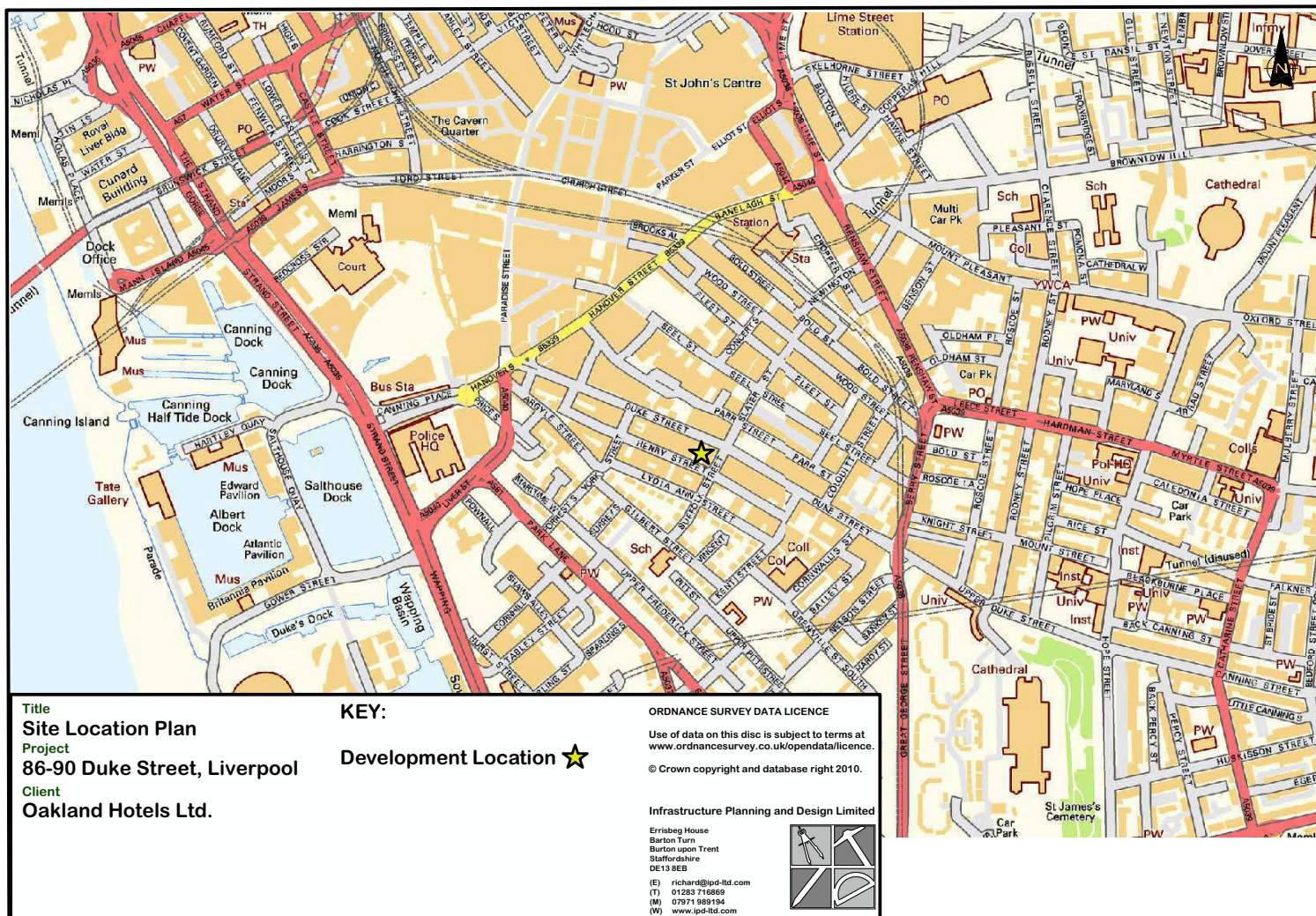
- 5.13 Other potential routing options exist from those presented above given the high density of streets in the surrounding area which would in real terms result in a greater dispersal of vehicle traffic over a wider area. However to ensure that a robust position is accommodated for in terms of the worst case vehicle impact, all traffic generated by the development has been assigned to one of the four routing options above, dependent upon wider trip routing.
- 5.14 Using the routing assumptions presented above, the traffic generation figures have been assigned to the local network to determine the peak hour traffic impact at junctions on the off-site highways network. This is shown within the figures presented within **Appendix D**.
- 5.15 The analysis demonstrates that the development is not likely to generate a material impact upon any of the off-site junctions within the surrounding area. The maximum impact likely to be generated at a single junction within the study area during peak times amounts to an additional impact of 22 vehicles at the Duke Street / Hanover Junction, and at the Liver Street / Wapping Street / Strand Street Signalised Junction. The total impact generated at the Duke Street / Berry Street / Great George Street Signalised Junction equate to fewer than 17 two way vehicle trips within both peaks. These levels are considered to be negligible and constitute no greater impact than on average 1 vehicle arrival rate every three minutes across the assessment period.
- 5.16 The impact shown within the analysis is representative of a worst case assessment as it is based upon baseline trip rate calculations that are derived from sites that do not have active travel plans and in some cases do not have directly comparable existing levels of accessibility to non-car modes of transport when compared to the Duke Street site. Additionally, no account has been made to further consider deductions in these baseline traffic generation figures that are likely to be borne by the effective implementation of a site specific travel plan and on-site restrictive parking measures.
- 5.17 In conclusion, the development is considered to be acceptable in transportation terms and further analysis of off-site junctions is not required.

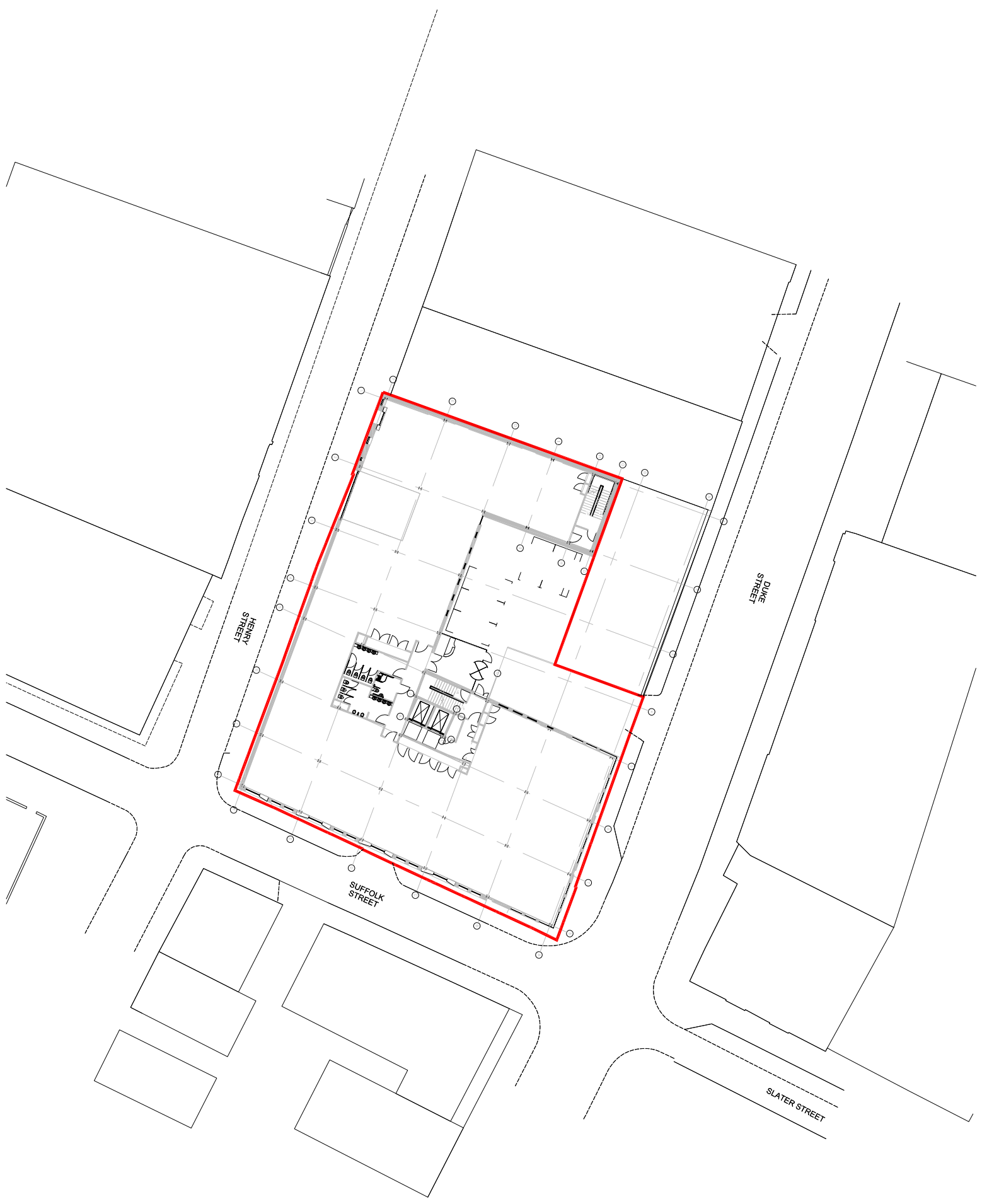
6 Summary and Conclusions

- 6.1 This Transport Assessment (TA) has been prepared by Infrastructure Planning and Design (IPaD) on behalf of Langtree Group Plc to support a planning application for an office development on land located at 86-90 Duke Street, located in the south eastern quadrant of Liverpool City Centre.
- 6.2 The proposed development is fully compliant with government policies at national, regional and local levels, especially in relation to transport planning policies.
- 6.3 The accident record for the relevant roads has been examined and has shown no serious problems caused by either the local highway layout design or due to congestion.
- 6.4 A vehicle trip impact assessment has been undertaken and this has shown that the development will not impact materially on the surrounding highway network in terms of additional vehicle trip impact across the weekday peak periods.
- 6.5 The site has excellent existing levels of accessibility and connectivity by non-vehicular modes of transport to include links with national and regional train services and a wide range of regional bus links.
- 6.6 A site specific travel plan will be implemented on-site to ensure that maximum levels of access by non-car modes of transport are maintained to the site and that awareness of the benefits of the use of sustainable forms of transport is promoted. Consequently, it is expected that the residual levels of traffic generated by the development would be further reduced from the levels as set out within the analysis within this document.
- 6.7 In summary, it is considered that the development is acceptable in transport terms.

Appendix A

Site Location Plan Figures





Appendix B

Stats 19 Accident Reports