

TECHNICAL NOTE

Date: June 2020

File Ref: BD/P19-1773/01TN

Company: Inland Homes

Subject: Development: Air Quality Neutral Assessment

Project: Hillingdon Gardens

1.0 INTRODUCTION

Site Specifics

- 1.1 Create Consulting Engineers Ltd (CCE) have been commissioned by Inland Homes to undertake an Air Quality Assessment for the proposed development located at Hillingdon Gardens site, located off the A40 Western Avenue, adjacent to Hillingdon London Underground station. This Technical Note is provided following a Meeting with Tom Richardson from the GLA to discuss air quality and a number of technical points / clarity required.
- 1.2 The outcome of this meeting required clarification by the Applicant on the following aspects;
- **Air quality neutral** – In the calculation of the BEBs and TEBs, separate the C3 residential GIAs/no. of dwellings from the flexible retail classes, and use A1 Retail as a worst case if the land use class is not clear. Please also separate trip generation by C3/A1 in the calculation of development transport emissions Building emissions must be below the BEB and transport emissions must be below the TEB for the development to be considered air quality neutral.
 - **Traffic data and receptors** – please clarify the changes in concentrations at receptors between the Oct 19 and most recent reports. If you could also come back to me on the decisions in the choice of receptors (e.g. whether R18 is included most recently, etc.).

- **Verification** – it would be useful to see the error and ensure it is in line with TG16, and how the inclusion/exclusion of sites affects it.
- **Mitigation** – measures in Table 8.1: could the client confirm these are to be included.

1.3 This report is supplementary to the Air Quality Assessment undertaken by Create Consulting Engineers. Full details can be found in the CCE document MR/CS/P19-1773/02 Rev A (*herein referred to as the CCE AQ report*).

1.4 The proposed development includes construction of a residential-led, mixed use development comprising buildings between two and seven storeys to provide 551 residential units, employment floor space, flexible commercial floor space, and associated car and cycle parking, highway improvements, hard and soft landscaping, plant and other associated ancillary development.

Policy and Guidance

- 1.5 The London Plan contains a policy relating to air quality, explicitly to 'Air Quality Neutral Development'. The purpose of this policy is to favour developments that are air quality neutral (or better), specifically in areas where air quality objectives are not currently reached.
- 1.6 The most widely adopted assessment approach for mixed use developments in London is to calculate the changes in concentrations of NO₂, and particulate matter (specifically PM₁₀ and PM_{2.5}) that would be generated by the development. The air quality neutral approach compares the benchmark values against the calculated pollutant emissions from the development, with the wider aim of minimising contributions to background pollution concentrations as in London as a whole.
- 1.7 The Air Neutral Planning Support document was originally published in March 2013 to go together with the Greater London Authority's (GLA's) Sustainable Design and Construction Supplementary Planning Guidance (SPG). This forms the basis of the methodology of air quality neutral assessments, as well as the benchmark values for buildings and transport. The aim of improving upon these benchmark values is to minimise the mass of emitted pollutants, rather than targeting the ambient concentration of the pollutant.

2.0 OPERATIONAL EMISSIONS

- 2.1 An Air Quality Neutral assessment had previously been completed (full details can be found in section 7 of the CCE AQ report). Following completion of this report, the premise of assessment in official guidance has shifted from evaluating the aggregate emissions, to the individual uses of the development. This is achieved by looking at each individually proposed land use and comparing them to the benchmark values.

Building Emissions

- 2.2 The Guidance sets out Building Emissions Benchmarks (BEB) based upon the Gross Internal Area (GIA m²) and on-site emissions of NO_x. Developments that do not exceed these benchmarks will be considered to avoid any increase in NO_x emissions and be air quality neutral.
- 2.3 The proposed development is wholly based on air source heat pumps. There are no gas systems, or systems with combustion processes being proposed. Therefore, the development will not include any NO_x or PM₁₀ emissions.

Transport Emissions

- 2.4 The proposed development's air quality neutral assessment for road traffic compares the road traffic related emissions against calculated the aforementioned benchmark values. These

values are based upon land use, the number of anticipated trips per year and the average distance travelled per trip.

- 2.5 The Transport Emission Benchmarks (TEB) are calculated using default NO_x and PM₁₀ emission factors p/m², which have been determined for the different land use classes, and for each of the three areas within London, as defined in the guidance.
- 2.6 The emission factors are multiplied by the Gross Floor Area (GFA), for the Proposed Development in order to obtain the TEB for NO_x and PM₁₀.
- 2.7 The information as provided by Inland Homes have been presented in the following table:

Use Classes	GEA		GIA	
	m ²	ft ²	m ²	ft ²
Commercial	1141	12282	925.9	9966
Other	69.1	744	48	517
Residential	50818.5	546395	46546.8	500879
Total	52028.6	559421	47520.7	511362

Table 2.1: Floor Areas

- 2.8 From the information provided, the calculation of transport emissions against the benchmark values have been shown in the following table:

A1 – Commercial		
GIA (m ²)	NO _x	PM ₁₀
925.9		
Benchmark (g/m ² /yr)	249	42.9
TEB (kg/yr)	230.5	39.7
C3 - Residential		
Number of Dwellings	NO _x	PM ₁₀
514		
Benchmark (g/m ² /yr)	1553	267
TEB (kg/yr)	798.2	137.2

Table 2.2: TEB Figures

- 2.9 It can be seen in the above table that the transport emissions are below the TEB figures for the respective land uses and therefore considered acceptable.

Traffic Data and Receptors

- 2.10 The considered 'most affected' pre-existing sensitive receptors as detailed in the CCE AQ report were based on the traffic data supplied by WSP's Transport Planners. Clarification has

been sought regarding the usage of these receptors in the assessment. The link road (Long Lane) with the sensitive receptors has been shown in the following image:

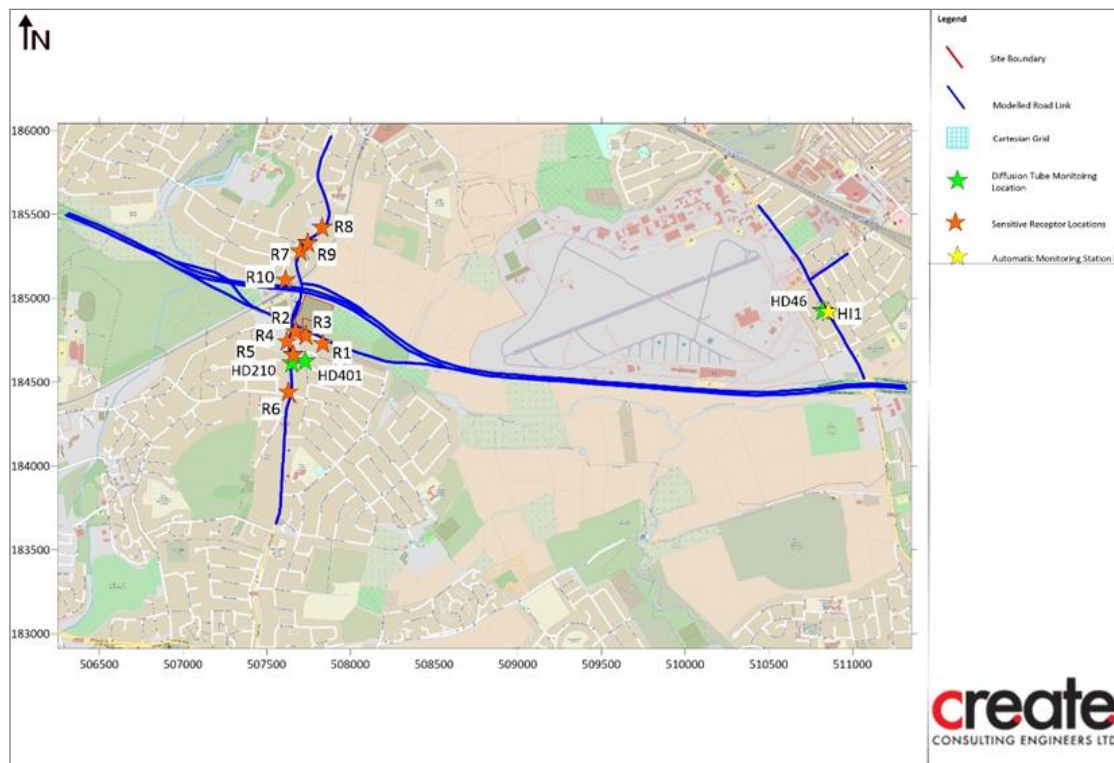


Figure 2.1: Receptor Locations (Figure 5.1: CCE AQ report)

- 2.11 The following tables are from the WSP project: 70028642: Hillingdon Gateway, Traffic Modelling Addendum. They show the highest percentage of impact due to the development along this road, growth rates applied have been agreed between the Applicants Transport Consultant and both LB of Hillingdon and TfL :

JUNCTION ARM	TURNING MOVEMENT	COMMIT. DEV.	PROPOSED DEV.	SCENARIO 1 (BASE)	SCENARIO 2 (BASE+CD)	SCENARIO 3 (BASE+CD+DEV)	COMMIT. DEV. IMPACT %	PROPOSED DEV. IMPACT %
Long Lane southbound	Left Turn	0	6	13	13	19	0%	31%
	Ahead	37	0	715	753	753	5%	0%
	Right Turn	19	0	319	338	338	6%	0%
Freezeland Way	Left Turn	27	18	215	242	261	11%	7%
	Ahead	9	21	481	490	512	2%	4%
	Right Turn	7	40	129	136	176	5%	23%
Long Lane northbound	Left Turn	25	6	169	194	200	13%	3%
	Ahead	57	0	710	767	767	7%	0%
Western Avenue	Left Turn	20	0	607	627	627	3%	0%
	Ahead	0	14	6	6	20	0%	71%
	Right Turn	27	0	236	263	263	10%	0%
Total		229	106	3,830	3,601	3,936	6%	3%

Table 2.3: Excerpt from table 2.1 – WSP Addendum

JUNCTION ARM	TURNING MOVEMENT	COMMIT. DEV.	PROPOSED DEV.	SCENARIO 1 (BASE)	SCENARIO 2 (BASE+CD)	SCENARIO 3 (BASE+CD+ DEV)	COMMIT. DEV. IMPACT %	PROPOSED DEV. IMPACT %
Long Lane southbound	Left Turn	0	14	2	2	16	0%	87%
	Ahead	6	0	498	505	505	1%	0%
	Right Turn	7	0	220	227	227	3%	0%
Freezeland Way	Left Turn	2	8	243	246	254	1%	3%
	Ahead	3	12	494	497	509	1%	2%
	Right Turn	5	20	260	265	285	2%	7%
Long Lane northbound	Left Turn	4	14	157	161	175	3%	8%
	Ahead	14	0	755	769	769	2%	0%
Western Avenue	Left Turn	17	0	709	726	726	2%	0%
	Ahead	0	31	12	12	43	0%	72%
	Right Turn	2	0	295	298	298	1%	0%
Total		61	100	3,708	3,647	3,808	2%	3%

Table 2.4: Excerpt from table 2.2 – WSP Addendum

Mitigation

- 2.12 Table 8.1 from the CCE AQ report has been appended, and has been verified in terms of forecasted costs and expenditure. The Applicant has agreed to fund all measures within Table 8.1 in lieu of a generic S106 air quality contribution as previously required by LB Hillingdon.

3.0 SUMMARY

- 3.1 We trust the information detailed above is sufficient, however if we can be of any further assistance, please let us know.

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M-ID	Short Title	Physical Description	Target Sub-Fleet	Benefit Description	Cost (£)
1	Electric Vehicle Charging Points	Encouraging sustainable travel, EV charging points will be provided up and beyond the London Plan standards (2016). 20% of parking bays will have EV charging points, with additional 40% having capacity for future conversion. Anticipate installing over 40 charging points initially.	1 / 3 / 5 / 7	EV charging points encourage vehicle owners to purchase low emission hybrid or full electric vehicles, reducing the overall impact of emissions from development related vehicular movements.	£100,000
2	New/ Improved Walking and Cycling Routes	Significant improvements are proposed to the highway network immediately surrounding the site that will benefit pedestrians and cyclists.	1 & 5	Measures designed to enhance pedestrian/ cycle access and support a sustainable travel approach include: - The entrance to the site at the south eastern corner of the site takes the form of a gateway action as an extension of the high street, with landscaped public; - Widening/ modernising pedestrian islands across north, east and south arms of the junction to enhance safety and to provide additional space for wheelchair users, pedestrians with pushchairs, and cyclists; - Southbound approach from Long Lane North will be re-aligned to allow for the widening of the pedestrian	£280,000

M-ID	Short Title	Physical Description	Target Sub-Fleet	Benefit Description	Cost (£)
				crossing islands on the north and south junction arms; - Footway at the X90 / Oxford Tube bus stop along Freezeland Way will be widened to allow for a suitable bus shelter. Dropped kerbs will also be provided to allow for improved mobility impaired access.	
3	Improved Bus Stop				£10,000
4	Up to 4 Car Club Bays	Proposed that four car club cars and provided within the site to support the development. It is envisaged that one car will be provided upon initial occupancy, with usage monitored and reported prior to implementation of a second vehicle.	5	Benefits of the car club include: - Reduced cost of owning a car, insuring a car, taxing a car etc.; - Convenience of booking car at short notice; - Those involved in the scheme choose walking, cycling and public transport as their mode of travel, using the car club when it is the best option.	£30,000

M-ID	Short Title	Physical Description	Target Sub-Fleet	Benefit Description	Cost (£)
5	Over 950 High Quality Cycle Parking Spaces	Cycle parking will meet the minimum standards set out within the London Plan - 1 space for 1 bedroom unit, 2 spaces for 2+ bedroom units Total of 657 cycle parking spaces will be provided.	5	Cycling measures will add to the measures of LBH Go Cycle Programme, which is being implemented to try and encourage more people to cycle and improve safety while providing better streets/ environment for everyone.	£70,000
6	New Cycle Superhub On-site	The Hillingdon 'Cycle Hub' will include high quality, viable and conveniently located visitor cycle parking; In form of accessible stands; Include cycle/ Brompton hire facilities; Have CCTV; Repair and maintenance facilities; and Signage linking all sustainable travel routes.	1 / 3 / 5 / 7	The 'Cycle Hub' will benefit both new and existing local residents, and contribute to the Mayors Transport Strategy, which aims to increase cycling mode share across London from 1% (2001) to 5% (2026). MTS aims for 80% for Londoners trips to be by foot, cycle or public transport by 2041; Implementation will contribute towards: Increase number of residents cycling within the local area; Raise awareness and increase the visibility and appeal of cycling as mode of travel; Improve cycle security;	£60,000

M-ID	Short Title	Physical Description	Target Sub-Fleet	Benefit Description	Cost (£)
				Improve customer satisfaction with station and interchange facilities in the area.	
7	Brompton/ Traditional Bike Hire Facilities	Traditional/ Brompton bike hire facilities to be provided in order to give residents and future residents access to 24/7 automated bike hire.	1 & 5	<p>The Brompton Bike Hire station will target different journeys to the Central London cycle hire scheme, due to offering more flexibility in journey type and duration, at one simple low price.</p> <p>Docks allow people to take out bikes and use them for rolling 24hour period, as opposed to the sub-30 minute journeys with the Santander bicycle hire schemes.</p> <p>People can take bikes with them treating the bikes as if they were their own, taking them places of work etc.</p> <p>Traditional bike hire will also be provided.</p> <p>There will be a 50:50 split between Brompton and Traditional bikes.</p>	£20,000

M-ID	Short Title	Physical Description	Target Sub-Fleet	Benefit Description	Cost (£)
8	Travel Plan Coordinator	Travel Plan Coordinator will be appointed prior to first occupation and will be responsible for managing and implementing the Travel Plan.	1 to 8	The TPC role will focus on: Day to day liaison with necessary stakeholders; Implementation of TP measures; Managing travel information; Distribution of a welcome pack to new residents; Promoting non-car travel through TP measures; Reporting progress to any TP stakeholders, including LBH; Managing the monitoring and progress of the Travel Plan targets.	£82,000
9	3 years free car club membership		5		£45,000
10	Oyster Card Credit	One Oyster Card per dwelling with credit of £40 will be distributed on occupation of each unit.	5	Measure is aimed at encouraging future residents to travel via sustainable means for localised trips. Assumed that future residents commuting to central London will be travelling via sustainable means regardless of this measure, due to impracticalities of travelling by private vehicle.	£45,000

M-ID	Short Title	Physical Description	Target Sub-Fleet	Benefit Description	Cost (£)
11	Monitoring Plan (TRICS/ iTRACE compliant)				£88,000
12	Residential Travel Pack	Every household will be provided with a Residential Travel Pack promoting sustainable modes of transport and key services provided through the Travel Plan.	5	The RTP will contain information on the facilities within the development and nearby. The RTP will also include information on: <ul style="list-style-type: none"> - Access Initiatives; - Journey Planner Tools; - Key Services and Facilities; - Health Benefits of Sustainable Travel; - Working from home; and - How to join car clubs etc. 	£40,000
13	London Cycling Campaign Promotion	LCC promotes cycling locally, improves conditions for cyclists in their borough, organises leisure rides and social events.	1 / 3 / 5 / 7	Benefits include discounts at bike shops, exclusive cycle theft insurance packages, free third party insurance for damage or injury up to the value of £1m, access to local LCC borough groups with free legal advice.	£200,000

M-ID	Short Title	Physical Description	Target Sub-Fleet	Benefit Description	Cost (£)
14	Community Notice Boards	<p>Provide travel and community information as well as events in the area.</p> <p>Boards will be placed in prominent locations across the site. Such events will provided future residents with:</p> <ul style="list-style-type: none"> - Free bike checks from bicycle mechanics; - Overview of new route designs and plans and future consultation opportunities; - Advice from experts about different cycling opportunities available in the borough; and - Cycle skills training (on different bikes etc.). 	5		£10,000
15	Financial Contribution to Public Transport	<p>Proposed that the developer will make a financial contribution towards bus improvements in the Hillingdon area. It is envisaged that the contribution will go towards increased frequency of service or potentially towards a new direct route running north-south along Long Lane towards Ruislip.</p>	1 / 3 / 5 / 7	<p>A significant bus contribution will significantly enhance local residents' access to local bus services and will enhance the feeling of a focal transport hub at Hillingdon Underground Station, nearby the site boundary. The service will be highly accessible to those living and working across the site and wider local area.</p>	£1,365,000

M-ID	Short Title	Physical Description	Target Sub-Fleet	Benefit Description	Cost (£)
16	Selective Vehicle Detection (SVD)	Selective Vehicle Detection (SVD) measures will be put in place at the Hillingdon Circus junction.		SVD is a method of bus priority that allows buses to be progressed through traffic signals by selectively favouring buses' movement and changing traffic light sequences as buses approach. This helps to reduce bus journey times and improves reliability for passengers.	£30,000

Table 8.1 List of Measures Aimed at Reducing Emissions from Hillingdon Gateway