Air Quality Planning Technical Guidance

Swale Borough Council

December 2016

Summary

This Technical Guidance for Swale Borough Council has been prepared in conjunction with the Kent and Medway Air Quality Air Quality Partnership has been developed in response to the changes in national planning policy, through the National Planning Policy Framework (NPPF). This guidance will be reviewed and updated in light of any specific future national and local policy changes.

The guidance is available to download from the Council's website. In addition a template document on which this has been based on is available on the Kent and Medway Air Quality Partnership website www.kentair.org.uk.

This guidance has been developed to improve air quality across Kent and Medway and encourage emissions reductions to improve the environment and health of the population. In addition it aims to provide consistency as far as is practicable across the Kent and Medway area in the approach to air quality in the planning regime. In producing this guidance the Council also aims to provide developers with clear information as to what it will require and consistency in how it will approach planning applications in terms of air quality, which should help to speed up the planning process.

The guidance deals primarily with the air quality impacts from traffic emissions, although the increasing use of biomass boilers is now becoming an important local planning issue. The assessment and control of dust impacts during demolition and construction is also considered, as dusts contribute to airborne particulate matter. Greenhouse gas emissions are not addressed explicitly, as they are covered by other initiatives, but synergies exist between measures to minimise climate change and local air quality impacts.

It is recognised that development will in the main inherently increase road transport emissions, both during the construction and operational phases. However, it is also recognised that sustainable development can be a positive force for change. The approach in this guidance seeks to minimise road transport emissions wherever practicable to sustainable levels, by securing reasonable emission mitigation while also seeking to counter the cumulative impacts arising from all developments.

A key theme of the National Planning Policy Framework (NPPF) is that developments should enable future occupiers to make green vehicle choices and it explicitly states that low emission vehicle infrastructure, including electric vehicle re-charging, should be provided. This guidance seeks to develop consistent EV re-charging standards for new developments across Kent.

The air quality assessment process follows a staged process:

1. Using the 'Screening checklist' to determine whether the proposal qualifies as a 'major development'

2. Determining whether the development requires an air quality assessment or emissions assessment using the 'Air Quality and emission mitigation assessment checklist';

3. Determining whether an air quality assessment is required to assess the impact on public health and/or the local environment as well as the significance of a development on local air quality;

4. Determining whether an application should be refused on air quality grounds or what mitigation measures are required to make the development acceptable on air quality grounds;

The assessment process is summarised in the flow chart on page 3.

Acknowledgements:

The guidance has been developed by using guidance documents produced by the Forest of Dean District Council, Sussex Air Quality Partnership and West Yorkshire Low Emissions Strategy Group with their permission.

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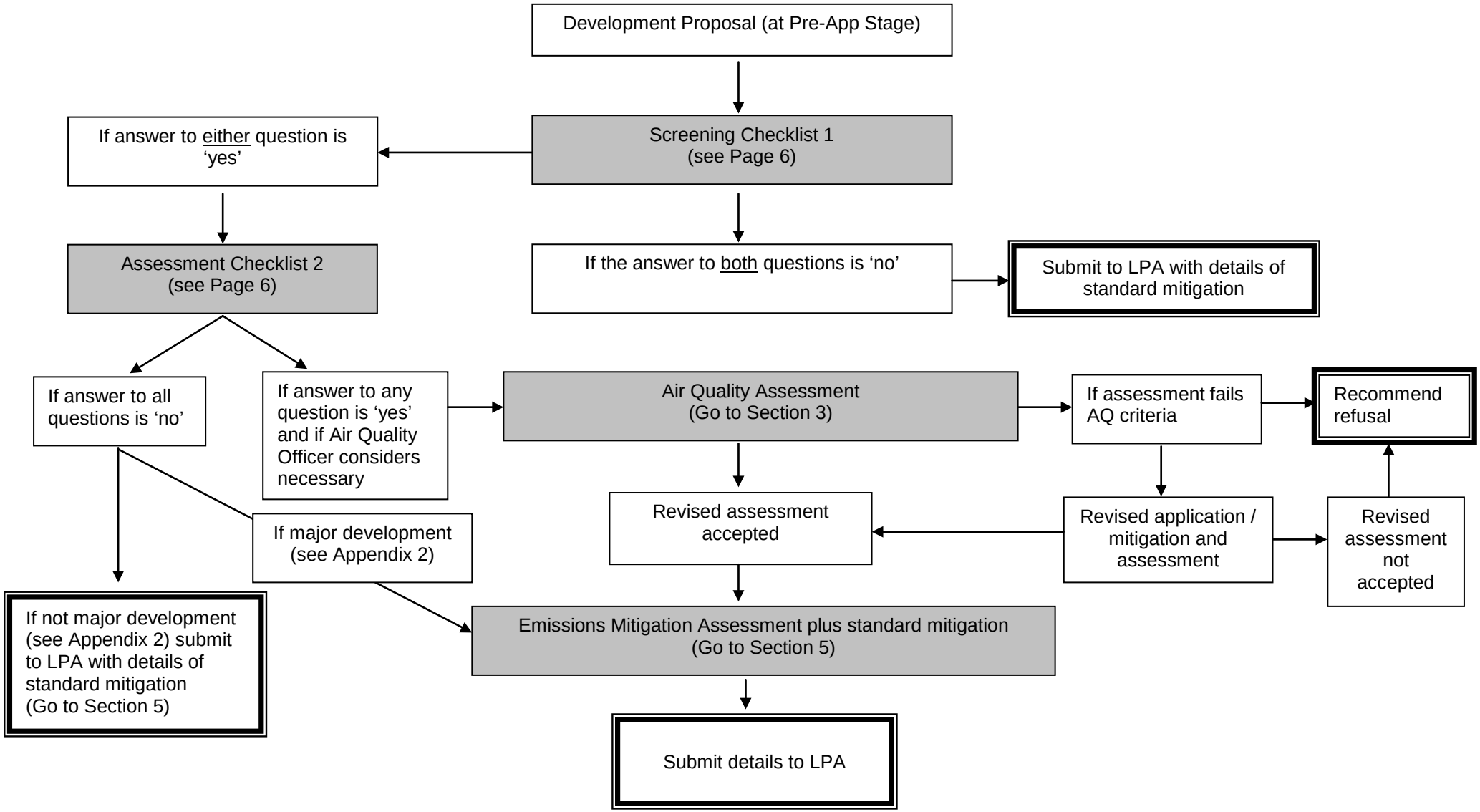
Quick Reference Guide: Air Quality Assessment Process



1 Introduction

Clean air is essential for life. The quality of the air impacts on human health, the natural environment and can damage buildings and materials. The aim of this guidance is to provide advice for developers and their consultants on addressing local air quality when making a planning application in Swale Borough Council.

Swale Borough Council continues to review and assess the air quality across the Borough to identify if there are any breaches of the National Objectives. To date this has resulted in the declaration of 5 Air Quality Management Areas (Appendix 1). These have been declared based on excessive Nitrogen Dioxide (NO_2) levels.

Air quality is a material planning consideration when a development is considered. The Local Planning Authority (LPA) will require an air quality assessment where certain criteria are met.

This guidance has been developed to: -

- Introduce a method for assessing the air quality impacts of a development which includes the quantification of impacts, calculation of damage costs and the identification of mitigation measures to be implemented to negate the impact of development on air quality.
- Tackle cumulative impacts.
- Provide clarity and consistency of the process for developers, the local planning authority (LPA) and local communities.

1.1 Planning Policy Framework

1.1.1 National Policy

National planning policy is now set by the National Planning Policy Framework (NPPF). The NPPF places a general presumption in favour of sustainable development, stressing the importance of local development plans. One of its 12 Core Planning Principles states that planning should:

"contribute to conserving and enhancing the natural environment and reducing pollution", by: (paragraph 109) "preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability".

It goes on to state (paragraphs 120 and 124) that:

"To prevent unacceptable risks from pollution and land instability, planning policies and decisions should ensure that new development is appropriate for its location. The effects (including cumulative effects) of pollution on health, the natural environment or general amenity and the potential sensitivity of the area or proposed development to adverse effects from pollution, should be taken into account. Planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with local air quality action plans".

1.1.2 Local Planning Policy

Local plans are at the heart of the planning system and the Planning and Compensation Act 2004, as amended by the Localism Act 2011, requires their preparation by local planning authorities. As well as the National Planning Policy Framework (NPPF), guidance for the preparation of Local Plans (formerly known as Local Development Frameworks) is to be found in Planning Practice Guidance prepared by Communities and Local Government and accessible through http://planningguidance.planningportal.gov.uk/. Local plan policies may be further elaborated by Documents which provide further detail on specific topics, and increasingly through Neighbourhood Plans introduced by the Localism Act.

1.2 Local Air Quality Management

The Environment Act 1995 established the Local Air Quality Management (LAQM) regime. LAQM requires Local Authorities to review and assess ambient air quality in their areas against health-based standards for a number of specific pollutants prescribed in the Air Quality Regulations 2000 and Air Quality (Amendment) Regulations 2002. If there is a risk that levels of air pollution in any part of the authority's area will be higher than the prescribed objectives, the authority is required to designate an Air Quality Management Area (AQMA). It is then required to produce an Air Quality Action Plan, which sets out the measures it intends to take in pursuit of the objectives.

It is not necessarily the case that a proposed development in an area of poor air quality will have a negative impact. However, it is important to recognise when such development might introduce additional people into an area of poor air quality.

The declaration of an AQMA does not mean that there will be no new development within that area. Rather, it means that greater weight must be given to the consideration of air quality impacts and their mitigation.

In addition, the boundary of an AQMA does not necessarily define the limit of the area of poor air quality. The only constraint on the boundary definition is that it should be at least as large as the area of exceedance, where there is relevant exposure.

The fact that a development is within or close to an AQMA does not mean that it is necessarily affecting an area of exceedance of an Objective, or that it is being affected by air pollution that exceeds the objective. On the other hand, a development could introduce new exposure into an area of poor air quality, which has not been identified and declared as an AQMA, as previously there was no relevant exposure. The presence or potential creation of an AQMA should therefore not prevent development but will mean that development which mitigates its affect on air quality will be expected.

2 What information is required and why

2.1 Pre-application stage

In order to avoid unnecessary delays in the planning process and ensure optimum scheme design and sustainability, it is vital for communication at an early stage. Pre-application discussions with the LPA should flag up if a development is planned in an AQMA or is a major development as stated in Checklist 1.

2.2 Checklist 1: Screening checklist

Screening checklist	Yes	No	Recommendations
Q1. Is the proposed development categorised as a major size development?*			**If Yes, go to Checklist 2** **If No, go to Q2.**
Q2. Is the proposed development within, or close to an Air Quality Management Area (AQMA)**			**If Yes, go to Checklist 2** **If No, Go to Section 5 standard mitigation for all developments**

Note: * Major sized category defined by Department for Transport indicative thresholds for transport assessments (see Appendix 2)
** AQMA locations can be found in Appendix 1

The purpose of Checklist 1 is to screen out developments which are not likely to have a significant effect on local air quality and, therefore, do not require further assessments.

The assessment is quick, simple and can be carried out by a developer, their agent or the LPA. If you need any help in completing the checklists, then please contact the Local Authority Air Quality Officer.

2.3 Checklist 2: Air quality and emissions mitigation assessment checklist

Question (answer all questions)	Yes	No	Recommendations
Q3. Does the development require an Environmental Impact Assessment (EIA)?			**If any question is answered = YES, Go to Section 5 standard mitigation for all developments and contact the Air Quality Officer to confirm whether an air quality (AQ) assessment and / or emission mitigation assessment is also required.** **OR** **If all questions are answered = NO, and the development is a major development then Go to Section 5 standard mitigation for all developments and undertake an emissions mitigation assessment.**
Q4. Will development type likely become large scale major development*? (either on its' own or as part of several separate cumulative planned developments.)			
Q5. Is there vehicle parking in the development: >100 (outside AQMA) or >50 (within or adjacent to AQMA)?			
Q6. For existing roads with >10,000 Annual Average Daily Traffic (AADT) does the development: Introduce extra vehicle movements (>5%), is it likely to cause congestion or introduce > 15 extra heavy duty vehicle movements per day?			
Q7. Will the development introduce new sensitive receptors into an AQMA?			
Q8. Are there any other proposed developments in the vicinity of this development which could have a cumulative effect on air quality?			
Q9. Is the development introducing biomass energy/heating plant into an urban environment?			

Q10. Is the development likely to impact on sensitive environments (i.e. SSSI's, National Parks etc.)			**OR** **If all questions are answered = NO, and the development is not a major development OR the Air Quality Officer determines there is no need for an AQ and/or emissions mitigation assessment = Go to Section 5 standard mitigation for all developments.**

*Large scale major development is one where the number of residential units to be constructed is 200 or more or 1,000 square metres of industrial, commercial or retail floor space. Where the number of residential units or floor space to be constructed is not given in the application a site area of 4 hectares or more should be used as the definition.

The purpose of Checklist 2 is to determine whether a development requires an air quality assessment and/or an emissions mitigation assessment.

The checklist should be carried out in consultation with the Local Authority Air Quality Officer.

Whether or not an assessment is required all development within an AQMA must provide details of standard mitigation to be submitted.

2.4 Air Quality Assessment

The purpose of an air quality assessment is to determine whether the predicted impacts from a development on local air quality will impact on public health and/or the local environment. This section also assesses the significance of the impact of a development on local air quality.

The assessment should be carried out by a developer's air quality consultant.

Guidance on how to carry out an air quality assessment is given in Section 3, with supporting information provided in Appendix 3.

2.5 Planning Requirements and Outcomes

The planning requirements and outcomes section provides information on whether a development should be refused on air quality grounds or if granted planning permission, what measures are required from a developer to make the development acceptable on air quality grounds.
Planning requirements in relation to the effect of a development on air quality are provided in Section 4.

Note: this section does not set out the specific mitigation requirements; these are provided in Section 5: Emissions mitigation assessment.

2.6 Emissions Mitigation Assessment

All major developments will require an emissions mitigation assessment. The purpose of an emissions mitigation assessment is to determine the appropriate level of mitigation required from a development, by assessing the emission from that development.

The assessment should be carried out by a developer's air quality consultant.

Guidance on how to carry out an emission mitigation assessment is given in Section 5, with supporting information provided in the Appendices.

3 Air quality assessment

Before proceeding with the assessment, please contact the Air Quality Officer to confirm that an assessment is needed. After confirmation and completion of the assessment, proceed to section 5 to produce the emission mitigation assessment.

The purpose of an air quality assessment is to determine whether the predicted impact of a development on local air quality would adversely affect public health and/or the local environment, both to help determine a planning application and to determine the appropriate level of mitigation from a development. The assessment should be carried out by a developer's air quality consultant.

Applicants should always seek the latest information available on local air quality from the Air Quality Officer.

3.1 Air quality assessment process

This section provides the technical elements and methodology for undertaking air quality assessments for developments. This includes:

- Guidance on air quality assessments
- Significance criteria for determining a developments' impact on air quality
- Recommendations for planning decisions.

3.2 Air quality assessment

An air quality assessment should clearly establish the likely change in pollutant concentrations at relevant receptors resulting from the proposed development during both the construction and operational phases. It must take into account the cumulative air quality impacts of committed developments (i.e. those with planning permission). The Council has used similar assessment methods to fulfil the requirements of their detailed Review and Assessment that led to the AQMA designations. For consistency, air quality assessments for developments should, where possible, follow similar methodologies.

- The Council will work with developers by providing guidance on the suitability of such measures which should be incorporated at the early design stage of any proposal.
- Guidance on the methodologies to be used for air quality assessments is also available in the Department for Environment, Food and Rural Affairs (DEFRA) Technical Guidance LAQM TG(09).

Note: Further detail of the air quality assessment requirements can be found in Appendix 3.

3.3 Developments that require an Environmental Impact Assessment (EIA)

The EIA procedure ensures that the likely effects of a new development on the environment are fully understood. The EIA is likely to include a detailed study of the effects of any development upon local air quality as highlighted below.

- Developments that require an EIA include major developments which are of more than local importance; developments which are proposed for particularly environmentally sensitive or vulnerable locations and developments with unusually complex and potentially hazardous environmental effects.
- Most proposals for commercial or industrial installations that have the potential to emit pollution (e.g. Part A1, A2 and B installations) are likely to require an air quality assessment under the EIA regulations but more detailed "screening" may be required before this can be finally determined.

There are likely to be many other situations where developments that do not require a full EIA will nevertheless warrant an air quality assessment as part of the planning application.

- It is advised that developers, as good practice, should check with the LPA to determine whether an air quality assessment is required before submitting a planning application.

Key point:

Planning applications for major developments may require an EIA, which may need to include a more detailed assessment of the likely air quality effects. The Environmental Impact Assessment Directive provides the policy requirement for EIAs.

3.4 Determining the impact of a development on air quality

The key concern with regard to the air quality impacts of a development is the likely effect on human health. It is important that an air quality assessment evaluates modelled air quality in terms of changes in pollution concentrations where there is relevant public exposure.

- The Air Quality Regulations are concerned with areas that exceed air quality objectives and the revised Air Quality Strategy (2007) considers overall exposure reduction.
- This guidance considers that any development that leads to additional air pollution problems, even if it is outside an AQMA, could be significant.
- The local authority will have to make a balanced judgment on the likely impact of each development, based on the results of the air quality assessment and their professional experience. The local authority may also need to consider the impact of the development on air quality in neighbouring authorities.

3.5 Areas where air quality is a concern

There are key areas where the magnitude of change as well as the concentration of pollutants in air caused by proposed development is a concern.
In some cases, any additional contribution of emissions may worsen air quality and cause the creation of a new AQMA and, therefore, a small change in pollutant concentration can be as much a cause for concern as a large one. The areas of concern to consider are:

- AQMAs
- Areas near to or adjacent to AQMAs and candidate AQMAs
- Developments that require an EIA

The process for determining the impacts of a development on air quality is detailed below.

3.6 Assessment of the air quality impacts of a development.

1. The air quality assessment provides modelled predicted concentrations for scenarios (for the year of application and an agreed year of opening): without development (baseline), with development, with development including mitigation measures.

2. A comparison of the scenarios will be presented in the report. Compare scenario “without development (baseline)” with scenario “with development including mitigation measures”.

3. The difference in the compared scenarios is used to determine the classification of the change in air quality concentration.

4. The scale of air quality impact due to changes of concentration or if the additional concentration causes local exposure to approach or breach air quality objectives, determines the planning recommendations.

5. Planning recommendations are then provided.

3.7 Scaling of impacts on air quality from a development

An air quality assessment of a development should include modelling results as part of an air quality assessment for a proposal. These shall include modelled output scenarios “with” and “with-out” mitigation proposals as part of the application, to demonstrate predicted health exposure.

- Once the modelled outputs are agreed by the Air Quality Officer, then the scale or “magnitude” of change in pollutant concentration can be used to determine the significance of the air quality impact from a development.

- The increase in pollutant concentration is compared to National Air Quality Objective (AQO) levels and pollutant increases are expressed as percentages according to Table 1.

- The level of the change or magnitude provides the scale for recommendations for a planning decision (see Table 2, below).

The following table sets the classification of impact to determine their significance.

Table 1 Classification of impacts due to changes in pollutant concentration.

Classification of impact	Concentration change due to development:	Or if development contribution causes:
Very High	Increase > 10%	Worsening of air quality within an existing AQMA Creation of a new AQMA Introduction of new receptors within an existing AQMA
High	Increase > 5 – 10%	Levels to be within 5% AQO
Medium	Increase >1 <5 %	Levels to be within 10% AQO
Low/Imperceptible	Increase < 1%	-

Note: Concentrations are relative to national air quality objective levels (AQO).

4 Planning requirements

If the air quality assessment determines specific changes in air quality due to a single development or from the cumulative effect of several developments; the following determinations will be made by the LPA (see Table 2).

- An overriding consideration will be to ensure that the air quality in existing AQMAs does not worsen by the introduction of a development and/or that there is no additional air pollution burden from a development(s) which could create new AQMAs.

- Each decision must be a balance of all material considerations depending upon the individual merits and circumstances. The weight to be given to the impact on air quality in the consideration of a planning application and the acceptability of proposed mitigation measures lies with the relevant local planning authority. Any agreed measures will be taken forward by condition where possible, or through the use of Section 106 agreements.

- Refusal of a planning application may still result if air quality impacts from a development remain; even after all reasonable means to mitigate the impacts on air quality have been exhausted.

Table 2 Planning requirements and outcomes.

Magnitude of change in air quality	Likely requirements	Likely outcomes
Very High	Require evidence to show that mitigation will cancel out air quality impacts. If impact of development on air quality still very high = strong presumption for recommendation for refusal on air quality grounds.	Recommend refusal
High	Seek mitigation to significantly reduce air quality impacts. Mitigation to include reducing exposure through various measures, emissions reduction technologies and/or development redesign.	Recommend refusal unless significant mitigation measures are implemented.
Medium	Seek mitigation to reduce air quality impacts. Mitigation to include reducing exposure through various measures, emissions reduction technologies and/or development redesign.	Ensure mitigation is implemented.
Low/Imperceptible	Recommend the minimum mitigation for development scheme type.	Ensure minimum mitigation is implemented.

5 Emissions mitigation assessment

5.1 Standard mitigation for all developments

Residential:
All gas-fired boilers to meet a minimum standard of <40mgNOx/kWh
1 Electric Vehicle charging point* per dwelling with dedicated parking or 1 charging point per 10 spaces (unallocated parking)

Commercial/Retail/Industrial:
10% of parking spaces to be provided with Electric Vehicle charge points* which may be phased with 5% initial provision and the remainder at an agreed trigger level

Demolition/Construction:
Mitigation in accordance with the Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction

Notes:
* this shall be the best technology available at the time of planning approval

5.2 Emissions mitigation assessment

The purpose of an emissions mitigation assessment is to assess the local emissions from a development and to determine the appropriate level of mitigation required to help reduce the potential effect on health and/or the local environment. In addition the developer will be required to minimise dust emissions during the construction phase in accordance with the IAQM Guidance on the Assessment of Dust from Demolition and Construction.

Where mitigation is not integrated into a scheme, the LPA will require this through a planning condition(s). If on-site mitigation is not possible then the LPA may seek contribution to wider air quality mitigation measures through a section 106 agreement.

Each emissions mitigation assessment should include a brief emissions mitigation statement.

Emissions mitigation statement

The statement must include:

- Development traffic input data for emissions mitigation calculation
- Emissions calculation and totals
- Mitigation proposed to be equivalent to the value of emissions calculation (appropriate to the type and size of development and local policy requirements)
- Statement of provision required to minimise dust emissions in accordance with the IAQM Guidance on the Assessment of Dust from Demolition and Construction.

5.3 Mitigation for minor developments:

If the development is within or close to an AQMA and is considered minor development then it will be at the discretion of the Air Quality Officer to suggest reasonable mitigation options for these types of development.

5.4 Mitigation for all other developments:

The emissions mitigation calculator provides a formula to calculate the emissions resulting from a development and produces an exposure cost value to be spent on mitigation measures.

The assessment should be carried out by a developer's air quality consultant. Please contact the Air Quality Officer for assistance.

5.5 Emissions mitigation calculation

An emissions mitigation calculation inputs the additional number of trips generated by the development into the latest DEFRA Emissions Factor Toolkit (EFT)[1] which calculates the amount of transport related pollutant emissions a development is likely to produce. If the proposal is to include alternative fuels or technology i.e. LPG, EV etc, then there are "advanced options" within the EFT to accommodate this. The output is given in kg of specified pollutant per year and requires converting to tonnes per year. The output is then multiplied by the Interdepartmental Group on Costs and Benefits (IGCB) damage costs[2] for the key pollutants nitrogen oxides (NOx) and particulates (PM10). Finally the emissions total is then multiplied by 5 to provide a 5 year exposure cost value which is the amount (value) of mitigation that is expected to be spent on measures to mitigate those impacts. This value is used for costing the required emissions mitigation for the development.

The emissions mitigation is summarised below: -

Emissions Mitigation Calculation

EFT output x Damage costs x 5 years = 5 year exposure cost value

[1] http://laqm.defra.gov.uk/review-and-assessment/tools/emissions.html
[2] http://www.gov.uk/guidance/air-quality-economic-analysis

5.6 Example emissions mitigation calculation

The following example demonstrates the calculation based on a development with 10 domestic properties within an AQMA using version 6.0.2 of the EFT.

EFT input factors:

10 Household (urban not London) (2015) (NOx and PM10)

27 (trip/traffic ratio for 10 houses)

cars only (0% HGV)

50 kph (average speed)

10km (NTS UK average.)

EFT output = 34.74 kg/annum (NOx) and 3.39 kg/annum (PM10)

= 0.03474 tonnes/annum (NOx) and 0.00339 tonnes/annum (PM10)

x Damage cost £21,044/tonne (NOx) and £58,125/tonne (PM10)

=£731.07 + £197.04

x 5 (years)

= £3655.34 + £985.21

Total = £4,640

Notes:
- Trip rates can be sourced from transport assessment or local authority/transport authority.
- Trip length uses the 2014 National Travel Survey (NTS)[3] UK average = 7.3miles/10km
- The IGCB damage costs used are the IGCB Air Quality Damage Costs per tonne, 2015 prices (Central estimate: NOx = £21,044/tonne and PM10 £58,125/tonne Transport Average).

[3] https://www.gov.uk/government/collections/national-travel-survey-statistics

5.7 Requirements for mitigation measures

The mitigation options selected for a development should be relevant and appropriate to:

- Any local policies including Air Quality Action Plans, which may determine the mitigation priorities that the local authority may wish to be incorporated within a particular scheme.

- Any local air quality concerns; to assist in the mitigation of potential cumulative air pollution impacts of the development on the local community.

- The type, size and activity of the development.

Scheme mitigation should be provided within the design of the development where possible. Table 3 lists the mitigation measures to be considered.

Table 3 Mitigation measures

Standard mitigation plus: -

Residential
• Travel plan (where required) including mechanisms for discouraging high emission vehicle use and encouraging the uptake of low emission fuels and technologies
• A Welcome Pack available to all new residents online and as a booklet, containing information and incentives to encourage the use of sustainable transport modes from new occupiers
• Eco-driver training and provision of eco-driver aid to all residents
• EV recharging infrastructure within the development (wall mounted or free standing in-garage or off-street points)
• Car club provision within development or support given to local car club/eV car clubs
• Designation of parking spaces for low emission vehicles
• Improved cycle paths to link cycle network
• Adequate provision of secure cycle storage
• Using green infrastructure, in particular trees* to absorb dust and other pollutants

Commercial/Industrial
• As above plus: -
• Differential parking charges depending on vehicle emissions
• Public transport subsidy for employees
• All commercial vehicles should comply with either current or previous European Emission Standard
• Fleet operations should provide a strategy for considering reduced emissions, low emission fuels and technologies
• Use of ultra low emission service vehicles
• Support local walking and cycling initiatives
• On-street EV recharging
• Contributing funding to measures, including those identified in air quality action plans and low emission strategies, designed to offset the impact on air quality arising from new development

Additional mitigation
• Contribution to low emission vehicle refuelling infrastructure
• Low emission bus service provision or waste collection services
• Bike/e-bike hire schemes
• Contribution to renewable fuel and energy generation projects
• Incentives for the take-up of low emission technologies and fuels

*For guidance on selecting the best air quality species please refer to the Urban Air Quality 2012 Woodland Trust document

The above lists are not exhaustive and further options may be suggested where the Council feels it is appropriate, depending on the scale of development and air quality issues within an area. The developer may also suggest alternative mitigation options not listed above provided that they clearly show the air quality benefits.

References

The Air Quality Standards Regulations 2010
http://www.legislation.gov.uk/uksi/2010/1001/contents/made

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69336/pb12654-air-quality-strategy-vol1-070712.pdf

Guidance on the assessment of dust from demolition and construction – IAQM (2014)
http://www.iaqm.co.uk/text/guidance/construction-dust-2014.pdf

DEFRA Emissions Factor Toolkit
http://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html

DEFRA Impact pathway guidance for valuing changes in air quality (2013)
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/197900/pb13913-impact-pathway-guidance.pdf

DEFRA Interdepartmental Group on Costs and Benefits
https://www.gov.uk/air-quality-economic-analysis

DEFRA Technical Guidance Note LAQM TG (09)
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69334/pb13081-tech-guidance-laqm-tg-09-090218.pdf

Environmental Impact Assessment Directive
http://ec.europa.eu/environment/eia/eia-legalcontext.htm

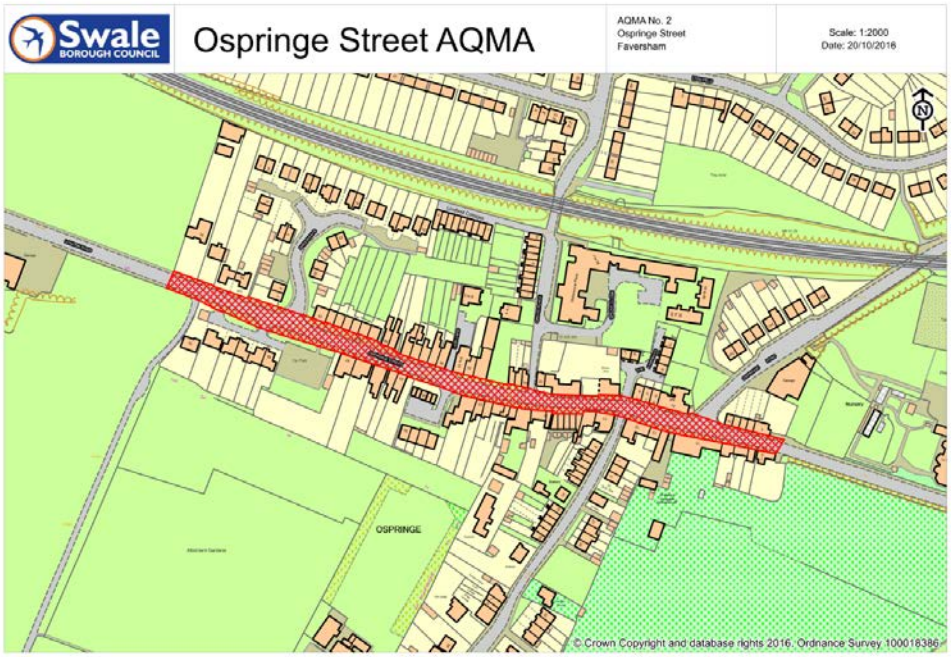
European Union Limit Values
http://ec.europa.eu/environment/air/quality/standards.htm

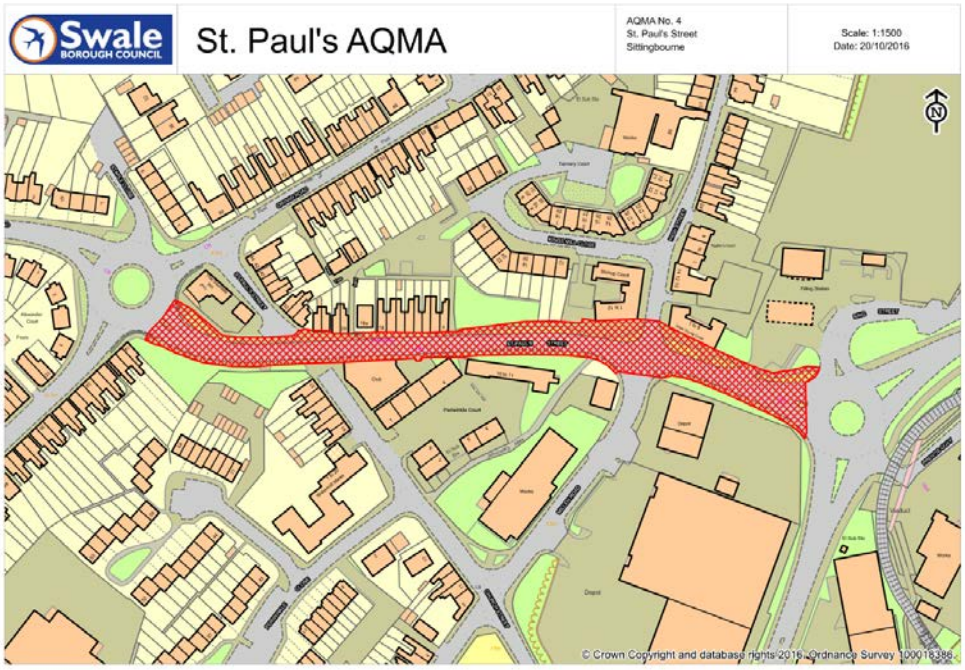
Electric Vehicle (EV) Network
http://www.ev-network.org.uk/

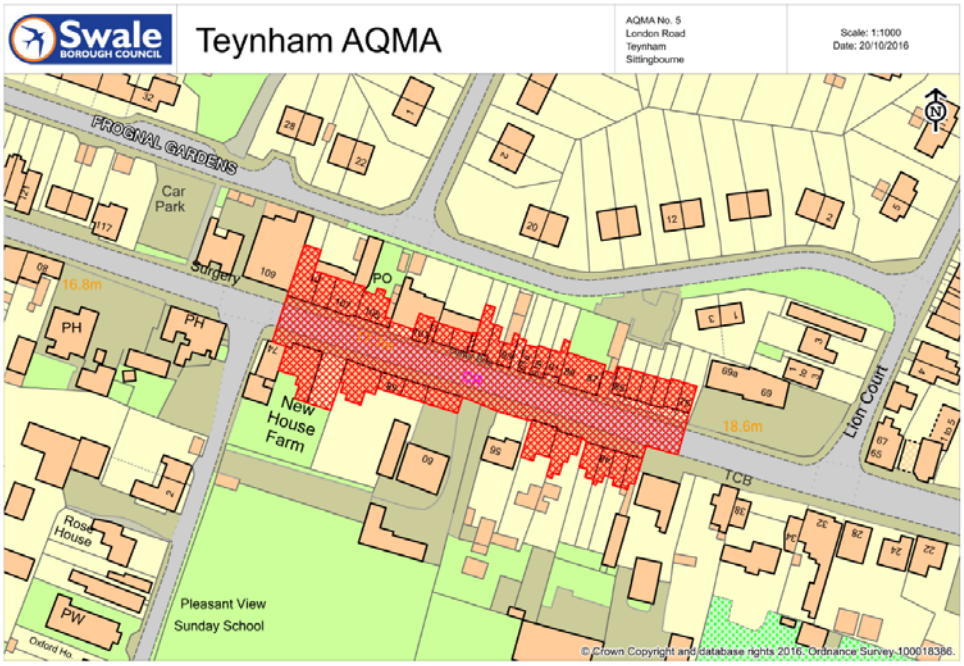
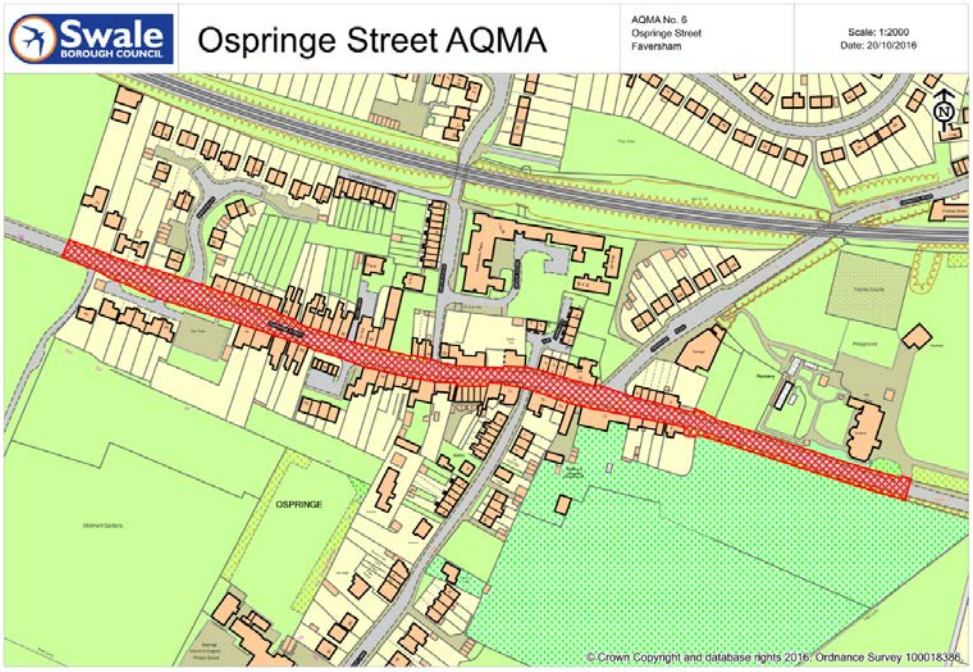
National Planning Policy Framework (NPPF) March 2012
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

Town and Country Planning (Development Management Procedure) (England) Order 2010
http://www.legislation.gov.uk/uksi/2010/2184/pdfs/uksi_20102184_en.pdf

Appendix 1 – Air Quality Management Areas in Swale Borough Council area

AQMA 1 Newington	https://uk-air.defra.gov.uk/aqma/details?aqma_id=127
AQMA 2 Ospringe St, Faversham, Kent	https://uk-air.defra.gov.uk/aqma/details?aqma_id=1 

AQMA 3 East Street, Sittingbourne	https://uk-air.defra.gov.uk/aqma/details?aqma_id=934
AQMA 4 St Pauls	https://uk-air.defra.gov.uk/aqma/details?aqma_id=935 

AQMA 5 Teynham	AQMA not area not yet available on LAQM website. 
AQMA 6 (extension of AQMA 2) Ospringe St, Faversham, Kent	

Appendix 2 - Criteria for Development Classification

The major sized category is determined using criteria from the Department for Transport indicative thresholds for transport assessments[4].

Table 1: Criteria for Development Classification

Land Use	Description	Further Assessment Required
Food Retail (A1)	Retail sale of food goods to the public - supermarkets, superstore, convenience food store	>800m2
Non-Food Retail (A1)	Retail sale of non-food goods to the public; but includes sandwich bars or other cold food purchased and consumed off site	>1500m2
Financial and professional services (A2)	Banks, building societies and bureaux do change, professional services, estate agents, employment agencies, betting shops	>2500m2
Restaurants and Cafes (A3)	Use for the sale of food consumption on the premises	>2500m2
Drinking Establishments (A4)	Use as a public house, wine-bar for consumption on or off the premises	>600m2
Hot Food Takeaway (A5)	Use for the sale of hot food for consumption on or off the premises	>500m2
Business (B1)	(a) Offices other than in use within Class A2 (financial & professional) (b) Research & Development - laboratories, studios (c) Light industry	>2500m2
General Industrial (B2)	General industry (other than B1)	>4000m2
Storage and Distribution (B8)	Storage and distribution centres - wholesale warehouses, distribution centres and repositories	>5000m2
Hotels (C1)	Hotels, boarding houses and guest houses	>100 bedrooms
Residential Institutions (C2)	Hospitals, nursing homes used for residential accommodation and care	>50 beds
Residential Institutions (C2)	Boarding schools and training centres	>150 students
Residential Institutions (C2)	Institutional hostels, homeless centres	>400 residents
Dwelling houses (C3)	Dwellings for individuals, families or not more than six people in a single household	>50 units
Non-Residential Institutions (D1)	Medical & health services, museums, public libraries, art galleries, non-residential education, places of worship and church halls	>1000m2
Assembly and Leisure (D2)	Cinemas, dance and concert halls, sports halls, swimming, skating, gym, bingo, and other facilities not involving motorised vehicles or firearms.	>1500m2

4 http://webarchive.nationalarchives.gov.uk/+/http:/www.dft.gov.uk/adobepdf/165237/202657/guidanceontaappendixb

Other
1. Any development generating 30 or more two-way vehicle movements in any hour
2. Any development generating 100 or more two-way vehicle movements per day
3. Any development proposing 100 or more parking spaces
4. Any relevant development proposed in a location where the local transport infrastructure is inadequate
5. Any relevant development proposed in a location adjacent to an Air Quality Management Area (AQMA)

Appendix 3 - Air Quality Assessment Protocol to Determine the Impact of Vehicle Emissions from Development Proposals

An air quality assessment should clearly establish the likely change in pollutant concentrations at relevant receptors resulting from the proposed development during both the construction and operational phases. It must take into account the cumulative air quality impacts of committed developments (i.e. those with planning permission).

Key Components of an Air Quality Assessment

The assessment will require dispersion modelling utilising agreed monitoring data, traffic data and meteorological data. The modelling should be undertaken using recognised, verified local scale models by technically competent personnel and in accordance with LAQM TG.09. The study will comprise of:

1. The assessment of the existing air quality in the study area for the baseline year with agreed receptor points and validation of any dispersion model;
2. The prediction of future air quality without the development in place (future baseline or do nothing);
3. The prediction of future road transport emissions and air quality with the development in place (with development or do-something).
4. The prediction of future road transport emissions and air quality with the development (with development or do-something) and with identified mitigation measures in place.

The assessment report should include the following details:

A. A detailed description of the proposed development, including:

- Identify any on-site sources of pollutants;
- Overview of the expected traffic changes;
- The sensitivity of the area in terms of objective concentrations;
- Local receptors likely to be exposed;
- Pollutants to be considered and those scoped out of the process.

B. The relevant planning and other policy context for the assessment.

C. Description of the relevant air quality standards and objectives.

D. The assessment method details including model, input data and assumptions:

For traffic assessment;

- Traffic data used for the assessment;
- Emission data source;
- Meteorological data source and representation of area;
- Baseline pollutant concentration including any monitoring undertaken;
- Background pollutant concentration;
- Choice of base year;
- Basis for NOx:NO_2 calculations;
- A modelling sensitivity test for future emissions with and without reductions;

For point source assessments:

- Type of plant;
- Source of emission data and emission assumptions;
- Stack parameters – height, diameter, emission velocity and exit temperature;
- Meteorological data source and representation of area;
- Baseline pollutant concentrations;

- Background pollutant concentrations;
- Choice of baseline year;
- Basis for deriving NO_2 from NOx.

E. Model verification for all traffic modelling following DEFRA guidance LAQM.TG (09):

F. Identification of sensitive locations:

G. Description of baseline conditions:

H. Description of demolition/construction phase impacts:

I. Summary of the assessment results:

- Impacts during the demolition/construction phase;
- Impacts during the operation phase;
- The estimated emissions change of local air pollutants;
- Identified breach or worsening of exceedances of objectives (geographical extent)
- Whether Air Quality Action Plan is compromised;
- Apparent conflicts with planning policy and how they will be mitigated.

J. Mitigation measures.

Air Quality Monitoring

In some case it will be appropriate to carry out a short period of air quality monitoring as part of the assessment work. This will help where new exposure is proposed in a location with complex road layout and/or topography, which will be difficult to model or where no data is available to verify the model. Monitoring should be undertaken for a minimum of six months using agreed techniques and locations with any adjustments made following Defra Technical Guidance LAQM.TG (09).

Assessing Demolition/Construction Impacts

The demolition and construction phases of development proposals can lead to both nuisance dust and elevated fine particulate (PM_{10} and $PM_{2.5}$) concentrations. Modelling is not appropriate for this type of assessment, as emission rates vary depending on a combination of the construction activity and meteorological conditions, which cannot be reliably predicted. The assessment should focus on the distance and duration over which there is a risk that impacts may occur. The Institute of Air Quality Management (IAQM)[5] has produced a number of definitive guidance documents to which this guidance refers. The document `Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance' should be the reference for reporting the construction assessment.

Cumulative Impacts

The NPPF (paragraph 124) recognises that a number of individual development proposals within close proximity of each other require planning policies and decisions to consider the cumulative impact of them. Difficulties arise when developments are permitted sequentially, with each individually having only a relatively low polluting potential, but which cumulatively result in a significant worsening of air quality. This will occur where:

- A single large site is divided up into a series of units, such as an industrial estate or retails park;
- A major development is broken down into a series of smaller planning applications for administrative ease; and
- There are cumulative air quality impacts from a series of unrelated developments in the same area.

[5] IAQM www.iaqm.co.uk

In the first two cases, the cumulative impact will be addressed by the likelihood that a single developer will bring forward an outline application for the whole site which should include an air quality assessment as part of an Environmental Impact Assessment. For major developments that are broken down into a series of smaller planning applications, the use of a `Master or Parameter Plan' that includes an air quality assessment will address the cumulative impact.

Appendix 4 - Electric Vehicle Charging Point Specification:

This shall be the best technology available at the time of planning approval.

EV ready domestic installations

- Cable and circuitry ratings should be of adequate size to ensure a minimum continuous current demand for the vehicle of 16A and a maximum demand of 32A (which is recommended for Eco developments).
- A separate dedicated circuit protected by an RCBO should be provided from the main distribution board, to a suitably enclosed termination point within a garage, or an accessible enclosed termination point for future connection to an external charge point
- The electrical circuit shall comply with the Electrical requirements of BS7671: 2008 as well as conform to the IET code of practice on Electric Vehicle Charging Equipment installation 2012 ISBN 978-1-84919-515-7 (PDF)
- If installed in a garage all conductive surfaces should be protected by supplementary protective equipotential bonding. For vehicle connecting points installed such that the vehicle can only be charged within the building, e.g. in a garage with a (non-extended) tethered lead, the PME earth may be used. For external installations the risk assessment outlined in the IET code of practice must be adopted, and may require an additional earth stake or mat for the EV charging circuit. This should be installed as part of the EV ready installation to avoid significant on cost later.

EV ready commercial installations

Commercial and industrial installations may have private 11,000/400 V substations where a TN-S supply may be available, simplifying the vehicle charging installation design and risk analysis. It is, therefore, essential for developers to determine a building's earthing arrangements before installation. Commercial vehicles have a range of charge rates and it is appropriate to consider a 3-phase and neutral supply on a dedicated circuit emanating from a distribution board. More than one EV charging station can be derived from a source circuit, but each outlet should be rated for a continuous demand of 63Amps. No diversity should be applied throughout the EV circuitry. 3 phase RCBOs should be installed and the supply terminated in a switched lockable enclosure. If an external application (for example car park or goods yard) is selected, the supply should be terminated in a feeder pillar equipped with a multi-pole isolation switch, typically a 300mA RCD, a sub-distribution board (if more than one outlet is fed from the pillar). If an additional earthing solution is required, the earth stake can be terminated within this pillar. See IET guideline risk assessment[6].

[6] www.theiet.org/resources/standards/ev-charging-cop.cfm