



Hatfield Galleria

Proposed Internal Roundabout, Traffic Impact Assessment

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This document has been prepared and checked in accordance with Waterman Group's IMS (BS EN ISO 9001: 2008, BS EN ISO 14001: 2004 and BS OHSAS 18001:2007)

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A01	11/01/16	PH	CI	Peter Hawke Technical Director
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Comments

Final

Our Markets



Property & Buildings



Transport & Infrastructure



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Environment



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1. Introduction

This Traffic Impact Statement has been prepared for Land Securities Group PLC by Waterman Infrastructure and Environment Ltd (WIE). This report has been produced to explain the reasons for introducing a new roundabout on the Hatfield Galleria shopping centre's internal road network and to assess the impact of this proposal.

The roundabout is required to assist internal vehicular routing within the Hatfield Galleria shopping centre. This report has been undertaken for the planning and highway authorities to help in their assessment of the propose scheme.

It has been reported to Waterman by the shopping centre operators, Land Securities Group plc, that northbound vehicles exiting the South Central and Multi-Story car parks are directed by the geometry of the road layout towards the A1001 (Comet Way) without the option of accessing the (surface) North car park or the northern drive through destinations including the drive through McDonalds.

It is understood from the centre managers that northbound drivers exiting the South Central and Multi-Story car parks may wish to divert to the North car park for other shopping destinations or to find available car parking spaces in the event that there are no free car parking spaces available within the other, southern, car parks that they have previously had access to. This report examines the impact of providing such a roundabout within the development to enable such movement to be undertaken safely. The allowance of this turn could prevent vehicles that cannot find a parking space exiting the site and potentially re-entering the site to the detriment of the external road network.

It should be emphasised that the proposals will not have any negative effects on the external highway network or increase the traffic generations of the Galleria Shopping centre.

2. Existing Road Network

As shown in Appendix A there are two principal vehicular entrance points to the Hatfield Galleria Shopping centre from Cavendish Way to the south and from the A1001 Comet Way to the north. The southern Cavendish Way access passes a drop off area in front of the shopping centre and then carries on to the eastern boundary of the complex before continuing in a westerly direction towards the access points of the southern multi storey car parking structures and surface car park. Two exit routes from the southern car parking structures are provided, onto the south bound lane of the dual carriageway for south bound traffic and via the internal central spine road for northbound traffic. This northbound traffic cannot access the northern surface level car park or the McDonalds restaurant as there is no facility for a right turn manoeuvre to access these facilities within the site from this road. This report therefore concentrates its scope on the northern part of the Galleria internal road layout to address this issue.

Vehicles entering the Hatfield Galleria shopping centre from the A1001 can make a right turn off the eastbound dual carriageway or a left turn off the westbound carriageway at a major traffic signal junction. The access off the A1001 gives access to a 2 lane entry into the Hatfield Galleria. The left lane allows entrance into the North surface car park as well as the straight ahead movement to access the servicing facilities as an alternative access to the North surface car park. The right lane caters primarily for customers wishing to access the other southern car parking areas (the multi-story and south car parks) as well as the popular drive through fast food facilities (McDonalds). The site layout is shown in the red line plan in Appendix A.

Upon entering the Hatfield Galleria from the A1001 there is a car parking sign showing customers the direction to access the various car parks and drive through facilities with speed humps in both directions to ensure vehicle speeds are reduced upon diverging off the dual carriageway and entering the busy shopping centre. The image overleaf/below shows the existing road layout at the entrance to the Hatfield Galleria.

Figure 1: Existing Entrance Road Layout from the North



Taking the first turning off the access road to the left gives access to the North surface car park while following the access road leads to the option of carrying on straight to access the southern car parking areas, diverging to the left to the McDonalds restaurant or making the left turn as a further alternative routes to access the North surface car park as well as servicing facilities. Prior to this 'junction' there is a

further speed reducing speed hump followed by a pedestrian zebra crossing with appropriate preceding signage. An image of the speed hump and zebra crossing facility on the approach to the access junction is provided.

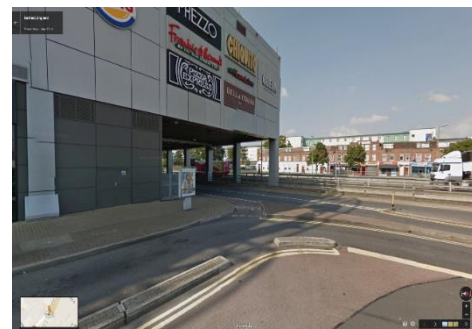
Figure 2: Speed hump and zebra crossing



The access road leading to the other car parks is 2 lanes on its approach with road marking indicating that the left lane is to facilitate vehicles wishing to enter the north surface car park, which did not make the previous left turn, or the servicing facilities whilst vehicles in the right lane can carry on straight ahead to access the other, southern, car parking areas or diverge to the left to access the McDonalds fast food drive through. Vehicles approaching this intersection are not interrupted by vehicles traveling in the opposing direction as the south and north bound flows are separated by a raised, kerbed, separation island. The image below shows this configuration on the approach to the zebra crossing facility.

As well as the aforementioned permitted vehicular access movements there is an existing two-way shared surface cycle lane which bisects the drive-through and left turn lane to facilitate cycle movements. Images showing the existing cycle lanes are given below.

Figure 3: Configuration on the approach



As mentioned vehicles exiting the south central and multi-story car parks are directed towards the A1001 (Comet Way) without the option to re-enter the north surface car park. Such traffic must exit the site onto the public highway network if they need to access the northern car park. The exit onto the A1001 is a signal controlled junction with a two-lane approach with the left lane facilitating left turn movements and

the right lane facilitating right turn movements only; straight ahead access is 'Buses Only'. The image below shows a view of the exit approach onto the A1001.

Should vehicles required to egress the site by this northern route need to enter the northern car park to find a parking spaces they are required to access Comet Way and make a U turn on one of the roundabouts on Comet Way to come back to the northern Galleria entrance, which than gives access to the north surface car park.

Figure 4: View of the exit approach on to Comet Way A1001



3. Traffic Surveys

In order to understand the existing traffic movements in the vicinity of the access to the McDonald's drive through on the northern internal road system a video survey was undertaken. The video survey recorded and analysed all movements at the intersection between 09:00 to 21:00 on Friday 5 June 2015 and between 09:00 to 19:00 on the following Saturday and Sunday the 7 and 8 June 2015, respectively. The counts were undertaken in June as this period represents a neutral month for traffic counts as it falls outside local school holidays and other shopping surges such as the run up to Christmas. It was also confirmed that there were no major local road works within the local area which would have affected the results of the undertaken traffic surveys.

The weather at the time of the surveys was reported as mostly dry and bright with showers reported on the Friday morning period.

The traffic counts recorded six classifications of traffic as follows:

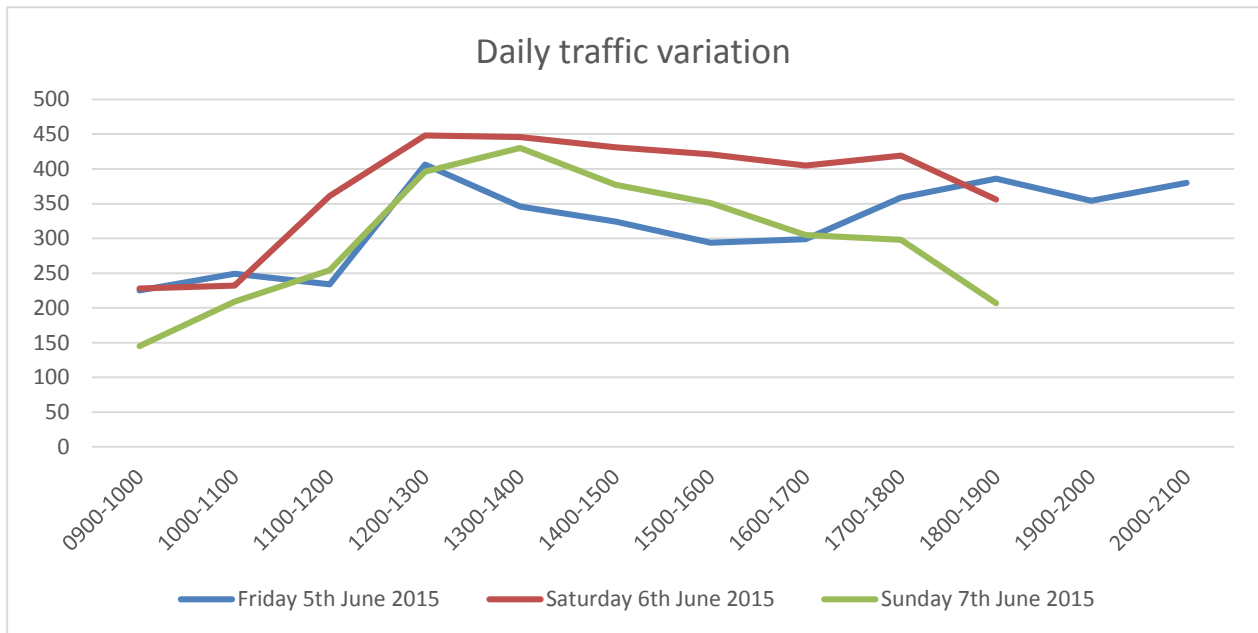
- Pedal Cycles
- Motor Cycles
- Cars
- Light Goods Vehicles
- Medium Goods Vehicles & Heavy Goods Vehicles; and
- Buses & Coaches

The survey recorded the volume of vehicle movements on the various routes within the internal access arrangements near the A1001 access. The counts recorded movements passing in 15 minute intervals. A copy of the traffic survey undertaken can be viewed within Appendix B of this report.

As part of the undertaken traffic surveys it was revealed that as well as the permitted traffic movements a number of vehicles were undertaking unauthorised movements whilst egressing from the multi-story and South Central car parks and illegally turning right to enter the drive through facility and the North surface level car park indicating that there is a desire for users to undertake this movement. It was recorded that ten cars and one Light Good Vehicle (LGV) made the currently illegal right turn movements between 09:00 and 21:00 on Friday 5 June with a further four cars and one LGV on Saturday 6 June and eleven cars and two LGVs on Sunday 7 June 2015.

The traffic survey showed that the peak hour period was between 12:00 to 13:00 on the Friday and Saturday with 406 and 448 movements recorded passing the intersection respectively and between 13:00 to 14:00 on the Sunday with 430 movements within the peak hour period. As would be expected, the survey results showed traffic volumes increasing in the morning to the daily peak. A graph showing the daily variations in traffic passing the junction are shown below.

Figure 5: Daily Traffic Variation



As can be seen on the above graph, the Saturday traffic volumes showed higher traffic volumes and therefore has been used as the basis for this junction review. The daily junction movement summary tables are presented overleaf with the daily peak hour periods for each day in red.

Table 1: Friday 5 June 2015 (Daily)

	P/C	M/C	Cars	LGV	MGV / HGV	Bus / Coach	Total
0900-1000	1	0	189	29	6	0	225
1000-1100	1	0	208	36	3	1	249
1100-1200	3	0	210	17	3	1	234
1200-1300	0	2	365	31	6	2	406
1300-1400	3	1	304	33	4	1	346
1400-1500	0	0	286	33	5	0	324
1500-1600	2	0	273	18	1	0	294
1600-1700	3	1	282	13	0	0	299
1700-1800	2	1	333	20	3	0	359
1800-1900	0	3	365	16	2	0	386
1900-2000	2	2	324	20	5	1	354
2000-2100	1	0	357	021	0	1	380
Day Total	18	10	3496	287	38	7	3856

Table 2: Saturday 6 June 2015 (Daily)

	P/C	M/C	Cars	LGV	MGV / HGV	Bus / Coach	Total
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0900-1000	0	1	209	17	1	0	228
1000-1100	3	1	220	7	1	0	232
1100-1200	2	4	335	19	1	0	361
1200-1300	1	3	427	14	3	0	448
1300-1400	0	4	423	18	1	0	446
1400-1500	4	2	407	17	1	0	431
1500-1600	0	1	404	16	0	0	421
1600-1700	0	1	385	18	0	1	405
1700-1800	1	1	398	19	0	0	419
1800-1900	3	1	335	17	0	0	356
Day Total	14	19	3543	162	8	1	3747

Table 3: Sunday 7 June 2015 (Daily)

	P/C	M/C	Cars	LGV	MGV / HGV	Bus / Coach	Total
0900-1000	3	0	122	20	0	0	145
1000-1100	0	0	193	15	0	1	209
1100-1200	2	2	232	15	1	2	254
1200-1300	2	1	378	14	0	1	396
1300-1400	4	2	403	21	0	0	430
1400-1500	0	5	350	21	0	1	377
1500-1600	4	0	326	21	0	0	351
1600-1700	2	0	290	11	1	1	305
1700-1800	1	0	280	14	1	2	298
1800-1900	2	0	188	17	0	0	207
Day Total	20	10	2762	169	3	8	2972

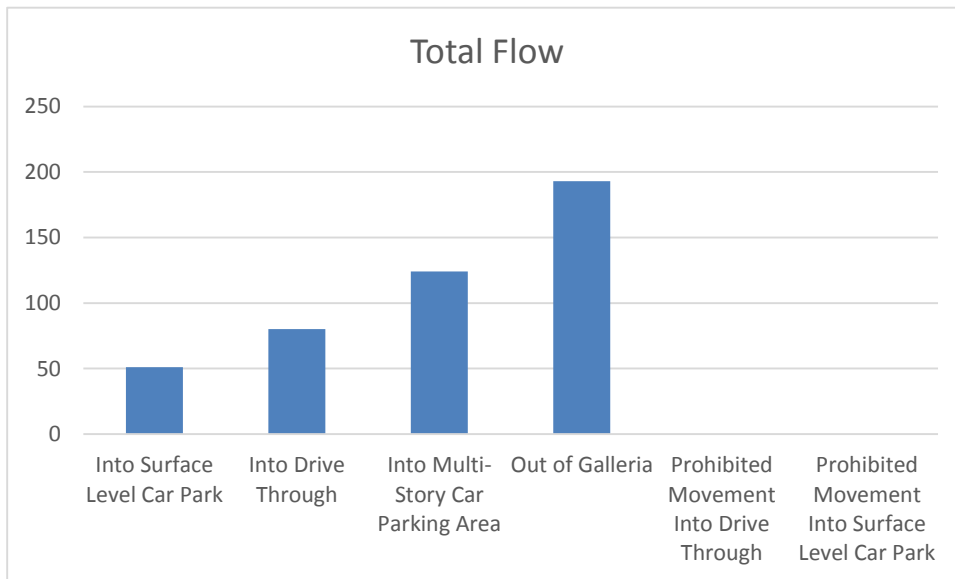
The peak traffic movements occurred on Saturday midday peak hour between 12:00 to 13:00. The table below shows the Saturday peak hour summary of the movements recorded.

Table 4: 12.00 to 13.00 Saturday Hour Summary by Movements

Movement	P/C	M/C	Cars	LGV	MGV / HGV	Bus / Coach	Total
1	0	1	47	2	1	0	51
2	0	0	74	4	2	0	80
3	0	2	120	2	0	0	124
4	1	0	186	6	0	0	193
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
Hour total	1	3	427	14	3	0	448

Movement 1 recorded the volume and type of passing traffic entering the North surface level car parking area, Movement 2 recorded the movements into the McDonalds drive through facilities, Movement 3 into the Multi-Story and South Central car parking areas, Movement 4 recorded all egressing movements out of the Hatfield Galleria whilst Movements 5 and 6 recorded the type and volume of movements making the prohibited right turn into the drive through and North car park, respectively. A bar chart summary is shown on the below graph.

Figure 6: 1200-1300 Total Flow



The traffic management proposals are not associated with any new development at the site and the junction change described below will only be required to accommodate the existing traffic flows on the site.

4. Proposed Roundabout to Accommodate a Link to the North surface Car park and McDonalds

Following the evaluation of several differed options to provide a right turn facility on the site at the northern junction which has been described in detail in Section 2, a mini roundabout facility has been progressed and is now proposed as shown in Appendix C.

The proposal is for the provision of a mini-roundabout junction, albeit with one arm being exit only, incorporating one lane primarily serving the north car park and the other the entrance to the McDonalds drive through. A drawing indicating the proposed layout is given within Appendix C, at the end of this Statement. The roundabout design allows for the new right turn for northbound traffic giving access for internal shopping centre northbound traffic to the north surface car park and also allowing for access from both north and southbound directions into the McDonalds drive through lane as well as for the existing movements at the junction. In addition it allows for U turn movements and also retains the existing marked zebra pedestrian crossing desire line while facilitating cycle movements.

The principle elements of the mini roundabout are an inscribed circle diameter of 14 metres, a single lane approach and a single lane exit on the southern arm, 2 exiting lanes on the eastern arm and a two lane approach with a segregated slip lane on the northern arm with a single lane exit (which then leads to a two lane approach at the A1001 junction). It should also be noted that the northern arm carriageways are separated by a central island and the two exiting lanes on the eastern arm one of which served the Drive through McDonalds are also segregated from each other.

The design incorporates pedestrian crossing points on the eastern and northern arms to continue in facilitating the existing pedestrian provision and accommodate the pedestrian desire lines.

The proposed mini roundabout enables the following:-

- gives an easily recognisable junction configuration;
- allows the preferred right turn movement from the southern arm required by the operator;
- Initial ARCADY junction capacity analysis (a computerised capacity simulation program) shows that the proposed mini-roundabout configuration would work in a satisfactory manner and not cause capacity issues or excessive queuing to occur for a new peak hour right turn movement of up to 200 vehicles per hour;
- U turn movements allowed;
- permits a traffic manoeuvre that is currently illegal, but takes place, giving access to the North surface car park and McDonalds drive through;
- assists car parking search patterns with the potential to prevent northbound vehicles within the Galleria having to exit and re-enter the site if searching for a parking space during busy periods when the southern car parks are full ;
- allows for the existing pedestrian crossing movements; and
- has superior operation and potential safety advantages when compared to the existing layout.

The existing cycle provision at the roundabout will be rearranged with some south bound cyclist being requested by means of signage to cross at the northern zebra onto the dedicated cycle facilities on the north western side of the site while cycle access from the McDonalds area southbound will be retained by a shared surface facility adjacent to the Galleria building.

5. Conclusions

This Traffic Impact report has been produced to review and examine the existing internal vehicular routing within the Hatfield Galleria shopping centre in the light of an operator requirement to allow better access to the sites north surface car park and the drive through McDonalds for vehicle initially entering the site from the south but exiting to the north. It has been highlighted to Waterman that vehicles exiting the South Central and Multi-Story car parks are directed towards the A1001 (Comet Way) to the North without the option of accessing the North car park or the drive through destinations under the current traffic management layout. It is understood that drivers exiting the South Central and Multi-Story car parks may wish to divert to the North car parking area for other shopping destinations or to find available car parking spaces in the event of other parking spaces being heavily utilised.

It should be noted that this proposed roundabout is within the Shopping centre complex, remote from the public highway network which it will not effect, and the proposal is not associated with any additional traffic generations on the site.

As part of this assessment base traffic counts were commissioned to understand the existing turning movements at the access / egress configuration between the South Central, Multi-Story and north surface level car parks between 09:00 to 21:00 on Friday and between 09:00 to 19:00 on the following Saturday and Sunday in early June 2015. The peak traffic movements occurred on Saturday midday peak hour between 12:00 to 13:00.

It is understood from discussions with Land Securities Plc as well as site observations (the traffic counts) that a number of vehicles (approximately ten per day) are currently making illegal manoeuvres to access the north surface level car park / fast-food drive through when egressing the south central and multi-story car parking areas to the north. Vehicles undertaking these banned movements could potentially cause damage to their vehicles or cause accidents as other motorists, cyclists and pedestrians would not be prepared for these currently illegal manoeuvres.

There is a further anticipated demand for additional customers to access these other areas (particularly the north surface car park and the fast food locations from the exit route to the A1001) if such a right turn manoeuvre was permitted. Currently access to the northern car park and fast food locations for exiting traffic requires vehicles to completely exit the Galleria shopping centre and travel northbound along the A1001 and come back on themselves to enter the northern car parking area requiring additional external vehicle kilometres and turning manoeuvres on the public roads as well as a potential loss of trade to the shopping centre for customers not prepared to take this tortuous route.

To allow for this manoeuvre and after considering other options a mini roundabout solution has been proposed as shown in Appendix C. The principle elements of the mini roundabout are an inscribed circle diameter of 14 metres, a single lane approach and a single lane exit on the southern arm, 2 exiting lanes on the eastern arm and a two lane approach with a further segregated slip lane on the northern arm with a single lane exit.

The mini roundabout design incorporates pedestrian crossing points on the eastern and northern arms to continue facilitating the existing pedestrian provision and accommodate the pedestrian desire lines. Cycle movements will be accommodated by directing cyclist towards the crossing facility on the northern arm by means of signage and by a new shared surface cycle way adjacent to the centre.

The proposed mini roundabout gives an easily recognisable junction configuration. It, allows the preferred right turn movement from the southern arm in a safe manner, has sufficient capacity, allows for U turns and the existing pedestrian movement and has operational advantages. It also allows for the existing cycling routes and assists car parking search patterns at peak times with the potential to prevent northbound vehicles within the Galleria having to exit and re-enter the site if searching for a parking space

in the northern car park. It should be emphasised that the scheme is not on and will not affect the public highway.

It is therefore recommended that the mini roundabout is approved to assist the traffic operation of the site.



APPENDICES



Appendix A

Red Line Plan



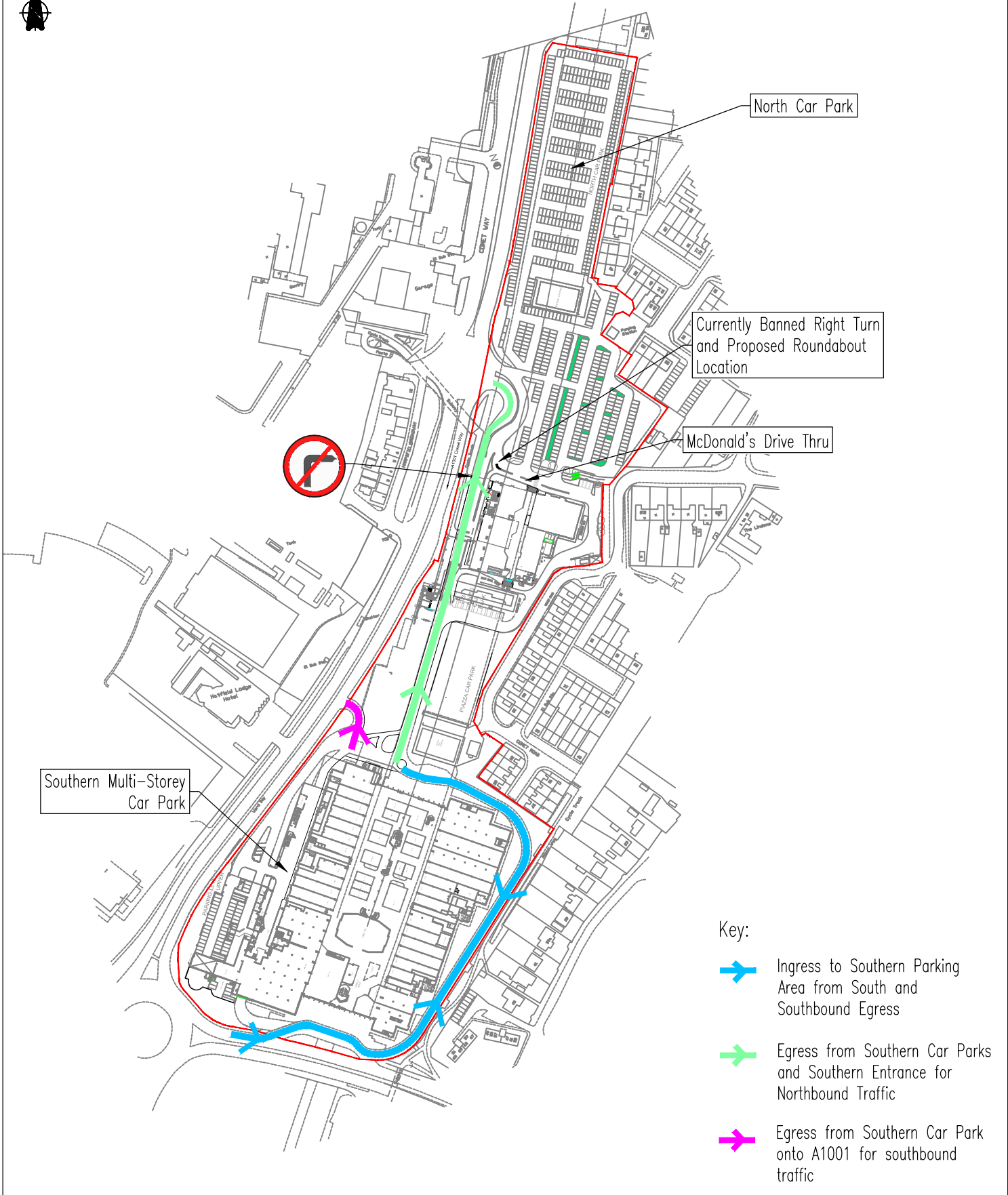
Title Ingress and Egress
to and from the southern
parking areas

Drawing Status				
PRELIMINARY				
Designed by	CTI	Checked by	CTI	Project No
Drawn by	JW	Date	January 2016	Projects
Scales @ A4 work to figured dimensions only			NTS	Computer File No WIE-17416-SA-04-0002-A01.dwg
Publisher	Zone	Category	Number	Revision
WIE	SA	04	0002	A01

Project Hatfield Galleria

Client Land Securities Group PLC

A4-Wat-S, Original OS





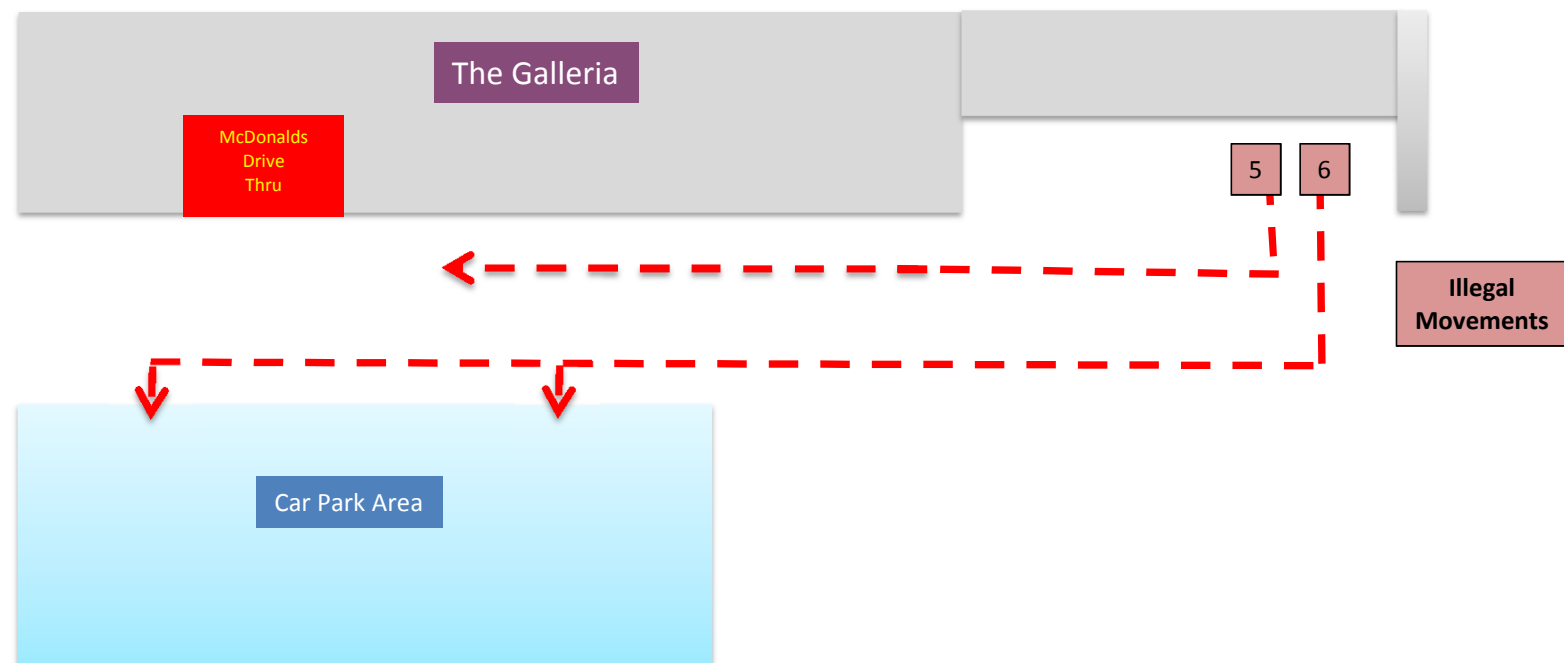
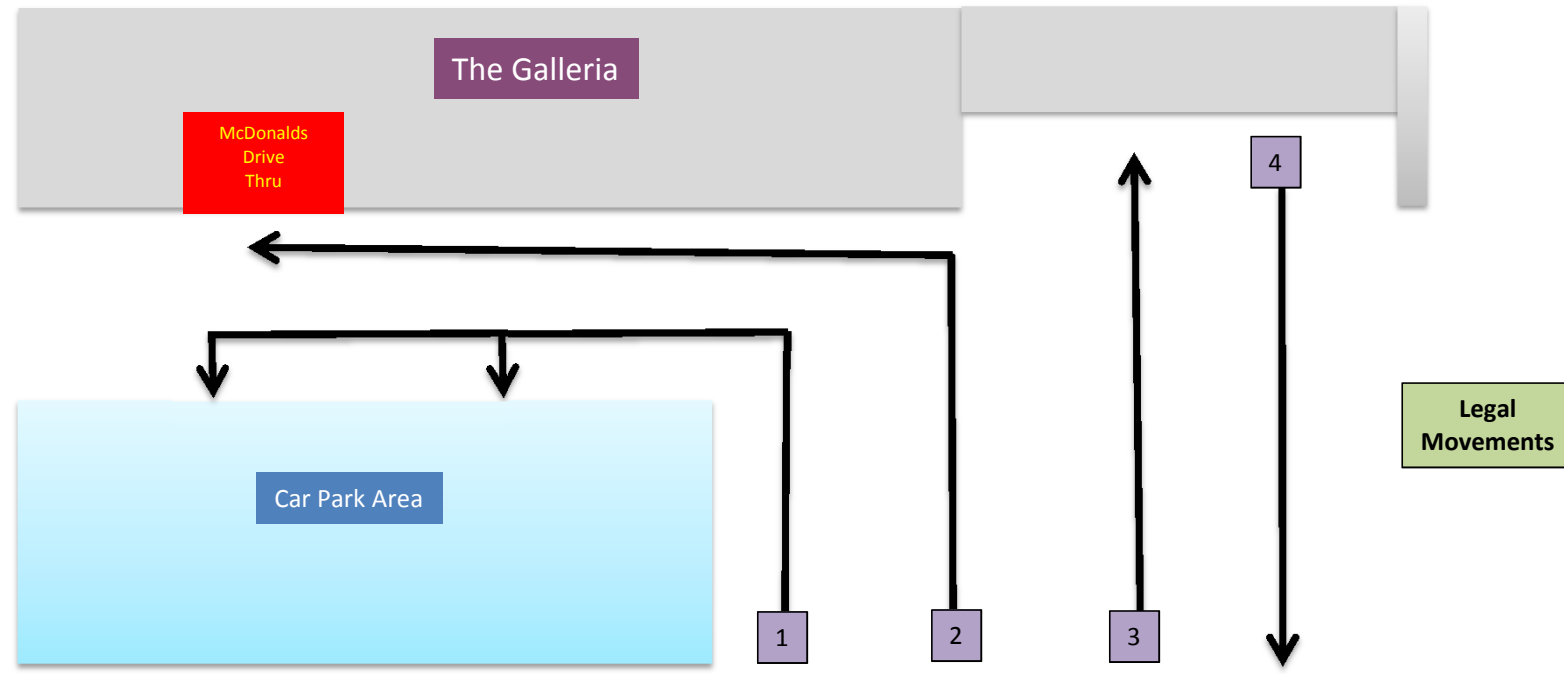
Appendix B

Traffic Flows



Classified Vehicle Video Survey

Site: The Galleria
Location: Comet Way, Hatfield
Date: Friday 5th - Sunday 7th June 2015
Time: Fri - 0900-2100
Sat & Sun 0900-1900
Weather: Mostly Dry and Bright





Classified Vehicle Video Survey

Site: The Galleria
Location: Comet Way, Hatfield
Date: Friday 5th - Sunday 7th June 2015
Time: Fri - 0900-2100
Sat & Sun 0900-1900
Weather: Mostly Dry and Bright





Classified Vehicle Video Survey

Site: The Galleria
Location: Comet Way, Hatfield
Date: Friday 5th - Sunday 7th June 2015
Time: Fri - 0900-2100
Sat & Sun 0900-1900
Weather: Mostly Dry and Bright

This area is busy with pedal cycles. The majority come and go via the pedestrian crossing.



At its busiest times the queue for the Mcdonalds Drive Thru backs up to the pedestrian crossing



Classified Vehicle Video Survey

Site: The Galleries
Location: Comet Way, Hatfield
Date: Friday 5th - Sunday 7th June 2015
Time: Fri - 0900-2100
Sat & Sun 0900-1900
Weather: Mostly Dry and Bright

Classified Vehicle Video Survey

Site: The Galleries
Location: Comet Way, Hatfield
Date: Friday 5th - Sunday 7th June 2015
Time: Fri - 0900-2100
Sat & Sun 0900-1900
Weather: Mostly Dry and Bright

Classified Vehicle Video Survey

Site: The Galleries
Location: Comet Way, Hatfield
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Sat & Sun 0900-1900
Weather: Mostly Dry and Bright

Friday 5th June 2015													Friday 5th June 2015													Friday 5th June 2015													Friday 5th June 2015													Friday 5th June 2015													Friday 5th June 2015												
1	P/C	M/C	Cars	LGV	MGV / HGV	Bus / Coach	Total	2	P/C	M/C	Cars	LGV	MGV / HGV	Bus / Coach	Total	3	P/C	M/C	Cars	LGV	MGV / HGV	Bus / Coach	Total	4	P/C	M/C	Cars	LGV	MGV / HGV	Bus / Coach	Total	5	P/C	M/C	Cars	LGV	MGV / HGV	Bus / Coach	Total	6	P/C	M/C	Cars	LGV	MGV / HGV	Bus / Coach	Total																														
0900-1000	0	0	16	2	1	0	19	0900-1000	0	0	56	10	0	0	66	0900-1000	0	0	70	7	2	0	79	0900-1000	1	0	47	10	3	0	61	0900-1000	0	0	0	0	0	0	0	0900-1000	0	0	0	0	0	0	0	0900-1000	0	0	0	0	0	0	0																						
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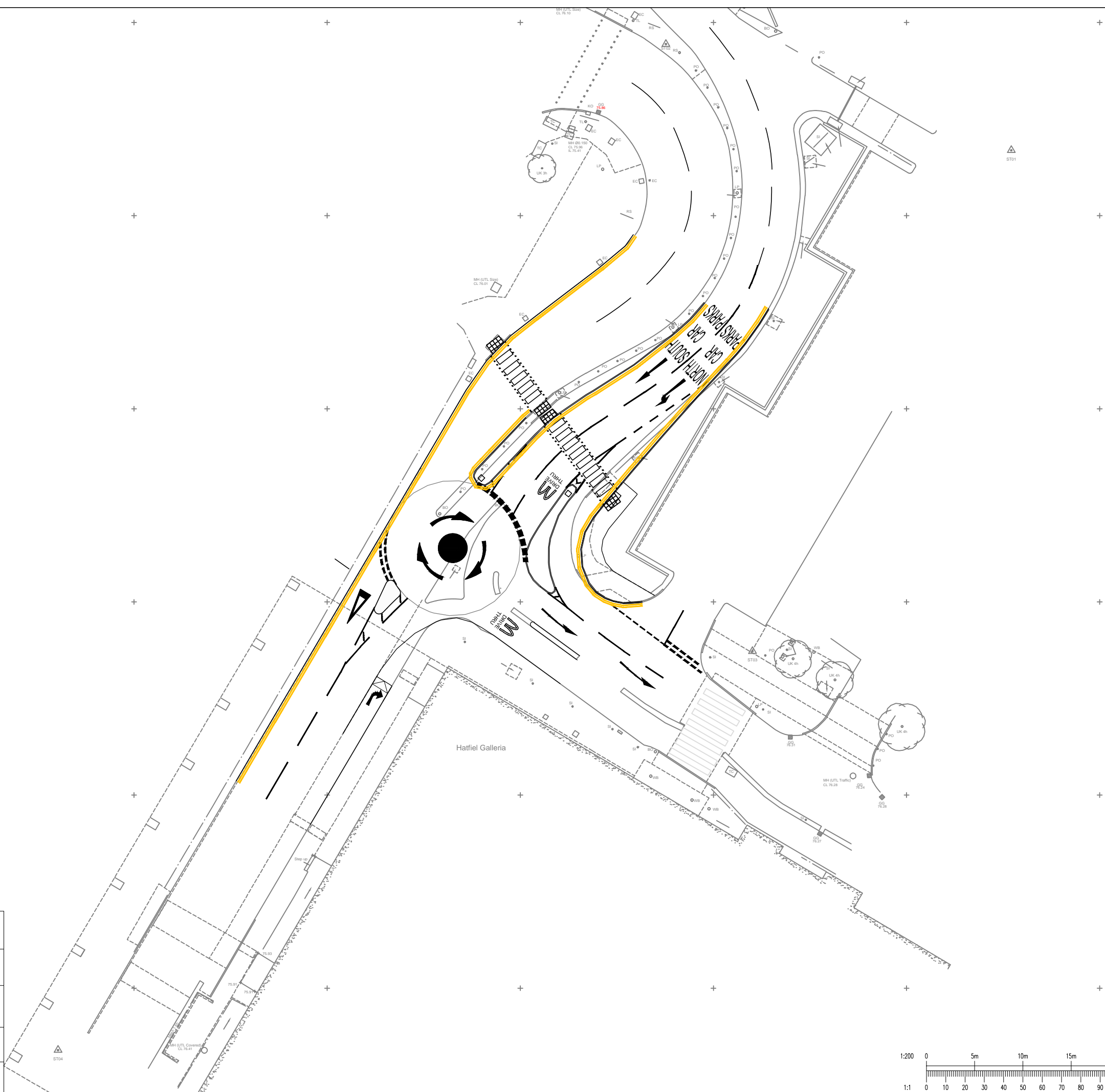
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Sunday 7th June 2015													Sunday 7th June 2015													Sunday 7th June 2015													Sunday 7th June 2015													Sunday 7th June 2015													Sunday 7th June 2015												
1	P/C	M/C	Cars	LGV	MGV / HGV	Bus / Coach	Total	2	P/C	M/C	Cars	LGV	MGV / HGV	Bus / Coach	Total	3	P/C	M/C	Cars	LGV	MGV / HGV	Bus / Coach	Total	4	P/C	M/C	Cars	LGV	MGV / HGV	Bus / Coach	Total	5	P/C	M/C	Cars																																										



Appendix C

Proposed roundabout drawing



This drawing should not be scaled. Dimensions to be verified on site.
Any discrepancies should be referred to the Engineer prior to work being put in hand.

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Pickfords Wharf, Clink Street, London SE1 9DG 1 020 7928 7888 1 020 7902 0992

This drawing is based upon topographical survey information supplied by Survey Solutions and Waterman shall not be liable for any inaccuracies or deficiencies.

**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
UNUSUAL SIGNIFICANT HAZARDS**

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement.
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

- CONSTRUCTION**
1. Works to be constructed over structural concrete. Depth to top of structure to be confirmed on site
 2. Road sign foundations to be over existing structure, depths to be confirmed

- MAINTENANCE / CLEANING**
1. None
 - 2.
 - 3.

- DECOMMISSIONING / DEMOLITION**
1. None
 - 2.
 - 3.

Rev	Date	Description	By
A01	08.01.16	First Issue	JW

Amendments

Project **Hatfield Galleria**

Title **Internal Vehicular Routing
General Arrangement**

Client **Land Securities Group PLC**

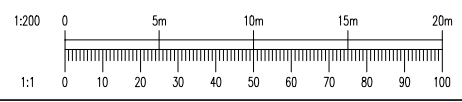


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Drawing Status **PRELIMINARY**

Designed by	CTI	Checked by	SN	Project No	17416
Drawn by	JW	Date	January 2016	Computer File No	WIE-17416-SA-95-0006-A01.dwg
Scale	@ A1	work to figured dimensions only	1:200	Number	0006

Publisher	Zone	Category	Number	Revision
WIE	SA	95	0006	A01



Traffic Sign Schedule									
No.	Diagram No.	Diag. Size (wxh)(m)	X-height(mm)	Illuminated	Class of Reflected Material	Mounting Height	No. of Posts and Size	Foundations	Notes
NS1	602	0.68x0.6	N/A	NO	RA2	2700mm	102.0 x 3.2 (PS 100 NE3) (CHS) (Optimast or similar)	Circular Ø0.8m x 0.48 height	New sign mounted above NS2 on new post & foundation
NS2	611.1	0.6x0.6	N/A	NO	RA2	2100mm	Same as NS1	Same as NS1	New sign mounted below NS1 on new post & foundation
NS3	611.1	0.6x0.6	N/A	NO	RA2	2100mm	102.0 x 3.2 (PS 100 NE3) (CHS) (Optimast or similar)	Circular Ø0.65m x 0.48 height	Mini-roundabout sign to be mounted on post
NB1KL	N/A	N/A	N/A	YES	N/A	N/A	N/A	N/A	For keep left bollard construction details see drawing No. WIE-17416-SA-95-0005
NB2PF	N/A	N/A	N/A	YES	N/A	N/A	N/A	N/A	For plain faced bollard construction details see drawing No. WIE-17416-SA-95-0005
NS4	959.1	0.825x0.375	N/A	NO	RA2	2300mm	50.0 x 3.0 (PS: 100NE2 [EN12767])	0.8m x 0.8m height	New sign mounted on new post & foundation
NS5	956	0.45 dia.	N/A	NO	RA2	2300mm	Same as NS4	Same as NS4	New sign mounted reverse of NS4 on new post & foundation
NS6	966 variant	0.535x0.390	40	NO	RA2	2300mm	50.0 x 3.0 (PS: 100NE2 [EN12767])	Circular Ø0.6m x 0.6 height	New sign mounted on new post & foundation
NS7	956	0.45 dia.	N/A	NO	RA2	2300mm	Same as NS6	Same as NS6	New sign mounted reverse of NS6 on new post & foundation
NS8	957	0.45 dia.	N/A	NO	RA2	2300mm	50.0 x 3.0 (PS: 100NE2 [EN12767])	Circular Ø0.6m x 0.6 height	New sign mounted on new post & foundation
NS9	966 variant	0.535x0.390	40	NO	RA2	2300mm	Same as NS8	Same as NS8	New sign mounted reverse of NS8 on new post & foundation

Notes

- All road markings refer to the 'Traffic Signs Regulations and General Directions 2002'.
- For post and foundation details see reports WIE-17416-SIGN-NS1-NS2 and WIE-17416-SIGN-NS3

White Lining Specification

- The location, colour and position of permanent road markings are shown on this drawing.
- All permanent road markings shall be retro-reflective thermoplastic screed with applied solid glass beads, unless otherwise stated.
- Solid glass beads shall comply with requirements of BS6088.
- The functional life of permanent road markings, as described in BS EN1436 shall be 12 months after granting of substantial completion certificate for the road works.
- The permanent road markings shall have road performance as given in DMRB Specification Clause 1212(3).

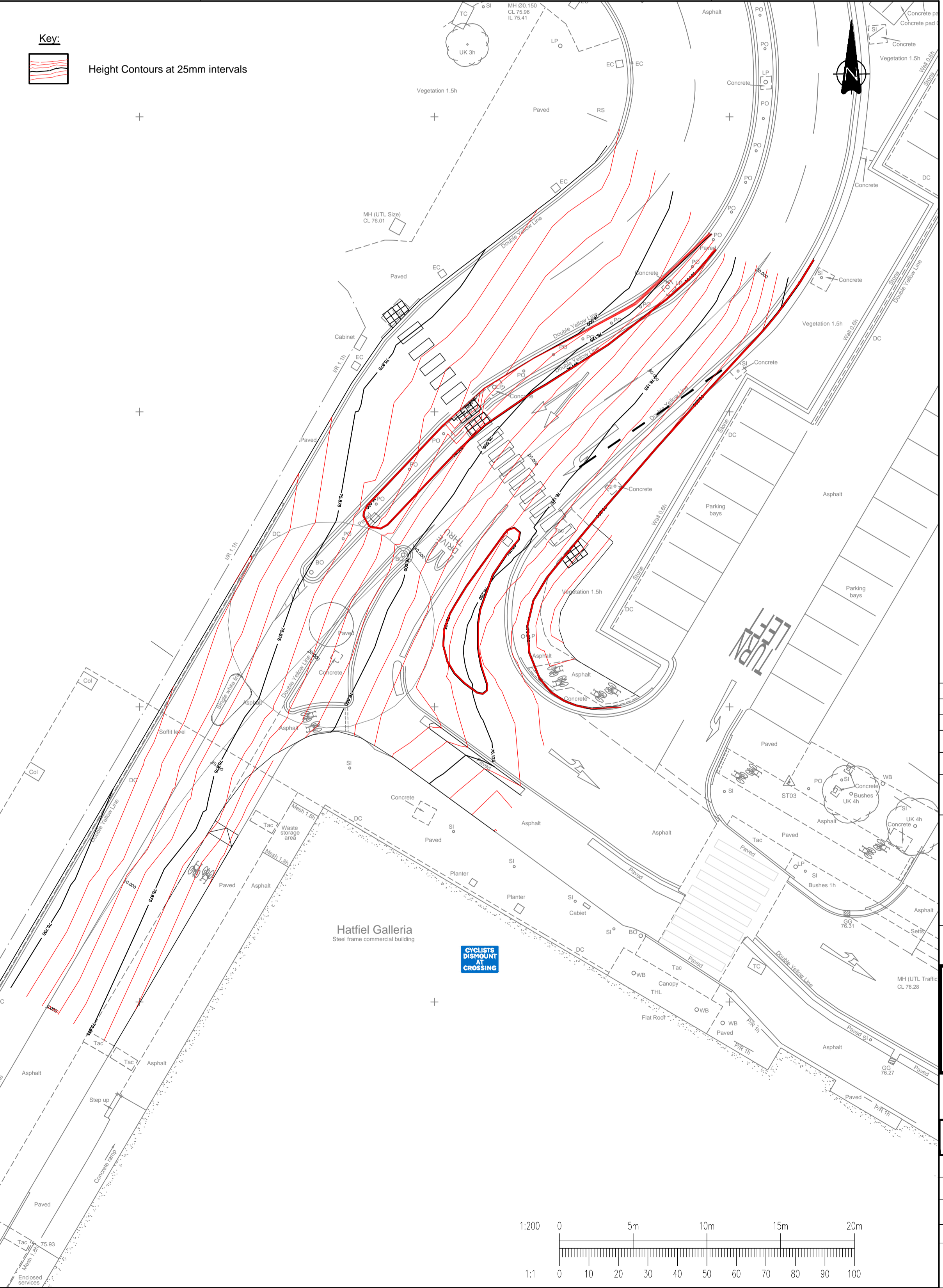
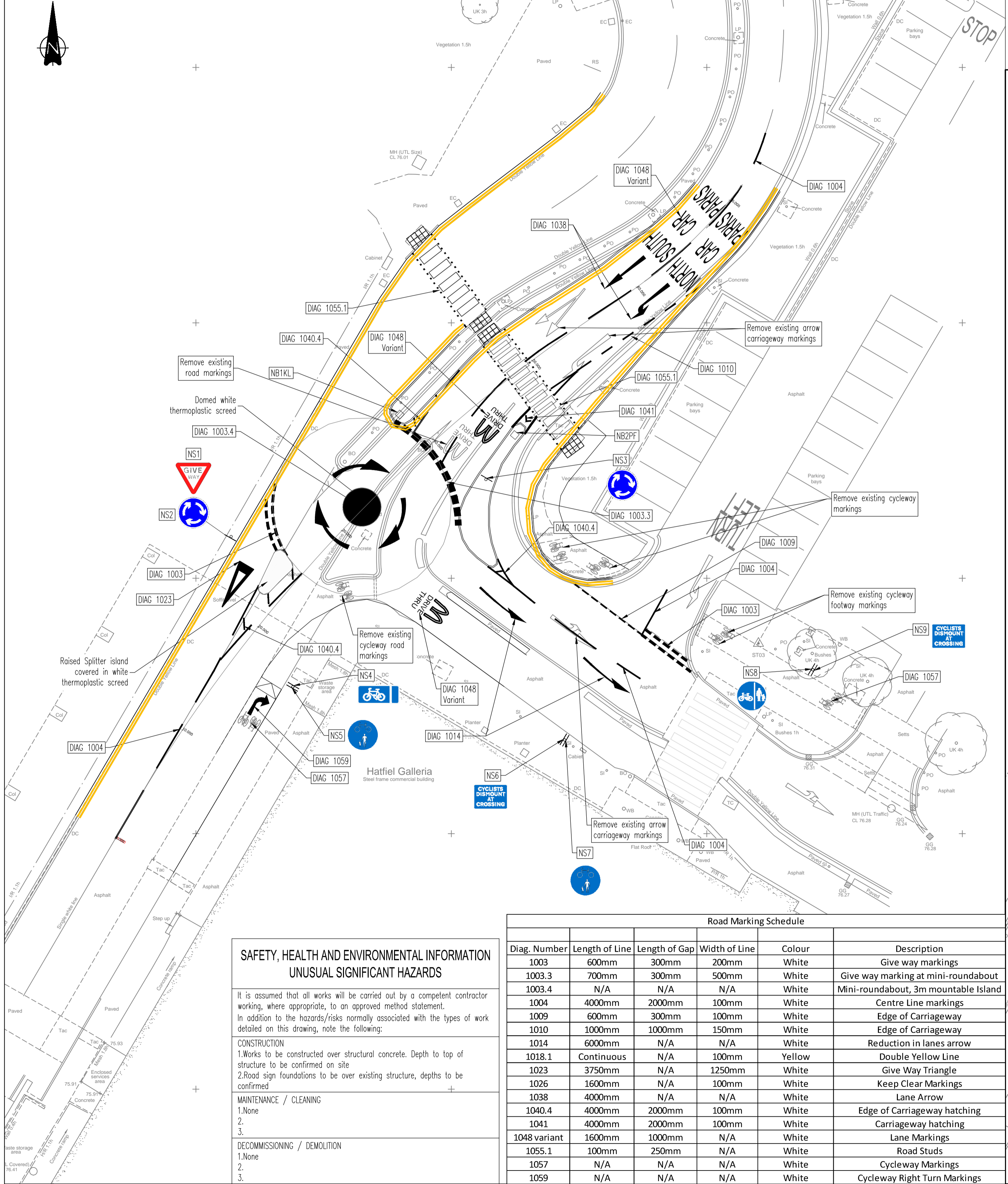
Key:

- NS1 New traffic sign
- New bollard

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Road Marking Schedule					
Diag. Number	Length of Line	Length of Gap	Width of Line	Colour	Description
1003	600mm	300mm	200mm	White	Give way markings
1003.3	700mm	300mm	500mm	White	Give way marking at mini-roundabout
1003.4	N/A	N/A	N/A	White	Mini-roundabout, 3m mountable Island
1004	4000mm	2000mm	100mm	White	Centre Line markings
1009	600mm	300mm	100mm	White	Edge of Carriageway
1010	1000mm	1000mm	150mm	White	Edge of Carriageway
1014	6000mm	N/A	N/A	White	Reduction in lanes arrow
1018.1	Continuous	N/A	100mm	Yellow	Double Yellow Line
1023	3750mm	N/A	1250mm	White	Give Way Triangle
1026	1600mm	N/A	100mm	White	Keep Clear Markings
1038	4000mm	N/A	N/A	White	Lane Arrow
1040.4	4000mm	2000mm	100mm	White	Edge of Carriageway hatching
1041	4000mm	2000mm	100mm	White	Carriageway hatching
1048 variant	1600mm	1000mm	N/A	White	Lane Markings
1055.1	100mm	250mm	N/A	White	Road Studs
1057	N/A	N/A	N/A	White	Cycleway Markings
1059	N/A	N/A	N/A	White	Cycleway Right Turn Markings

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
UNUSUAL SIGNIFICANT HAZARDS

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CONSTRUCTION

- Works to be constructed over structural concrete. Depth to top of structure to be confirmed on site
- Road sign foundations to be over existing structure, depths to be confirmed

MAINTENANCE / CLEANING

- None
- None
- None

DECOMMISSIONING / DEMOLITION

- None
- None
- None

A03	26.01.16	Signs & road markings updated along shared cycleway	MAC
A02	11.01.15	Shared cycle facility added	JW
A01	23.12.15	First Issue	MAC
Rev	Date	Description	By
Amendments			
Project			
Hatfield Galleria			
Title			
Carriageway Markings, Road Signs & Contours			
Client			
Land Securities Group PLC			
Regent House, Hubert Road, Brentwood, Essex CM14 4JE			
Tel no 01277 238000 mail@watermangroup.com www.watermangroup.com			
Drawing Status			
PRELIMINARY			
Designed by	CTI	Checked by	SN
Drawn by	MC	Date	December 2015
Scales @ A1		work to figured dimensions only	1:200
Computer File No		WIE-17416-SA-95-0002-A03.dwg	
Publisher	Zone	Category	Number
WIE	SA	95	0002
			Revision
			A03

UK and Ireland Office Locations

