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Bridges Healthcare (Richmond) Limited

RICHMOND INN

Odour Risk Assessment

Hoare Lea

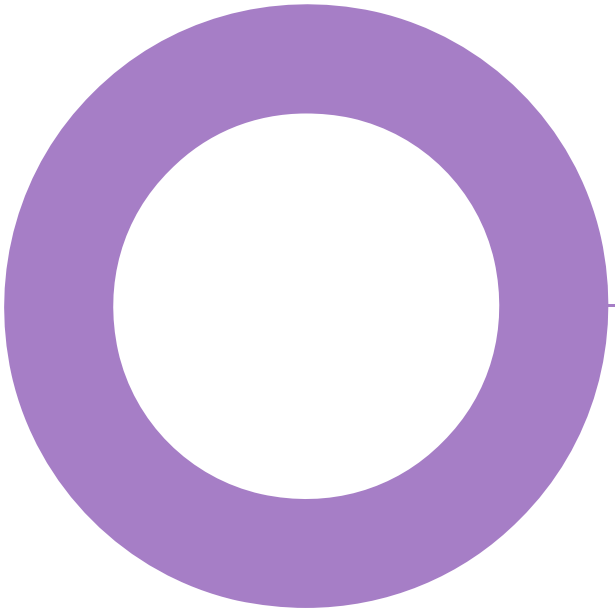
HOARE LEA

Rehabilitation Hotel. London.

Bridges Healthcare (Richmond) Limited.

AIR QUALITY
ODOUR RISK ASSESSMENT

REVISION 01 – 05 MAY 2022



Audit Sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
00	04/05/2022	First Draft	ED	LB	KW
01	05/05/2022	First Issue	ED	LB	KW

Contents.

Executive Summary.

Hoare Lea has been commissioned by Bridges Healthcare (Richmond) Limited to undertake an Odour Risk Assessment to support the planning application for the proposed physiotherapy-led rehabilitation centre, Richmond, TW9 1UG (the 'Application Site').

As the Proposed Development will include a kitchen and restaurant, an Odour Risk Assessment has been undertaken.

A freedom of information request has been sent to the London Borough of Richmond upon Thames Council to obtain information regarding the odour complaint history in the area surrounding the Proposed Development.

Guidance from the Institute of Air Quality Management (IAQM) has been used to consider receptor sensitivity to potential odour impacts. The receptors classified as 'high' sensitivity to potential odour impacts are the residential properties located in the vicinity of the kitchen extract.

An Odour Risk Assessment has been completed in line with the EMAQ 2018 Addendum to the 2005 Defra guidance on the 'Control of Odour and Noise from Commercial Kitchen Exhaust Systems'. This concluded that the Proposed Development was 'high' risk for odour potential due to poor dispersion of the exhaust air, owing to a discharge velocity below 10 m/s.

In order to preserve amenity in the locale, the ventilation and filter system for the Proposed Development must be designed to achieve high odour control. The odour control systems that are already proposed include ultraviolet C (UV-C) filtration. It is recommended that the odour control system is serviced and maintained according to the manufacturers specifications. These measures will reduce the potential for odour, ensuring that the impact on amenity will not be significant.

Based on the above, the odour abatement measures are considered to be acceptable for the Proposed Development to reduce potential odour impacts and therefore odour should not be viewed as a constraint to planning consent.

1. Introduction.

Hoare Lea has been commissioned by Bridges Healthcare (Richmond) Limited to undertake an Odour Risk Assessment to support the planning application for the proposed physiotherapy-led rehabilitation centre, Richmond, TW9 1UG (the 'Application Site').

1.1 Background.

The proposals comprise the partial demolition and extension of Richmond Inn for Class C2 visitor accommodation providing care and physiotherapy-led rehabilitation, highways works, car and cycle parking, refuse storage, landscaping and other associated works.

As the Proposed Development will include a kitchen, the following Odour Risk Assessment has been undertaken which describes the relevant legislation, assessment methodology and the baseline odour conditions that currently exist in the locality of the Application Site. The assessment will then consider any potential significant odour impacts as a result of the Proposed Development and odour abatement measures, if required.

1.2 Scope of Assessment.

An email detailing the proposed methodology for the Odour Risk Assessment was provided to the London Borough of Richmond upon Thames Council (LBRuT) on the 25th April 2022. A formal response was received on the 28th April 2022. Correspondence with LBRuT has been included in Appendix 1.

The scope of the assessment includes:

- Determination of baseline odour conditions, using available odour complaint history for the area; and
- Assessment of potential odour impacts using the EMAQ's 2018 addendum to the 2005 Defra guidance document 'Control of Odour and Noise from Commercial Kitchen Exhaust Systems'.

2. Defining Odour.

2.1 Definition.

Odour may be defined as 'a characteristic property of any compound that makes it perceptible to the sense of smell, whether pleasant or unpleasant, fragrance or stench'.

An alternative definition of an odour is an 'organoleptic attribute perceptible by the olfactory organ on sniffing certain volatile substances.'

2.2 Effect of Environmental Odours.

The Institute of Air Quality Management (IAQM) document 'Guidance on the assessment of odour for planning'[1] defines the possible effects of environmental odours as:

> "Most odours are mixtures of many chemicals that interact to produce what we detect as a smell. A distinction should be made between odour-free air, containing no odourous chemicals; and fresh air, usually perceived as being air that contains no chemicals or contaminants that are unpleasant (i.e. air that smells 'clean'). Fresh air may contain odourous chemicals, but these odours will usually be pleasant in character, such as freshly-mown grass or sea spray. Perceptions of an odour – whether it is found to be acceptable, objectionable or offensive – are partly innate and hard-wired, and partly determined through life experiences and hence can be subjective to the individual."

3. Legislation, Policy and Guidance Documents.

3.1 Planning Policy.

3.1.1 National Planning Policy Framework.

The National Planning Policy Framework (NPPF) 2021[2] sets out planning policy for England. It includes advice on when air quality should be a material consideration in development control decisions. Relevant sections are set out below:

Paragraph 174: "Planning policies and decisions should contribute to and enhance the natural and local environment by: preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality"

Paragraph 185: "Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development."

Paragraph 188: "The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities."

Paragraph 55: "Local planning authorities should consider whether otherwise unacceptable development could be made acceptable through the use of conditions or planning obligations. Planning obligations should only be used where it is not possible to address unacceptable impacts through a planning condition."

The NPPF is supported by Planning Practice Guidance (PPG).

The PPG states that:

Paragraph 001 (Reference ID: 32-001-20191101): "Odour and dust can also be a planning concern, for example, because of the effect on local amenity."

Paragraph 005 (Reference ID: 32-005-20191101): "Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and / or breach legal obligations (including those relating to the conversation of habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity."

The PPG also sets out the information that may be required in an air quality assessment, stating that:

Paragraph 007 (Reference ID: 32-007-20191101): "Assessments need to be proportional to the nature and scale of development proposed and the potential impacts (taking into account existing air quality conditions), and because of this are likely to be locationally specific."

It also provides guidance on options for mitigating air quality impacts, and makes clear that:

Paragraph 008 (Reference ID: 32-008-20191101): "Mitigation options will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact."

3.2 Local Policy.

3.2.1 London Borough of Richmond Upon Thames Local Plan.

The LBRuT Local Plan[3] was adopted on the 3rd July 2018. This document sets out the policies and guidance for the development of the Borough over the following 15 years. It looks ahead to 2033 and identifies where the main developments will take place, and how areas of the Borough will change, or be protected from change, over that period.

The following policies relating to odour are contained within the Local Plan.

Policy LP 8. Amenity and Living Conditions

> *"All development will be required to protect the amenity and living conditions for occupants of new, existing, adjoining and neighbouring properties. The Council will:*
>
> *[…]*
>
> *4. Ensure there is no harm to the reasonable enjoyment of the use of buildings, gardens and other spaces due to increases in traffic, servicing, parking, noise, light, disturbance, air pollution, odours or vibration or local micro-climatic effects."*

Policy LP 10. Local Environmental Impacts, Pollutions and Land Contamination

> *"A. The Council will seek to ensure that local environmental impacts of all development proposals do not lead to detrimental effects on the health, safety and the amenity of existing and new users or occupiers of the development site, or the surrounding land. These potential impacts can include, but are not limited to, air pollution, noise and vibration, light pollution, odours and fumes, solar glare and solar dazzle as well as land contamination. Developers should follow any guidance provided by the Council on local environmental impacts and pollution as well as on noise generating and noise sensitive development. Where necessary, the Council will set planning conditions to reduce local environmental impacts on adjacent land uses to acceptable levels.*
>
> *[…]*
>
> *Odours and Fume Control*
>
> *E. The Council will seek to ensure that any potential impacts relating to odour and fumes from commercial activities are adequately mitigated by requiring the following:*
>
> *1. an impact assessment where necessary;*
>
> *2. the type and nature of filtration to be used;*
>
> *3. the height and position of any chimney or outlet;*
>
> *4.promotion and use of new abatement technologies;*
>
> *[…]"*

3.3 Odour Nuisance Regulation.

3.3.1 Statutory Nuisance

Odour emissions from premises are typically controlled through the Environmental Permitting (England and Wales) Regulations (2007), and subsequent amendments or by the Statutory Nuisance provisions in Section 79 of Part III of the Environmental Protection Act (1990). Statutory nuisance is defined for the purposes of the 1990 Act and includes:

> "any dust steam, smell or other effluvia arising on industrial trade or business premises and being prejudicial to health or a nuisance."

Enforcement of the statutory nuisance provisions under the Act is by the Local Authority, whose officers are required to provide an independent evaluation of whether there is a nuisance or not. If the Local Authority is satisfied that a statutory nuisance exists or is likely to occur or reoccur, it must serve an abatement notice. The Local Authority can insist that there be no malodour beyond the boundary of the premises where odour generating activities are taking place. A defence is to show that the process causing the nuisance is being controlled using Best Practicable Means.

It should be noted that planning policy requires that general amenity should be taken into account and that loss of amenity does not equate directly to nuisance. It is often the case that loss of amenity occurs at much lower levels of odour exposure than what would be considered as a statutory nuisance.

3.4 Guidance Documents.

3.4.1 Guidance on the Assessment of Odour for Planning.

The IAQM document 'Guidance on the Assessment of Odour for Planning'[1] provides clear guidance to assist practitioners involved in odour assessments for planning purposes to determine potential amenity impacts.

To facilitate the assessment of significance of predicted odour exposure on amenity, the guidance defines receptor sensitivity and proposes 'odour effect descriptors' which combine the relative sensitivity of the receptors, the nature (or offensiveness) of the odour. Table 1 presents the IAQM guidance for defining the odour sensitivity of different types of receptor.

Table 1: Receptor Sensitivity to Odour

High Sensitivity Receptor	Surrounding land where: • Users can reasonably expect enjoyment of a high level of amenity; and • People would reasonably be expected to be present here continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land. Examples may include residential dwellings, hospitals, schools/education and tourist/cultural.
Medium Sensitivity Receptor	Surrounding land where: • Users would expect to enjoy a reasonable level of amenity, but wouldn't reasonably expect to enjoy the same level of amenity as in their home; or • People wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of land use. Examples may include places of work, commercial/retail premises and playing/recreation fields.
Low Sensitive Receptor	Surrounding land where: • The enjoyment of amenity would not be reasonably be expected; or • There is transient exposure, where people would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land. Examples may include industrial use, farms, footpaths and roads.

3.4.2 Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems.

EMAQ's 2018 addendum to the 2005 Defra guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems[4] provides clear guidance to the regulation of commercial kitchens and the issues of odour and noise emissions from the associated exhausts. This guidance is not a statutory document but provides information on best practice techniques for the minimisation of odour and noise from kitchen exhaust systems.

3.4.3 London Borough of Richmond Upon Thames Air Quality Supplementary Planning Document

The LBRuT Air Quality Supplementary Planning Document[5] (SPD) has been produced to address common air quality issues affecting the Borough, including odours. The SPD assists in providing a consistent approach to new development. The primary aim of the SPD is to supplement existing Local Plan policies which seek to improve air quality (including the mitigation of odours) in the Borough. The SPD assists developers, decision makers, agents, residents and others to identify issues to be addressed in any application for development consent in which air quality and therefore odour, will be an important consideration when assessing that application.

4. Baseline Conditions.

4.1 Surrounding Area.

The Application Site is located at the junction of Sheen Road (A305) and Church Road (B322), with Sheen Road to the south, and Church Road to the west. The area surrounding the Application Site largely consists of residential dwellings and commercial premises.

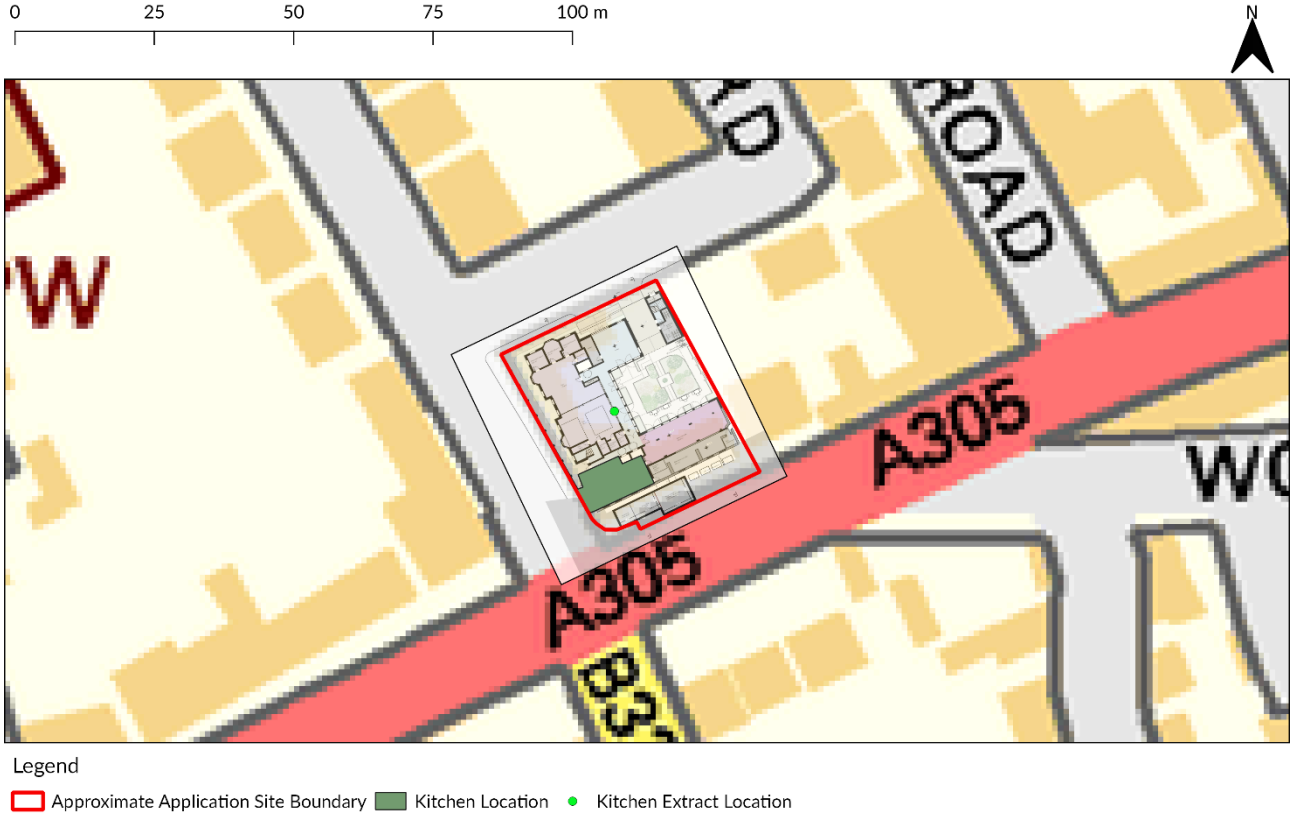


Figure 1: Location of the Application Site and the Proposed Kitchen and Kitchen Extract Locations. Contains Google Maps Data © Crown Copyright and Database rights 2022. Building footprint from Ackroyd and Lowrie [Proposed Lower Ground Floor Plan 888-100].

4.2 Review of Local Complaints Data.

The Application Site falls within the administrative area of LBRuT. As part of the consultation process, a history of local odour complaints was requested from on the 25th April 2022. A formal response was received on the 28th April 2022, confirming no relevant odour complaints from the last 5 years.

5. Assessment of Potential Odour Impacts.

The assessment approach provided by the IAQM guidance[1] and EMAQ 2018 addendum to the 2015 Defra guidance[4] is considered within this section, together with a review of the effectiveness of the proposed odour control.

5.1 IAQM Odour Guidance.

The EMAQ Addendum to the Defra guidance[4] does not differentiate between the differing levels of receptor sensitivity. The IAQM guidance[1] considers receptor sensitivity to potential odour impacts based upon a combination of the frequency and duration time that receptors are likely to be present to experience a potential impact, and requirements for amenity in that location. For example, residential areas are classified as receptors of high sensitivity. In contrast, footpaths/recreational areas are classified as receptors of low sensitivity (see Table 1 for more detail). The IAQM guidance[1] has been used to identify the appropriate level of sensitivity for each receptor in the locale of the Proposed Development.

Table 2 presents the potential sensitive receptors within the vicinity of the Proposed Development alongside their closest distance to the kitchen extract, which is the potential odour source, and discusses the sensitivity of the receptor locations in line with the IAQM odour guidance[1].

Table 2: Potential Sensitive Receptors in the vicinity of the Proposed Development

Receptor	Distance and Direction from Kitchen	Sensitivity
Residential Properties	The closest existing residential properties to the kitchen extract are located approximately 25 m to the east, at the closest point.	High sensitivity. People will reasonably expect enjoyment of a high level of amenity and will reasonably expect to be present within their homes for continuous periods of time.
Industrial/Commercial Properties	The closest industrial/commercial property to the kitchen extract location is located approximately 25 m to the west, at the closest point.	Medium sensitivity. Users would expect to enjoy a reasonable level of amenity, but it is expected that people in this location would only be present for limited periods of time.
Outdoor Seating	The outdoor seating area, which is part of the Proposed Development plans, is located approximately 6 m to the east of the kitchen extract location, at the closest point.	Low sensitivity. The proposed outdoor seating area will be of transient exposure to potential odours, and it is expected that people in this location would only be present for limited periods of time.
Pedestrian Foot Path	The pedestrian foot path is located approximately 13 m to the west of the kitchen extract location, at the closest point.	Low sensitivity. The pavement is of transient exposure to potential odours, and it is expected that people in this location would only be present for limited periods of time.
Car Parking Spaces	The closest parking space is located approximately 20 m to the north of the kitchen extract location.	Low sensitivity. The pavement is of transient exposure to potential odours, and it is expected that people in this location would only be present for limited periods of time.

The receptors classified as 'high' sensitivity to potential odour impacts are the residential properties located in proximity of the Proposed Development.

5.2 EMAQ Addendum to Defra Guidance Methodology.

An assessment utilising Appendix 3 in the EMAQ Addendum to the Defra guidance has been undertaken. The EMAQ/Defra guidance identifies the factors that influence the magnitude of potential odour from kitchens as:

- The size of the cooking facility;
- The type of food prepared; and
- The type of cooking appliances used.

The layout drawing provided by Ackroyd Lowrie for the scheme (Proposed Lower Ground Floor Plan 888-100), shows that the kitchen is located in the southwest corner of the Application Site. The kitchen extract system will be discharge the exhaust air at approximately 1 m above roof level, which is approximately 12.1 m. Therefore, odour is expected to be discharged to the atmosphere at approximately 13.1 m.

The restaurant has a capacity of 33 people and therefore the kitchen has the potential to serve more than 100 covers a day. As such, the kitchen is considered at 'large'. Food preparation will consist of freshly prepared meals in a restaurant setting with a focus on nutrition to aid recovery and well-being; it is not expected that the offering will include deep-fried foods with a high grease content. Therefore, the odour and grease loading are considered to be medium.

The EMAQ Addendum to the Defra guidance[4] provides an approach of determining odour control requirement by way of a risk-based methodology, as presented in Appendix 2.

A summary of the assessment for the Proposed Development and associated cooking related food odour is presented in Table 3 below. Details are taken directly from the EMAQ Addendum to the Defra guidance[4] and are considered to be the most representative of the Proposed Development and associated cooking related food odour.

Table 3: EMAQ/Defra Methodology of Odour Control Requirements

Category	Score	Detail
Dispersion	15	The kitchen extract system is likely to discharge the exhaust air at 1 m above the roof level. Therefore, odour is expected to be discharged to the atmosphere at a height of approximately 13.1 m. However, the discharge velocity is expected to be below 10 m/s. As such, the level of dispersion is therefore considered to be 'poor'.
Proximity of the Receptors	5	There are several receptors that are located in close proximity to the kitchen; an outdoor seating area and pedestrian foot paths located approximately 10 m away, commercial properties and car parking located approximately 20-25 m away, and residential properties located approximately 25 m away. Although the outdoor seating area, pedestrian foot paths and nearest car parking spaces are located with 20 m of the kitchen extract location, these receptors are considered to have low sensitivity to potential odour impacts, according to IAQM guidance. The commercial properties located approximately 25 m away are considered to be medium sensitivity receptors to potential odour

Category	Score	Detail
		impacts according to IAQM guidance. These are located between 20 m and 100 m from the kitchen extract location. The nearby residential properties present the highest risk for sensitivity to potential odour impacts. Residential properties, which are the only nearby receptors considered to be highly sensitive to potential odour impacts according to IAQM guidance, are located between 20 m and 100 m from the kitchen. Therefore, based on guidance from both the IAQM and Defra, the proximity of receptors is considered to be medium.
Size of Kitchen	5	The kitchen is likely to prepare more than 100 covers a day. Therefore, the kitchen size is considered to be large.
Cooking Type	4	Food preparation will consist of freshly prepared meals in a restaurant setting with a focus on nutrition to aid recovery and well-being; it is not expected that the offering will include deep-fried foods with a high grease content. Therefore, the odour and grease loading are considered to be medium.
Total Score	29	
Level of Odour Control Required	High	

The EMAQ Addendum to the Defra guidance[4] states, "the greater the potential risk of causing harm to the amenity or causing a nuisance, the more effective the odour abatement must be". As presented above, the overall score of the Proposed Development and associated cooking related food odour is 29 and the kitchen is considered to have a high risk of odour impacts without odour control. Therefore, a high level of odour abatement is required in order to protect the amenity of sensitive receptor locations in the locale.

6. Odour Abatement.

EMAQ guidance[4] recommends the following odour abatement systems to achieve a high level of odour control:

1) Fine filtration or ESP followed by carbon filtration (carbon filters rated with a 0.2 - 0.4 second residence time);
2) Fine filtration or ESP followed by UV ozone system to achieve the same level of control as 1.

The physiotherapy-led rehabilitation centre manager will be expected to maintain the ventilation and filter system to ensure that grease does not build up and cause odour. Maintenance may include the inspection and cleaning of the grease filters and replacement, where necessary and the schedule of maintenance should be in line with the manufacturer's recommendations.

In order to ensure that the odour control system is serviced and maintained according to the manufacturer's specifications, it is recommended that that an odour control plan is agreed in writing with LBRuT and is periodically reviewed.

The inclusion of odour abatement measures assists in reducing the potential for odour and in turn, ensures that the impact on amenity at the sensitive receptor locations identified within this assessment will not be significant.

7. Conclusions.

Hoare Lea has been commissioned by Bridges Healthcare (Richmond) Limited to undertake an Odour Risk Assessment to support the planning application for the proposed physiotherapy-led rehabilitation centre, Richmond, TW9 1UG (the 'Application Site').

The proposals include a kitchen and restaurant and as such, an odour assessment has been undertaken in order to determine the potential impacts on amenity at sensitive receptor locations in the vicinity of the Proposed Development.

A freedom of information request has been sent to LBRuT to obtain information regarding the odour complaint history in the area surrounding the Proposed Development.

Guidance from the IAQM has been used to consider receptor sensitivity to potential odour impacts. The receptors classified as 'high' sensitivity to potential odour impacts are the residential properties located in the vicinity of the kitchen extract.

The methodology contained within the EMAQ 2018 Addendum to the 2005 Defra guidance on the 'Control of Odour and Noise from Commercial Kitchen Exhaust Systems' has shown that the kitchen within the Proposed Development is considered to be of large size with medium potential for odour and grease loading due to the type of cooking. The kitchen is considered to have a high risk of odour impacts without odour control.

To control the odour emissions, in line with the EMAQ/Defra guidance, the ventilation and filter system must be designed to achieve high odour control. It is recommended that the odour control system is serviced and maintained according to the manufacturers specifications. These measures will reduce the potential for odour and in turn, ensures that the impact on amenity will not be significant.

In conclusion, the Proposed Development conforms to the principles of National Planning Policy Framework and LBRuT Local Plan.

8. References.

[1] Institute of Air Quality Management (2018), Guidance on the assessment of odour for planning, version 1.1 – [online] (Last accessed: 04/02/2022), Available: http://www.iaqm.co.uk/text/guidance/odour-guidance-2014.pdf
[2] Ministry of Housing, Communities & Local Government (2021) National Planning Policy Framework – [online] (Last accessed: 04/02/2022), Available at:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf
[3] The London Borough of Richmond upon Thames Local Plan (2018), - [online (Last accessed: 22/04/2022), Available at:
https://www.richmond.gov.uk/media/15935/adopted_local_plan_interim.pdf
4 EMAQ, Ricardo-AEA (2018) Addendum to the 2005 Defra guidance Control of Odour and Noise from Commercial Kitchen Exhaust Systems
[5] The London Borough of Richmond upon Thames Supplementary Planning Document (2019) - [online (Last accessed: 22/04/2022), Available at:
https://www.richmond.gov.uk/media/18082/air_quality_planning_document_draft.pdf

Appendix 1 – Consultation with LBRuT.

From: Hedley Pugh <Hedley.Pugh@merton.gov.uk>
Sent: 28 April 2022 12:19
To: Ellie Drage
Subject: FW: Hoare Lea Odour Assessment

> You don't often get email from hedley.pugh@merton.gov.uk. Learn why this is important

Good afternoon Ellie,

I can confirm the methodology below is acceptable.

In respect of complaints, I have interrogated the complaint database and can so no evidence of odour complaints in the vicinity. If you have a specific address you would like me to check please do let me know.

Regards

Hedley

Dr Hedley Pugh
Principal Environmental Health officer
(P/T Thursdays and Fridays)
Civic Centre, London Road, Morden, Surrey, SM4 5DX
www.merton.gov.uk

From: Ellie Drage
Sent: 25 April 2022 15:22
To: carol.lee@merton.gov.uk
Cc: Kathryn Woolley
Subject: Hoare Lea Odour Assessment

Good afternoon,

Hoare Lea have been commissioned to undertake an Odour Risk Assessment in support of a planning application for a proposed hotel development in Richmond, London.

To help inform our baseline assessment, I would be grateful if you could please provide any history of odour complaints in the locale of Sheen Street (A305)and Church Road (B322)?

It is proposed that the odour assessment will be completed in line with the EMAQ+ guidance on the 'Control of Odour and Noise from Commercial Kitchen Exhaust Systems' September 2018. The following information will be used to inform the odour assessment:

- The number of meals (covers) served per day by the proposed restaurant.
- The food preparation method and type of food proposed to be served.
- Ventilation designs, including the exhaust height, location and discharge velocity.
- Proximity of nearby receptors.

I would be grateful if you could please confirm your acceptance of the above methodology.

If you have any further queries on this at all please do not hesitate to get in contact.

Kind regards,

Ellie Drage
Graduate Air Quality Consultant

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Tel +44 20 3668 7100
Email elliedrage@hoarelea.com

Appendix 2 – EMAQ Addendum to the Defra Risk Assessment for Odour from Kitchen Exhausts.

Table A2-1: Scoring Criteria

Criteria	Score		Details
Dispersion	Very Poor	20	Low level discharge, discharge into courtyard or restriction on stack.
	Poor	15	Not low level but below eaves, or discharge at below 10m/s.
	Moderate	10	Discharging 1m above eaves at 10 -15m/s.
	Good	5	Discharging 1m above ridge at 15 m/s.
Proximity of Receptors	Close	10	Closest sensitive receptor less than 20m from kitchen discharge.
	Medium	5	Closest sensitive receptor between 20 and 100m from kitchen discharge.
	Fair	1	Closest sensitive receptor more than 100m from kitchen discharge.
Size of Kitchen	Large	5	More than 100 covers or large sized take away.
	Medium	3	Between 30 and 100 covers or medium sized take away.
	Small	1	Less than 30 covers or small take away.
Cooking Type (odour or grease loading)	Very High	10	Pub (high level of fried food), fried chicken, burgers or fish & chips.
	High	7	Kebab, Vietnamese, Thai or Indian.
	Medium	4	Cantonese, Italian, French, Pizza (gas fired)
	Low	1	Most pubs (no fried food), Tea rooms

Based on the summation of the contributions from dispersion, proximity of receptors, size of kitchen and cooking type the odour control required, and risk of impact is determined using the criteria in Table A2-2.

Table A2-2: Level of Risk, Odour Control Requirement and Significance Score

Impact Risk	Odour Control Requirement	Significance Score
Low to Medium	Low level odour control	Less than 20
High	High level odour control	20 to 35
Very High	Very high level of odour control	More than 35

Appendix 3 – Professional Experience.

Kathryn Woolley (Hoare Lea), BSc (Hons), AMIEnvSc, MIAQM

Kathryn is an Associate of the Air Quality team with Hoare Lea. She is an Associate Member of the Institution of Environmental Sciences and a Full Member of the Institute of Air Quality Management.

She has a diverse portfolio of experience and has worked on a range of projects from initial site feasibility, through planning and development to construction and operation. Kathryn's expertise covers planning, and air quality, specifically in relation to residential developments, industrial fixed installations such as district heating networks. Kathryn has completed over 50 EIA in the past 8 years throughout the UK and abroad including; St Johns Masterplan in Manchester (residential led), Leicester City Football club training facility north of Leicester (sports use), 1-5 Grosvenor Place, Westminster (mixed use residential, retail and hotel site), and Chestnut Avenue in Eastleigh (residential and community use).

Lauren Buchanan (Hoare Lea), MSc, BSc (Hons), AMIEnvSc, MIAQM

Lauren is a Senior Air Quality Consultant at Hoare Lea. She is an Associate Member of the Institution of Environmental Sciences and a Member of the Institute of Air Quality Management. She has worked on a range of projects gaining experience in many different aspects of air quality assessment, including monitoring and detailed dispersion modelling of dust, odour, roads and industrial emissions for a variety of sectors and to fulfil Local Air Quality Management (LAQM) duties on behalf of Local Authorities. Lauren has undertaken air quality assessments for permit requirements and planning applications, including stand-alone reports, Environmental Impact Assessments, Habitats Regulations Assessments and Development Consent Orders.

Ellie Drage (Hoare Lea), MEarthSci, AMIEnvSc, AMIAQM

Ellie is a Graduate Air Quality Consultant with Hoare Lea. She graduated from the University of Oxford with an Earth Sciences degree focusing on Climate and Ocean Systems. Ellie's MEarthSci project involved reconstructing ocean circulation, climate, and the carbon cycle approximately 100 million years ago, to better understand Earth's past environment.

Ellie has worked on a range of projects across various sectors such as residential, industrial and office. She has undertaken outdoor air quality monitoring, and has experience preparing air quality screening assessments for planning and indoor air quality plans for BREEAM. Ellie's interests lie in the mitigation of pollution and air quality control.

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