



Red & Yellow Specialist Extra Care Melliss Avenue - Kew

Odour Assessment Report
October 2018

Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
01	August 2018	Draft for review	CP	Colin Page	Regional Director
02	August 2018	Client comments incorporated	CP	Colin Page	Regional Director
03	September 2018	Draft Planning Issue	CP	Colin Page	Regional Director
04	October 2018	Final Planning Issue	CP	Colin Page	Regional Director

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1. Introduction

This Odour Assessment Report has been prepared by AECOM Ltd, in its role as M&E consultants on the project, on behalf of Melliss Ave Devco Limited (“the Applicant”) in support of a planning application for the redevelopment of the former Biothane Site (“the Site”) within the London Borough of Richmond Upon Thames (‘LBRuT’).

1.1 Purpose of Report

This report has been prepared to demonstrate that any potential impacts relating to odour and fumes from commercial activities within the development have been adequately mitigated. The principles of ventilation and odour controls described within this report are based on the following London Borough of Richmond upon Thames Planning guidance documents:

- *London Borough of Richmond upon Thames Local Validation Checklist for All Applications (April 2015, updated October 2017, which references DEFRA (2004) ‘Guidance on the Control of Odour and Noise from Commercial Kitchen System’*
- LBRuT Supplementary Planning Guidance ‘*Planning Guidance for Food and Drink Establishments*’.
- LBRuT Local Plan, adopted July 2018 – specifically Policy LP10 extracted below

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;

This report sets out the principles being followed and describes how the current design responds to them, including adequate provision within the scheme to ensure that the odours generated by the food and drink establishment in the scheme do not give rise to significant environmental effects. It is expected that further details of the proposed kitchen equipment and associated odour control and extract systems will be provided at a later date, when available, to discharge any imposed planning conditions

* This document - available at

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/645289/pb10527-kitchen-exhaust-0105.pdf - is noted as being out of date and has been withdrawn. However, the general principles still apply and have been followed in the design proposals.

2. Description of development

As described in the planning statement, application form and associated planning application material, a new Specialist Extra Care facility is proposed to be constructed on the former Thames Water Biothane treatment plant associated with Stag Brewery.

The scheme involves demolition of existing buildings and structures and redevelopment of the site to provide an Specialist Extra Care facility (C2 Use Class) for the elderly with existing health conditions. Comprising, 89 units, with extensive private and communal healthcare, therapy, leisure and social facilities set within a building of ground plus 3 to 5 storeys including set backs. Provision of car and cycle parking, associated landscaping and publicly accessible amenity spaces including a children's play area.

3. Ventilation and Odour Control

3.1 Principles

In accordance with the LBRuT *Planning Guidance for Food and Drink Establishments* document (included in full in Appendix A), the following applicable design principles have been followed in relation to odour control from the commercial kitchen:

- 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.
- The outlet location should also take into account the general wind direction and the distance and configuration of nearby premises, particularly their openable windows.
- 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
- For particularly malodours cooking styles such as Indian, Chinese, Fish and Chips and continuous operations such as burger bars and continuous operations, additional odour control may be required. (note that this clause is not applicable to the proposed scheme)
- 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.
- Fumes should also be controlled from infrequently used equipment either by incorporating integral hoods and / or connection to the main ventilation system
- 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 operate optimally at all times.
-

In addition to the above, best practice guidance would include the following:

- 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.

The following section of this report demonstrates how these requirements are proposed to be satisfied for the food and drink establishment forming part of the scheme.

3.2 Ground Floor Restaurant / Café

As mentioned in the development overview and described in more detail in elsewhere in the application, the proposed development includes a restaurant as well as a café at ground floor level. The proposed location of the kitchen is shown below:



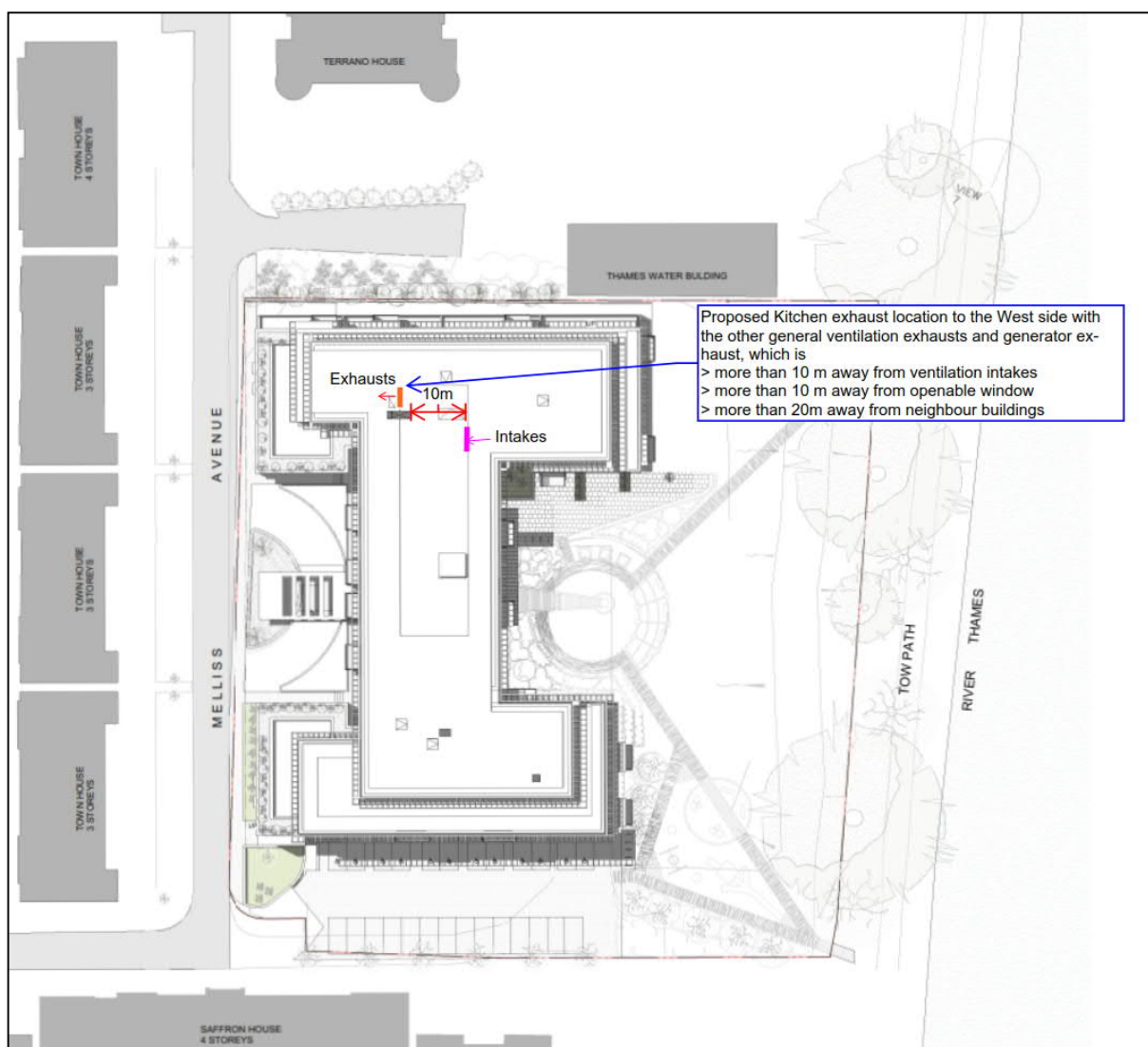
Red & Yellow believe that the availability of high quality food and beverages for our residents and visitors is one of the key elements of the Red & Yellow vision. Not only is a balanced, nutritional diet of utmost importance in the prevention and treatment of later life illnesses and dementia, but we also believe that food and the sense of community that it can provide is central to our aim of providing a sense of home and happiness to our residents.

Both café and restaurant will offer a range of hot and cold meals, snacks and refreshments throughout the day, the core opening hours being generally 08.00 – 21.30 (Café, 08.00- 19.00, Restaurant, 12.00-15.00, 18.00-21.00), 7 days a week.

The café will provide a simpler, casual, menu and the Restaurant more formal. The menus will be developed in conjunction with the Red and Yellow Food and Beverage manager and nutritionists to provide residents and visitors appropriate and healthy meals.

The detailed layout of the kitchen space and technical details of the associated cooking equipment is not yet available and therefore the associated mechanical extract systems (including hoods) have not been specified. However, allowance has been made in the space planning and building services design for the following:

- It is anticipated that kitchen canopies - comprising both extract and make-up (at 85-90% of the extract volume) - would be provided as appropriate, located above each cooking appliance. The canopies would include grease filtration and fire suppression as required.
- Fire-rated kitchen extract ductwork would connect the hoods to suitable kitchen extract fan(s) located in the roof plant enclosure, which would discharge in an appropriate location as illustrated on the indicative plan below.



- A builderswork shaft has been allocated from high level ground floor, rising vertically through the building to the roof plant enclosure, for the kitchen extract duct(s) to be located within. The route from the kitchen to the riser has been kept as short as possible.
- The kitchen extract system will designed in accordance with DW172 '*Specification for Kitchen Ventilation Systems*' during the detailed design stage

It is considered that these measures and provisions comply with the relevant LBRuT requirements and will ensure that the food and beverage establishment within the scheme will not lead to unacceptable odours or other significant environmental effects.

Appendix A – Planning Guidance

- Copy of Planning Guidance for Food and Drink Establishment – available at https://www.richmond.gov.uk/services/planning/planning_policy/local_plan/supplementary_planning_documents_and_guidance.



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.

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