



Stag Brewery, Mortlake

Odour Assessment Report

For Reselton Properties

March 2022



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Comments



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1. Introduction

- 1.1. This Odour Assessment Report has been prepared by Waterman Infrastructure & Environment Limited (Waterman) on behalf of Reselton Properties Limited ('the Applicant') in support of two linked planning applications for the comprehensive redevelopment of the former Stag Brewery Site in Mortlake ('the Site') within the London Borough of Richmond Upon Thames ('LBRuT').
- 1.2. The Site is bounded by Lower Richmond Road to the south, the river Thames and the Thames Bank to the north, Williams Lane to the east and Bulls Alley (off Mortlake High Street) to the west. The Site is bisected by Ship Lane. The Site currently comprises a mixture of large-scale industrial brewing structures, large areas of hardstanding and playing fields.
- 1.3. The redevelopment will provide homes (including affordable homes), complementary commercial uses, community facilities, a new secondary school alongside new open and green spaces throughout.
- 1.4. The Applications seek planning permission for:

Application A:

"Hybrid application to include the demolition of existing buildings to allow for comprehensive phased redevelopment of the site:

Planning permission is sought in detail for works to the east side of Ship Lane which comprise:

- a) *Demolition of existing buildings (except the Maltings and the façade of the Bottling Plant and former Hotel), walls, associated structures, site clearance and groundworks*
- b) *Alterations and extensions to existing buildings and erection of buildings varying in height from 3 to 9 storeys plus a basement of one to two storeys below ground*
- c) *Residential apartments*
- d) *Flexible use floorspace for:*
 - i. *Retail, financial and professional services, café/restaurant and drinking establishment uses*
 - ii. *Offices*
 - iii. *Non-residential institutions and community use*
 - iv. *Boathouse*
- e) *Hotel / public house with accommodation*
- f) *Cinema*
- g) *Offices*
- h) *New pedestrian, vehicle and cycle accesses and internal routes, and associated highway works*
- i) *Provision of on-site cycle, vehicle and servicing parking at surface and basement level*
- j) *Provision of public open space, amenity and play space and landscaping*
- k) *Flood defence and towpath works*

l) Installation of plant and energy equipment

Planning permission is also sought in outline with all matters reserved for works to the west of Ship Lane which comprise:

- a) The erection of a single storey basement and buildings varying in height from 3 to 8 storeys*
- b) Residential development*
- c) Provision of on-site cycle, vehicle and servicing parking*
- d) Provision of public open space, amenity and play space and landscaping*
- e) New pedestrian, vehicle and cycle accesses and internal routes, and associated highways works”*

Application B:

“Detailed planning permission for the erection of a three-storey building to provide a new secondary school with sixth form; sports pitch with floodlighting, external MUGA and play space; and associated external works including landscaping, car and cycle parking, new access routes and other associated works”

- 1.5. Together, Applications A and B described above along with the Section 278 highways works comprise the ‘Development’.
- 1.6. This report sets out the design principals to be considered with regards to the design of odour extraction related to the commercial elements of the Development. At this stage, the final uses and end users of the commercial elements are unknown, as such this report sets out the strategy to be used for the detailed planning application and the design principals to be considered once further details become available. Final details of each odour mechanical / ventilation design would be provided to LBRuT prior to commencement.
- 1.7. This report is accompanied by **Appendix A: LBRuT Planning Guidance for Food and Drink Establishments**¹.

¹ London Borough of Richmond Upon Thames, Planning Guidance for Food and Drink Establishments

2. Stag Brewery Proposed Development Overview

2.1 As noted in **Section 1: Introduction** of this report, the Applicant is seeking planning permission for two Planning Applications which, together with the Section 278 (S278) highways works, collectively comprise one comprehensive redevelopment proposal ('the Development'). An overview of the Development, as defined by the planning applications forms is provided in **Section 1**.

Application A: The Hybrid Planning Application

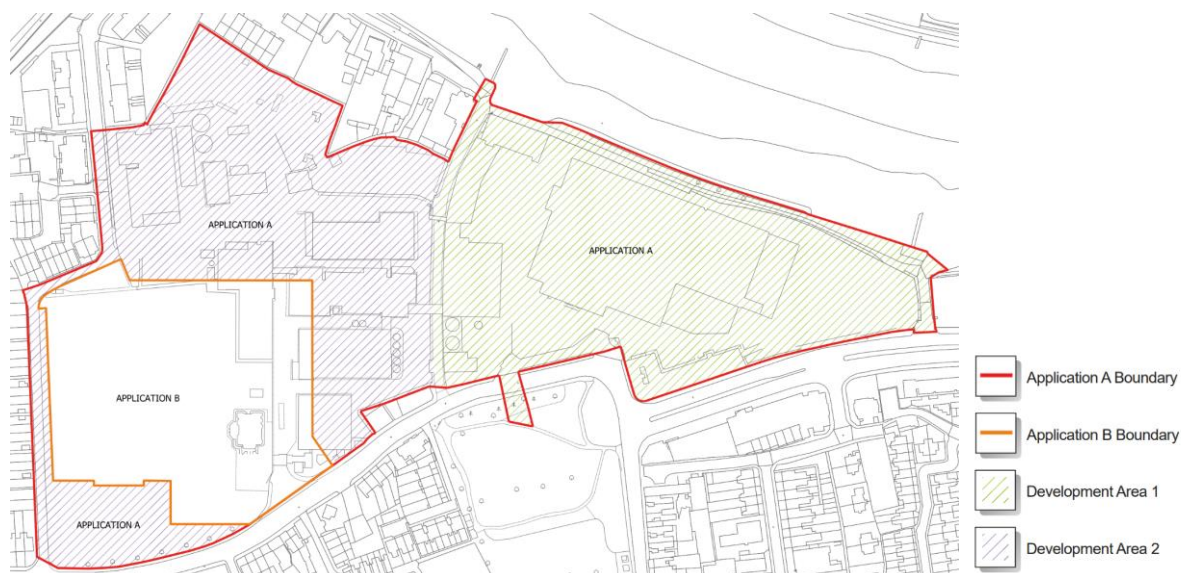
2.1. As described in **Section 1**, Application A is a hybrid application for the demolition of the majority of buildings and structures within the Site (with the exception of the Maltings and the façades of the former Hotel and Bottling building) and the redevelopment of the majority of the former Stag Brewery.

Application B: School Planning Application

2.2 Application B is a detailed planning application for the construction of a six-form entry secondary school, located to the west of Ship Lane in the area of the Site that is not covered by Application A with the exception of roads to the north and east of the school building which forms both part of Applications A and B.

2.3 The Planning Applications would not be implemented separately or in any combination that would not bring forward all Planning Applications as one comprehensive redevelopment proposal. As such, the content of both Planning Applications including the S278 highways works comprises the Development. **Figure 1** shows the planning application boundaries.

Figure 1: Planning Application Boundaries (Applications A and B)



2.4 The proposed floorspace of the detailed component of Application A (east of Ship Lane within the Site) is set out in **Table 1**.

Table 1: Proposed Floorspace of the Detailed Component of Application A

Land Use	Floorspace Area (m ²)	
	Gross External Area (GEA)	Gross Internal Area (GIA)
Residential	68,321 (558 units)	60,718 (558 units)
Office	5,019	4,547
Cinema	1,937	1,606
Flexible Uses - Restaurant / bar / retail / community / boathouse	5,699	4,839
Hotel	1,937	1,765

3. Odour Mechanical Extract Design Principals

- 3.1. As included in **Appendix A**, the LBRuT has produced planning guidance for food and drink establishments which gives a general indication of the standards required by the LBRuT in regard to the control of odour from food and drink establishments.
- 3.2. As discussed in **Section 2: Stag Brewery Proposed Development Overview**, Application A includes for 4,979 m² GIA of flexible uses which has the potential to include restaurant, bar, retail, community and boathouse uses. Whilst the exact use is unknown at this stage, these uses could include food and drink establishments and as such odour mechanical extraction would be required.
- 3.3. The detailed designs of the flexible space units are not yet available and nor is any information on potential occupiers. As such the technical specifications of any potential odour extraction cannot be presented at this time of the assessment. Where food and drink establishments are proposed, the following design principles would be included within the future detailed planning applications for all odour ducts:
 - ducts to be vertically discharging high velocity / high dilution system;
 - extracts designed to have a grease filter, with the point of discharge as high as is reasonable without causing undue harm on the environment and residential amenities;
 - duct location to consider the general wind direction and the distance and configuration of nearby premises, particularly their openable windows;
 - duct discharge point to incorporate bird proofing;
 - ducts to avoid the use of capping methods such as 'Hat Type Cowls';
 - for malodorous cooking styles such as Indian, Chinese, Fish and Chips and continuous operations such as burger bars, additional odour control will be included (details are provided below);
 - fumes to be controlled from infrequently used equipment either by incorporating integral hoods and / or connection to the main ventilation system;
 - all systems to allow for cleaning and maintenance to be carried out safely; and
 - all systems to include a clear maintenance programme provided (at the appropriate time).
- 3.4. In addition to the above, specific details on the discharge stack would include:
 - the extracted air not less than 1m above the roof ridge of any building within 20 m of the building housing the commercial kitchen.
 - If the above is not achievable or malodorous cooking styles are proposed then additional odour control measures may be required, based on the criteria scoring system set out in **Appendix A**. Such odour control measures would include:
 - *Low to Medium Level Control* - Fine filtration or electrostatic precipitation (ESP) followed by carbon filtration (carbon filters rated with a 0.1 second residence time) or fine filtration followed by a counteractant / neutralising system.
 - *High Level Control* - Fine filtration or ESP followed by carbon filtration (carbon filters rated with a 0.2-0.4 second residence time) or fine filtration or ESP followed by a UV ozone system.

- *Very High Level Control* - Fine filtration or ESP followed by carbon filtration (carbon filters rated with a 0.4-0.8 second) or fine filtration or ESP followed by carbon filtration and by a counteractant / neutralising system or fine filtration or ESP followed by a UV ozone system or fine filtration or ESP followed by wet scrubbing.

3.5. The above design details would be included in the detailed design for all food and drink establishments attached to any grant of planning permission for the Development. The detailed design would be secured by a suitably worded planning condition. As such, it is not anticipated that odours generated by food and drink establishments within the Development would give rise to significant environmental effects.



APPENDICES

**Appendix A London Borough of Richmond upon Thames, Planning
Guidance for Food and Drink Establishments**



Planning Guidance for Food and Drink Establishments



Planning Guidance for Food and Drink Establishments

Introduction

This guidance is aimed to help applicants to submit necessary details with their planning application, and gives a general indication of the standards required by the Commercial Environmental Health Team for food businesses, specifically with regard to noise and odour control from food and drink establishments.

Planning applications for new premises for the sale and consumption of hot food and drink, such as cafes, restaurants, take-aways and pubs, are dealt with by the Council's Development Control Team in Development and Street Scene. These are classified as either:

A3 – Restaurants and Cafes – Use for the sale of food for consumption

A4 – Drinking Establishments - Use as a Public House, Wine-Bar or other Drinking Establishment.

A5 – Hot Food Takeaway - Use for the sale of hot food for consumption off the premises.

Development Control consults various interested parties about applications so that their views can be considered when a planning application is being determined.

For planning applications for food and drink premises, the Council's Environmental Health Officers (EHOs) in its Commercial Environmental Health Team are usually consulted. Generally, their main concern is the potential loss of amenity to neighbouring premises, particularly due to odour and noise from such uses.

The EHO needs detailed information regarding the proposed food and drink premises in order to assess their likely impact. This guidance note sets out the information required.

After a planning application has been decided, the Council sends a decision notice to the applicant. Where planning permission is granted various conditions may be imposed and informatives added. These will be set out in the decision notice. Conditions and informatives may include requirements for applicants to carry out certain works or to comply with other regulations relating to the development / management of the new premises.

The EHOs' comments on planning applications may be incorporated into planning conditions and informatives.

Where applicable, planning applications for new food and drink premises should be accompanied by the information requested in the following list. This will be forwarded to the Environmental Health Officers.

Noise Control

The aim is to prevent an increase in the background noise level at the site boundary, and to prevent structure borne noise and vibration transmission to adjoining premises.

1. Plans and / or maps submitted with the application must indicate the location and type (residential / commercial / industrial) of neighbouring premises.

Depending on the vicinity of the premises likely to be affected, background noise measurements at the most sensitive times (such as late at night or early morning) may need to be submitted with the application.

2. The sound power level and the likely resultant noise level at the site boundary should be submitted for all noise producing machinery such as extract ventilation systems, refrigeration plant / equipment etc that is likely to be installed. This information can usually be obtained from the equipment manufacturer.

It is recognised that much of this technical information may not be available to the applicant at this stage. However, any plant or equipment installed on site to be used in conjunction with the purpose of the application must be suitably located (indicated on submitted maps), acoustically enclosed or treated and / or vibration damped. A written undertaking to carry out such works may be sufficient at this stage.

3. Noise from customers is normally controlled by specifying hours of use, which will generally be set as the same as similar businesses in the area. A submission outlining the intended hours of operation should be included with the application.

4. Operation of delivery / collection vehicles will generally be conditioned so that their arrival / leaving is within the hours of intended use.

5. Proposed car parking areas would normally need to be screened from adjoining residential properties to prevent the transmission of noise. Details of such proposals should be submitted with the application.

6. It is recommended that external windows and doors are kept closed to minimise the escape of noise. Alternatively two sets of doors, with an internal lobby may be necessary.

7. Proposed developments immediately adjoining (including below or above) residential premises will have to provide full details of a scheme to insulate the premises from the transmission of airborne and impact sound.

In some cases a higher sound insulation standard than that specified by Building Regulations Approved Document E; Resistance to the Passage of Sound, may be required. This is to limit the effect of impact and airborne noise from the commercial premises. i.e. commercial kitchen below residential flat. Noise from the extraction system and use of the kitchen is likely to cause disturbance if there is no suitable sound insulation.

Ventilation and Odour Control

The aim is to prevent odour nuisances to neighbours, when equipment is operating under normal circumstances.

8. Details must be provided with the application of the range of food to be provided and method of cooking intended.

9. When looking at ways of preventing odour nuisance beyond the site boundaries, consideration should be given to a vertically discharging high velocity / high dilution system. It should be designed to have a grease filter, with the point of discharge as high as is reasonable without causing undue harm on the environment and residential amenities. It may be advisable to contact Development Control with respect to the siting of extract duct systems.

The outlet location should also take into account the general wind direction and the distance and configuration of nearby premises, particularly their openable windows.

Additionally the discharge point should incorporate bird proofing. The prevention of water penetration should not be by capping methods such as 'Hat Type Cowls', which tend to hinder vertical discharge.

10. For particularly malodorous cooking styles such as Indian, Chinese, Fish and Chips and continuous operations such as burger bars, additional odour control may be required: - Any system should develop the design in item (9) by incorporating the appropriate filter system. Please see the brief guidelines for odour control overleaf.

11. The site must have the potential for installing the above equipment, and consideration must be given to any ductwork passing across land not in control of the applicant.

12. Fumes should also be controlled from infrequently used equipment either by incorporating integral hoods and / or connection to the main ventilation system.

13. All designs should allow for cleaning and maintenance to be carried out safely and a clear maintenance programme should be submitted at the appropriate time so that the systems operates optimally at all times.

The Department for the Environment, Food and Rural affairs (DEFRA) has recently produced detailed guidance;

Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems; <http://www.defra.gov.uk/environment/noise/research/kitchenexhaust> detailed overleaf is a summary of some of the main points.

Best Practice for Design and Operation of Commercial Kitchen Ventilation Systems

Minimum Requirements for Odour Control

Objectives

- For new premises or premises covered by planning conditions restricting the impact of odour, the system shall be designed to prevent harm to the amenity.
- For existing premises not covered by planning conditions restricting the impact of odour, the system shall be designed to avoid statutory nuisance and shall comply with the principles of Best Practicable Means.

To achieve these objectives the odour control system shall include an adequate level of:

1. Odour control; and
2. Stack dispersion.

The overall performance of the odour abatement system will represent a balance of 1 and 2.

Discharge stack

The discharge stack shall:

1. Discharge the extracted air not less than 1m above the roof ridge of any building within 20m of the building housing the commercial kitchen.
2. If point 1 above cannot be complied with for planning reasons, then the extracted air shall be discharged not less than 1m above the roof eaves or dormer window of the building housing the commercial kitchen. Additional odour control measures may be required.
3. If points 1 or 2 cannot be complied with for planning reasons, then an exceptionally high level of odour control will be required.

Odour arrestment plant performance

Low to medium level control may include:

1. Fine filtration or electrostatic precipitation (ESP) followed by carbon filtration (carbon filters rated with a 0.1 second residence time).
2. Fine filtration followed by a counteractant/neutralising system to achieve the same level of control as 1.

High level odour control may include:

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 a UV ozone system to achieve the same level of control as 1.

Very high level odour control may include:

1. Fine filtration or ESP followed by carbon filtration (carbon filters rated with a 0.4-0.8 second).
2. Fine filtration or ESP followed by carbon filtration and by a counteractant/neutralising system to achieve the same level of control as 1.
3. Fine filtration or ESP followed by a UV ozone system to achieve the same level of control as 1.
4. Fine filtration or ESP followed by wet scrubbing to achieve the same level of control as 1. Maintenance must be carried out to ensure these performance levels are always achieved.

Minimum Requirements for Noise Control

- For new premises or premises covered by planning conditions restricting the impact of noise, the system shall be designed to prevent an acoustic impact on the external environment and therefore harm to the amenity, as well as ensuring that noise exposure of kitchen staff does not constitute a hearing hazard.
- For existing premises not covered by planning conditions restricting the impact of noise, the system shall be designed to avoid statutory nuisance and shall comply with the principles of Best Practicable Means.

To achieve these objectives the noise control system shall include:

1. Control of noise at source to the greatest extent possible (with the added benefit of hearing protection); and
2. Control of noise to the environment by taking acoustic considerations into account within duct, grille and termination design.

The control system should meet the requirements laid down in BS4142: 1997 "Method for rating industrial noise affecting mixed residential and industrial areas".

Maintenance

Proprietors of commercial kitchens have a duty to ensure that the ventilation systems serving their premises are maintained and operated effectively.

Good maintenance is a requirement/must for ensuring that a system complies with BPM under statutory nuisance provision and will form a key element of any scheme designed to minimise harm to the amenity under planning regulation. Good maintenance is required by the food hygiene regulations and will also minimise the risk of fire. The recommended cleaning period for extract ductwork is:

**Heavy Use 12-16 Hours Per Day
3 Monthly**

**Light Use 2-6 Hours Per Day
6 Monthly**

Recommendations for maintenance of odour control system include:

- System employing fine filtration and carbon filtration.
- Change fine filters every two weeks.
- Change carbon filters every 4 to 6 months.
- Use a system employing ESP and other integrated abatement.
- Clean every 2-6 months

Risk Assessment for Odour

Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach.

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 odour control	More than 35

* Based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and cooking type:

Criteria	Score	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 10 m/s.
	Moderate	10	Discharging 1m above eaves at 10 -15 m/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 and 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, Japanese or Chinese.
	Low	1	Most pubs, Italian, French, Pizza or steakhouse.

Example application of scoring procedure for four different cooking situations

Example	Dispersion	Proximity of receptors	Size of Kitchen	Cooking Type	Total Score
1. Small Indian restaurant	20	10	1	7	38
2. Pub	5	5	5	1	16
3. Medium sized French restaurant	15	10	3	1	29
4. Large burger restaurant	10	10	5	10	35

Example 1 Represents a small Indian restaurant with the kitchen ventilation extract discharging into a small courtyard.

Example 2 Represents a traditional pub cooking a range of food types with the kitchen ventilation extract discharging at roof ridge. The pub is located in a rural location with the closest receptors 25 m away.

Example 3 Represents a medium sized French restaurant. The restaurant occupies the ground floor of two-story building (adjacent buildings are taller). The kitchen extract discharges at roof eaves.

Example 4 Represents a large burger restaurant. The restaurant occupies a building within 20m of residential properties. The kitchen extract discharges at roof eaves.

Example 1 is a location where the risk of problems arising due to these types of cooking activities is very high. In both instances, improving dispersion (e.g. to 1m above roof ridge) will reduce the risk rating. Based on this assessment approach the emissions from these restaurants will need a very high level of odour control to prevent nuisance. The level of odour control requirement is reduced with improvement in stack dispersion.

Example 2 is a location where the risk of problem occurring due to this type of cooking activity is low to medium. Based on this assessment approach the emissions from these restaurants will need a low to medium level of odour control to prevent nuisance.

Example 3 and 4 are locations where the risk of problems occurring due to this type of cooking activity is high. Based on this assessment approach the emissions from the restaurant will need a high level of odour control to prevent nuisance. The level of odour control requirement is reduced with improvement in stack dispersion.

Other Considerations

14. **The Building Regulations Approved Document H – Drainage and Waste Disposal (2002 Edition)** Drainage serving kitchens in commercial hot food premises should be fitted with a grease separator complying with prEN 1825-1 and designed in accordance with prEN 1825-2 or other effective means of grease removal.
15. Applications relating to takeaway food premises should have regard to the prevention of litter, for example including an undertaking to pick-up litter and / or provide adequate bins.
16. Suitable refuse storage systems must be implemented, and be of adequate design and size appropriate for the Council and / or normal methods of collection.

17. **Toilet Provision for Food/Entertainment Premises** The Workplace (Health, Safety and Welfare) Regulations 1992 places duties on employers to provide suitable and sufficient WC and wash facilities for employees. Further guidance can be found in the approved code of practice that supports the regulations and should be considered at the planning stage.

In addition to the above, **The Local Government (Miscellaneous Provisions) Act 1976** allows Local Authorities to require the provision of sanitary appliances and associated facilities for use by the public (especially where food and drink is consumed on the premises).

Applicants may wish to consider the guidance found in British Standard BS 6465 at the planning stage.

Flexibility in the requirements for customer toilet provision will be considered on an individual basis based upon issues such as:

1. Size of premises;
2. Provision and access to foul drainage;
3. Nature and scale of operation.

In the interests of good hygiene, where food is prepared on the premises, it is preferable that staff WCs be accessible by employees only.

18. The applicant must comply with the **Workplace (Health, Safety and Welfare) Regulations 1992** with regard to room ventilation, lighting and provision of toilets. The requirements of these regulations are outlined in an advice note available from the Commercial Environmental Health Team on 020 8891 7994.
19. Illumination should be carefully controlled so that it is appropriate to the locality and does not adversely affect public safety, or create visually unacceptable advertisement clutter. Light pollution should also be considered, and guidance can be obtained from the Institute of Lighting Engineers, Lennox House, 9 Lanford Road, Rugby CV21 2DZ
20. The design, scale and materials used in proposed shop fronts and shop signs, including illumination, must comply with the Supplementary Planning Guidance 'Design Guidelines for Shop fronts and Shop signs'. This is available in the DC Reception on the 2nd floor of the Civic Offices or on the internet (www.richmond.gov.uk).
21. The provision of equipment and standard of fixtures and fittings must comply with the **Food Safety (England) Regulations 2006**. Proprietors will also be required to register their food business with the Commercial Environmental Health Team. For further information contact 020 8891 7994.
22. The **Licensing Act 2003** deals with alcohol sales, regulated entertainment and late night refreshment and is the responsibility of the Council as the Licensing Authority. For further information contact the Licensing Team on 020 8891 6455.

Summary

This guidance is not intended to be a comprehensive list and other matters may arise in particular circumstances. However, the applicant is advised to provide the necessary details when planning applications are submitted to enable Development Control and Commercial Environmental Health to give full and informed consideration.

Further guidance may be obtained by directly contacting the Commercial Environmental Health Department on 020 8891 7994 or Development Control at the Environment Customer Service Centre on 08456 122660.

UK and Ireland Office Locations

