

11. Natural Resources

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Local Plan Aim

To protect and enhance the special and distinctive features of the Borough's environment, to minimise any adverse impacts from development on the Borough's environment and natural resources and to harness the new development opportunities to effect environmental improvements.

Key Objectives

1. To protect surface and ground water from pollution.
2. To ensure that the effectiveness of the floodplain is not prejudiced by development.
3. To ensure that flooding does not pose a risk to life and property.
4. To ensure that additional surface water run-off from new development does not exceed the capacity of watercourses or exacerbate flooding problems elsewhere.
5. To ensure users and occupiers of land do not suffer from significant disturbance by noise.
6. To ensure an acceptable standard of air quality.
7. To promote energy efficiency in development layout and building design.
8. To ensure that any contaminated land that may create a potential risk to health, safety or the environment is treated before development or other use takes place.
9. To restore and return to beneficial use, degraded and contaminated land.

11.1 Introduction

11.1.1 One of the key purposes of the Plan is to safeguard and enhance the Borough's environmental assets. The area has suffered in the past from a legacy of environmental degradation – a place where London generated its power and dumped its rubbish. Heavy industry and quarrying have resulted in a damaged landscape. It is therefore vital to harness the new opportunities for development, to effect an overall improvement to Dartford's environment.

11.2 Policy Context

11.2.1 Relevant Government Guidance includes 'Renewable Energy' (PPG22), 'Planning and Pollution Control' (PPG23) 'Planning and Noise' (PPG24) and 'Development and Flood Risk' (PPG 25).

11.2.2 'Sustainable Development in the UK Strategy' sets the agenda for accommodating development needs. The environment is an asset vital for life and should be passed on to future generation in the best possible condition.

11.2.3 A DETR good practice guide 'Planning for Sustainable Development' deals with planning policy areas where sustainable development raises new issues. Of particular relevance are Renewable Energy and Energy Efficiency.

11.2.4 Development within Kent Thameside provides a key opportunity for meeting development needs and also achieving environmental objectives. Sub regional guidance for Thames Gateway (RPG9A) acknowledges the need to conserve environmental assets and identifies key environmental and ecological constraints.

11.2.5 Water supply is identified as a key factor determining the rate of development and advocates demand management measures such as recycling and re-use schemes. Precautionary measures to protect low-lying areas from flooding will be necessary.

11.2.6 RPG9a refers to a 1993 HMIP Report 'An assessment of the effects of industrial release of nitrogen oxides on the East Thames Corridor.' The greatest source of such pollutants arising from emissions from motor vehicles, which points to the need to curb their use.

11.2.7 The Kent Structure Plan recognises that the provision of water supply, waste water treatment and sewerage can be expensive and have possible environmental implications. Accordingly, in considering development proposals, the Council will need to be satisfied that the water, sewerage and waste water treatment requirements resulting from the development can be provided for at the appropriate time, and without prejudicing infrastructure investment programmes necessary to the implementation of the Development Plan.

11.3 Water

Water Management

11.3.1 Water management issues represent a major challenge for Kent Thameside. The following matters in particular need to be addressed:

- new development will impose substantial additional demands for water, and the additional demand which this will impose on water resources is an issue that needs to be considered;
- droughts, combined with over-abstraction, have resulted in the River Darent running dry – one of the worst examples of this type of environmental damage in the country. Measures to mitigate this are now in progress;
- de-watering since the beginning of the century has artificially lowered the - natural water-table in the vicinity of Blue Circle's quarries. Consideration must be given to the implications of a rise in ground water should the de-watering cease.

11.3.2 Kent Thameside commissioned a study into the implications of development for the various utilities. With regard to water usage the following strategy has been advocated:

- measures to minimise the demand for water, including water-efficient devices, should be incorporated into new development wherever practicable, particularly in those areas where existing resources are under pressure. This is in line with the Environment Agency's Water Resources Strategy "Water resources for the future" which was published in March 2001. The full strategy contains recommendations for each Region. The summary for the Southern Region acknowledges: "opportunities for sustainable resource development are very scarce in our region. Efficient use of water is crucial to successful water resource management over the next 25 years."
- further assessment of the public water supply situation and other supply sources developed in conjunction with the water companies;
- water companies making full use of their licensed capacity by transfer or bulk-supply agreements with neighbouring companies;
- developing a private borehole water supply;
- the possibility of using groundwater from quarries around Swanscombe, to replace capacity relinquished in the Darent catchment;
- desalination to help meet peak summer demand.

11.3.3 The issues raised in this study are being progressed through the operation of a public utilities liaison organisation ('PULO') - see the Community Facilities chapter.

Drainage and Waste Water Treatment

11.3.4 New development will only be permitted if adequate facilities exist – or their provision is assured – for drainage and sewage treatment, because the overloading of sewers can lead to pollution, environmental damage and risk to water quality. New mains sewerage can, in some cases, provide an opportunity for existing dwellings to be connected thereto, and such possibilities should be explored.

NR1 Sewerage and Drainage

Development proposals will not be permitted unless served by adequate mains sewerage and surface water drainage.

11.3.5 There is a presumption against the use of small private package sewage works, in areas where it is reasonably practicable to connect to a mains sewer since these require frequent maintenance and sometimes discharge an unacceptable standard of effluent. Cesspits are generally an unsatisfactory method of dealing with sewage because they are expensive to empty and overflowing can lead to the risk of pollution. Septic tanks are only acceptable where there is sufficient land to provide adequate soakaway drainage and there is no possibility of connecting to the mains sewerage.

NR2 Alternative Methods of Sewerage Treatment

Development proposals which require the provision of private package sewage works, or cesspits will not be permitted. Proposals for single dwellings built in locations where connection to mains sewerage is not practicable, and which require the provision of a septic tank, will only be permitted if there is adequate land available for drainage.

11.3.6 Notwithstanding the above, where an isolated group of dwellings currently uses cess pit or septic tanks, and connection to mains sewerage is not possible, small private package sewerage works may provide the most satisfactory option for treatment.

NR3 Private Sewage Treatment Works

Where it is not possible to connect an existing dwelling, or group of dwellings, to a mains sewer, the provision of a private package sewage works, as an alternative method of treatment, will be permitted, subject to the views of the Environment Agency.

Surface and Groundwater Protection

11.3.7 Maintaining and improving the quality of water resources is of major importance. Most of the Borough lies within a Groundwater Protection Zone and the protection of underground water reserves from pollution will be a major factor in considering development proposals. Safeguarding the aquatic environment of the River Darent and other surface water is also important.

11.3.8 The Council, in consultation with the Environment Agency, will oppose any development which may pose a risk or result in damage to water resources, in particular through:

- physical damage to aquifers caused by excavation;
- the discharge of contaminating substances;
- disturbance of contaminated sites.

11.3.9 Adequate mitigation measures will be necessary wherever any such risk may arise.

NR4 Surface and Groundwater Protection

Development which may pose a risk or result in damage to surface and underground water resources, in terms of both quality and quantity, will not be permitted.

Water Resources

11.3.10 The need to conserve water is detailed above. Development proposals which would place a heavy demand on water resources will need to demonstrate how that demand can be met in a sustainable manner.

NR5 Water Resources

Development proposals will not be permitted unless an adequate supply of water can be made available without detriment to existing abstractions, water quality, fisheries, amenity or nature conservation interests; and consideration has been given to demand management measures.

Development and Flood Risk

11.3.10a The susceptibility of land to flooding is a material planning consideration and PPG 25 ('Development and Flood Risk') requires local planning authorities to apply the precautionary principle to the issue of flood risk.

11.3.10b Within the fluvial flood plain and tidal flood zone the risks of flooding should be minimised by the incorporation of appropriate flood protection measures in the design and construction of buildings. This could include for example, providing access to upper storeys that have a point of escape, and placing electrical circuitry at a higher level. The Building Research Establishment Scottish Laboratory's publication 'Design guidance on flood damage to buildings' (1996) provides details of such measures. In England the Environment Agency is promoting further research which should be available by the end of 2002. Bungalows, caravans and camping and caravan sites in these areas pose an unacceptable risk to their occupants. However, no development will be permitted in areas where the Environment Agency considers flood defences to be inadequate.

Protection of the Fluvial Floodplain

11.3.11 The Rivers Darent and Cray and other main rivers, such as the Stanham have significant areas of associated floodplain. Any flooding that could arise might, in certain situations, be exacerbated by extreme tidal conditions and the need to shut the Dartford Creek Barrier. The high risk flood zone with a 1% probability of flooding, (which equates to an average of once in a hundred years or greater flood risk), is shown on the Proposals Map. However, this map does not take account of recent research in climate change or recent experience. The flood risk maps will be updated regularly by the Environment Agency and their most up to date maps will be used when making planning decisions. In general, the Environment Agency is opposed to development in the flood plain which could impede flood flows, reduce

the flood storage capacity of the flood plain or pose an unacceptable risk to life, infrastructure and property. On the fluvial reaches of the Rivers Darent and Cray and other main rivers it will be necessary to maintain an 8m margin from the top of the bank, or within 8 metres of the landward toe where one exists, clear of obstruction for maintenance purposes. On the tidal reaches of the River Darent it will be necessary to maintain a 15 metre margin from the top of the bank, or within 15 metres of the landward toe where one exists, clear of obstruction for maintenance purposes.

11.3.11a Applications for development in the flood plain or which would increase flood risk elsewhere should be accompanied by a flood risk assessment.

11.3.11b Where development is permitted that requires flood protection work and those works are not programmed by the responsible agencies, the necessary protection measures will be fully funded by the developer. This will include a dedicated commuted sum in respect of maintenance costs for 30 years. This will apply to flood protection works required to protect either the development or other areas at risk as a consequence of development. In most cases the authority will require the measures to be implemented before development proceeds. Where appropriate a contribution will be required towards the cost of additional emergency planning capital costs resulting from the development, such as suitable warning systems.

11.3.11c The importance of ensuring that development does not increase the quantity and rate of surface run-off is addressed in paragraph 11.3.13 and policy NR8 below.

11.3.11d Developments at risk of flooding may face difficulties with the cost or availability of insurance and this, in turn, could cause problems for the purchaser. To avoid the risk of blight PPG25 advises developers to seek the views of insurers at an early stage.

NR6 Fluvial Flood Risk Area – Developed Areas

Development proposals within the developed parts of the fluvial flood risk area, as shown on the Proposals Map, will only be permitted if:

- 1. under flood conditions they do not impede flood flows or reduce flood storage capacity;**
- 2. all ground floor residential accommodation includes a permanent means of access to an upper storey and a point of escape therefrom.**
- 3. they incorporate flood-resistant construction;**
- 4. they do not lie within 8m of the top of the bank or the landward toe, where one exists, of the banks of the fluvial reaches of Rivers Darent, Cray (or other main rivers);**
- 5. they do not lie within 15 metres of the top of the bank, or the landward toe where one exists, of the banks of the tidal reaches of the River Darent;**
- 6. they are not within an area that performs a washland function or is required as part of an identified flood defence strategy, including washland creation; or**
- 7. they include, where necessary, appropriate sustainable flood defences.**

Preference will be given to areas already defended to the appropriate minimum standard of flood defence.

Bungalows, ground floor flats, caravans, mobile homes or other dwellings of similarly lightweight construction will not be permitted.

Applications should be accompanied by a flood risk assessment.

11.3.11e In undeveloped or sparsely developed areas and the functional flood plain no development will be acceptable unless it is for a use for which such a location is essential, for instance a boathouse.

NR6a Fluvial Flood Risk Area – Undeveloped, Sparsely Developed Areas and the Functional Floodplain

No development will be permitted in the undeveloped, sparsely developed and functional floodplain parts of the fluvial flood risk area as shown on the Proposals Map, unless it is for a use for which such a location is essential, in which case it must comply with the criteria set out in Policy NR6 above.

Tidal Flood Zone

11.3.12 Land fronting the River Thames is protected by continuous flood defences. However there is a theoretical risk – notionally 0.1% per annum, or once in a thousand years – of these being overtopped in extreme tidal conditions. There is also a risk of breaching if a floodgate is left open or through overtopping and breaching of the defences in extreme circumstances. Areas behind the defences, particularly low lying areas, would be at risk from flooding. The Environment Agency therefore resists development immediately behind defences. It is therefore important that all living accommodation, including hotels, hostels and guest houses, is constructed or located above the flood risk level. Land for residential development must be raised to between 6.5m and 6.62m above Ordnance Datum Newlyn (depending upon location), or alternatively storeys below this level must not be used for residential accommodation (for instance, used for car parking instead). The Environment Agency prefers that living accommodation is located above flood level and that sleeping accommodation is located above flood risk level. Where land is raised it will be necessary to provide the sufficient and appropriate drainage to prevent on-site flooding.

NR7 Tidal Flood Zone

Residential development within the Tidal Flood Zone area, as shown on the Proposals Map, will only be permitted if the following criteria are met:

- 1. there must be no living accommodation below the flood risk level as defined by the Environment Agency;**
- 2. there must be no single storey accommodation;**
- 3. all ground floor units must have a permanent means of access to upper floors and a point of rescue therefrom;**
- 4. there must be no development within 15m of the landward toe of the flood defence wall (unless agreed with the Environment Agency);**
- 5. any redundant flood defence gate openings must be permanently filled in;**
- 6. there shall be a formal agreement involving the developer, the local planning authority and the Environment Agency ensuring maintenance, repair and access to the flood defences;**
- 7. there must be no development on the seaward side of the flood defences (other than jetties, footpaths, bridleways and cycleways where they do not conflict with the functioning of the flood defence);**
- 8. compliance with any other flood defence requirements of the Environment Agency; and**

9. Ground floor flats, mobile homes, caravans or other dwellings of similarly lightweight construction will not be permitted.

Applications must be accompanied by a flood risk assessment.

Surface Water

11.3.13 Unless properly sited and designed, new development, including redevelopment can increase the quantity and rate of surface water run-off, creating the risk of flooding locally and farther down stream and adversely affecting the aquatic environment. It will therefore be important that new development does not increase run-off over and above the current 'undeveloped' level of run-off from the site, although it would be preferable if development resulted in a reduction in the level of run-off. Redevelopment should result in a reduction in run-off. Appropriate attenuation measures will be required, such as sensitively designed balancing ponds and sustainable drainage systems. The system should be so designed to ensure that there is sufficient capacity to deal with surface water during periods when outfall to the river is tide locked or there are surge tides. Wherever possible, attenuation measures should be designed so that they improve the amenity and wildlife interest of developments. The views of the Environment Agency should be sought in such cases.

11.3.13a The scope for incorporating 'soft' sustainable drainage systems in new development should be fully explored. These can be a cost-effective means of reducing the rate of run-off, maintaining water quality, and improving the amenity and wildlife interest of a development. Such measures can include:

- landscaped balancing ponds with reed beds for filtration
- filter strips and grass swales (gently sloping landscaped areas that mimic natural drainage patterns)
- porous pavements and filter drains
- infiltration devices (such as soakaways and infiltration basins)

NR8 Surface Water

Development proposals which would result in flooding, exacerbate flooding problems elsewhere, or have other adverse effects on the water environment, due to surface water run-off, will not be permitted. Preference will be given to schemes that have sustainable drainage systems over those that use conventional systems.

Culverts

11.3.14 Watercourses have the potential to add to the quality of the urban environment and the Council will welcome proposals that enhance these assets. The culverting of watercourses, on the other hand, represents a wasted opportunity: it can create flooding problems, disrupt the river environment, result in a loss of amenity and represent a safety hazard, especially to children. The Environment Agency now resists culverting proposals and encourages the opening up of culverts wherever possible.

NR9 Culverts

Proposals that result in an improvement to the amenity of a watercourse will be permitted. Proposals that entail the culverting of a new or existing watercourse will not be permitted.

11.4 Pollution Control

11.4.1 Effective consultation between the relevant agencies is an important part of the planning process. The Council will take into account the views of the Environment Agency, DEFRA and any other agencies with a statutory responsibility for the application and enforcement of pollution controls in determining planning applications.

11.4.2 The need to improve the environment and perceptions of Kent Thameside severely curtails the scope for development that involves noxious industries or processes. Two sites for potentially polluting 'poor neighbour' industry have been identified in locations which are considered least likely to give rise to environmental problems (see policy E5). Pollution issues arising from such uses are controlled by legislation by either the local authority or the Environmental Agency, depending on the size and nature of the processes involved.

Air Quality

11.4.2a The Clean Air Act 1956 enabled local authorities to reduce urban air pollution by controlling the domestic combustion of coal and requiring certain polluting industries to limit smoke emissions. There are many 'smoke control orders' covering most of the Borough. The main effect of the legislation is to limit emissions from domestic fires by the use of designated fire grates and approved smokeless fuels. The controls do not apply to bonfires. The Environmental Protection Act 1990 introduced a new method of controlling emissions from industrial premises. Certain industries producing specified pollutants have to limit emissions to the air and the operators of those premises require an 'Authorisation' from the Council to operate which is in addition to planning permission. However, the impact of air quality from planned development is now a material planning consideration.

11.4.3 Air fit to breathe is essential to a clean and safe environment. Under the Environment Act 1995, local authorities are required to identify and tackle local air quality problems arising from seven key pollutants: benzene, 1,3 butadiene, carbon monoxide, lead, nitrogen dioxide, particles (PM10) and sulphur dioxide. The aim of the National Air Quality Strategy is to maintain and improve air quality, and the planning process has an important role in meeting this aim.

11.4.4 Controlling emissions from road traffic is problematic. Technological advances in clean fuels and emission control systems are only part of the long term solution to the problem and restraint on car use will become increasingly important. This underlines the importance of a sustainable strategy which encourages alternative forms of transport other than the car (see Transport chapter).

11.4.5 In areas where air quality standards cannot be met (or give cause for concern) by the prescribed dates, local authorities must declare Air Quality Management Areas. Within these areas, Action Plans will need to be devised and implemented with the aim of achieving the air quality standards. Local authorities have a duty to consider the air quality implications of proposed development and condition approvals or refuse applications accordingly.

11.4.6 One Air Quality Management Area has been declared in Dartford Borough (as shown on the Proposals Map) and, it is possible that others may be declared in the Borough during the Plan period. Recent information suggests that poor air quality is not restricted to major roads such as the M25 and A2, but also affects local roads. Indeed, the impact needs to be measured in terms of exposure, and many residents already live alongside busy local roads. Along with legislation and Government guidance, the Local Plan enables this issue to be taken into account in the planning process.

11.4.7 There is also a danger that if the issue is viewed too narrowly, action to remedy poor-quality air could have a perverse effect. New development will inevitably generate transport demands, and by diverting such development away from polluted central urban areas, journey lengths will be increased along with transport emissions. In some cases it may not be appropriate to prevent development in or near Air Quality Management Areas as this could frustrate regeneration objectives and the associated social, economic and other benefits. Developers will be required to demonstrate the long-term (ie 10 years hence and beyond) effect of their development on air quality – together with those of other anticipated developments and improvements to public transport and green grid links – will satisfy National Air Quality objectives. Predictions shall be based upon up-to-date guidance issued by DEFRA.

11.4.8 However it is reasonable to expect new development proposals to be designed in a manner that minimises harmful emissions, by:

- being planned in a manner that encourages the use of alternatives to car travel;
- employing energy-efficient building design; and
- contributing to public transport infrastructure where appropriate.

NR10 Air Quality: Minimisation of Pollutants

Proposals for developments with potentially polluting activities (usually commercial or industrial) will only be permitted if they are sited and designed to minimise the emission of air pollutants and the impact of air pollutants on the local environment.

NR11 Air Quality Impact Assessments

Proposals for development (including any resultant traffic generation) that may adversely affect air quality must be accompanied by an air quality impact assessment, and will only be permitted if it can be demonstrated that such impacts can be satisfactorily mitigated in the context of policy NR12.

NR12 Development Likely to Adversely Affect Air Quality

In considering proposals for development (including any resultant traffic generation) that may adversely affect air quality, the following factors will be taken into account:

- current levels of air pollution in the locality, and the likely cumulative impact on air quality;
- the impact on Air Quality Action Plans and/or the need to create or extend Air Quality Management Areas;
- the scope for mitigation of adverse effects; and
- the anticipated long term air quality situation, and the length of time before satisfactory air quality in the area can be achieved.

Noise and Vibration

- 11.4.10 Noise intrusion can have a significant effect on the quality of life in towns and villages and on the tranquillity of the countryside. The Plan seeks to locate noise-sensitive developments away from significant noise sources, and to locate potentially noisy developments in less sensitive areas away from housing.
- 11.4.11 In Dartford, the scale of new construction expected to take place during the Plan period is likely to generate noise and vibration which the Council will control by planning conditions. Temporary noise barriers can be effective during the construction period. Where development is proposed which has the potential to generate noise, it should not have an unacceptable adverse impact on the amenity of existing uses in the locality, particularly noise-sensitive uses.
- 11.4.12 Residential development, schools, hospitals and offices are particularly sensitive to noise and should be located away from existing sources of significant noise.
- 11.4.13 The layout of a site can be designed to protect noise-sensitive buildings. It will be important to identify existing solid noise barriers and the potential location for new ones. The impact of noise is best reduced by solid barriers and buffers such as earth banks, buildings and walls. Noise buffers can also act as a wind break, a wildlife corridor, a recreational facility and add to the visual quality and setting of a development.
- 11.4.14 The majority of noise generated in the Borough comes from road traffic. Notwithstanding the emphasis of this Plan on facilitating better public transport, some new road building will be necessary. The Council will expect suitable environmental mitigation measures to reduce traffic noise to be part of any major new road scheme, including the widening of existing routes. The principle of noise attenuation at source - minimising the amount of noise produced in the first place - has been acknowledged by the Highways Agency in the use of quieter road surface treatments, such as porous asphalt, on parts of the M25. Quieter road surfaces should be used in the construction of major new roads wherever possible in the Borough.
- 11.4.15 PPG24 'Planning and Noise' sets out the criteria to be applied in determining planning applications for noise sensitive developments and for potentially noisy uses. Proposals for residential development close to a noise source will only be permitted if they accord with Annex 1 of PPG24. Proposals for potentially noisy development will be assessed against PPG24 and appropriate British Standards (set out in PPG24, Annex 8).

NR13 Noise: Residential Development

Proposals for residential development near a noise source will not be permitted if the noise is likely to have an adverse effect on residential amenity.

NR14 Noise: Non-Residential Noise-Sensitive Development

Proposals for non-residential noise-sensitive developments will not be permitted close to existing sources of significant noise or programmed development such as new roads, unless acceptable mitigation measures are proposed.

NR15 Noise Impact

Proposals for new industrial or commercial development will be assessed for likely noise impacts. Proposals which are likely to cause an unacceptable noise impact on the amenity of an area, or on the tranquillity of the countryside, will not be permitted.

NR16 Noise Assessments

Potentially noisy development proposals will only be permitted where details of present and predicted noise levels (to assess the impact of the development) are provided. Where mitigation measures may overcome prospective problems, conditions will be imposed in appropriate cases, relating to:

- 1. site layout;**
- 2. provision and retention of acoustic barriers;**
- 3. acoustic insulation of buildings;**
- 4. noise limits at site boundaries;**
- 5. restrictions on types of activity; and**
- 6. limitations on hours of operation.**

Noisy Sports and Recreational Activity

11.4.16 Some open air sports such as clay pigeon shooting, model aircraft flying, war games and motor cycle events; and leisure uses, such as pop concerts; can give rise to unacceptable levels of noise disturbance.

11.4.17 In determining proposals for potentially noisy sports and recreational activities it will be necessary to balance the enjoyment of participants against nuisance to other people. Where noisy activities are carried out on a temporary basis under Permitted Development Rights, but nevertheless create unacceptable disturbance, the Council may withdraw those rights by way of an Article 4 Direction. The following factors will also be taken into account:

- the extent to which the activity results in loss of amenity in the urban area and other settlements, or loss of tranquillity in the countryside;
- the frequency with which the noisy activity occurs. Where noisy activities are carried out on a temporary basis under Permitted Development Rights, but nevertheless create unacceptable disturbance, the Council may withdraw those rights by way of an Article 4 Direction;
- the extent to which noise disturbance can be mitigated by limiting hours of operation and by other controls of noise emission;
- Planning Policy Guidance Notes PPG17 and PPG24;
- Codes of Practice specific to certain sports such as model aircraft flying;
- the extent to which noise nuisance can be mitigated by siting the use near to an existing source of ambient noise, such as the M25 or A2.

NR17 Noisy Sports and Recreational Activity

Development proposals for noise generating sports and recreational activity must be accompanied by details of present and predicted noise levels. Proposals which are likely to give rise to noise disturbance will only be permitted if the following criteria are met:

- 1. there is no adverse loss of amenity in the urban area and other settlements, or loss of tranquillity in the countryside;**
- 2. the occurrence of the noisy activity is likely to be low;**
- 3. any noise disturbance can be satisfactorily mitigated either by limiting hours of operation and by other controls of noise emission;**

4. **the level of existing ambient noise is such that the proposal would not have a detrimental impact on the surrounding area;**
5. **there is no adverse effect on nature conservation interests within or adjacent to the site of the development proposal.**

Landfill Sites and Restoration

11.4.18 Dartford has a substantial legacy of derelict and despoiled land, largely as a result of quarrying operations. The major development allocations are, therefore, seen as an opportunity for environmental improvement.

11.4.19 Some sites have been landfilled with inert waste and restored, but several have been filled with putrescible domestic waste which gives rise to landfill gas. This gas can create a hazard, both on the site and within a radius of 250m unless dealt with properly by way of:

- gas collection and flaring system;
- an impervious barrier at the site boundary; or
- measures to prevent gas entering nearby buildings.

11.4.20 Development proposals on or near these sites will need to take account of this risk, and of national guidance. In some cases it may be appropriate to restrict residential proposals to flatted development, in order to prevent activity carried out under permitted development rights that might create a gas hazard.

NR18 Residential Development at Landfill Sites

Residential development proposals on or within 50m of a landfill site which is generating, or capable of generating, hazardous gasses will not be permitted. Proposals within 250m of a landfill site must be accompanied by a technical analysis which demonstrates that landfill gas does not represent a hazard. Where there is the possibility of such a hazard occurring, residential proposals may be restricted to flatted development, which incorporates suitable protective measures against gas migration.

11.4.21 One site in the Borough is regarded as having a particular priority for restoration. St James Lane Pit is a deep, sheer-sided chalk pit where re-use at a low level is not a practical proposition, and where landscaping alone cannot achieve significant environmental improvements. However, once filled up to, or close to, the surrounding ground level, the site could make a significant contribution to the Green Grid network. Any restoration proposal for St James Lane Pit will be assessed against the following criteria:

- the need for protection of the aquifer;
- the need to only use clean inert material;
- the need for measures to deal with any gas migration from neighbouring restored pits to be investigated; and
- the requirement for a significant element of public open space, as its after use, to contribute to the Green Grid network and to provide links to surrounding sites.

Kent County Council, as minerals planning authority, would assess restoration proposals, in consultation with Dartford Borough Council.

Contaminated Land

11.4.22 Other forms of land contamination also pose health hazards which must be addressed before development can take place. The developer is responsible for assessing the risks involved and for ensuring that appropriate remedial measures are effected. Such works may include:

- chemical, physical or biological treatment to remove, neutralise or detoxify contamination either on site (that is, requiring prior treatment) or in situ (that is, treatment applied to the contaminated material in the ground without excavation);
- containment or isolation by superimposing cover and providing, if necessary, in-ground barriers to contain migration; or
- removal and/or replacement of contaminated material.

11.4.23 In all cases remedial works must be covered by a quality assurance scheme. The development should then be designed to minimise risk. In particular it must not result in surface water leaching through the ground, especially where this may cause the contamination of an aquifer.

NR20 Contaminated Land

Applications for development on land which is known to be, or likely to be, contaminated must be accompanied by an investigative survey carried out in consultation with, and in accordance with, the advice of the relevant pollution control authority. Proposals must identify remedial measures to deal with any particular contamination identified and the implementation of the measures must be secured. Such remedial works must be covered by a quality assurance and control schemes. Development which is likely to result in surface water percolating through contaminated material will not be permitted.

11.4.24 In the case of residential development, decontamination must be carried out to a sufficient standard to ensure that uses normally associated with residential occupation – such as gardening and the erection of small structures – do not create a hazard. Planning proposals for sites which may be contaminated will be considered on the basis of PPG23 (Planning and Pollution Control), Annex 10.

NR21 Decontamination of Residential Sites

Residential development proposals will only be permitted if any necessary decontamination is carried out to a sufficient standard to ensure that no hazard is likely to arise from the residential use and occupation of the land.

11.5 Energy

Renewable Energy

11.5.1 Electricity can be generated using renewable energy sources which produce lower greenhouse gas emissions compared to conventional sources of electricity, and which do not deplete a finite source of fuel. Examples include wind power, solar power, waste incineration, anaerobic sewage digestion and landfill gas burning. There are obvious advantages to such technologies in terms of sustainability, but these have to be weighed against other environmental effects, particularly the visual intrusion created by large structures such as wind turbines and waste incinerators, and the traffic generated from transporting waste to be processed at combined sewage and waste digestors.

11.5.2 However, there may be scope for small-scale generation schemes such as landfill gas burning and coppicing to produce a 'bio-fuel.' Solar panels can be placed on the roofs of houses to generate heat or electricity.

NR22 Renewable Energy

Electricity generation proposals, employing renewable energy, will only be permitted if they do not:

- 1. create unacceptable visual intrusion, including the need for the associated distribution infrastructure;**
- 2. create unacceptable noise, odours, dust, smoke or gas emissions; and**
- 3. generate unacceptable levels of traffic through sensitive areas.**

Energy Efficiency

11.5.3 Energy efficient housing layout and design can significantly reduce the demand for energy and can improve the sustainable functioning of the built environment. The Building Regulations deal with the detailed design of buildings, but it is also important to look at other issues such as site layout and orientation. The design guide 'Planning for Passive Solar Design' (BRECSU, 1999) is particularly relevant in this respect. The Council expects developers to give high priority to this issue, and to consider, in particular the following factors, in relation to site layout:

- select the location to avoid poor micro-climate (hill crests or frost pockets) and to make the most of south facing slopes;
- consider the orientation to enable the majority of housing to face within at least 45 degrees of south, and preferably within 35 degrees, to maximise solar gain. Most main front or rear elevations should face south, with a high proportion of houses served by east-west access roads;
- limit overshadowing by neighbouring building and trees to ensure that there is no more than a 5% loss of useful solar gain. This should not be achieved through loss of existing trees (especially if protected by Tree Preservation Order or within a conservation area). Rather, solutions should be found in the spacing and location of dwellings;
- use landscaping to provide shelter belts and improve energy conservation and use of building shape and layout to minimise wind tunnelling and eddying.

In relation to building design:

- plan the internal layout to ensure rooms requiring higher temperatures (such as living rooms) are on the southerly side in order to maximise passive solar heating;
- use atria, conservatories and porches to enable natural ventilation and conservation of heat;
- use windows, doors and rooflights to provide larger window areas to the south (to maximise solar gain but without overheating); and smaller areas to the north (to minimise heat loss, but still provide adequate daylight);
- provide for the recycling of rain water and domestic waste on site;
- include active solar systems (use of photovoltaics); and
- use materials with reduced energy inputs (such as sustainably produced timber) with low maintenance needs, preferably locally manufactured or recycled.

NR23 Energy Efficiency

Development proposals will only be permitted where they are designed to give optimum energy efficiency, through their site layout and orientation, and through the layout and design of individual buildings.