



32 Lawn Road, Camden
Planning Application by
Fairview Estates (Housing) Ltd
Air Quality Assessment
October 2014

LAWN RD NW.3.



Fairview Estates (Housing) Limited

Lawn Road, Camden, NW3 2XU

Air Quality Assessment

Document Ref: 772200-REP-ENV-001

Revision: -

Date: 30 October 2014

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Project Revision Sheet

Rev. No.	Date	Status	Changes	Author	Approved
-	30 October 2014	Final		S. Chara	S. Chara

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Executive Summary

Fairview Estates (Housing) Limited is proposing to develop the site at Lawn Road for residential development. An Air Quality Assessment was undertaken, using DMRB method to assess the impact of the ambient air quality on the proposed development at the site.

The assessment results were compared against the objectives set out in the Air Quality Regulations (England) (Wales) 2000 and Air Quality Amendment Regulations 2002 and Environmental Protection UK produced guidance document entitled 'Development Control: Planning for Air Quality (2010 Update)'.

The results of the assessment indicate:

- The annual mean pollution concentration limit of $40\mu\text{g}/\text{m}^3$ for NO_2 , as set out in the Air Quality Regulations was exceeded in year 2017 in the flats located between the ground and third floors of the proposed building at the northern end of the site (closest to Fleet Road). Therefore, positive venting should be provided for these flats with the air extracted from above the third floor. It is considered that the high level of NO_2 predicted in year 2017 is due to the traffic from Fleet Road.
- The development will be a car free development.

As the DMRB method used for this assessment is a conservative modelling method, it is considered that modelling undertaken using dispersion modelling is likely to predict lower levels of NO_2 and PM_{10} especially at higher floor levels as the dispersion model considers the influence of wind dispersion within its values. Therefore, it is recommended that dispersion modelling be undertaken prior to construction to confirm the findings of the screening assessment.

Overall, it is considered that the proposed development will not have any impact on the ambient air quality near the development site, when compared to the previous usage. As such it is considered that air quality does not present a constraint to the granting of planning permission.

Limitations and Exceptions

- 1 This report and its findings should be considered in relation to the terms and conditions proposed and scope of works agreed between MLM Consulting Engineers Ltd and the client.
- 2 The Executive Summary, Conclusions and Recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon until considered in the context of the whole report.
- 3 This report provides available factual data for the site and the surrounding area at the time of the study and as obtained by the means described in the text. The data is related to the site on the basis of the site location information provided by the Client.
- 4 It should be appreciated that the information that has been made available to date, is not necessarily exhaustive and that further information relevant to the proposed site usage may be provided which could change the overall findings.
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- 7 This report is prepared and written in the context of the proposals stated in the introduction to this report and should not be used in a differing context. Furthermore, new information, improved practices and legislation may necessitate an alteration to the report in whole or in part after its submission. Therefore, with any change in circumstances or after the expiry of one year from the date of the report, the report should be referred to us for re-assessment and, if necessary, re-appraisal.

1 Introduction

1.1 General

This report has been prepared by MLM Consulting Engineers Ltd (MLMCEL) on behalf of Fairview Estates (Housing) Ltd ('Fairview'). It accompanies an application for full planning permission for a residential development at 32 Lawn Road, Camden, NW3.

Until earlier this year, the London Borough of Camden (LBC) was the freehold owner of the site. In 2012, the Council decided to sell the site as part of its Community Investment Programme, intended to raise funds for investment in Camden's schools, homes and community facilities through the sale of underutilised Council assets. In March 2014, the Council agreed the sale of the site to Fairview for redevelopment for housing.

The development that is subject to the planning application has been subject to considerable pre-application discussion with Council officers.

The Council has declared the entire borough as an Air Quality Management Area (AQMA) since 2001.

Preliminary discussions were held with Ms Poppy Lyle and Ms Amy Farthing at the LBC Environmental Protection team in July 2014 and it was agreed with them that Design Manual for Roads and Bridges (DMRB) was an appropriate method for assessing the site for the purpose of submitting a planning application.

The AQMA considers the impact from road traffic emissions. The assessment has not considered the impact of any on-site emissions.

1.2 Report Structure

The structure of the report is summarised below:

- A brief description of the site and proposed development;
- A brief description of the legislation governing air quality in England;
- Details of the method and the input data used for the assessment;
- Results of the assessment;
- Conclusions

1.3 Objectives

The objectives of this report are:

- To assess the present levels of air pollution around the proposed site. The assessment will be based upon historical monitoring data and Local Authority data, as available in the public domain for nitrogen dioxide (NO₂) and the Particulate Matter (PM₁₀, i.e. particles which are less than 10µm in diameter).
- To use the Design Manual for Roads and Bridges (DMRB screening method), which is published by the Highways Agency, to assess the impact of the existing air quality on the proposed development.

2 The Site

2.1 Location and Description

The site is located within the Belsize Park/Gospel Oak area of NW3, between Lawn Road to the west and Upper Park Road to the east, south of the junction with Fleet Road. The site covers approximately 0.25ha and currently contains two existing buildings. These comprise a former car park building, now utilised as seven (part vacant) commercial units with undercroft car parking, and a former launderette, most recently used as a community centre.

The approximate national grid reference for the site is 527577E, 185362N. Figure 1 shows the location of the site relative to the surrounding area.

2.2 Proposed Development

The proposed development comprises a building of 5-7 storeys containing 73 apartments of mixed size and set within landscaped grounds. This includes a central landscaped courtyard fronting Upper Park Road and gardens along the Lawn Road frontage, with new trees lining the perimeter of the site.

The development is being brought forward as a car-free scheme with no general car parking spaces provided. Provision for four on-street disabled parking bays is proposed, with three spaces created on Lawn Road and one on Upper Park Road adjacent to the entrance.

For cycle storage, the scheme will provide 1 cycle space for 1 and 2 bed units, and 2 spaces for 3 bed units (all internal within the building), plus 2 courtyard spaces for visitors.

2.3 Historic Air Quality Assessment

LBC has undertaken a detailed assessment of the air quality within its boundary under the principles set out in the Environment Act 1995. The assessment indicated that the air quality, in particular the annual and hourly mean levels of the nitrogen dioxide (NO₂) and annual and daily mean levels of particulates (PM₁₀), had exceeded the air quality objectives and therefore declared the whole borough as an AQMA since 2001.

LBC monitors the air quality in the borough using a series of continuous analysers at London Bloomsbury to monitor pollution at urban background, Swiss Cottage to monitor kerbside and at Shaftesbury Avenue and Euston Road to monitor pollution at roadside. The analyser at Swiss Cottage has been included as part of this assessment to validate the modelling. The analyser at London Bloomsbury monitors the urban background values and the recent values are shown on Table 2.1.

Table 2.1 Results of Nitrogen Dioxide Levels for London Bloomsbury Continuous Analyser

Continuous Analyser	Annual average NO ₂ (µg/m ³)				
	2008	2009	2010	2011	2012
London Bloomsbury	55	54	55	50	55

3 Air Quality Standards

3.1 General

The national air quality objectives for nitrogen dioxide (NO₂), as set by Air Quality Regulations (England) (Wales) 2000 and Air Quality Amendment Regulations 2002 are:

- An annual average of 40µg/m³ to be achieved by 31 December 2005;
- 200µg/m³ as an hourly average with a maximum of 18 exceedances in a year, to be achieved by 31 December 2005.

The national air quality objectives for particulate matter (PM₁₀), as set by Air Quality Regulations (England and Wales) 2000, are:

- An annual average of 40µg/m³ to be achieved by 31 December 2004;
- 50µg/m³ as an hourly average with a maximum of 35 exceedances in a year, to be achieved by 31 December 2004.

For the assessment undertaken in this report, the following generally stringent standards were adopted:

- For the analysis of NO₂, the annual mean was used.
- For PM₁₀, the 24 hour standard is adopted. In addition, the annual mean was calculated to assess the rate of increase in the level of PM₁₀ at existing receptors.

Since December 1997 each Local Authority in the UK has been carrying out a review and assessment of air quality within their areas. These periodic reviews are used to assess whether the national air quality objectives will be achieved throughout the UK by the relevant deadlines. The process is known as 'Local Air Quality Management' (LAQM). AQMAs are declared in areas or zones where the objectives are not likely to be achieved.

3.2 European Law on Air Quality

The European Directive (2008/50/EC) sets legally binding limits for concentrations in outdoor air of major air pollutants that impact public health such as particulate matter (PM₁₀ and PM_{2.5}) and nitrogen dioxide (NO₂). The European Directive is implemented in the UK under the Air Quality Standards Regulations 2010. The obligations under the Air Quality Standards Regulations 2010 are separate from those of the 2000 and 2002 UK Regulations because local authorities in the UK will only have powers to manage some of the pollutants in the Air Quality Standards Regulations 2010 as most of the source pollutants will be managed by the Environment Agency under the IPPC Regime. Therefore the obligation to meet the Air Quality Standards Regulations 2010 rests with the Secretary of State for Environment.

3.3 Regional Planning Policy

Following extensive public consultation, the Mayor of London published the final version of his Air Quality Strategy on 14 December 2010. 'Clearing London's Air' details how the Mayor aims to protect Londoners' health and increase their quality of life by cleaning up the capital's air.

The strategy sets out a framework for improving London's air quality and measures aimed at reducing emissions from transport, homes, offices and new developments, as well as raising awareness of air quality issues.

This will be delivered through a number of initiatives including:

- Age limits for taxis
- Promoting low-emission vehicles (such as electric cars)
- Promoting eco-driving
- New standards for the Low Emission Zone
- Retrofitting older buses
- Targeted measures for areas where air quality is poor.
- Using the planning system to reduce emissions from new developments.
- Retrofitting homes and offices to make them more energy efficient.

4 DMRB Screening Method

4.1 General

The DMRB Screening Method has been designed to assist in the assessment of the impact a new road scheme will have on air quality at local and regional levels. It is widely used by local authorities in air quality assessment and is included in Defra's guidance as a recommended means of undertaking road traffic assessments at the second stage level.

The model is designed to be a conservative screening application, with purposefully overestimated concentrations. The results of the DMRB should therefore serve to establish whether, or not, a more detailed and sophisticated air quality assessment is required for the road scheme.

4.2 Input Data

4.2.1 General

The following parameters are required to determine the air pollution concentration using the DMRB screening method:

- Receptor location details;
- The assessment year;
- The road network details;
- Background pollution(s) concentration(s);
- Traffic data.

The details of the parameters used in the analysis for the Lawn Road site are presented below.

4.2.2 Receptor Locations

Receptors were selected from within the proposed building to assess the impact of the existing environment on the proposed development. Receptors were also selected at varying heights to show variation in concentration with height.

The locations of potentially sensitive receptors within the proposed building are shown on Figures 2 to 4 and presented in Table 4.1. The proposed layouts are indicative plans.

Table 4.1 Receptor Locations

Receptor Number	Receptor Name	Description
R1	Proposed Plot 1	Front window of the ground floor
R2	Proposed Plot 2	Front window of the ground floor
R3	Proposed Plot 3	Front window of the ground floor
R4	Proposed Plot 6	Front window of the ground floor
R5	Proposed Plot 5	Front window of the second floor
R6	Proposed Plot 24	Front window of the second floor
R7	Proposed Plot 25	Front window of the second floor
R8	Proposed Plot 27	Front window of the second floor
R9	Proposed Plot 29	Front window of the second floor
R10	Proposed Plot 50	Front window of the fourth floor
R11	Proposed Plot 51	Front window of the fourth floor
R12	Proposed Plot 53	Front window of the fourth floor
R13	Proposed Plot 55	Front window of the fourth floor

4.2.3 The Assessment Years

The selected assessment years are 2012 and 2017. The year 2012 was chosen as the base year to model the conditions at the existing continuous analyser to validate the modelling. The year 2017 represents the year when the site is likely to be in operation.

4.2.4 The Road Networks

The following road networks were selected for the assessment, for the reasons provided:

- Lawn Road was chosen as it traverses the western site boundary.
- Fleet Road as it feeds traffic in to Lawn road as well as directly impacting on the site.
- A41 was chosen as it is located adjacent to continuous analyser at Swiss Cottage. The continuous analyser was used in the verification process.

4.2.5 Background Pollution

Background concentrations for the assessment undertaken at the site were sourced from the Defra LAQM website. The June 2014 updated LAQM website contains information on the background monitoring undertaken in year 2011 as well as projected values for future years.

Background monitoring undertaken by LBC at London Bloomsbury indicates that the background levels of NO₂ presented in the Defra website are 1 µg/m³ lower than the monitored levels. The discrepancy is probably due to London Bloomsbury station being surrounded by roads on four sides and therefore it is probably measuring pollution from these roads as well as the background values. Historic monitoring by LBC indicates that there has not been any decline in the background values within the borough. Therefore, the background values obtained from the Defra LAQM website for the nearest 1km square centred grid to the site and the continuous analyser for the base year of 2012 were assumed to remain unchanged for the opening year in 2017. However to avoid double counting, the source sectors from the major roads for the NO₂ and oxides of NO_x were removed in accordance with Defra published guidance documents. The Defra published and adjusted background values near the site in year 2012 are shown on Tables 4.2.

Table 4.2 Background levels sourced from LAQM website for the site

Pollutant	Annual mean value (µg/m ³) for year 2012	
	Defra Predicted	Adjusted values
NO ₂	32.19	31.61
NO _x	52.25	51.0
PM ₁₀	22.4	22.40

4.3 Traffic Data

The details of the impact of the proposed development on the local traffic are presented in the URS Transport Statement for 32 Lawn Road dated October 2014.

The following information, which is pertinent to the air quality assessments, was sourced from the above report:

- Trip rates have been derived for the former land use and the proposed development, using similar sites within the TRAVL database. The findings of this analysis suggest that there will be no trips made by private vehicle or as a car passenger associated with the proposed development. The majority of trips associated with the development are instead expected to be made on foot, bicycle or by public transport.
- The development will provide four new disabled parking bays; three of which will be on Lawn Road and the remaining space on Upper Park Road. The spaces on Lawn Road will be provided in gaps currently created to allow access to the site, which will no longer be needed, and will be available for new residents and other members of the community with blue badges to use. Cycle parking will also be provided on site, in accordance with the London Plan standards.

The traffic flows in terms of Annual Average Daily Traffic (AADT) used in the analysis to verify the model for the Swiss Cottage was sourced from the Department for Transport (DfT) automatic counter survey presented on the DfT website and are presented in Table 4.3.

Table 4.3 Historic Annual Average Daily Traffic (AADT) Flow Data for Years 2012

Link	AADT in Year 2012	
	LGV	HGV
A41 Finchley Road	37537	1330

Traffic data for Lawn Road and Fleet Road were sourced from a survey that was undertaken during the school term on 23 October 2014. The survey, which was undertaken by MLM, counted the morning peak hour flows. These values were used to calculate the annual average daily traffic (AADT) by multiplying the peak hourly flow by a factor of 17 (DMRB 2007). The surveyed traffic flow was projected to year 2017 by assuming there will be an increase of 1.04% growth per annum. The projected traffic growth in Year 2017 for Lawn Road and Fleet Road are presented in Table 4.4.

Table 4.4 Projected Annual Average Daily Traffic (AADT) Flow Data for Years 2017

Link	AADT in Year 2017	
	LGV	HGV
Lawn Road	3094	119
Fleet Road	13498	901

5 Model Output

5.1 General

The modelling predicted total oxides of nitrogen (NO_x) at the selected diffusion tube location and at the selected receptor locations within the AQMA area. The base year of 2012 was chosen to predict the NO_x levels at the continuous analyser location and this value was compared with monitored NO_x results to verify the model predictions. An adjustment factor was determined for the modelling and the factor was applied to predicted values for the opening year in Year 2017. The details of the process are presented below.

5.2 Baseline Conditions

5.2.1 Method

The model adjustment was undertaken using the methodology given in the publication 'Local Air Quality Management Technical Guidance LAQM TG (09) Annex 3: Modelling published by Department for Environment, Food and Rural affairs'. LAQM TG (09) requires the determination of the ratio between monitored road contributions NO_x to modelled road contribution NO_x at each comparison sites. Where more than one comparison site is available, TG (09) recommends the use of graphs to determine the ratio. The statistically determined ratio between the monitored roads contributed NO_x and the modelled road contribution NO_x is then referred to as the adjustment factor. This adjustment factor is applied to the modelled road contribution NO_x. The modelled road contributed NO₂ is then determined using the Defra NO_x/NO₂ calculator.

5.2.2 Model Verification

The road source contributed NO_x for the receptors located within the AQMA area was adjusted using the continuous analyser at Swiss Cottage. The model predicted values for NO_x at the continuous analyser together with the observed values are presented in Table 5.1. The monitored road contributed NO_x was calculated from the measured NO₂ using the Defra NO_x/NO₂ calculator.

Table 5.1 Ratio of the monitored road contribution to modelled contribution for NO_x

Continuous analyser	Year	Monitored road contribution NO _x (excluding background) (µg/m ³)	Modelled road contribution NO _x (excluding background) (µg/m ³)	Ratio between monitored and modelled NO _x (µg/m ³)
Swiss Cottage	2012	97.3	22.64	4.2

The road source contributed NO_x for the receptors located in and around the site were adjusted using the factor of 4.2 as stated in Technical Guidance LAQM.TG (09). The modelled PM₁₀ values were also factored by 4.2 in accordance with Technical Guidance LAQM.TG (09).

5.3 Modelled Results

The modelled NO₂ levels were calculated from adjusted modelled road NO_x values using the Defra NO_x/NO₂ calculator with background values derived from Defra website. The modelled NO₂ and PM₁₀ values are presented in Table 5.2 with the development.

Table 5.2 Modelled NO₂ Pollution Concentrations

No	Receptor Name	Year 2017: With Developments	
		NO ₂ Annual Mean (µg/m ³)	PM ₁₀ Annual Mean (µg/m ³)
R1	Proposed Plot 1– Ground Floor	46.81	27.10
R2	Proposed Plot 2– Ground Floor	44.20	26.22
R3	Proposed Plot 3– Ground Floor	42.14	25.59
R4	Proposed Plot 6– Ground Floor	38.94	24.63
R5	Proposed Plot 5– Ground Floor	39.83	24.63
R6	Proposed Plot 24– Second Floor	46.46	26.47
R7	Proposed Plot 25– Second Floor	43.93	25.72
R8	Proposed Plot 27– Second Floor	41.87	25.17
R9	Proposed Plot 29– Second Floor	39.83	24.63
R10	Proposed Plot 50– Fourth Floor	45.62	26.18
R11	Proposed Plot 51– Fourth Floor	41.24	24.96
R12	Proposed Plot 53– Fourth Floor	41.42	25.00
R13	Proposed Plot 55– Fourth Floor	38.96	24.37

The pollution level generally decreases with height due to dispersion effect of wind. A reduction curve presenting the relationship between NO₂ pollution level and height is shown as Figure 5. The relationship was derived from the published work by Hitchens et al (2002) and MLME experience. The predicted NO₂ level given in Table 5.2 was modified by multiplying the factors presented in the curve shown in Figure 5 and are presented in Table 5.3.

Table 5.3 Factored NO₂ Pollution Concentrations

No	Receptor Name	NO ₂ Annual Mean -Year 2017 With Developments (µg/m ³)
R1	Proposed Plot 1– Ground Floor	46.81
R2	Proposed Plot 2– Ground Floor	44.2
R3	Proposed Plot 3– Ground Floor	42.14
R4	Proposed Plot 6– Ground Floor	38.94
R5	Proposed Plot 5– Ground Floor	39.83
R6	Proposed Plot 24– Second Floor	41.81
R7	Proposed Plot 25– Second Floor	39.53
R8	Proposed Plot 27– Second Floor	37.68
R9	Proposed Plot 29– Second Floor	35.85
R10	Proposed Plot 50– Fourth Floor	36..50
R11	Proposed Plot 51– Fourth Floor	37.12
R12	Proposed Plot 53– Fourth Floor	37.28
R13	Proposed Plot 55– Fourth Floor	35.06

6 Discussion of Results

6.1 Guidance Used for the Review

The results of the analysis were compared against the national objectives described in the Air Quality Regulations, presented in Section 3 of this report and the Environmental Protection UK produced guidance document entitled 'Development Control: Planning for Air Quality (2010 Update)'. Appendix C provides a summary of the guidance.

6.2 Comparison with the National Objectives

- The annual mean pollution concentration limit of $40 \mu\text{g}/\text{m}^3$ for NO_2 , as set out in the Air Quality Regulations (England) (Wales) 2000 and Air Quality Amendment Regulations 2002, was exceeded in the receptors located in the northern part of the development between the ground and third floor. However, DMRB model does not take in to account dispersion effect of the wind at higher level. Therefore, the predicted NO_2 values were reduced to take account of the wind dispersion using factors derived from MLM experience and these revised predicted values, shown on Figure 5.4. These values indicate that national objective will not be exceeded above the third floor. It is considered that the high level of NO_2 predicted in year 2017 is due to the traffic from Fleet Road.
- Based upon this it can be concluded that flats located between ground and the third floor at the northern end of the site (closest to Fleet Road) will require positive venting. The air for the positive venting will need to be extracted from above the third floor level.
- The annual mean pollution concentration limit of $40\mu\text{g}/\text{m}^3$ for PM_{10} , as set out in the Air Quality Limit Value Regulations, was not exceeded in any of the receptors within the site.

6.3 Recommendations

The NO_2 pollution concentration of the flats located between the ground and third floors at the northern end of the site (closest to Fleet Road) are shown to be above the Objective value for NO_2 . Therefore, it is recommended that positive venting be provided for flat numbers 1,2,3,11,12,13,14,24 and 37 with the air to be extracted from above third floor level of the building. However, as DMRB method is a conservative modelling method, it is considered that modelling undertaken using dispersion modelling is likely to indicate lower predicted levels of NO_2 and PM_{10} especially at higher floor levels as the model considers the influence of wind dispersion within its values. Therefore, it is recommended that dispersion modelling be undertaken prior to construction.

7 Conclusions

The results of the analyses undertaken as part of this assessment indicate the following:

- The annual mean pollution concentration limit of $40\mu\text{g}/\text{m}^3$ for NO_2 , as set out in the Air Quality Limit Value Regulations was exceeded in year 2017 in the flats located between the ground and third floors of the proposed building at the northern end of the site (closest to Fleet Road). Therefore, positive venting should be provided for these flats with the air extracted from above the third floor of the building.
- The development will be a car free development.

As DMRB method is a conservative modelling method, it is recommended that dispersion modelling be undertaken prior to construction.

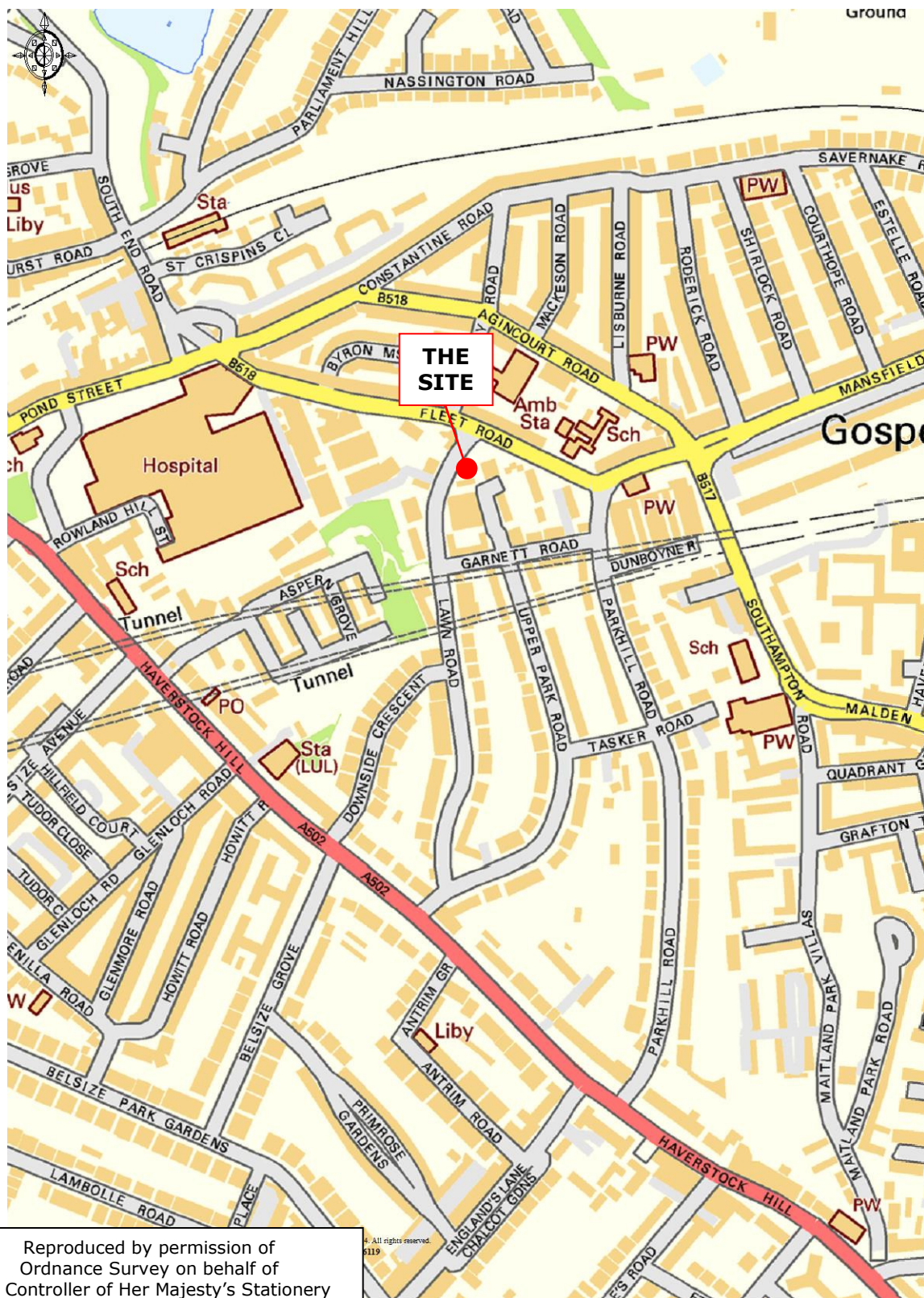
Overall, it is considered that the proposed development will not have any impact on the ambient air quality near the development site, when compared to the previous site usage as it will be a car free development. As such it is considered that air quality does not present a constraint to the granting of planning permission.

8 References

- 1 The Air Quality Strategy for England, Scotland, Wales and Northern Ireland; Addendum, Department of Environment Food and Rural Affairs 2007.
- 2 Local Air Quality Management, Technical Guidance, LAQM.TG (09), Department of Environment Food and Rural Affairs (2009).
- 3 Air Quality Environmental Assessment Techniques, Design Manual for Roads and Bridges (DMRB), Highways Agency, Volume 11, Section 3 (2007).
- 4 National Road Traffic Forecasts (Great Britain) (1997), Department of the Environment, Transport and the Regions.
- 5 Development Control: Planning for Air Quality (2010 Update), Environmental Protection UK (2010).
- 6 Lexden D, Mamer B, and Donovan S, (2007) Deriving NO_2 from NO_x for Air Quality Assessment of Roads – Updated to 2006. Air Quality Consultants Ltd.
- 7 Air Quality and Planning Guidance, London Councils, The London Air Pollution Planning and the Local Environment (APPLE) Working Group. (2007)

Figures

Figure 1: Site Location Plan
Figure 2-4: Proposed Receptors
Figure 5: NO₂ V Height Relationship



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32 Lawn Road, Camden
Site Location Plan

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Figure No.

1

NOTES

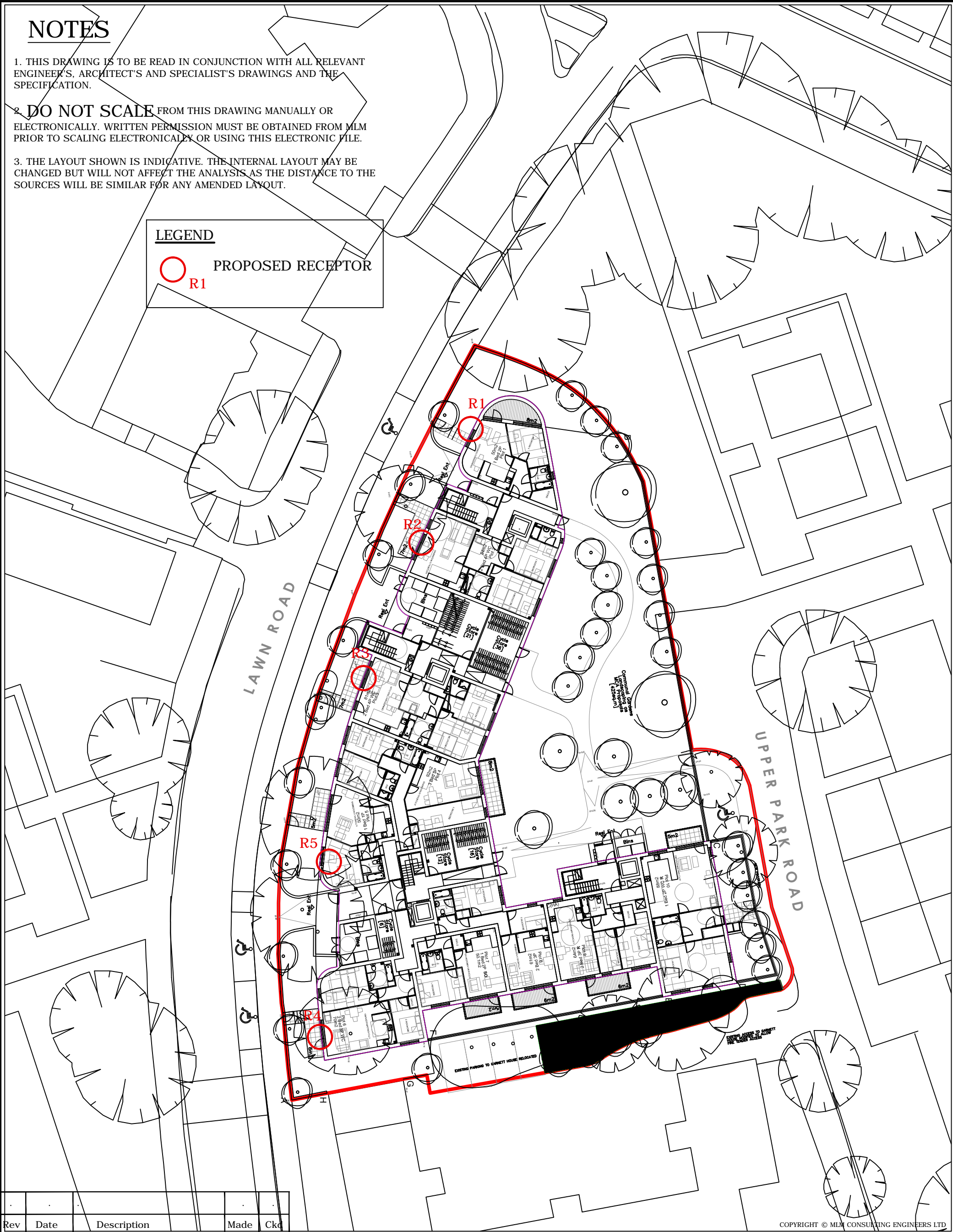
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LEGEND



PROPOSED RECEPTOR

R1



Rev	Date	Description	Made	Ckd

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INFORMATION

Client **FAIRVIEW ESTATES (HOUSING) LTD**

Project **32 LAWN ROAD, CAMDEN**

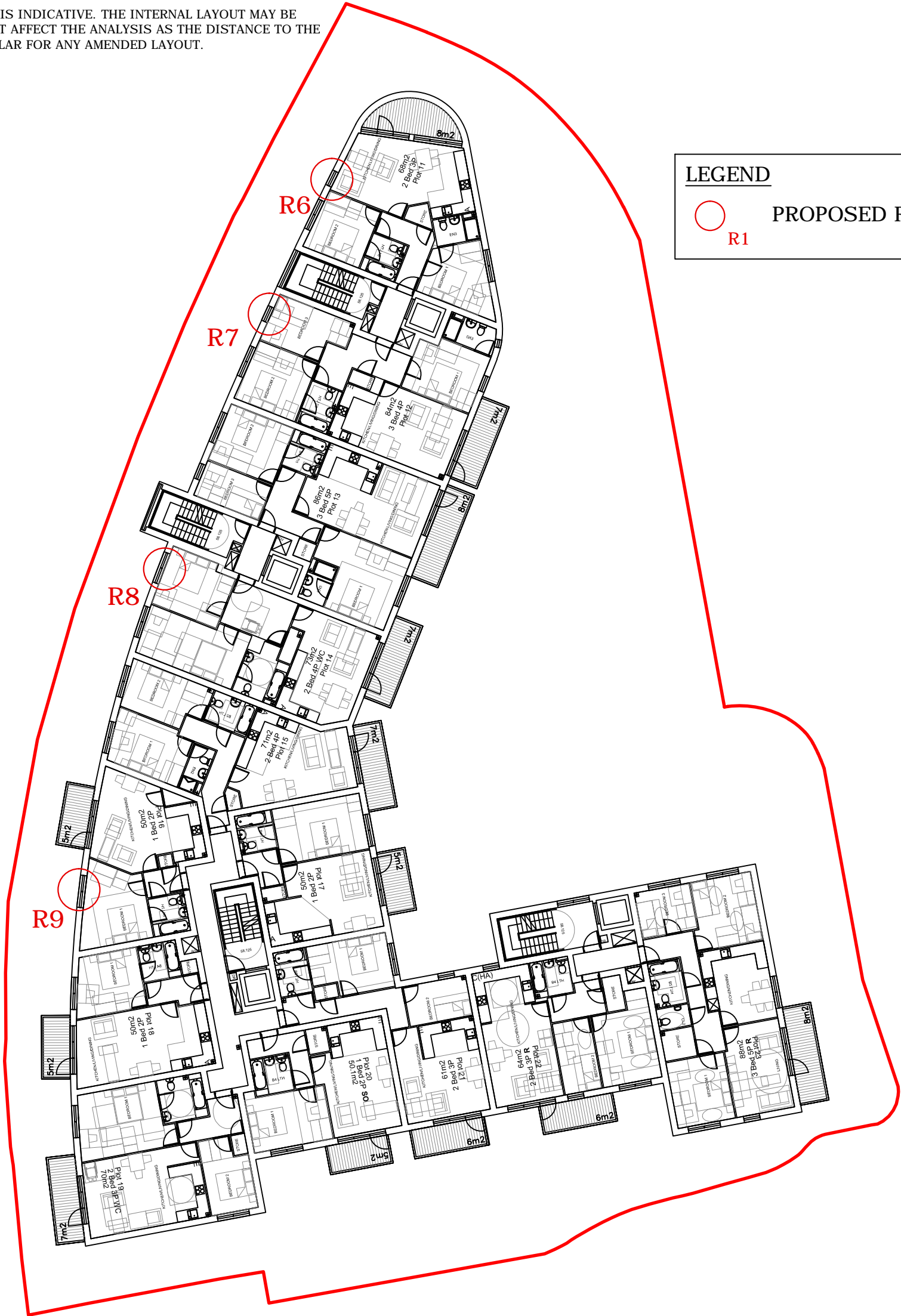
Drg Title

PROPOSED RECEPTORS-GROUND FLOOR

Drawn/Design ER	Checked SC	Approved DG	Date OCT 2014
Scales NTS @ A3	Drg No. 772200-DWG-ENV-FIG 2	Rev .	

NOTES

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LEGEND

R1

PROPOSED RECEPTOR

Rev	Date	Description	Made	Ckd
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Information

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32 LAWN ROAD, CAMDEN

Drg Title

PROPOSED RECEPTORS - SECOND FLOOR

Drawn/Design

ER

Checked

SC

Approved

DG

Date

OCT 2014

Scales

1:250 @ A3

Drg No.

772200-DWG-ENV-FIG 3

Rev

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NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEER'S, ARCHITECT'S AND SPECIALIST'S DRAWINGS AND THE SPECIFICATION.
2. **DO NOT SCALE** FROM THIS DRAWING MANUALLY OR ELECTRONICALLY. WRITTEN PERMISSION MUST BE OBTAINED FROM MLM PRIOR TO SCALING ELECTRONICALLY OR USING THIS ELECTRONIC FILE.
3. THE LAYOUT SHOWN IS INDICATIVE. THE INTERNAL LAYOUT MAY BE CHANGED BUT WILL NOT AFFECT THE ANALYSIS AS THE DISTANCE TO THE SOURCES WILL BE SIMILAR FOR ANY AMENDED LAYOUT.



LEGEND

PROPOSED RECEPTOR

Rev	Date	Description	Made	Ckd

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MLM

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Drawing Status:

Client

Project

Information

FAIRVIEW ESTATES, (HOUSING)
Ltd

32, LAWN ROAD, CAMDEN

Drg Title

PROPOSED RECEPTORS - FOURTH FLOOR

Drawn/Design
ER

Checked
SC

Approved
DG

Date
OCT 2014

Scales

1:250 @ A3

Drg No.

772200-DWG-ENV-FIG 4

Rev

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Variation in Concentration of Nitrogen Dioxide with Height

Figure: 5
Site: 32 Lawn Road
Job No. 772200

