



Odour Assessment:

Hanns Way, Eastleigh

Doswell Projects

20th April 2023

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Hanns Way, Eastleigh

Doswell Projects • 20th April 2023 • H3813 – O – v1



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1. INTRODUCTION

1.1. Overview

Hawkins Environmental Limited has been instructed by Doswell Projects to undertake an odour assessment for the proposed redevelopment of Hanns Way Car Park, situated in the Borough of Eastleigh in Hampshire.

In November 2022, planning consent was refused for the “erection of three storey building consisting of 4no. one-bedroom and 2no. two-bedroom apartments with ancillary bin and cycle storage, landscaping and parking” (reference F/22/92349).

In the decision notice, Reason for Refusal 1 noted:

“The proposed development, by reason of its close proximity to existing commercial uses would subject future residents of the development to unacceptable levels of noise and odour disturbance, including from associated plant, servicing and deliveries. Furthermore, the proposed mitigation would result in a poor quality living environment due to the need for mechanical ventilation and odour neutralization equipment and closed/sealed windows. The development is therefore considered to be contrary to Policies DM1 and DM8 of the adopted Eastleigh Borough Local Plan 2016-2036, the ‘Internal Space’ section of the Council’s ‘Quality Places’ Supplementary Planning Document, and Paragraphs 130 f), 185 and 187 of the National Planning Policy Framework (2021)”.

Hawkins Environmental provided the original odour report “H3626 - Hanns Way, Eastleigh – Odour Assessment - v1” dated 6th September 2022 that was submitted with the planning application. This new assessment builds upon the 2022 survey and assessment and considers the impact of odour from the neighbouring commercial food premises and the broader environment and determines whether odour is a constraint upon the development of the site.

The assessment is carried out in accordance with Defra’s “Odour Guidance for Local Authorities”, published in March 2010 in collaboration with Temple Group, with all field odour assessments in accordance with The Institute of Air Quality Management’s “Guidance on the assessment of odour for planning” (2018).

1.2. Nature and Effect of Odour

Odour is perceived by our brains in response to chemicals present in the air we breathe. Odour is the effect that those chemicals have upon us. Humans have sensitive senses of smell, and they can detect odour even when chemicals are present in very low concentrations. Most odours are a mixture of many chemicals that interact to produce what we detect as an odour.

Different life experiences and natural variation in the population can result in different sensations and emotional responses by individuals to the same odorous compounds. Because the response to odour is synthesised in our brains, other senses such as sight and taste, and even our upbringing, can influence our perception of odour and whether we find it acceptable, objectionable or offensive.

1.3. Statement of Competency

The assessment has been carried out by Nick Hawkins MSc MIOA MIAQM MIEEnvSc PIEMA, the managing director of Hawkins Environmental Limited and Will Totty MSc AMIEEnvSc.

Nick is an environmental consultant with over 15 years of experience working within the field of air quality, odour and environmental impact assessment. Nick is an alumnus of the University of East Anglia and the University of Southampton. Nick became a full Member of the Institute of Air Quality Management in 2010 and is also a Member of the Institution of Environmental Sciences and a Member of the Institute of Acoustics.

Will is an environmental consultant experienced working within the field of air quality, odour and environmental impact assessment.

Olfactometry Standard BS 13725: 2003 provides a framework for odour assessment and the rating of the suitability of odour assessors. An assessor must have a certain sensitivity and repeatability in their responses to tests of n-butanol, the reference odorant. The assessor is required to have an average sensitivity to n-butanol in the range of 20 to 80-ppb. Nick has an average sensitivity to n-butanol of 46 ppb (tested March 2017 by Silsoe Laboratories). Will has an average sensitivity to n-butanol of 54.5 ppb (tested April 2022 by Silsoe Laboratories).

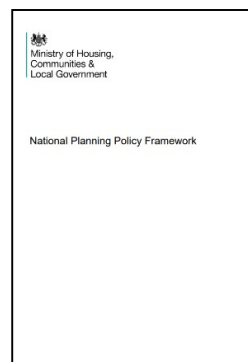
1.4. Site Description

The proposed development site is situated on the corner of Hanns Way and Wells Place in the town centre of Eastleigh. The site is currently a small hard standing public car park with 19 spaces. The proposed development will see the construction of 6 flats over a ground and two upper storeys. A location plan of the proposed site can be seen in **Appendix 1**.

2. PLANNING POLICY & GUIDANCE

2.1. National Planning Policy Framework (2021)

The National Planning Policy Framework (NPPF) was first published on the 27th March 2012 and revised July 2018, February 2019 and again in July 2021. The NPPF outlines the Government's environmental, economic and social policies for England. The NPPF sets out a presumption in favour of sustainable development which should be delivered with three main dimensions: economic; social and environmental (Paragraphs 7, 8, 10 and 11). The NPPF aims to enable local people and their councils to produce their own distinctive local and neighbourhood plans, which should be interpreted and applied in order to meet the needs and priorities of their communities.



The NPPF states that in the planning system *"Planning policies and decisions should contribute to and enhance the natural and local environment by... e) 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, taking into account relevant information such as river basin management plans"* (Paragraph 174).

Whilst the NPPF doesn't talk in specific terms about odour, pollution in general is referenced several times. The NPPF states that in the planning system *"Planning policies and decisions should contribute to and enhance the natural and local environment by... e) 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, taking into account relevant information such as river basin management plans"* (Paragraph 174). Paragraph 185 of the NPPF goes on to state that *"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"*.

Specifically in relation to existing commercial premises, Paragraph 187 of the NPPF notes: *"Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed"*.

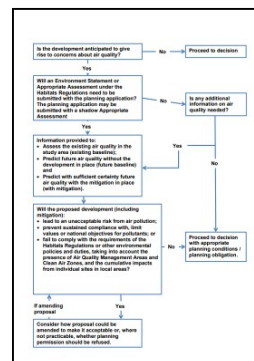
2.2. Planning Practice Guidance (2019)

The Planning Practice Guidance (PPG) was launched on 6th March 2014 and last updated in November 2019 and provides additional guidance and interpretation to the Government's strategic policies, outlined within the NPPF, in a web-based resource. This is updated regularly.

The PPG provides little advice regarding odour directly, although does note that "Odour and dust can also be a planning concern, for example, because of the effect on local amenity" (Reference ID: 32-005-20191101). Therefore, much of the guidance related to air quality could equally be applied to odour.

Matters of relevance to odour assessment include:

- The provision of "guidance on how planning can take account of the impact of new development on air quality". The PPG provides signposts as to how to address air quality in planning applications and highlights the importance of local plans.
- The PPG goes on to say that "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 conservation of habitats and species)" (Reference ID: 32-005-20191101).
- The identification of the content of an air quality assessment, stating clearly that "Assessments need to be proportionate 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" (Reference ID: 32-007-20191101).



2.3. Environmental Protection Act 1990

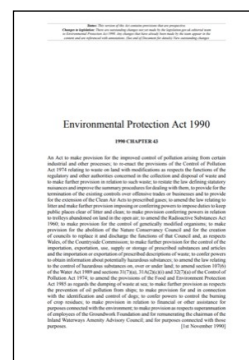
The Environmental Protection Act 1990 provides powers for a Local Authority to serve an odour abatement notice where the Authority is satisfied that unnecessary and objectionable odour is being generated, to demand that the person responsible refrain from causing a nuisance in the future.

The Local Authority can allege that under Section 79 c) and d) of the Environmental Protection Act 1990 the following could constitute a "statutory nuisance":

"c) fumes or gases emitted from premises so as to be prejudicial to health or a nuisance;

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

The local authority has powers and duties to address issues arising from odours through the statutory nuisance provisions of the Environmental Protection Act 1990 (EPA). Regulation, through the use of statutory nuisance provides a crucial level of protection in respect of problems that were not anticipated at the planning or permitting stage.



2.4. Eastleigh Borough Local Plan (2022)

Eastleigh Borough's Local Plan (2016-2036), adopted in April 2022 notes in Section 1,a,i of Policy DM1, *General criteria for new development*:

"All new development should...not have an unacceptable impact on, and where possible should enhance... residential amenities of both new and existing residents; the character and appearance of urban areas, the countryside and the coast"

Policy DM8, *Pollution* provides more specific guidance in relation to pollution. It notes:

1. "Development will not be permitted if it is likely to cause loss of amenity or impact on public health or other unacceptable environmental impacts through:
 - a. air pollution (including odours or particulate emissions);
 - b. pollution of surface, underground, coastal waters or other watercourses;
 - c. noise or vibration;
 - d. light intrusion, both generally and with respect to the South Downs National Park's status as an International Dark Night Skies reserve; or
 - e. land contamination.
2. Development susceptible to particular forms of pollution will not be permitted:
 - a. where it will be adversely affected by such pollution, unless measures can be taken that adequately mitigate the polluting effects; or
 - b. where it would inhibit existing economic or other activities giving rise to acceptable polluting effects".

Section 5.43 provides additional guidance noting:

"Government advice in the NPPF makes it clear that the prevention of pollution is a planning concern. The Borough Council will give considerable weight to ensuring that new development does not give rise to new pollution, suffer from existing sources of pollution, or inhibit legitimate economic activities giving rise to otherwise acceptable polluting effects (e.g. noise)".



2.5. Quality Places Supplementary Planning Document (2011)

Eastleigh Borough's Quality Places Supplementary Planning Document notes that site constraints must be considered in the design of the development. It notes *"site constraints can be physical, visual or social in nature. Many of the environmental constraints may need detailed survey reports, (e.g. noise, air and soil contamination, biodiversity). Constraints may lead to a reduction in the developable area of the site, special design solutions, specific construction techniques, or mitigation measures to overcome or minimise them"*. It notes that *"mitigation may take the form*



of restricting different forms of development to certain parts of the site; preventing openable windows nearest the pollution source”.

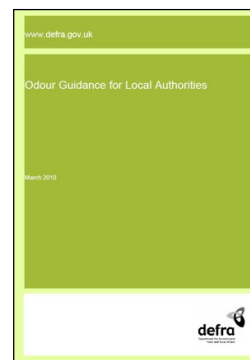
Specifically in relation to windows, it notes: “*not only do windows allow natural light to enter a building, provide ventilation, and offer opportunities for natural surveillance, windows often form the most prominent elements in the elevations of the building. If a property has been designed to take account of the surrounding buildings, the windows should also reflect this, in form and material...Windows should be able to be opened, where appropriate as noise and air quality issues may need to be addressed*”. The Quality Places Supplementary Planning Document has no specific requirements regarding ventilation.

3. ASSESSMENT METHODOLOGY & GUIDANCE

3.1. Defra Odour Guidance for Local Authorities (2010)

In order to determine whether a housing development or other sensitive development is appropriate in an area which is subject to a potential odour issue, it is necessary to conduct an odour risk assessment. In March 2010, Defra published its document “*Odour Guidance for Local Authorities*”, prepared by Temple Group, which gives advice and practical guidance on how to assess odour. The guidance suggests that the risk assessment takes several simple stages:

- Onsite investigations into potential odour sources;
- Field odour assessment to evaluate and describe sources of odour;
- Determine the likelihood of complaints relating to odour i.e. will a statutory nuisance occur;
- Determine the suitability of the proposed development in relation to odour.



The Defra “*Odour Guidance for Local Authorities*” was prepared to provide advice and a consistent approach to dealing with odour issues for local authorities. One of the principal functions of the guidance is to assist in the investigation and determination of odour complaints. This is relevant to an odour assessment for planning, since when determining the acceptability of odour on proposed development, it is usual to assess whether the future occupiers of the proposed development will have cause to complain about odour. Therefore, the objective of an odour assessment is to determine whether, in all likelihood, any odours are likely to cause complaints and therefore proceedings under Section 79 of the Environmental Protection Act 1990 regarding Statutory Nuisance.

The Defra Guidance provides advice on a standardise method for describing odour characteristics and attributes, which requires reference to several different attributes of smell, which are summarised in **Table 3.1**.

Table 3.1: Basic Sensory Properties of Odour

Detection (at Threshold)	Concentration of an odour when first detectable
Recognition	Human ability to differentiate between odours, e.g. wine or vinegar
Intensity	Perceived strength at differing concentrations – see Table 3.2 .
Hedonic Tone	Pleasantness / offensiveness, e.g. pleasant, unpleasant, offensive. Normally scored on a scale between -4 (very unpleasant) and +4 (very pleasant). The Hedonic Tone (also sometimes referred to as “ <i>Dravnieks</i> ”) is normally assessed using the library of Hedonic Tones published by Dravnieks, A., Masurat, T. and Lamm, R.A. 1984 <i>Hedonics of odours and odour descriptors</i> . Journal of the Air Pollution Control Association 34 (7), 752– 755. Dravnieks Library of Hedonic Tones is reproduced in Appendix 2 .

Odour Quality or Character

Association & complexity, e.g. the many “tones” and associations we have with an odour such as flowers, coffee, waste, sewage, etc. The quality and character are normally associated with the “descriptors” of the odour.

Table 3.2: Odour Intensity Scale

Score	Intensity
0	No odour
1	Very faint odour
2	Faint odour
3	Distinct odour
4	Strong odour
5	Very strong odour
6	Extremely strong odour

3.2. IAQM Guidance on the Assessment of Odour for Planning (2018)

The Institute of Air Quality Management’s “*Guidance on the assessment of odour for planning*” also provides useful guidance. However, the focus of the IAQM guidance is to assess the appropriateness of future new odour sources within the planning context, rather than determine the appropriateness of new dwellings adjacent to existing odour sources. However, the IAQM guidance does provide useful guidance on the assessment of odour, especially in relation to field odour assessments.

The IAQM Guidance discuss FIDOL factors which are used to highlight which general principles and factors may be important in assessing when, or if, a specific odour source is likely to constitute a cause for complaint. The FIDOL factors are defined as **F**requency, **I**ntensity (and therefore concentration), **D**uration, relative **O**ffensiveness (hedonic tone/character) and **L**ocation, along with any aggravating characteristics. Although an odour does not have to be offensive in order for it to constitute a statutory nuisance, there are similarities between the criteria. **Table 3.3** below outlines the FIDOL factors that are useful in determining potential odour impact or “offensiveness”, and some of the important factors that should be taken into account when assessing a case of potential statutory odour nuisance.



Table 3.3: Relating Odour Impact (or Offensiveness) to Statutory Nuisance

The 'FIDOL' factors determining offensiveness	Factors determining Statutory Nuisance	Comments
FREQUENCY (How often an individual is exposed to odour)	Frequency (How often an individual is exposed to odour)	Even an odour with quite a pleasant hedonic score can be perceived as a statutory nuisance if exposure is frequent. At low concentrations, a rapidly fluctuating odour is more noticeable than a steady background odour, i.e., this is an aggravating factor
INTENSITY (The perceived strength of the odour, proportional to log10 concentration)	Level of odour	
DURATION (The length of an odour event or episode. Duration of exposure to the odour)	Duration	
OFFENSIVENESS (Relative character - Offensiveness is a mixture of odour character and hedonic tone at a given odour concentration/intensity)	Type of odour	Some odours are universally considered offensive, such as decaying animal matter. Other odours may be offensive only to those who suffer unwanted exposure in the residential intimacy e.g. coffee roasting odour.
LOCATION (The type of land use and nature of human activities near an odour source. Tolerance and expectation of the receptor.)	The characteristics of the neighbourhood where the odour occurs	
	The sensitivity of the complainant	Statutory nuisance uses the concept of the response of the average, reasonable person

4. ONSITE INVESTIGATIONS AND FIELD ODOUR ASSESSMENT

4.1. Overview

The first stage in determining the likelihood of problems relating to odour is to evaluate all potential sources of odour. The human response to recognisable odours in the environment is essentially subjective, and can be influenced by emotion and perception as well as, or as much as, by real and obvious sensory responses. Unlike noise, there are no “simple” instruments which can be used to objectively measure odours in the field. Therefore, a field odour assessment, or “sniff test” is commonly used to evaluate and describe odour. The Defra “*Odour Guidance for Local Authorities*” and the IAQM’s “*Guidance on the assessment of odour for planning*” both provide guidance on odour characterisation and site assessment.

The site and its environs were visited on several occasions on the 13th of January 2022, both during the daytime and during the evening, as well as again on the 17th January 2022. Additional observations were made on the 19th July 2022, which was at the peak of a heatwave, with daytime temperatures measured in Eastleigh of around 37°C and night-time temperatures of around 22°C.

Several nearby premises were considered to be likely sources of odour and were operational at various times:

- McDonald’s, located immediately southeast of the proposed development, which operates 06:00-23:00 daily and has plant located on the roof of the car park above, fronting Wells Place.
- Pizza Hut (Delivery and Collection), immediately east of the proposed development, which operates 11:00-23:00 daily and has plant located to its rear on Hanns Way.
- King’s Chef Chinese, also located east of the proposed development, which operates 16:30-23:00 daily and has plant located to its rear on Hanns Way.

Additionally, there are several premises on the High Street (parallel to Hanns Way) which are considered possible odour sources, namely The Station public house and Roosters chicken restaurant. Neither of these premises have plant that vent directly to Hanns Way or Wells Place. An Indian restaurant directly next to King’s Chef Chinese restaurant (with plant on Hanns Way) is changing location and was not operational during the assessment.

During each odour assessment the advice provided in Appendix 2 of the IAQM’s odour guidance was followed, specifically that:

- *“The odour assessor should not carry out the assessment if they have a cold, sore throat, sinus trouble, etc.*
- *The odour assessor should not be hungry or thirsty.*
- *The odour assessor should not work within half an hour of the end of their last meal.*
- *The odour assessor should not smoke or consume strongly flavoured food or drink, including coffee, for at least half an hour before the field odour survey is carried out, or during the survey.*
- *The odour assessor should not consume confectionery or soft drinks for at least half an hour before the field odour survey is carried out, or during the survey.*

- Scented toiletries, such as perfume/aftershave should not be used on the day of the field odour survey.
- The vehicle used during the field odour survey should not contain any deodorisers.
- If the odour assessor has had to travel a long distance, then a rest period should be taken before starting the survey”.

4.2. Basic Sensory Assessment

When determining whether an odour on and around a development site is considered acceptable, it is first necessary to characterise the odour using field odour assessment techniques.

A basic sensory assessment was conducted around the development site which is summarised in **Table 4.1**.

Table 4.1: Basic Sensory Assessment and the Proposed Development Site

Detection (at Threshold)	Changeable and highly variable. Sometimes (although not always), odour attributable to the Pizza Hut is detectable on site at low concentration during the early afternoon, and harder to detect in the evening. Food smells are also detectable at changeable concentrations over a broader area around the site in the afternoon and evening, particularly on the High Street (parallel to Hanns Way) attributable to the public house, and close to the McDonald's.
Recognition	The odours are sometimes recognisable as being associated with the food produced at the nearest premises, i.e., at stronger concentrations the odour on site can be identified as that of takeaway pizza, whereas on the high street it can be distinguished as pub grill style food and passing the McDonald's the smell of fried food is often recognisable. At the weaker concentrations often detected on site, it would often be harder to attribute the odour directly to the pizza premises. General traffic fume odour was also recognisable due to traffic idling and accelerating around the junction between Hanns Way and Wells Place. On one occasion the smell of flowers was noticeable on site during the opening of the refrigerated container to the rear of the flower shop on the High Street (container facing Hanns Way).
Intensity	Variable – see Figures 4.1 to 4.10
Hedonic Tone	The hedonic tone varied with the specific odour, which varied also. Odours from the pub varied, including +2.34 (meat), +2.33 (coffee), +1.27 (seasoning for meat), -1.41 (oil/fatty) and -1.53 (burnt or smoky). Consequently, the hedonic tone is likely to be in the region of -1.3 to +2.3, i.e., mildly unpleasant to moderately pleasant.
Odour Quality or Character	Food smells (some of which would be considered pleasant), burnt food, frying. The odour is unlikely to be perceived by everyone in the same consistent way. For example, some people may find some of the food odours very pleasant, other people may find some of the food odours mildly offensive, especially if they have a distaste for a particular food. Could be unpleasant when experienced over longer durations or at high intensity, but unlikely to be considered unpleasant given the current circumstances.

Whilst the character of the odour (when detectable) remained fairly constant during the site visits (i.e., mainly food smells) the intensity and threshold of detection of the odour varied over time. **Figures 4.1 to 4.10** show the locations where the odour was detected during the site visits.

It should be noted that detection was variable and not constant, and times was stronger at a location and then 10 seconds later, the odour was significantly weaker at the same location. Consequently, **Figures 4.1 to 4.10** show the maximum intensity observed at that location and does not indicate that odour was observed at the marked locations continuously.

Figure 4.1: Odour Intensity 11:25 13th January 2022



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Figure 4.2: Odour Intensity 12:25 13th January 2022



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Figure 4.3: Odour Intensity 13:25 13th January 2022



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Figure 4.4: Odour Intensity 19:45 13th January 2022



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Figure 4.5: Odour Intensity 20:45 13th January 2022



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Figure 4.6: Odour Intensity 21:45 18th January 2022



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Figure 4.7: Odour Intensity 22:30 18th January 2022



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Figure 4.8: Odour Intensity 11:45 19th July 2022



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Figure 4.9: Odour Intensity 13:15 19th July 2022



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Figure 4.10: Odour Intensity 22:00 19th July 2022



4.3. Sensory Testing by the “Sniff Test”

As well as noting the maximum intensity of odour in the vicinity of the site, as described in **Figures 4.1 to 4.6**, a full sniff test assessment, using the methodology described in the IAQM’s “*Guidance on the assessment of odour for planning*” was carried out to determine the overall odour exposure at the proposed development site and the odour effect on the proposed development.

In the U.K. there is no specific national standard for subjective sniff testing; however, there is a German national standard VDI 3940: 1993 *Determination of Odorants in Ambient Air by Field Inspection*. VDI 3940 is very complex and requires a full years’ worth of data, with multi-person “sniffing squads”; however, for the purposes of developments such as this, an assessment of this complexity is not feasible. The Environment Agency’s H4 Odour Guidance document provides a streamlined guide to sniff testing, with the IAQM guidance providing an example of how this could be applied.

At the development site, during the site visits, a sensory assessment was carried out over the standard observation time (five minutes) with inhalation through the nose of the odour at 10 second intervals. For each sample, the odour intensity was noted, and the extent of the odour was assessed. A full sniff test was carried out at two locations – Location A was located to the south of the existing car park at a location representative of the front of the proposed dwellings – Location B was located at the north of the site. **Table 4.2** and **Table 4.3** characterise the results of the sniff test for the two locations in January 2022, with **Table 4.4** and **Table 4.5** showing the results for July 2022

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Table 4.2: Results of the Stiff Test – Location A – January 2022

Visit	No of Samples	No of Samples at each Intensity (I)								Odour Pleasantness Note 1	% Odour Time ($t_{I \geq 4}$) Note 2
		0	1	2	3	4	5	6	I _{mean}		
11:35	30	15	7	6	2	0	0	0	0.8	Mildly Unpleasant to Mildly Pleasant	0
12:45	30	11	11	5	3	0	0	0	1.0	Mildly Unpleasant to Mildly Pleasant	0
13:55	30	12	13	4	1	0	0	0	0.8	Mildly Unpleasant to Mildly Pleasant	0
19:20	30	18	10	2	0	0	0	0	0.5	N/A	0
20:30	30	15	11	4	0	0	0	0	0.6	N/A	0
22:00	30	27	3	0	0	0	0	0	0.1	N/A	0
23:30	30	30	0	0	0	0	0	0	0.0	N/A	0
00:30	30	30	0	0	0	0	0	0	0.0	N/A	0
Total	240	158	55	21	6	0	0	0	0.5	Mildly Pleasant	0%

Note 1 = Assumes some odour was at least "barely recognisable" i.e., odour intensity 3 or more

Note 2 = For recognisable odours, i.e., odour has an intensity of 4 or more

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Table 4.3: Results of the Stiff Test – Location B – January 2022

Visit	No of Samples	No of Samples at each Intensity (I)								Odour Pleasantness Note 1	% Odour Time ($t_{I \geq 4}$) Note 2
		0	1	2	3	4	5	6	I_{mean}		
11:45	30	15	12	3	0	0	0	0	0.6	N/A	0
12:35	30	7	8	6	8	1	0	0	1.6	Mildly Unpleasant to Mildly Pleasant	0
13:50	30	13	9	6	2	0	0	0	0.9	Mildly Unpleasant to Mildly Pleasant	0
19:30	30	10	14	6	0	0	0	0	0.9	N/A	0
20:35	30	20	7	3	0	0	0	0	0.4	N/A	0
22:10	30	24	3	3	0	0	0	0	0.3	N/A	0
23:40	30	30	0	0	0	0	0	0	0	N/A	0
00:40	30	30	0	0	0	0	0	0	0	N/A	0
Average	240	149	53	27	10	1	0	0	0.6	Mildly Pleasant	0%

Note 1 = Assumes some odour was at least "barely recognisable" i.e., odour intensity 3 or more

Note 2 = For recognisable odours, i.e., odour has an intensity of 4 or more

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Table 4.4: Results of the Stiff Test – Location A – July 2022

Visit	No of Samples	No of Samples at each Intensity (I)								Odour Pleasantness Note 1	% Odour Time ($t_{I \geq 4}$) Note 2
		0	1	2	3	4	5	6	I _{mean}		
11:30	30	22	4	2	2	0	0	0	0.5	Mildly Unpleasant to Mildly Pleasant	0
12:50	30	28	2	0	0	0	0	0	0.1	N/A	0
22:10	30	30	0	0	0	0	0	0	0.0	N/A	0
Total	90	80	6	2	2	0	0	0	0.2	Mildly Pleasant	0%

Note 1 = Assumes some odour was at least "barely recognisable" i.e., odour intensity 3 or more

Note 2 = For recognisable odours, i.e., odour has an intensity of 4 or more

Table 4.5: Results of the Stiff Test – Location B – July 2022

Visit	No of Samples	No of Samples at each Intensity (I)								Odour Pleasantness Note 1	% Odour Time ($t_{I \geq 4}$) Note 2
		0	1	2	3	4	5	6	I _{mean}		
11:40	30	25	3	2	0	0	0	0	0.2	N/A	0
13:00	30	30	0	0	0	0	0	0	0.0	N/A	0
10:05	30	30	0	0	0	0	0	0	0.0	N/A	0
Average	90	85	3	2	0	0	0	0	0.1	N/A	0%

Note 1 = Assumes some odour was at least "barely recognisable" i.e., odour intensity 3 or more

Note 2 = For recognisable odours, i.e., odour has an intensity of 4 or more

5. ODOUR ASSESSMENT

The objective of an odour assessment is to determine whether, in all likelihood, any odours are likely to cause complaints. The likelihood of complaints is used as an indicator as to whether the site would be suitable for housing or whether additional mitigation may be required to make the site suitable.

As previously mentioned, the FIDOL factors are used to guide Environmental Health Officers and Odour professionals in determining whether an odour is likely to result in complaints. The FIDOL factors have been considered for the site in question and summarised in **Table 5.1** below.

Table 5.1: Odour Risk Assessment

FREQUENCY	It is understood that generally the odour on site comes from the neighbouring Pizza Hut premises during the periods of operation (11:00-23:00). When considering the percentage odour time ($t_{\geq 4}$), at the proposed development site, the $t_{\geq 4}$ was 0, i.e., no odours of intensity 4 or higher were observed during the 8 separate "sniff tests" conducted. This indicates that whilst odour may be detectable at times on site, it is infrequently experienced at an intensity that could be considered distinct.
INTENSITY	Perceptibility of the odour is mixed and not constant, nor is the intensity (I). However, at its worst externally, whilst certainly not overpowering or even always distinct, it is likely that people would be able to perceive the odour. At the front of the site (Location A) the I_{mean} was 0.5, ranging between 0 and 3 over the 8 visits in January. To the rear of the site (Location B) the I_{mean} was 0.6, ranging between 0 and 4 over the 8 visits in January. For the further site visits in July, the intensity was observed to be lower.
DURATION	All of the odours observed during the 2 "sniff tests" at each location were detected while the neighbouring Pizza Hut was open. It is noteworthy that during the 2 "sniff tests" conducted at each location after the closing of the premises, no odours were detected even at very weak intensities. However, observations indicate that the odour is not constant and even when the fan is operational, if they are not cooking, odour is not necessarily observed.
OFFENSIVENESS	The hedonic tone would generally be considered to be mildly unpleasant to moderately pleasant and generally fairly neutral, depending on your preferences and your acceptance of these types of food smells. It is possible that some people may find the odour to be unpleasant for prolonged periods; however, given the close proximity of existing receptors, the evidence suggests that this is not occurring at this location.
LOCATION	It has also been observed that there is a number of other restaurants in the area (including a McDonald's, a Chinese restaurant and a public house) – all of which are located within 200 m of the site), a number of which create food/restaurant related odour in the evening time in particular (but also at times at lunchtime).

It is noted that none of these premises contribute to odour on site at an intensity that would distinguish their origin.

Given the town centre location and the high frequency of food establishments, it has been observed that food related odour is commonplace, with food related odour observed on regular occasions when walking around the area, including in areas with other residential premises.

At this site, location is particularly important, since it is clear that this area has a high occurrence of eating and drinking establishments, which leads to a frequently observed, fairly neutral in nature, background odour in the area, albeit at low intensity. Consequently, given the nature of the area, any future resident should have a reasonable expectation to notice some odour outside of their property at times, as other residential properties already do.

It was observed that the concentrations of odour in the area were somewhat directional, with odour marginally stronger at location B to the north of the site than at location A to the south. Location B is closer to the rear door of the Pizza Hut restaurant which remained open throughout the duration of the “sniff tests”.

Overall, given its location, the low intensity and relatively short duration and intermittency of the odour, it is difficult to conclude that the odour would be considered to give rise to complaints. Therefore, overall, it is not considered that odour is likely to be considered a constraint upon the development of the site.

5.1. Additional Observations in July 2022

In response to Eastleigh Borough Council’s comments in relation to the original report, additional observations were made in July 2022, during a period of extremely hot weather. In general, levels of odour, and in particular food related odour, were less noticeable during the July observations when compared to the January observations.

Eastleigh Borough Council specifically made comments in relation to refuse, noting “*The report does not discuss food waste, which in hot weather putrefies. Planning colleagues should ask the applicant about food and other wastes which could be a source of odour impact*”. The additional observations confirm that there are a number of waste bins located on the western façade of Pizza Hut, directly facing the development site. An additional bin was noted in the car park to the rear of Pizza Hut, but it is believed that this is used in relation to the insurance office which occupies most of the building. Additional bins were observed to the rear of the Flower Shop (35 High Street) and King’s Chef Chinese (37 High Street).

Pizza Hut employees were seen depositing waste into the bins directly opposite the development site, especially towards the end of the night (i.e. around 10pm), when multiple trips were observed. It would appear that waste in Pizza Hut is stored internally during the day and then deposited into the waste bins towards closing time. It was observed that the waste bins are emptied around 5am every day via commercial waste collection.

During the site visits in both January and July 2022, odour from the waste bins was barely noticeable and only noticeable adjacent to the bins and never noticeable on the proposed development site itself. Whilst it is acknowledged that in hot weather the odour from food waste can become unpleasant, the management

practices of the takeaway outlets in the vicinity of the development site suggest that this is unlikely at this location.

5.2. Additional Observations in April 2023

As previously noted, the original January and July 2022 surveys were prepared to submit with the 2022 planning application. This report, whilst building upon the 2022 surveys, has been prepared to accompany the revised 2023 application.

In April 2023, a site visit was undertaken to determine whether site conditions had changed since the previous surveys. It was noted that in general, odour observations were very similar to the two 2022 surveys, in that odour was generally not perceptible on the proposed development site and certainly no distinct strong odours were noted.

It was observed in the 2023 survey that the King's Chef Chinese Takeaway, located at No. 37 High Street, was "closed until further notice". However, given that odour from the premises was not noticeable, this was not considered to materially change the odour assessment.

It was also noted that there were more wheeled bins located adjacent to Pizza Hut (on the corner of Hanns Way and Wells Place) when compared to previous surveys. Previously, there was generally two bins, which observations indicating that they belonged to Pizza Hut. The April 2023 survey noted a total of six wheeled bins, including two bins belonging to Pizza Hut and two each from A-Plan insurance and the Junction Church. Previously refuse from A-Plan was observed in the car park area to the rear.

Whilst a greater number of bins were observed, the amount of odour from these receptacles remained unchanged. Odour from waste bins mainly occurs when food or other organic waste is deposited. It would not be anticipated that food or other organic waste would be deposited in any large quantities from either the office of A-Plan insurance, or from the church. As a consequence, the conclusions regarding odour from the refuse bins would be considered to remain valid.

6. MITIGATION

The previous section of the report determines that it is not considered that under the presently observed conditions, the odour would constitute a Statutory Nuisance; therefore, mitigation is not seen as necessary.

However, to adopt a precautionary approach and to ensure that the existing commercial premises are protected from any potential future odour complaints from the proposed residents (however unlikely), it is proposed that the development will have a Mechanical Ventilation with Heat Recovery (MVHR) system. The system shall be designed such that the future residents will never need to open their windows to ensure their own comfort, although it is not proposed that windows would generally be sealed - as it is considered that residents should have the right to choose whether or not they open the window, plus they should still be openable for the rapid dilution of smells/water vapour from the dwellings, for example when cooking. However, the residents should not have to rely on opening the windows to ensure that conditions in the rooms are comfortable.

It is proposed that all air intakes in relation to the MVHR system will be located on the western façade of the building, i.e. furthest from any sources of odour, therefore further limiting the potential for odours to infiltrate into the property.

It is considered that this precautionary approach is congruous with Paragraph 187 of the NPPF, which notes that *“Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses...(and they) should not have unreasonable restrictions placed on them as a result of development permitted after they were established”*. This is commonly referred to as the Agent of Change Principle.

Furthermore, this approach is endorsed by Eastleigh Borough's Local Plan (2016-2036) which notes in Policy DM8, *“Development susceptible to particular forms of pollution will not be permitted...where it will be adversely affected by such pollution, unless measures can be taken that adequately mitigate the polluting effects; or where it would inhibit existing economic or other activities giving rise to acceptable polluting effects”*.

It should be noted that Eastleigh Borough's Quality Places Supplementary Planning Document (2011) and in particular the *“Internal Spaces”* section, does not preclude the use of mechanical ventilation, nor does it endorse the requirement for natural ventilation. In fact, the SPD notes that when considering site restraints such as noise or odour, *“mitigation may take the form of restricting different forms of development to certain parts of the site; preventing openable windows nearest the pollution source”*, although it does not that *“Windows should be able to be opened, where appropriate as noise and air quality issues may need to be addressed”*.

As a consequence, it is considered that this mitigation strategy, i.e. ensuring that ventilation is sufficient such that residents should not have to rely on opening the windows to ensure that conditions in the rooms are comfortable, is in line with both the NPPF and local planning policy.

7. CONCLUSIONS & SUMMARY

An odour assessment has been undertaken to accompany a planning application for six dwellings at Hanns Way, Eastleigh, to determine whether odour emanating from local restaurants will be a constraint upon the development of the proposed site.

Using the guidance contained within Defra's "Odour Guidance for Local Authorities" (2010), and The Institute of Air Quality Management's "Guidance on the assessment of odour for planning" (2014), it has been observed via onsite field observations that odour specifically from the Pizza Hut premises, located immediately adjacent to the proposed development site on the other side of Hanns Way, can be observed on the proposed development site; however, odour is very infrequently observed at intensities at which the odour is recognisable (i.e. intensities of 4 or more).

The odour often has a hedonic tone which could be described as mildly to moderately pleasant, although is also often neutral, or at worst, mildly unpleasant. However, given its location, the low offensiveness of the odour, the normal low intensity and relatively short duration and intermittency of the odour, it is difficult to conclude that the odour would be considered to cause complaints.

However, to adopt a precautionary approach and to ensure that the existing commercial premises are protected from any potential future odour complaints from the proposed residents (however unlikely), it is proposed via a MVHR system to ensure that ventilation is sufficient such that residents should not have to rely on opening the windows to ensure that conditions in the rooms are comfortable. This is considered to be in line with the Agent of Change Principle from the NPPF and is in line with recommendations to deal with sources of pollution within Eastleigh Borough's Quality Places Supplementary Planning Document and the Local Plan.

Therefore, overall, whilst odour does need to be considered in the design of the building, odour is not considered to be a constraint upon the development of the site.

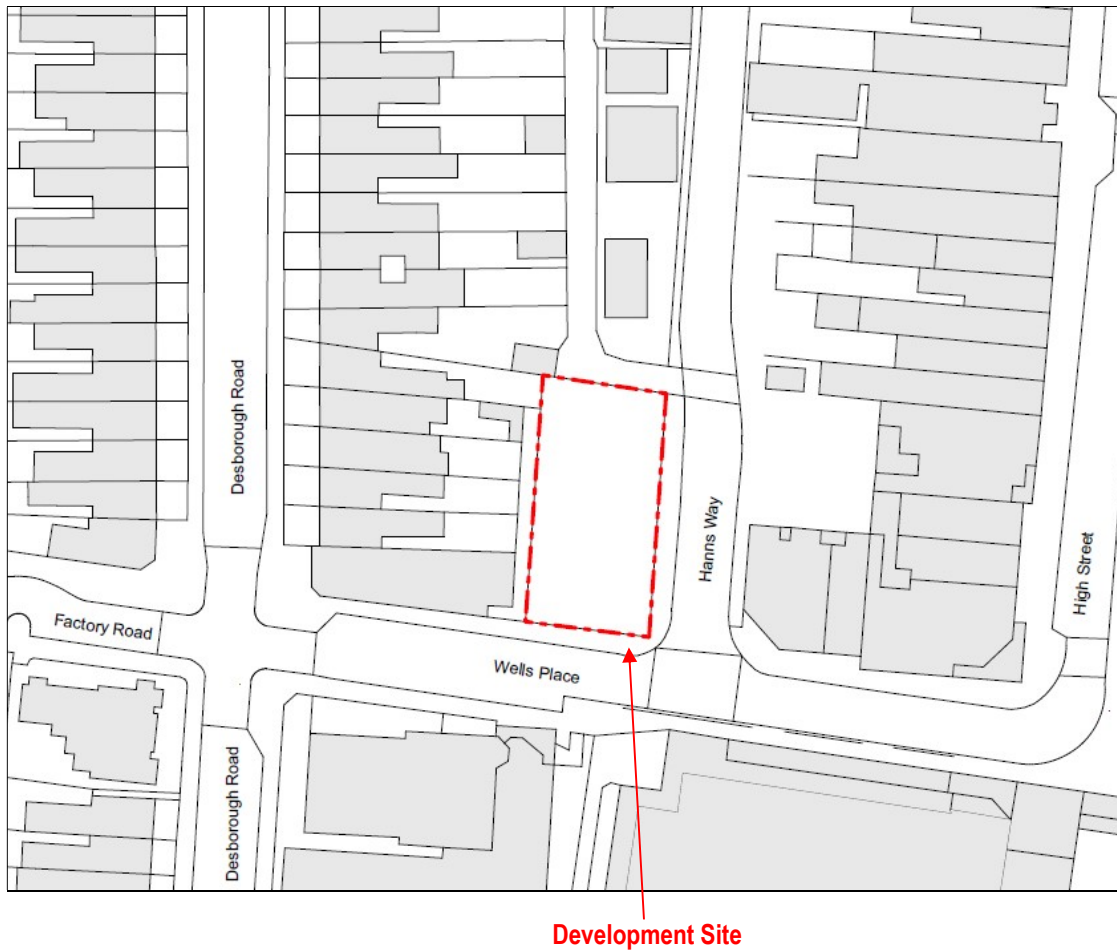
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Appendix 1 Site Location Plan

Appendix 1: Site Location Plan



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Appendix 2 Hedonic Tones

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Appendix 2: Hedonic Tones

Table I. Hedonics of descriptors.

Descriptors	Hedonic tones	Descriptors	Hedonic tones
Fruity, citrus	2.72	Soapy	0.96
Lemon	2.50	Leather	1.30
Grapefruit	1.95	Cardboard	-0.54
Orange	2.86	Rope	-0.16
Fruity, other than citrus	2.23	Wet paper	-0.94
Pineapple	2.59	Wet wool, wet dog	-2.28
Grape juice	2.07	Dirty linen	-2.55
Strawberry	2.93	Stale	-2.04
Apple	2.61	Musty, earthy, moldy	-1.94
Pear	2.26	Raw potato	0.26
Melon	2.41	Mouse-like	-2.20
Peach	2.67	Mushroom	0.52
Banana	2.00	Peanut butter	1.99
Floral	2.79	Beany	0.54
Rose	3.08	Eggy (fresh eggs)	0.45
Violets	2.68	Bark, birch bark	1.18
Lavender	2.25	Cork	0.19
Cologne	2.16	Burnt, smoky	-1.53
Musky	0.21	Fresh tobacco smoke	-0.66
Perfumery	1.96	Incense	1.01
Fragrant	2.52	Coffee	2.33
Aromatic	1.41	Stale tobacco smoke	-2.83
Honey	2.08	Burnt paper	-1.47
Cherry	2.55	Burnt milk	-2.19
Almond	2.01	Burnt rubber	-3.01
Nail polish remover	-0.81	Tar	-1.63
Nutty	1.92	Creosote	-1.35
Spicy	1.99	Disinfectant, carbolic	-1.60
Clove	1.67	Medicinal	-0.89
Cinnamon	2.54	Chemical	-1.64
Laurel leaves	0.97	Bitter	-1.38
Tea leaves	1.40	Sharp, pungent, acid	-2.34
Seasoning (for meat)	1.27	Sour, vinegar	-1.26
Black pepper	0.19	Sauerkraut	-0.60
Green pepper	1.39	Ammonia	-2.47
Dill	0.87	Urine	-3.34
Caraway	1.06	Cat urine	-3.64
Oak wood, cognac	1.23	Fishy	-1.98
Woody, resinous	0.94	Kipper (smoked fish)	-0.69
Cedarwood	2.11	Seminal, sperm-like	-1.04
Mothballs	-1.25	New rubber	-0.96
Minty, peppermint	2.50	Sooty	-1.69
Camphor	-0.55	Burnt candle	-0.08
Eucalyptus	0.99	Kerosene	-1.67
Chocolate	2.78	Oily, fatty	-1.41
Vanilla	2.57	Buttery, fresh butter	2.04
Sweet	2.03	Paint	-0.75
Maple syrup	2.26	Varnish	-0.85
Caramel	2.32	Popcorn	2.47
Malty	1.05	Fried chicken	2.53
Raisins	1.56	Meaty (cooked, good)	2.34
Molasses	1.00	Soupy	1.13
Coconut	1.93	Cooked vegetables	1.58
Anise (licorice)	1.21	Rancid	-3.15
Alcoholic	-0.47	Sweaty	-2.53
Etherish, anesthetic	-1.54	Cheesy	1.02
Cleaning fluid	-1.69	Household gas	-2.30
Gasoline, solvent	-1.16	Sulfidic	-2.45
Turpentine (pine oil)	-0.73	Garlic, onion	-0.17
Geranium leaves	0.57	Metallic	-0.94
Celery	1.36	Blood, raw meat	-1.64
Fresh green vegetables	2.19	Animal	-1.13
Crushed weeds	-0.21	Sewer odor	-3.68
Crushed grass	1.34	Putrid, foul, decayed	-3.74
Herbal, green, cut grass	2.14	Fecal (like manure)	-3.36
Raw cucumber	1.30	Cadaverous (dead animal)	-3.75
Hay	1.31	Sickening	-3.34
Grainy (as grain)	0.63	Dry, powdery	-0.07
Yeasty	-0.07	Chalky	-0.85
Bakery (fresh bread)	3.53	Light	0.91
Sour milk	-2.91	Heavy	-0.79
Fermented (rotten) fruit	-2.76	Cool, cooling	1.53
Beery	-0.14	Warm	0.78