LONDON BOROUGH OF BEXLEY

www.bexley.gov.uk

Design Guide

Supplementary Planning Document







Guidance for applicants, decision makers and the local community

June 2026

Part 2 - Technical Handbook

Contents

Introduction

London Borough of Bexley (the Council) has produced a series of Supplementary Planning Documents (SPDs) to provide design guidance and support to applicants, decision makers and developers for new development across the borough.

As demonstrated by Fig.01 opposite, the guidance supports the Development Plan which comprises the Bexley Local Plan and the London Plan. The SPDs demonstrate how policies within these statutory documents can be met and the guidance documents should also be read in conjunction with national and regional design guidance on placemaking, such as the National Design Guide.

Overarching design guidance, which applies across all types of development, is provided in the Design Guide SPD Part 1 - Design Principles. This should be read in conjunction with the guidance provided in Part 2 of the Design Guide SPD, which focuses on specific areas of development and comprises four documents which complement, and are structured around, the Design Principles.

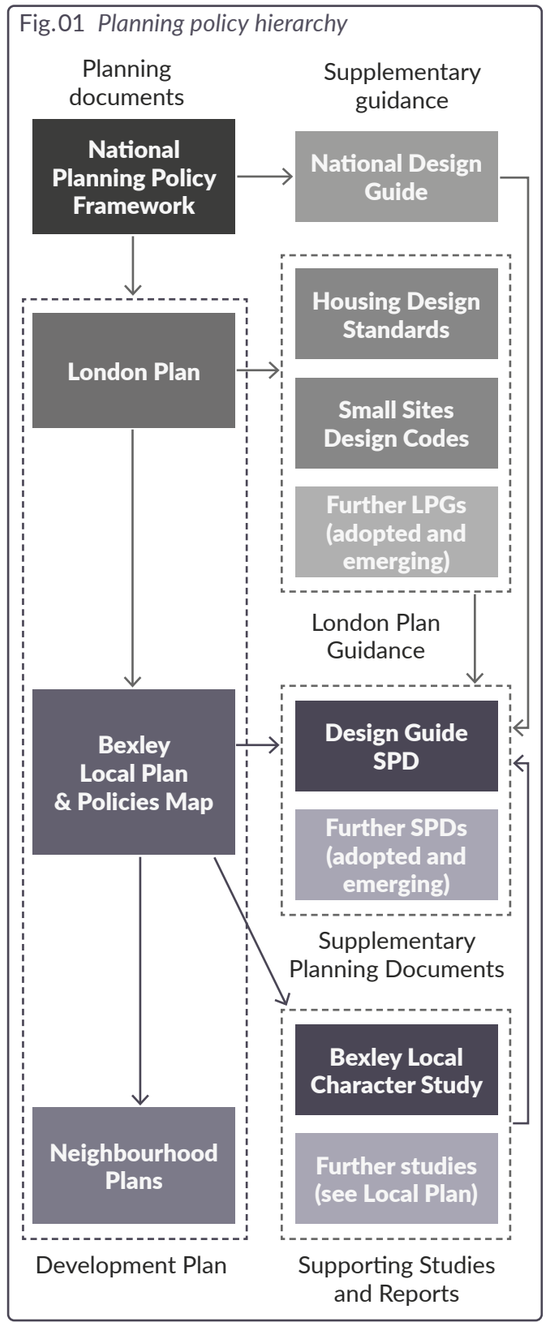
Once adopted, the Design Guide SPD Part 2 will also be a material consideration in determining planning applications. As such, proposals should conform with the guidance provided to achieve the best outcomes at determination.

This new guidance will replace the following Bexley planning guidance: Design and Development Control Guidelines SPD, Crayford Residential Design Code, Crayford Town Centre Design and Identity Guide, and the Sustainable Design and Construction SPD.

The production of this document has followed best practice and been informed by a robust local evidence base. The guidance has been shaped through engagement with stakeholders and will be further informed by the public consultation process.

It should be noted that during the preparation of the Design Guide SPD Part 2, the government published its draft NPPF. Once the final version of the new NPPF is published, it takes precedence should any conflicts arise between the two documents.

Fig.01 *Planning policy hierarchy*



How to use this document

The Design Guide SPD is separated into several distinct documents that will be developed and consulted upon in phases. The **Design Principles**, is the first part of the Design Guide SPD to be adopted and applies across all types of development in Bexley to ensure consistency and quality. This will be supplemented by additional guidance specific to certain types of development, including:

- **Small Sites** - sites below 0.25 hectares
- **Building Alterations** - extensions and alterations to existing residential and non-residential buildings
- **Area Types** - common and emerging development types in Bexley e.g. industrial sites
- **Site Design Codes** - design guidance for areas undergoing significant change (these will be provided as part of the new Local Plan for Bexley).

The documents are colour-coded to aid navigation and each section of design advice is given a sequential number for ease of reference. Design Principles are given the prefix D, Small site codes will be given the prefix S, Building Alterations codes B, and Area Types A. The prefix for the Site Design Codes will be based upon the name of the relevant area.

These documents are supported by this **Technical Handbook** which contains detailed specialist information and standards required for certain planning applications, including *highways*, waste, biodiversity and ecology.

Each chapter provides guidance which either use the words must, should, or could. These indicate the strength of the guidance and whether is it required to meet adopted policy or suggestive - see Fig.03. This guidance is supported by the use of numbered figures including diagrams, example projects, tables, and maps to illustrate the text.

Where underlined, highlighted text is used, this is a link to external resources. Where *italic text* is used, this word or phrase is a technical term and is included in the Glossary. Highlighted text indicates a link to information elsewhere in the document. *Highlighted, italic text* is used for numbered figures.

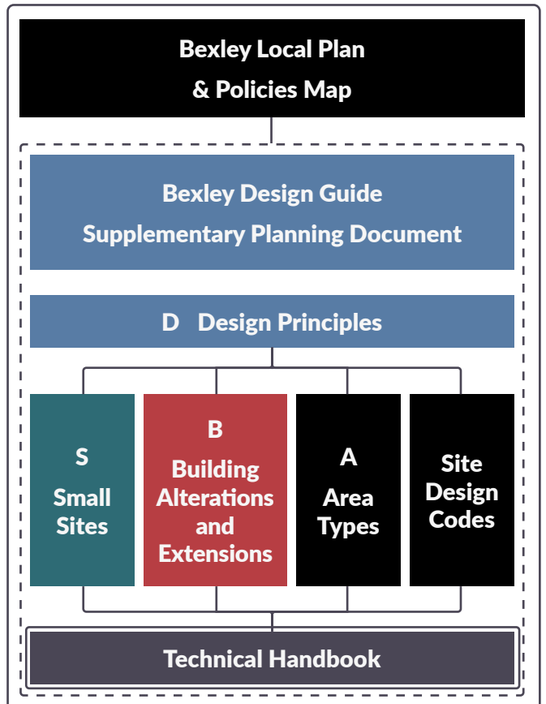


Fig.02 *The documents that will form the Design Guide SPD.*

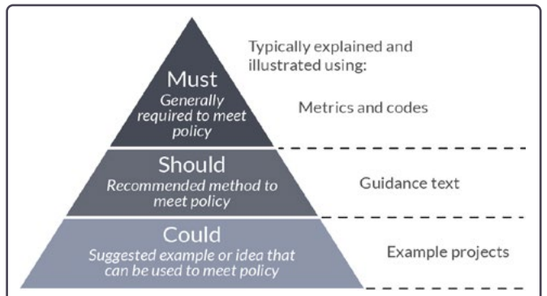


Fig.03 *The strength of the guidance is indicated in the use of the words must, should or could.*

1 Waste Management

Policy context

London Plan Policy SI 7 Reducing waste and supporting the *circular economy* sets out the Mayor's aims for new development to support a *circular economy* and prevent and reduce waste.

Policy D6 Housing quality and standards sets out the requirements for waste storage areas within all new homes.

Bexley Local Plan Policy SP12 Sustainable waste management details the Council's support for the principles of *circular economy* by utilising the waste hierarchy (Fig.04). The hierarchy aims to ensure waste is driven as far up the hierarchy as possible, with preventing waste being the highest priority through to disposal, which is the least preferred option for waste management. Applying the preferred hierarchy will typically reduce both cost and carbon.

Policy DP26 Waste management in new development sets out the Council's requirements for waste management within all new residential developments and conversions. The Policy states that all *major* developments should provide a *Circular Economy* Statement in line with relevant London Plan policy.

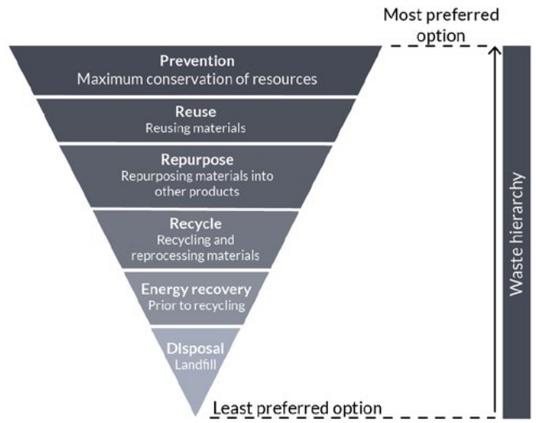


Fig.04 *The waste hierarchy, in line with circular economy principles*

General guidance

The following guidance sets out how applicants should consider waste management across all new developments, both residential and mixed-use/ commercial.

For a waste management system to be successful, applicants are encouraged to consider the user journey - from production to collection and considering the perspective of occupants, building managers and waste collection operatives. This consideration should be evidenced in a planning submission to the Council.

All waste storage facilities must be designed to minimise health and safety related risks and should accommodate usage by all people, including the elderly and disabled. Detailed guidance on this can be found in British Standard 5906:2005, the Code of Practice on Waste Management in Buildings.

Throughout the design process, applicants should demonstrate their compliance with the relevant British Standards and Building Regulations when ensuring appropriate construction, security, fire risk mitigation and ventilation to support the health and safety of all users.

Preparing a planning application

1.1 When preparing a planning application, it should be evidenced how the development accommodates:

- Suitably designed and designated storage areas for waste and recyclables, following the guidance provided in this document
- Consideration for how waste will be deposited by all users, including those with additional mobility needs.
- Consideration for how waste will be collected by waste collectors and their collection vehicles.

1.2 Where developments include a combination of new uses within one red line boundary, for example when co-locating residential homes alongside industrial development, applicants should follow guidance provided for each intended use.

1.3 The LBB Environmental Services team uses the Refuse Collection Vehicle (RCV) shown in Fig.05.
Applicants should ensure that all access roads, manhole covers and gratings within a development are designed to comfortably accommodate these vehicles. Applicants should also follow guidance provided in the Highways and transport section of this guidance document.

1.4 Dropped kerbs should be provided at all collection points and sufficient turning circles provided using hammerheads or similar. The design of these features should be discussed with the Transport and Development team.

1.5 RCVs should not be required to reverse more than 20m on public highways, as set out in D 28 of the Design Guide SPD Part 1 - Design Principles.

1.6 For *major* developments, a Site Waste Management Plan should be submitted. Site Waste Management Plans (SWMPs) estimate the type of waste that will be produced through construction; the proportion of which will be recycled, reused, recovered or disposed of; and how this will be managed. Fig.06 sets out what a SWMP should include.

Fig.05 *LBB Refuse Collection Vehicle specification for tracking purposes*

Model	
Gross Vehicle Weight (GVW) (tonnes)	26
Height (mm)	3 704
Weight (mm)	2 500
Length (mm)	10 052
Turning circle (m)	16.9

1.7 During construction, six weeks prior to the development being completed, the Environmental Services team should be contacted to arrange a site visit and inspect the bin stores and access routes.

1.8 At least three weeks prior to residents moving into a development, Environmental Services should be contacted to provide waste containers, add the development to the collection schedules, with the team provided with any access keys and cards at the time. Contact can be made via:

- Email: wasteteam@bexley.gov.uk
- Tel: 020 8303 7777

Fig.06 *Site Waste Management Plans (SWMPs) should:*

- Identify:
  a. The client
  b. The principal contractor and
  c. The person who drafted the SWMP.
- Describe the construction work proposed, including:
  d. The location of the site and
  e. The estimated cost of the project.
- Record any decision taken before the Site Waste Management Plan was drafted on the nature of the project, its design, construction method or materials employed in order to minimise the quantity of waste produced on site.
- Ensure:
  f. Each waste type expected to be produced in the course of the project is described
  g. The quantity of each different waste type expected to be produced is estimated and
  h. The waste management action proposed for each different waste type is identified, including reusing, recycling, recovery and disposal.
- Include a declaration stating that the client and principal contractor will take all reasonable steps to ensure that:
  i. All waste from the site is dealt with in accordance with the waste duty of care in section 34 of the Environmental Protection Act 1990(1) and the Environmental Protection (Duty of Care) Regulations 1991(2) and
  j. Materials will be handled efficiently and waste managed appropriately.

Design considerations for houses

Provision

1.9 It is the developer's responsibility to ensure that all the necessary waste containers are in place before householders move into new properties.

1.10 All containers for kerbside collections are provided free of charge by the Council and remain the property of the Council.

1.11 Containers will only be provided after new addresses have been applied for and approved.

Capacity

1.12 Houses should have their own set of waste containers. Houses are provided with kerbside collections and each household is given five individual waste containers as shown in Fig.07 overleaf.

1.13 Where an existing property is subdivided into five or fewer flats, each dwelling should have its own non-recyclable waste container but communal containers can be provided for each type of recycling and garden waste. Where demonstrated that the storage of individual non-recyclable waste containers is not feasible, communal facilities may be provided.

1.14 For properties subdivided into six or more dwellings, refer to guidance for apartments.

1.15 The Council issues three sizes of bins for recycling and non-recyclable waste – 140, 180 and 240L (see Fig.06 overleaf). Garden waste bins are all 240L.

1.16 When allocating space for waste containers it should be assumed that the largest bins (240L wheeled bins) will be needed for all collections except food recycling, which use kerbside caddies.

Storage

1.17 A dedicated and screened bin enclosure should be provided. Enclosures should be located within the curtilage of each property, to the front of the house and in a shaded position, away from windows. Stores can have roofs and doors for visual amenity, but must be designed to allow bin lids to fully open to deposit waste.

Woodmore Mews, Charlton
Peter Barber Architects

Entrances are set back from the street which allowed the designer to make use of the *defensible space* between the home and public realm for storage.

© Morley Von Sternberg

1.18 Waste storage to the rear will generally be resisted and will only be permitted in exceptional circumstances where it can be demonstrated that storage to the front of a property is not possible.

1.19 It must be demonstrated that there is enough space for the storage of all required containers. Proposed stores should accommodate the largest bins that are likely to be provided, with additional space to future-proof the design.

1.20 There is no requirement to provide space for bulky waste as this can generally be accommodated at the front of dwellings as required.

Collection

1.21 Containers should be removed from bin stores prior to collection and placed at a suitable collection point by the public highway.

1.22 A hard, smooth surface, free from steps and gradients over 1:12 and wide enough to easily manoeuvre the bins should be provided along the route containers will be moved along.

1.23 This route should not be blocked by parked vehicles and should be appropriately lit and the collection point should be accessible when parking bays are occupied. The proposed route should not result in paths being blocked or containers stored on the carriageway.

Houses in Multiple Occupancy (HMOs)

1.24 HMOs should be treated in the same way as houses, but will be provided with multiple containers to increase capacity. Storage requirements should be considered from the outset of the design process to ensure suitably sized enclosures can be accommodated.

1.25 Larger HMOs or converted former commercial premises may require special arrangements, please contact Bexley's Environmental Services Team for further guidance.

1.26 Further, specific, non-SPD guidance on HMO developments will be provided by the Council in due course.

Aikin Terrace, Hackney
Stephen Taylor Architects

In this new row of terraced houses, waste storage was integrated within the *defensible space* to the front of each property enabling easy access for residents and waste collection teams. The design of the stores is reflective of the detailing of the new homes to fully integrate the storage.

© David Grandorge

Collection types

Fig.07 *Collection type and frequency*

Dwelling type	Waste type	Lid colour	Bin type options	Collection frequency
Houses and subdivided properties with five or fewer dwellings	Paper and card recycling	Blue	140L, 180L or 240L Wheeled bin	Fortnightly
	Plastics, cans and glass recycling	White	140L, 180L or 240L Wheeled bin	Fortnightly
	Food recycling*	Brown	23L Kerbside caddy	Weekly
	Non-recyclable waste	Green	140L, 180L or 240L Wheeled bin	Fortnightly
	Garden waste	Brown	240L Wheeled bin	Fortnightly**
Apartments including mixed use and subdivided properties with six or more dwellings	Paper and card recycling	Blue	240L Wheeled bin, or 1100L or 1280L Euro-bin	Weekly or fortnightly depending on bin type
	Plastics, cans and glass recycling	White or silver	240L Wheeled bin, or 1100L or 1280L Euro-bin	Weekly or fortnightly depending on bin type
	Food recycling*	Brown	140L Wheeled bin	Weekly
	Non-recyclable waste	Green	240L Wheeled bin, 1100L or 1280L Euro-bin, or 940L Chamberlain for chute systems	Weekly
	Garden waste	Brown	240L Wheeled bin	Fortnightly**

* Smaller kitchen caddies are also provided for internal use

** The garden waste collection is a chargeable service and will only be provided to householders, landlords and property managers who pay the small annual charge

Capacity of bin containers

Fig.08 *Container types with maximum dimensions*

Bin type	Capacity (Litres)	Height (mm)	Depth (mm)	Width (mm)	Image
Kerbside caddy	23	405	400	320	
Wheeled bin*	140	1085	485	545	
	180	1085	485	723	
	240	1065	735	580	
Chamberlain	940	1410	950	1010	
Euro-bin**	660	320	720	1250	
	1100	1370	985	1260	
	1280	1430	985	1265	

* When allocating space for wheeled bins it should be assumed that the largest bins (240 litres) will be needed for all collections.

** When allocating space for euro-bins it should be assumed that the largest bins (1280 litres) will be needed for all collections.

Design considerations for apartments

Provision

1.27 It is the developer's responsibility to purchase the necessary bins for external waste storage and ensure that these are in place before residents move in.

1.28 To ensure the manufacturing quality, branding and labelling meet required standards, it is highly recommended that these are acquired directly from the Council.

1.29 Recycling bins are provided free of charge and will remain the property of the London Borough of Bexley. Bins for non-recyclable waste must be purchased and the price will be provided upon application.

1.30 If a developer wishes to acquire bins independently, the full specifications must be provided and agreed with the Council.

1.31 The Council reserves the right to refuse to empty bins that do not meet the required standards if there is a risk of damage to collection vehicles or the safety of collection staff.

1.32 To encourage the proper separation of waste, adequate internal storage space must be provided. This is best achieved through the provision of multiple compartment bin units - at least three - integrated within fitted kitchens.

1.33 Designs that allow occupants to remove the compartments to carry their waste to the external bins are strongly encouraged as these are most effective in encouraging separation and reducing contamination.

Capacity

1.34 Apartments and properties subdivided into six or more dwellings require communal waste storage facilities.

1.35 The Council offers several sizes and types of bin as outlined in Fig.08. Any combination of these bin types can be used to meet the required capacity. As a rule, fewer bins are easier to collect, so if there is a choice between several small containers or fewer large containers, the latter is preferable.

Fig.09 *Waste capacity per apartment (L)*

Dwelling size	Non-recyclable	Paper and card	Plastics, cans and glass
1 bed	120	60	60
2 bed	150	75	75
3 bed	180	90	90
4 bed	200	100	100

One 140L food recycling bin is required for every six flats regardless of the size of dwellings.

$$\text{Number of bins required}^{*} = \frac{\text{Volume of refuse or recycling (L)}}{\text{Capacity of bin type}}$$

Fig.10 *Equation for calculating the number and size of bins for apartments*

**Where the capacity calculation results in fractions of bins it is necessary to round-up to the nearest whole bin. For example, a requirement for 3.4 no. 1280L bins should be rounded up to 4 no. 1280L bins.*

1.36 The provision of multiple 1280L Euro-bins is the most efficient method for collecting waste from larger developments and should be used for all developments of 12 flats or more (except where chutes are proposed as these require Chamberlain containers).

1.37 Applicants should use the waste capacity estimation in Fig.09 and the equation in Fig.10 to determine the number and size of bins required. These estimations are based upon an assumption of weekly collections of non-recyclable waste and fortnightly collections of recycling.

1.38 As recycling requires two separate streams, it is necessary to split the capacity requirement across two bins as shown in Fig.09. At least one of each container type must be provided.

1.39 For larger developments where multiple bin stores are to be provided it is essential that this calculation is undertaken for each bin area considering the number and type of flats that will be feeding into each.

1.40 Food recycling bins are provided at a ratio of one bin for every six flats. All food recycling bins are 140L wheeled bins as standard.

Disposal

1.41 D 28 of the Design Guide SPD Part 1 - Design Principles provides maximum drag distances that must be complied with.

1.42 Hallways and communal areas must provide an easy, clear route from any flat to the communal waste storage point. The route to the bin store should be similar to the route out of the building to incentivise use.

Fig.11 *Signage*

Where communal facilities are provided, applicants should ensure adequate signage is provided to assist in the use of bin stores by residents and waste collection operatives.

- Signage should be installed to allow residents and waste collection operatives to navigate to stores
- It is recommended that signage follows the ReLondon - Flats Recycling Toolkit. Applicants can propose alternatives to be discussed with the Council
- Signage within bin stores should use appropriately robust materials and clearly distinguish between locations for different containers - food waste, recycling, residual waste and bulky items for collection.

1.43 The position of bin storage areas should not inconvenience occupants through noise or smell. Generally, the route to the waste facilities should not lead occupants directly past dwellings they would otherwise not pass to leave the building.

1.44 The location of the bin store(s) should be suitably signposted, with further robust signage provided within stores to distinguish between different locations for waste as described in Fig.11.

1.45 The Council is not generally supportive of waste chute systems as they can malfunction, get blocked and be misused. Proposals for these will be assessed on a case-by-case basis. Developers with an interest in providing these systems should discuss them with the Council as early as possible.

Storage design

1.46 Communal bin stores should be provided within the footprint of the development.

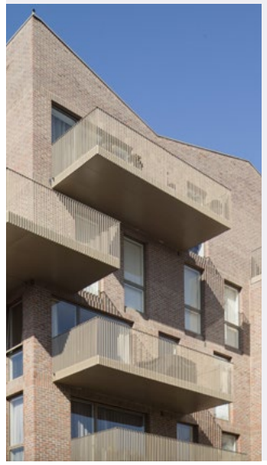
1.47 For larger developments several bin storage areas will be required to ensure an adequate distribution across the site and compliance with the maximum drag distances referenced in 1.41. Recycling facilities must be provided in all bin stores to encourage the separation of waste.

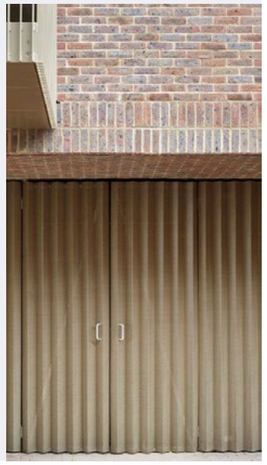
1.48 Bin stores must be designed to allow enough space for occupants to easily access bins, with a minimum 1 metre clearance in front of each bin to allow comfortable access. It must be possible for the lids of all bins to be fully opened.

1.49 All bins must be fully accessible from the front face. It is not acceptable to expect residents to use bins that are stored 'side-on' as the lids cannot easily be lifted from the side. The apertures on recycling bins can only be accessed from the front.

Brentford Lock, Brentford
Morris + Company, Mikhail Riches and Karakusevic Carson Architects

Bin storage areas were incorporated into the building footprint of this development, with the doors resembling other metalwork detailing across the development. Slightly perforated doors were used to additional provide ventilation to the bin stores.





© Morris and Company

1.50 There should be clearance of 150mm around and between each bin to enable ease of movement. Where necessary, the installation of a suitable buffer can prevent contact between the bins and the inside faces of the walls.

1.51 Each bin should be able to be used and moved without having to move another bin first.

1.52 Layouts that require bins to be swapped around mid-week are acceptable only if it is demonstrated, during the planning application process, that there will be site management presence at the development. Developers should discuss this with the Council at the earliest opportunity.

1.53 The minimum internal height for a bin store is 2 metres. There should be no internal fixtures of fittings that reduce the clearance above the bins, so that bin lids cannot be opened fully.

1.54 Any switches, taps, plugs or other similar installations should be placed above or well below the height of the rim of the bins, or protected in some other way.

1.55 Bin stores should be constructed of impervious, easy to clean, non-combustible materials that are able to withstand impacts from fully-loaded Euro-bins being moved.

1.56 The space should be well-ventilated and designed to prevent entry by vermin.

1.57 There must be a water supply with standard tap fittings available to the bin storage area to enable washing down of the bins, walls and floor.

1.58 Bin storage areas must have a suitable impermeable hard standing ground covering which can be cleaned easily.

1.59 The slope of the floor must enable proper drainage and the drainage system must be suitable for receiving a polluted effluent.

1.60 There should be adequate lighting in the bin storage area fitted with sealed bulkhead fittings for hosing clean.

1.61 Switching should be either through a proximity detection system or on a time delay button to prevent lights being left on. This lighting should be easy to maintain by local site staff without the need for specialist parts.

1.62 External doors must not open outward onto a public footpath or road and should not obstruct other access when open.

1.63 Doors should be able to be secured in the open position so that access is unimpeded whilst bins are being emptied.

1.64 Bin store doors must be sturdy and made of materials that can withstand heavy use. Doors should have a minimum opening of 2m to allow the largest bin type to be moved.

1.65 The design of doors and door thresholds should not prevent containers being easily moved in and out of the store.

Collection

1.66 For larger communal bins, routes to and from the collection point should be 2m wide or more.

1.67 Routes must not be obstructed by trees, shrubs, drainage channels or any such features. Gullies along the route should be able to withstand the weight of full containers.

1.68 Dropped kerbs should be provided to move the bins onto the carriageway and parking bays should not block the route to collection.

1.69 Signage and markings should be provided to indicate that access to storage areas should not be blocked. If bollards are used to prevent parking these should have 1.2m clear space between them.

1.70 The storage area should be secure from the wider public but accessible to waste operatives.

1.71 If not possible to have the storage areas accessed by the waste collection service owing to site constraints, a remote collection point which accommodates all bins must be provided. In this case, site management will be responsible to ensure that the bins are moved ahead of collection.

Bulky waste

1.72 Bulky household waste is any waste too large to be collected as part of usual household waste collections and includes items such as furniture and electrical items.

1.73 The Council provides a bulky waste collection service bookable on the Council website or by calling the Contact Centre. The cost of removal is dependent on the number and size of items.

1.74 This service is available to residents living in flats but will only be provided if adequate measures have been included in the design of flatted developments. If these measures are not in place then the Council may not be able to undertake collections and building managers will be required to make alternative commercial arrangements.

1.75 Details of each item will be taken at the time of booking and only those items listed and paid for will be collected. Unbooked items left in a bulky waste storage area or dumped elsewhere will not be collected and will be the responsibility of the building managers. It may be possible for building managers to use the Council's service to clear accumulations of bulky waste on an ad hoc basis, if agreed with the Environmental Services team.

Developers must provide a bulky waste storage area separate to bin stores and only accessible to residents. Storage facilities should be as follows:

a. For developments of **25 dwellings or more**, these storage areas must be separate from those used for storing household waste and recycling bins.
b. For developments of **up to 25 units**, the bulky waste storage area can comprise designated space within a bin-store for normal household waste.

The total area provided for the storage of bulky waste must equate to 10m^2 per 50 dwellings, with a minimum of 7.5m^2.

Stores should follow general bin store design guidance, be provided within the footprint of the building and be covered to ensure stored items can be reused, where possible.

1.76 Where bulky waste is stored in the same area as normal household waste it must not obstruct access to waste containers for both occupants and collection staff. Similarly, it should be possible to safely remove the bulky waste without the need to move any other bins. Collections will not be undertaken by The Council if the bulky waste causes an obstruction or is obstructed.

1.77 On larger developments it may be acceptable to provide centralised bulky waste stores, however it should not be anticipated that residents will move bulky waste to these stores themselves and a 'porterage' service will be required.

Apartments above shops

1.78 Where there is sufficient space and suitable access for communal containers for flats above shops, the guidance provided for apartments should be followed.

1.79 Where this is not feasible, flats above shops will be provided with the following collection services:

- Weekly collection of single-use clear recycling sacks which can be filled with co-mingled paper, card, plastic containers, cans, foil and glass bottles & jars. Sacks should be presented for collection alongside non-recyclable waste and will be collected on the same day
- Weekly collection contained within ordinary bins and/or tied refuse (black) sacks. The Council will not provide free containers for non-recyclable waste to flats above shops, but wheeled bins may be provided by landlords or building managers if permitted by the Environmental Services team
- Weekly collection of food waste.

1.80 Packs of recycling sacks will be delivered twice a year and residents can request further ad-hoc deliveries of sacks through the Council website or by calling the Council's Contact Centre.

1.81 For developments that include multiple apartments above shops with clear sacks recycling, a clearly labelled storage container will need to be provided. This can be a cupboard or box (typically plastic or timber) which can be easily accessed by both occupants and collection staff. Due to the way collections are undertaken wheeled bins cannot be provided for this function.

Assisted collections

1.82 Assisted collections are provided, on request, for householders who are unable to move their containers to the boundary owing to illness or disability.

1.83 Householders who are subject to an assisted collection will have their containers collected and returned to an alternative location on their property.

1.84 The collection location is agreed with The Council upon application and is usually close to the front door or at the top of a private driveway.

Design considerations for mixed-use and commercial developments

Capacity

1.85 The quantity of waste generated in commercial premises can vary significantly, dependent on the nature of occupants and the frequency of collection they secure through their waste contract.

1.86 Architects and developers should identify the types of businesses intended for any units proposed and ensure that adequate storage capacity is provided for the likely quantity of waste generated. Further guidance for some types of premises is given in British Standards BS 5906:2005.

Disposal

1.87 The permitted drag distances will be the same as those for purpose-built flats, as outlined in the Design Guide SPD Part 1 - Design Principles.

Storage

1.88 External storage areas for waste on mixed-use developments must be segregated, with domestic and commercial waste bins located in separate secured areas.

1.89 Access to the domestic bins should only be permitted for residents of the development and site management.

1.90 It is also good practice to secure any commercial bin storage areas to prevent residents from misusing these.

1.91 Suitable arrangements for segregating the storage of bulky household waste items will also need to be made, meeting the criteria set out for apartments.

1.92 All storage areas must be easily identifiable using clear and appropriate signage.

1.93 It is also recommended that residents and businesses are provided with leaflets or information sheets explaining which waste storage areas to use.

1.94 In developments where on-site businesses will be arranging individual contracts with waste collection providers, it will be necessary to ensure there is enough space available for each commercial unit to have its own bin or allocated area for bin storage.

Collection

1.95 On developments with multiple commercial units, landlords or site managers may choose to include the cost of waste collection in the unit rental price. This will enable a single contract to be arranged between the landlord/site manager and the Council or a licensed waste collection provider and remove the need for individual bins/storage areas to be provided for each business.

1.96 Architects and developers should ensure that provisions for waste storage and collection are compatible with the varying container and vehicle types used by different waste contractors.

1.97 If it is known that a provider is the intended contractor for a site, then that company should be consulted with at the earliest opportunity.

Locks and security

1.98 Unsecured bin stores that are targeted by fly-tippers or used as an illegitimate means of waste disposal for neighbouring residents and businesses will entail additional costs for building managers and The Council and can create serious dis-amenity to residents and create a sense of insecurity. The Council therefore encourages the securing of stores to prevent illegal entry, theft and anti-social behaviour such as vandalism and arson.

1.99 Bin stores should not become a 'weak point' that provides access to the building for intruders. Bin storage that doesn't provide further access into a building can eliminate this concern. Relying on FB pattern locks or key codes for building security is not advised.

1.100 If locks or padlocks are to be fitted to any door or gates at bin storage area, these should be of a standard 'Fire Brigade' pattern.
Unique keys for bin stores or access gates are not acceptable. Bexley collection staff carry the following keys as standard:

- FB1 mortice key
- FB2 mortice key
- FB4 mortice key
- FB14 padlock key

1.101 The use of electronic key fobs on bin store doors, access gates or vehicle barriers should be installed with a code input override option.

1.102 The use of 'tradesman's' locks whereby access is available only at certain times of the day or week are not acceptable as access for collections needs to be maintained at all times.

1.103 If a keypad and code is proposed for gaining access, developers and site managers should be aware that the code will be shared with a number of collection staff. All arrangements must be agreed with the Council prior to installation.

1.104 If locks or codes are changed at any point, it will be the responsibility of the site manager to inform Bexley's Environmental Services team giving prior notice of any changes.

Innovative approaches to waste collection

Compactors

1.105 In locations where waste storage space is limited, it may be appropriate for developers to consider using compaction systems to reduce the volume of the waste being generated on site.

1.106 There are various types of compactors available to suit different types and sizes of development and the Environmental Services team can provide further guidance if compactors are being considered.

Underground Refuse Systems

1.107 Underground Refuse Systems (URS) locate waste storage containers in underground facilities, helping architects and developers to provide more space at ground level for other use, which is beneficial in creating *active frontages* across a building.

1.108 Underground containers are far bulkier than traditional mobile waste containers so typically more suitable for larger developments.

1.109 Underground systems can vary from more basic systems involving standard waste containers being stored in a section of a basement car park, to more advanced systems where bulk storage containers are lifted out using crane attachments on refuse vehicles.

1.110 At the time of drafting, there are no URS in operation in Bexley, however the Council is open to exploring this as an option and applicants should contact the Environmental Services team for further guidance if an underground system is being considered.

The Wilds Ecology & Envac Centre, Barking
Jestico + Whiles

An underground Envac waste collection system is used to eliminate the need for bin stores across the masterplan. The refuse facility also functions as an ecology centre for the neighbouring park and cafe for the local community.

© Jestico + Whiles

Intelligent Chute Systems

1.111 Intelligent Chute Systems allow the separation of recycling from residual waste by allowing residents to select the material that they are placing in the hopper, with separation undertaken by a deflection plate at the bottom of the chute that directs the waste into different containers.

1.112 These systems have not been proven to work reliably in a domestic setting so are not currently supported by the Council.

Automated Vacuum Collection Services

1.113 Automatic Vacuum Collection Systems such as the Envac system have been shown to work well in very large new developments.

1.114 Residents deposit their waste in an inlet close to their dwelling before the waste is removed through an underground pipe network using a high-power vacuum system and deposited at a central location into large containers. The large containers are removed and can be emptied by the Council on a regular basis.

1.115 As well as freeing up ground floor space, such systems reduce vehicle movements on site as it is necessary only to visit one location to remove waste from a whole neighbourhood. Traditional bins are not required so 'bin blight' is eliminated which can also enhance also the public realm.

1.116 Due to the cost involved in building and maintaining the pipe network and centralised collection station this system is typically only cost effective on very large developments. *Retrofitting* such a system into existing neighbourhoods has not yet been proven to be cost effective in the UK.

1.117 Applicants should contact the Environmental Services team for further guidance if a vacuum system is proposed for use.

Circular economy in construction

1.118 The UN Building Materials and the Cimate: Constructing a new future report (2023) reports that 37% of global carbon emissions come from the production of new construction materials, whilst the UK Construction Industry Annual Waste Report (2023) stated that appropriately 62% of the UK's total annual waste results from waste material generated by the construction industry.

1.119 Adopting circular approaches to new development seeks to reduce the impact of creating and disposing of construction materials, thus lowering the carbon emissions required for these processes, whilst also conserving natural resources and habitats.

1.120 A *circular economy* can also have social and economic benefits in addition to the environmental benefit, for example a reduction in waste generation, and therefore pollution, which can in turn enhance the quality of residents' lives and a reduction of construction costs due to increased material recycling and reuse.

1.121 Bexley Local Plan Policy DP29 Waste management in new development states that all *major* development should promote *circular economy* outcomes and provide a *Circular Economy* Statement in line with London Plan Policy SI 7 Reducing waste and supporting the *circular economy*. This means using fewer resources and energy to reduce the impact of construction on the natural environment.

1.122 Applicants must, therefore, demonstrate how circularity has been considered for their proposal and ensure this is embedded in design development from first principles. Applications that demonstrate steps towards meaningfully reducing the *embodied carbon* of their development - including through implementing *circular economy* principles - will be viewed favourably.

Defined by the London Plan, the six *circular economy* principles are:

a. Building in layers - ensuring that different parts of the building are accessible and can be maintained and replaced where necessary
b. Designing out waste - ensuring that waste reduction is planned from project inception to completion, including consideration of standardised components, modular build, and reuse of secondary products and materials
c. Designing for longevity
d. Designing for adaptability or flexibility
e. Designing for disassembly
f. Using systems, elements or materials that can be reused and recycled

1.123 Applicants are required to submit a *Circular Economy* Statement in line with the London Plan requirements and should refer to the Mayor of London guidance provided in the *Circular Economy* Statements LPG. The guidance also provides information on design approaches applicants can take when exploring circularity.

1.124 For example, where existing buildings occupy a development site, applicants should investigate whether these structures, components and materials are suitable for *adaptive reuse* and *retrofitting* - either in full, or as a partial retention and refurbishment.

1.125 In these instances, applicants are strongly encouraged to first undertake a demolition audit of the existing structures to determine their suitability for reuse.

1.126 Where reuse is not deemed an option, applicants should consider how the structures can be otherwise used in the development, for example crushed and used as aggregate during construction, or used within elements of the landscape design.

1.127 When designing new buildings and infrastructure, applicants should consider how their development is designed for future adaptation, reconstruction and deconstruction as user needs and priorities evolve. Where appropriate, an inherently flexible design can enable this and should be explored by applicants.

1.128 For *major* schemes, this must be captured in the *Whole Life-Cycle* assessment required by the GLA, who have provided guidance on completing this in the Whole Life-Cycle Carbon Assessments LPG. Whilst not a planning required for smaller developments, demonstrating consideration for the whole life-cycle impact of the proposal will be looked upon favourably by the Council.

2 Highways and Transport

Policy context

Compliance with the Bexley Local Plan and the local transport policies set out in Bexley's Local Implementation Plan is integral to the Council's approach to assessing the likely impact of developments on the transport network, including ensuring that new schemes and re-developments meet Bexley's current and future needs. In some cases, local needs mean criteria and thresholds differ from those accepted elsewhere in London.

Bexley Local Plan Policy DP22 Sustainable transport details the Council's support for the alternatives to traditional car parking such as the use of Electric Vehicle Charging Points (EVCPs) and car clubs. This should be read alongside Policy SP10 Bexley's transport network, which encourages a transitional approach to providing car parking in new developments and notes parking layouts should be flexible.

Policies DP23 and DP24 set out the Council's approach to parking management and the impact of new development on the transport network. The latter covers the Council's procedures for alterations to the *highway* network to mitigate the effect of development traffic, as well as the 'Monitor & Manage' process to confirm whether *highway* works, based on predictions in the Transport Assessment, proved to be correct or not.

London Plan Policy T6 Car parking sets the framework for assessing parking provision in planning proposals.

Guidance provided in this chapter should be read in conjunction with the Public Realm section of the Design Guide SPD Part 1 - Design Principles, in particular the Movement chapter.

General guidance

The Council is the Highway, Traffic and Street Authorities for all roads in the borough apart from the Transport for London Road Network (TLRN), which in Bexley is the A2 and A20.

Any works or alterations to the *highway* require permissions from the Highway Authority, which are separate to the planning process.

These separate permissions prior to works in the *highway* include road opening notices for trial holes etc. and permits for utility connections to a new development (under the New Roads & Street Works Act 1991). These are in addition to the agreements for alterations to the *highway* (under the Highways Act 1980) and any necessary Orders to control traffic or stop-up sections of the *highway* (both of which are subject to separate public consultation and possible objection).

The timing of works under notices and permits is dependent on a number of factors, including other scheduled or emergency works in the *highway* in the vicinity of the site, which may mean than a developer's planned programme is delayed as a result.

The Council is committed to the approach set out in the national guidance, Manual for Streets (MfS), including MfS 2 and 3. This guidance sets out local standards and criteria for streets and their maintenance against specific elements of MfS and the documents should be considered in conjunction.

Prior to formal pre-application discussions, the Highway Authority can provide initial guidance on the scope of *highway* and transport information required for the pre-application process. The team can also provide guidance on non-planning processes and likely required approvals. To obtain initial *highway* and transport advice, applicants should contact the Highway Authority at: transport&development@bexley.gov.uk

For pre-application meetings arranged without initial guidance sought from the Highway Authority, and to ensure productive pre-application meetings, applicants should prepare data and proposed analysis techniques on traffic generation, servicing, access arrangements and parking. This is usually best clarified through an initial scoping report on transport-related issues, which should include any need for modelling, ongoing management plans or future mitigation works.

Further information on the Council's fees for development-related *highway* approvals, and likely order of magnitude costs for future impact of the development scheme, can be sought from the Highway Authority.

Transport Assessments & Statements

2.1 Developers must submit an evaluation of the travel implications of their proposals, which will form part of the Council's considerations of the development. This will need to set out the expected impact of the development on the *highway* and transport networks during demolition and/or construction and when completed, with full justification and to a scope agreed with the Highway Authority.

2.2 Where appropriate, this will need to be accompanied by obligations for future monitoring, to ensure that measures agreed at the time permission was granted has proved to be sufficient. These measures can include the impact of the development on the *highway* network and required future mitigation, or the success of travel plans and provision of additional measures for active travel in the future, achieving mode of travel targets agreed under the planning consent.

2.3 This supporting justification can vary from a Transport Statement (TS) for smaller and more basic schemes, to a Transport Assessment (TA) for larger or more complex schemes, or proposals in areas where the transport network is more sensitive. Fig.12 sets out the information to be included in these documents.

Thresholds and criteria

2.4 Appraisals should set out the existing transport infrastructure and the current traffic situation, as well as predicting the effects of the proposed development.

2.5 The scope and thresholds of the appraisals are generally the same as those advocated by Transport for London (TfL), however the Council has some local thresholds.

2.6 Developers should use the thresholds listed in Fig.12, based on the size or scale of the proposed land uses.

Fig.12 *Local Bexley Transport Statement / Transport Assessment spatial thresholds (based on proposed land use)*

Class Use	Transport Statement	Transport Assessment
Class E Commerical, business and service	1000 - 2500m² GFA*	>2500m² GFA
Class F.1 Learning and non-residential institutions	Highway Authority request	Highway Authority request
Class F.2 Local community	Highway Authority request	Highway Authority request
Class B2 General industrial	1000 - 2500m² GFA	>2500m² GFA
Class B8 Storage and distribution	1000 - 2500m² GFA	>2500m² GFA
Class C1 Hotels	Highway Authority request	>100 bedrooms
Class C2 Residential institutions	Highway Authority request	Highway Authority request
Class C2A Secure residential institutions	Highway Authority request	Highway Authority request
Class C3 Dwellinghouses	10-50 units	>50 units
Class C4 Houses in Multiple Occupation (HMOs)	Highway Authority request	Highway Authority request
Sui generis, including:		
Food retail	250-800m² GFA	≥800m² GFA
Non-food retail	800-1000m² GFA	≥1000m² GFA
Restaurants & cafes	250-2500m² GFA	≥2500m² GFA
Drinking establishments	250-600m² GFA	≥600m² GFA
Hot food takeaways	250-500m² GFA	≥500m² GFA
Assembly and leisure	Highway Authority request	Highway Authority request

2.7 Not all planning applications require a transport appraisal; however the Council may ask for one to be submitted even if the development proposal does not appear in the list in Fig.12. This may be due to the cumulative effect of several uses below the individual threshold for each in a mixed-use scheme, traffic generation characteristics, or in areas where the transport network is more sensitive (such as in a Controlled Parking Zone (CPZ)).

2.8 Traffic generation characteristics may, on their own, require a TA, even if the spatial thresholds are not met, and these developments are also listed in the TfL Transport Assessment guidance. These characteristics, as well as those related to the period over which a development may be delivered, are outlined in Fig.13.

Scope of assessments and considerations

2.9 Fig.14 is a general guide only and applicants should determine the full scope with the Highway Authority as early in the planning process as possible.

2.10 The contents should demonstrate a prioritisation for active travel, looking first at walking then cycling and public transport trips, rather than focusing on car trips.

Fig.13 *Developments that will require a TA where spatial thresholds are not met are those:*

- Not in conformity with the adopted development plan
- That generate >30 two-way vehicle movements in any hour
- Proposing 100 or more car parking spaces;
- Which may increase accidents or conflicts among motorised users and non-motorised (particularly vulnerable) users
- Generating significant freight or HGV movements per day, or significant abnormal loads per year
- In a sensitive location on the network or with inadequate transport infrastructure, including substandard roads, poor pedestrian/cyclist infrastructure or inadequate public transport provision
- Those that are likely to be delivered in phases over several years.

Fig.14 *Areas that would typically be covered in a TA or TS include:*

- An introduction and baseline conditions for site, local area, and wider network (including public transport connectivity and opportunities for active travel, as well as the highway network)
- Trip generation for all modes, existing and future, including construction traffic and potential parking issues
- Likely impacts at the site, local area and wider network, including cumulative and total impacts
- Mitigation and opportunities to support local transport goals
- Frameworks or the scope of Construction Management Plans, Travel Plans, Car Parking Management Plans and Delivery & Servicing Plans
- Suggested 'monitor & manage' protocols to ensure future traffic impacts are the same as predicted at the time planning permission was granted and whether further mitigation could be delivered if required.

Survey Methodologies

Traffic surveys

2.11 Surveys to identify the existing performance of the *highway* network, in terms of junction capacity, queues and journey times, will be required as part of the Transport Assessment (and possibly a Transport Statement). The scope of these surveys should be agreed with the Highway Authority, to ensure that the number and timings of surveys produces the most representative data to reflect actual conditions.

2.12 Guidance for developers who wish to arrange and undertake their own surveys, either direct or through specialist consultants/contractors is available from the Highway Authority.

2.13 The Council also carries out its own surveys, which can be made available for a fee. Details of the data available, and the likely cost, can be obtained by contacting the Highway Authority.

2.14 The Bexley Local Plan is supported by strategic traffic models and where appropriate developer's submissions should be consistent with and informed by the outputs from these. The Council may be able to make this modelling available for a fee.

Parking surveys

2.15 Developments should avoid contributing to an increase in on-street parking, particularly where this would be detrimental to amenity, traffic flow or road safety.

2.16 Where this may arise, Parking Capacity Surveys should be submitted as part of the application. As with all surveys, data should be collected at the times agreed in the Highway Authority scope and over a minimum of two days to ensure results are consistent and representative. This should provide an accurate picture of existing on-street parking availability

Fig.15 *Parking Capacity Survey methodology for surveys undertaken in Bexley*

- The timing of surveys and areas to be surveyed should be agreed in advance with the Highway Authority, to ensure they are at the time of day when parking will be most critical for the development as well as the surrounding area
- Where no restrictions are present on a road 3 metres width should be assumed as the minimum clear vehicle path when establishing where vehicles can and cannot park (to ensure sufficient room for HGVs and emergency vehicles to be able to safely pass etc.)
- The results should be presented in both a graphic and tabular form
- A plan, preferably at 1:1250, should be provided indicating the location of the available parking spaces (the plan should include details of waiting restrictions and vehicle crossings over footways etc.)
- The number of cars parked on each road within the survey area on each night must be counted and recorded, and the location of each car should be noted approximately on the plan (marked with an 'X')
- Photographs should be taken of the parking conditions in the survey area to support the results
- When calculating potential parking capacity, it should be assumed that each vehicle space measures 5.5m in length (rather than 5m as set out in the Lambeth methodology).

and any spare capacity, so an informed decision can be taken on the likely impacts of the proposal. This means that only areas where parking would be acceptable should be included in the surveys.

2.17 The survey methodology recommended in the 2021 Lambeth Council Parking Survey Guidance Note is generally acceptable when undertaking surveys, provided the local amendments outlined in Fig.15 are incorporated.

2.18 Conducting the surveys to suit the local context is vital and therefore should ensure that the length of assumed parking spaces is suitable for the Bexley context, using a 5.5m module, rather than 5m as in Lambeth. Surveys should be undertaken at appropriate times and dates to record representative variations in parking demand throughout the day as well as the peak parking demand of the proposed use (e.g. shift changeovers for commercial developments or healthcare-related uses).

2.19 If a development occurs in an area where a Controlled Parking Zone (CPZ) or Restricted Parking Zone (RPZ) system operates, the LPA may require that future occupiers are not eligible to acquire permits to park in the Zone to reinforce travel by sustainable modes.

2.20 Any alteration to Traffic Management Orders relating to on-street restrictions and the associated signs and lines, including those controlling a CPZ or RPZ, will only be carried out at the applicants' expense.

2.21 For car-free or car-lite developments, it must be evident in the application how this arrangement will not create overspill parking onto existing streets, as well as what initiatives will be included in the Travel Plan to encourage active travel and discourage car ownership and use.

Transport Assessment Conclusions and 'Monitor & Manage'

2.22 The TA or TS should provide a robust appraisal of the likely impact of the development on the road network and public transport services, including trip rates/assignment to the local *highway* network and modelling the impact on the operation/queuing at junctions.

2.23 This should be carried out in accordance with the scope agreed with the Highway Authority and will normally include junction modelling. Applicants should use approved software packages and calibrated ensure calibration with actual queue length surveys, following the TfL Traffic Modelling Guidelines and criteria in the Department for Transport Design Manual for Roads and Bridges (DMRB).

2.24 Whilst service enhancements to mitigate impacts on public transport services may be dealt with by financial contributions for the operators, potential impacts on the road network is likely to include *highway* alterations in addition to those associated with the access to the development itself.

2.25 Depending on the period over which a development is likely to be delivered, especially if delivery is likely to be phased, and the nature of the alterations proposed, or the sensitivity of the operation of the network in that location, the Council may require a 'Monitor & Manage' protocol to any planning permission, pursuant to Bexley Local Plan Policy SP10 Bexley's transport network and paragraphs 6.27 and 6.28 in the policy implementation text.

2.26 This protocol will set out a methodology for future surveys and monitoring after the development is occupied at pre-determined levels to confirm whether the predictions in the TA, and any resultant *highway* mitigation works, were adequate.

2.27 It will also identify apposite trigger points for agreed interventions when they have been reached, and if not what further mitigation might be required.
The results of the future study will inform the nature of any further mitigation measures necessary and determine apposite developer contributions and other funding sources.

2.28 Any off-site *highway* works may be carried out by the developer under a S278 agreement or, depending on the sensitivity of the *highway* concerned, by the Council itself.

Active Travel Zone (ATZ) Assessments

2.29 An Active Travel Zone (ATZ) Assessment is a tool used to appraise the accessibility of a site and its surroundings to sustainable modes of travel and can be a standalone document or included in a Travel Plan or as part of a Transport Assessment.

2.30 An ATZ Assessment evaluates the quality, safety and accessibility of walking and cycle routes between a proposed development and key local destinations, such as:

- Public transport stops and stations
- Current and future cycle networks
- Town centres and shopping areas
- Local employment districts
- Local schools, colleges and hospitals
- Parks and green/blue spaces
- Places of worship

2.31 As well as identifying existing connections, the assessment should identify suitable improvements that could be provided through the development to ensure that it facilitates sustainable travel, thereby improving health outcomes and reducing car dependency.

2.32 The assessment should also cover how possible additional measures or improvements identified through future monitoring can be funded and delivered.

2.33 Further detailed advice and guidance is available through TfL; however, the scope of the ATZ and associated methodology should be discussed with the Highway Authority in advance of completion.

2.34 The scope and methodology of an ATZ will typically follow the steps outlined in Fig.16.

Fig.16 *ATZ Assessment scope and methodology*

1 Defining the ATZ Scope

- Mapping the site's 20 minute walking and cycling zones
- Identifying key active travel destinations within the ATZ

2 Prioritising Destinations

- High priority destinations:
    - Public transport nodes;
    - Strategic cycle networks;
    - Town centres and shopping areas; and
    - Employment districts
- Medium/low priority destinations:
    - Green spaces;
    - Schools; and
    - Medical centres

3 On-site Analysis and Photographic Surveys

- Day and night time site visits to assess routes using Healthy Streets Indicators, with (Point of View) photographs at appropriate intervals such as:
    - Easy to cross;
    - People feel safe;
    - Not too noisy;
    - Places to stop and rest; and
    - Shade and shelter
- Identifying hazards, deficiencies, or severance points impacting active travel

4 Vision Zero Analysis

- Mapping clusters of collisions resulting in deaths or serious injuries (KSIs) along key routes
- Proposing measures to improve safety and reduce vehicle dominance

5 Healthy Neighbourhood Characteristics

- Assessing street density, permeability and proximity to green spaces
- Identifying opportunities for improvements in public realm and active travel infrastructure

6 Recommendations and Mitigation/Improvement Measures

- Prioritised improvements, such as:
    - New or improved pedestrian and cycle crossings;
    - Footway widening;
    - Resurfacing;
    - Hazard removal, protected cycle lanes and segregated routes; and
    - Enhanced wayfinding, lighting and safety measures

Travel Plans

2.35 A Travel Plan is a package of measures to manage the transport and travel needs of a development. A successful Travel Plan will reduce the impacts of transport on the local environment and increase access to the site by more sustainable methods, with additional benefits during demolition, construction and operation.

2.36 Measures to increase travel choice, for example offering discounted bus tickets or implementing a car share scheme, are to reduce dependency on the car and discourage unnecessary car use, such as restricting access to parking permits, should be included in the Travel Plan.

2.37 The Travel Plan should address journeys to and from work, and can include business travel, fleet management, visitors to the site and deliveries. It can also apply to residential development.

2.38 Framework or draft Travel Plans may be required, alongside the other draft plans outlined in Fig.17, to support planning applications and often form part of the Transport Assessment or Transport Statement.

2.39 Where planning permission is granted, the submission of final plans will be secured by condition, to manage construction traffic as well as the impact of the ongoing operation of the development.

2.40 A Section 106 (S106) agreement or unilateral undertaking will typically control the successful delivery of the actions in the Plan(s), including how the Plan(s) will be monitored and reviewed, and how the failure to meet targets will be dealt with.

2.41 As the principal function of the Travel Plan is to promote sustainable travel and to monitor, review and manage travel issues related to the completed development, the scope of information required will vary dependent on the

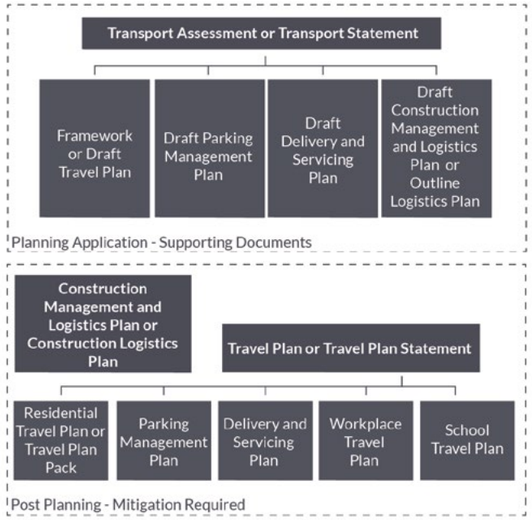


Fig.17 *Travel Plan requirements*

Fig.18 *Local Bexley Travel Plan spatial thresholds (based on proposed land use)*

Class Use	Travel Plan Statement	Full Travel Plan
Class E Commerical, business and service	>20 staff; <2500m² GFA	≥2500m² GFA
Class F.1 Learning and non-residential institutions	Highway Authority request	Highway Authority request
Class F.2 Local community	Highway Authority request	Highway Authority request
Class B2 General industrial	>20 staff; <2500m² GFA	≥2500m² GFA
Class B8 Storage and distribution	>20 staff; <2500m² GFA	≥2500m² GFA
Class C1 Hotels	>20 staff; <20 bedrooms	>20 bedrooms
Class C2 Residential institutions	Highway Authority request	Highway Authority request
Class C2A Secure residential institutions	Highway Authority request	Highway Authority request
Class C3 Dwellinghouses	50-80 units or Highway Authority request	>80 units or Highway Authority request
Class C4 Houses in Multiple Occupation (HMOs)	Highway Authority request	Highway Authority request
Sui generis, including:		
Food retail	>20 staff; <1000m² GFA	≥1000m² GFA
Non-food retail	>20 staff; <1000m² GFA	≥1000m² GFA
Restaurants & cafes	>20 staff; <750m² GFA	≥750m² GFA
Drinking establishments	>20 staff; <750m² GFA	≥750m² GFA
Hot food takeaways	>20 staff; <750m² GFA	≥750m² GFA
Assembly and leisure	Highway Authority request	Highway Authority request

size and type of development proposed. The spatial thresholds in Fig.18 provide a guide to the type of Plan likely to be required, although the Highway Authority can provide further clarification if needed.

2.42 A Travel Plan Statement, with sustainable measures and an action plan for implementation, but without specific targets, may be sufficient for smaller schemes with less staff or fewer units. A full Travel Plan is required for larger or more complex schemes.

2.43 The exact scope of a Travel Plan Statement or a Travel Plan must be agreed with the Highway Authority. This will broadly consider the likely impacts created during the demolition and construction phases and a separate, more detailed assessment may also be required in the Construction Management & Logistics Plan (CMLP) (or outline construction logistics plan or as part of a 'code of construction' pursuant to a planning condition).

Construction Management & Logistics Plan

2.44 Demolition or construction-related movements, and mechanisms to mitigate their impact, are typically controlled through a Construction Management & Logistics Plan (CMLP), or other planning-approved document dealing with construction and demolition logistics.

2.45 A CMLP will be required for *major* residential developments, and other residential or commercial schemes likely to have a significant impact on traffic congestion or pedestrian safety. Where loading and delivery activities associated with the demolition of construction of phases of development would cause congestion or obstruction on the highway or prejudice amenity in a sensitive street, a CMLP will also be required.

2.46 This may take the form of a stand-alone document, or a Construction Logistics Plan (CLP). For schemes with fewer construction vehicle movements, details may need to be submitted for approval and controlled as part of a 'code of construction' pursuant to a planning condition.

2.47 TfL has issued guidance and best practice notes for the production of CMLPs and CLPs, however the exact scope of the details required will be informed by the conditions of Bexley's transport network and the size of the development. Pre-application advice from the Highway Authority should therefore be sought, particularly for non-residential schemes or residential developments with fewer than 10 homes.

2.48 A CMLP or CLP should ensure that contractors and their sub-contractors, as well as those delivering to or collecting from the site, meet the requirements of the 'Considerate Contractors' scheme, Construction Logistics and Community Safety (CLOCS), and TfL's Freight Operators Recognition Scheme (FORS).

2.49 A draft version of the CMLP or CLP may be required in instances where the proposed demolition and construction would significantly impact the free flow and safety of the *highway* network or residential amenity. The Plan should include:

- Measures of how construction traffic can access the site safely and how potential traffic conflicts can be minimised
- The route construction traffic shall follow to and from the site and any 'barred routes' (including fines and sanctions for any breaches)
- Details of provisions for on-site delivery, off-loading, turning and parking of construction and operatives' vehicles, identifying efficiency and sustainability measures to be undertaken during site construction and the hours of operation.

2.50 It is recommended that a Final Plan is submitted for approval once a contractor has been appointed, allowing transport issues to be finalised. The Final Plan may also be used as a mechanism to ensure that any damage to the local *highway* caused by construction traffic is rectified once the development is complete, equivalent to Section 59 of the Highways Act 1980.

Framework or draft Travel Plans

2.51 A framework or draft Travel Plan is prepared and submitted in anticipation of a full Travel Plan when the occupiers of the development are unknown, particularly for commercial schemes or mixed-use developments.

2.52 Such Plans may be required as a result of a Transport Assessment or Statement, to minimise impact on the road network and contribute to a sustainable development as the other benefits of travel planning are also realised.

2.53 Framework and draft Travel Plans should include a site audit, travel surveys that establish preliminary modal split information, and a mechanism for how the document will be monitored, as well as a commitment to individual Travel Plan development by the future occupiers of the site.

2.54 For sites that are not currently occupied, or where a change of use is proposed, the method for predicting the likely modal split to be used for the TA or TS should be agreed in advance with the Highway Authority. For residential developments this may be derived from the Census (Super Output Area) data, while for commercial proposals obtained from travel plan monitoring results of nearby premises.

2.55 As individual occupiers are confirmed they will need to submit a full Travel Plan or Travel Plan Statement in accordance with the framework or draft Travel Plan prior to their occupation.

2.56 For larger, more complex or phased schemes this might include modal splits informed by surveys of the earlier phases, or by information obtained during the property marketing or employee recruitment processes.

2.57 This requirement should be included in the Section 106 agreement or unilateral undertaking, or within the terms of the lease, before ownership of that part of the site is transferred.

School Travel Plans

2.58 Planning applications relating to schools, nurseries and colleges need to include specific information about travel to assess the impact of changes to the transport demands of these sites, most commonly owing to a change in the number of pupils or staff, or changes to the access arrangements for the school.

2.59 Sometimes a school application is for minor change that won't impact on transport and in these cases the level of any supporting information should be agreed in advance with the Highway Authority. This is in addition to any travel planning the school is undertaking in connection with the TfL Sustainable Travel: Active, Responsible, Safe (STARS) travel planning and monitoring toolkit.

2.60 Travel to and from higher education facilities should be managed through a Workplace Travel Plan.

Residential and Workplace Travel Plans

2.61 Residential and Workplace Travel Plans will be specific to each individual site

and identify measures and targets for the operational travel and transport needs of the occupiers and visitors to the completed development. Priority should be given to active modes of travel to reduce non-essential car travel.

2.62 Public transport use can be encouraged through the use of on-site real-time displays for bus and train services in entrance or communal areas of both residential and commercial uses.

Residential Travel Plans

2.63 Residential Travel Plans are essential to ensure sustainable travel is an integral feature of a development and should form a package of measures integrated into the design, marketing and occupation of the site rather than *retrofitted* once the development is established.

2.64 Residential Travel Plans are concerned with journeys made from a home to multiple and changing destinations (and vice versa). Each Residential Travel Plan is site specific, with detailed measures determined by site opportunities and constraints such as the location of existing public transport routes, health & community facilities, and workplaces in the immediate area.

2.65 Prepared by the developer, a Residential Travel Plan should support and promote means of active travel. It should include the physical measures that have been agreed as part of the planning permission, such as cycle parking. However, the bulk of the Travel Plan should be supporting soft Travel Plan measures such as marketing, promotion and awareness-raising of sustainable travel initiatives and opportunities among residents.

2.66 As with all Travel Plans, Residential Travel Plans are secured via a Section 106 legal agreement or unilateral undertaking, and as such the modal choice of all occupiers and users, including visitors, of the development must be monitored, reviewed, regularly updated and audited.

2.67 This can be carried out via travel surveys to help examine travel patterns, attitudes towards non-car use, and the most effective measures for promoting sustainable travel in that location. The Travel Plan should last for the lifespan of the development. In some instances, the developer's commitment will cover the first five years of use, with an aim that sustainable travel will become embedded within the culture of the development or other self-financing initiatives are introduced after that.

Residential Travel Plan Packs

2.68 One of the simpler initiatives under a residential Travel Plan is the provision of packs for each household on first occupation providing local information and timetables for public transport, as well as travel vouchers that can be used towards bus and rail travel, and/or cycle purchase.

Workplace Travel Plans

2.69 Workplace Travel Plans are required to manage the travel aspects of organisations that generate a significant number of employee trips including: offices, hospitals, hotels, distribution centres, large shops and supermarkets, cinemas and theatres, primary care centres, GP surgeries and higher education establishments.

2.70 The travel activities to be addressed include staff travel to and from work and on business as well as visitor, client and customer travel. Other transport issues such as suppliers' deliveries, waste collections, contractors undertaking work on site and fleet management movements should be covered if they are an important aspect of the business' operation, unless they are included in a Servicing & Delivery Plan.

Business Travel Plan Packs

2.71 To help promote more sustainable travel, businesses are encouraged to make travel planning information available to employees and customers. In addition to local information and timetables for public transport, these can include staff travel vouchers that can be used towards bus and rail travel, and/or cycle purchase.

Delivery and Servicing Plans

2.72 A draft Delivery and Servicing Plan (DSP) may be required where the likely servicing requirements could significantly impact on the free flow and safety of the transport network or residential amenity, to ensure proactive management of the delivery and servicing arrangements.

2.73 The Council will seek DSPs for all *major* developments, including those that are required to submit a Travel Plan or Travel Plan Statement, and where it is required to address issues identified through the Transport Assessment or Statement .

2.74 For commercial developments, the DSP would be expected to consider:

- The stock management strategy (just-in-time etc.)
- The number, frequency and size of deliveries and collections - including vehicles used for food delivery services
- The capacity of the on-site loading and storage provision
- Existing on-street loading limits and current usage
- Likely servicing hour restrictions (e.g. peak or off-peak)
- Access arrangements and potential routing for vehicles
- The type of vehicles likely to be used for servicing, including the potential for those powered by electricity or hydrogen, particularly near residential properties and in prospective 'quiet delivery and servicing' areas.

2.75 These factors will assist in identifying the physical layout of the required facilities as part of the on-site development, as well as measures required off-site and the content of the Plan itself.

2.76 For residential developments, the layout of the site must allow suitable access (including turning) for larger vehicles making deliveries to the occupiers' homes, including bulky items such as white goods and furniture. The site layout should also support regular collections, such as recycling and waste, with suitable storage for the domestic recycling and waste within maximum walking distances from the nearest point of collection that the vehicle can reach.

Monitoring and Reviews of Operational Travel Management Plans

2.77 Financial contributions to cover the Council's costs incurred in monitoring and auditing future reviews of Travel Plans, including Delivery & Servicing Plans and Car Parking Management Plans, will be secured via a S106 agreement or unilateral undertaking in conjunction with each Plan.

2.78 The financial contribution allows the Council to monitor, comment and provide advice on the progress of the Plans and the provision of certain measures within the Plan, unless funding for future interventions are included in the Plan.

2.79 Such interventions could include walking initiatives, measures to encourage cycling and public transport use, and proposals to reduce car ownership, such as car clubs, to ensure that the ongoing operation of the development accords with the sustainable travel impacts agreed as part of the planning approval.

Street types and junctions

2.80 Adopted in the 2019 Bexley Local Implementation Plan, Bexley's Street Hierarchy follows the TfL Street Types set out in Fig.19 and has been adapted to suit the borough's context as shown in Fig.20.

2.81 Where works involve a change to an existing highway, for either a new junction or a vehicle crossing to a footway or verge or off an access, the developer will usually have to enter into a suitable agreement under the Highways Act 1980.

2.82 This is most likely to be pursuant to S278, or S184 in the case of a vehicle crossing, whether the existing highway is maintained at public expense (adopted) by the Council or privately managed.

2.83 In some cases, the S278 may be combined with a S38 agreement if there are prospective new areas of highway within the development that the Highway Authority has agreed to adopt.

2.84 In certain circumstances *highways* may also be adopted through S36, S37, S72 and S228 of the Act. For simpler works, a minor works agreement may be more appropriate, such as minor kerb works or a vehicle crossing under S184 of the Act.

2.85 No works can be carried out on an existing highway before they are formally approved by the Highway Authority through an appropriate legal agreement and the separate requisite Notices and/or Licences under the Highways Act 1980 or the New Roads & Street Works Act 1991 have been formally served on and agreed by the Council, with any fees paid before any work can commence.

Fig.19 *TfL's Street Types matrix*

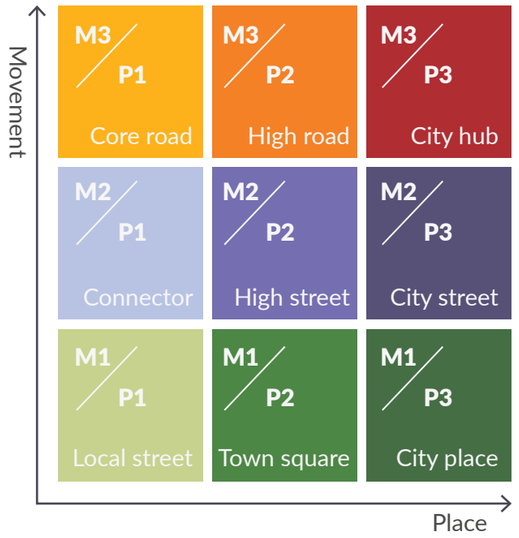


Fig.20 *Place and Movement categories in Bexley*

Movement categories		
M1	**M2**	**M3**
Major and minor access roads	Borough Distributor Roads	Strategic Road Network (SRN)
Shared surface streets and mews courts	Bus Routes	TfL Road Network (Red Routes)
Access ways		London Distributor Roads
Place categories		
P1	**P2**	**P3**
Residential areas	Neighbourhood centres	Town Centres
Industrial areas	Primary schools	Secondary schools
	Local parks	Major parks and leisure centres

Fig.21 *Table showing the type of connection and maximum number of dwellings likely to be permitted* **(in bold)** *based upon the existing highway and type of access road proposed.*

		Type of access road into development: **M1**					
		Private drive	*Housing square*	*Mews court*	*Shared surface*	*Minor access road*	*Major access road*
	Strategic Road Network / *TfL Road Network (Red routes)* / *London Distributor Roads*	Presumptions against access. Confirm with Highway Authority.					
M2	*Borough Distributor Road* / *Bus Routes*	Crossing				Junction	
M1	*Major Access Road*	Crossing **5**	Crossing **10**	Crossing **15**	Crossing **25**	Junction **50**	Junction **300**
M1	*Minor Access Road*	Crossing **5**	Crossing **10**	Crossing **15**	Crossing **25**	Junction **50**	n/a
M1	*Shared Surface*	Crossing **5**	Crossing **10**	Crossing **15**	Crossing **25**	n/a	n/a
M1	*Mews Court*	Crossing **5**	Crossing **10**	Crossing **15**	n/a	n/a	n/a
M1	*Housing Square*	Crossing **5**	Crossing **10**	n/a	n/a	n/a	n/a

Access and highway connection

2.86 The nature of the connection from the existing highway to any new development, whether a junction with kerb radii or a vehicle crossing over a footway or verge, footpath not contiguous with the existing carriageway or off an access, will depend on the movement and place functions of the existing street. Confirmation on the status of existing roads should be sought early from the Highway Authority.

2.87 There is usually a presumption against accesses to individual properties via a vehicle crossing on roads that form part of the Strategic Road Network or London Distributor Roads.
This presumption remains for the borough's Principal Road network listed in the Bexley Local Plan, many of which are dual carriageways, and comprise the main 'A' roads (A206, A207, A221, A223, A2000, A2016, A2018, A2041). Limited access may be allowed from other London Distributor Roads if on-site turning facilities can be provided and there is no other means of access.

2.88 Applicants must confirm whether a relaxation of this usual presumption against access may be possible with the Highway Authority during pre-application discussions.

2.89 The nature of access from other street-types, and in the case of a residential development the maximum number of units likely to be permitted, is shown in Fig.21. Fig.23 on page 48 sets out key dimensions for Bexley's different street and junction types.

2.90 These numbers are only a guide and confirmation of the correct dimensions for each individual scheme and layout should be sought from the Highway Authority during the pre-application stage.

2.91 If an access serves five or less dwellings and/or will not be adopted by the Council owing to a lack of public benefit (i.e. a private drive or access), basic requirements will need to be agreed with the Highway Authority to ensure that its layout is safe and fit for purpose, including arrangements for waste and recycling collections, large deliveries and fire tender access.

2.92 Minor alterations to the existing highway to provide access to a private drive, such as a vehicle crossing to a footway, will be carried out by the Council at the applicant's expense through S184 of the Highways Act 1980.

2.93 The layout of alterations such as vehicle crossings will need to reinforce the priority of pedestrians using that part of the highway, and ensure that vehicle crossings do not result in inconvenient or unsafe conditions for pedestrians, as multiple changes in crossfall can be difficult to navigate for those with prams or impaired mobility, including wheelchair users

2.94 Each case will be considered on its own merits, however the Council has operational practices related to standard layouts for crossings that will be followed where possible, unless outweighed by considerations of pedestrian safety or convenience.

Private drives

2.95 Driveways must be designed to ensure uninterrupted, level access to the principal entrance of the building. Applicants should consider the locations of existing street furniture and trees and prioritise the retention of existing trees and planting.

2.96 The use of *sustainable drainage systems* (SuDS) such as permeable paving to drain surface water, should be prioritised for all new drives. Applicants should be minded that it is an offence for water from a private area to flow onto a public footway and so some form of drainage interception and outfall may be required.

2.97 Fig.22 sets out information to be discussed and confirmed with the Highway Authority during the pre-application process.

2.98 Planning permission will be required for works to a private drive if any of the following apply:

a. The surface material to be used is impermeable and the area is over 5m^2 and has positive drainage
b. The access to the driveway/hardstanding is from a classified road (i.e. an A, B or C road)
c. The access is to a property that is not a single-dwelling unit (including a property that has been subdivided into flats)
d. The property is *listed* (in which case *listed building* consent will be necessary in addition to planning permission).
e. The property is in a *Conservation Area*.

Fig.22 *Information to be discussed and agreed with the Highway Authority for accesses that serve five or less dwellings and/or will not be adopted by the Council*

- Minimum footpath, cycleway and road widths including any verges and service margins
- Shared surface arrangements
- Refuse storage and collection arrangements including drag distances for refuse (for residents and operatives)
- Provision of passing bays where necessary and distances between them
- Manoeuvring distances behind parking spaces
- Turning spaces for service and delivery vehicles
- Pedestrian visibility
- Gradients and crossfall
- Forward visibility
- Access junction arrangements (radii, visibility etc.)
- Traffic calming features
- Fire / emergency access arrangements
- Cycle parking arrangements
- Lighting
- Future maintenance arrangements.

Street design and layout

2.99 As set out in Manual for Streets, the appearance of a street and how it functions has a large impact on the quality of life for its occupants as well as social and economic vitality, and where these areas are adopted, financial implications for the Council in future.

2.100 This integrated approach will be used within Bexley to move away from car dominance and a previous 'one size fits all' approach to scheme design, to ensure that new development is more flexible and better meets local needs.

2.101 This flexibility is intended to encourage innovation with better connections for pedestrians and cyclists whilst minimising the amount of hard paving provided for cars.

2.102 Street designs can include carriageway narrowing but must still accommodate safe and convenient routes for all, without undue risks or hazards. This means that the width where two-way traffic needs to pass each other should be as shown in Fig. 23 overleaf and the location of these bays should ensure adequate intervisibility between drivers using them.

2.103 Street networks in a development should enable walking and cycling and directly serve dwellings to contribute to successful neighbourhoods.

2.104 Streets should also be designed to minimise distances travelled between dwellings and other facilities, with new developments promoting sustainable travel such as walking, cycling and public transport. As Bexley is in outer London and has lower public transport connectivity than elsewhere in the capital, the streets have traditionally prioritised car travel, which affects how streets are designed and modified to accommodate other forms of movement.

2.105 Applicants should provide evidence of any existing highway capacity, safety or congestion problems when designing new streets as caution must be taken if the existing highway has traffic flow or safety issues.

2.106 Adequate sight lines that meet the guidance requirements must be provided as set out in the Street Design matrix in Fig. 23.

2.107 For non-residential developments, access will need to consider pedestrian priority walking along the street, and for commercial units a vehicle crossing over a footway or footpath giving priority to the needs of pedestrians is likely to be required.

2.108 All remote footpaths must be linked with the adjacent adopted footway to ensure a safe and suitable access for all people to the development.

2.109 A good wayfinding signage system must meet specific needs and be sited in appropriate locations. Pedestrian signage should take into account residents, tourists and business visitors. This is particularly important near transport interchanges, other major access points and complex road junctions where pedestrian routes may not be obvious.

2.110 Designers should consider wheelchair positioning to view a map-based sign and the proximity to a busy road. All wayfinding signage should be designed and located following guidance set out in D 38 of the Design Guide SPD Part 1 - Design Principles.

2.111 Applicants should be aware that the need for non-standard signage and markings will not always be evident during the design stages and may only become apparent during the post-planning technical audit.

2.112 Where new trees and landscaping is proposed along existing highway, the Council may require a commuted sum for

future maintenance or may issue a licence under S142 of the Highways Act 1980 to allow continuing upkeep by the frontager. Guidance for proposed new landscaping and trees can be found in the Design Principles sections D 04 and D 34.

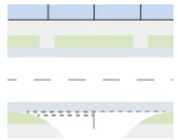
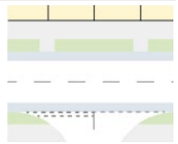
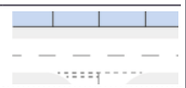
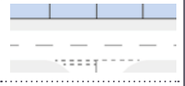
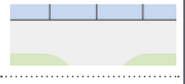
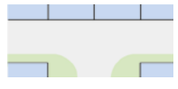
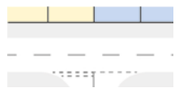
2.113 Even where a licence is issued pursuant to S142 the likely cost to the Council in maintaining the area in future when the licence ends will need to be considered and factored into the applicant's fees.

2.114 To demonstrate consideration for road safety, the design of proposed streets will need to have satisfactorily passed a Stage 1 Road Safety Audit at the planning application stage, which has been carried out in accordance with the Department for Transport DMRB. These are undertaken by a specialist team of auditors who are independent from the design team and who must be approved in advance by the Highway Authority.

2.115 The audit report, together with a response from the design team and the overseeing organisation, will need to be submitted to the Highway Authority for consideration before they can make a formal recommendation to the Local Planning Authority.

2.116 Other Road Safety Audits will be required during the technical approval process and construction of the highway works.

Fig.23 *Table showing the key minimum dimensions and qualities required for common street types based upon the TfL definitions. All distances and dimensions are shown in meters if not otherwise stated.*

Street Type		Design speed (mph)	Carriageway width	Footway width	Cycleway width	Max. gradient (%)**	Min. kerb radii	Forward visibility	Distance between calming features	Verge width	Junction X visibility	Junction Y visibility	Illustrative diagram
Core road	*London Distributor Road*	30	7.3	2.5	2***	5	10.5	45	n/a	2	2.4	43	
City hub	*London Distributor Road*	30	6.75	3	2***	5	10.5	45	n/a	2	2.4	43	
Connector	*Borough Distributor Road*	Variable	6.75	2	2***	5	10.5	33	80	Variable	2.4	43	
High street	*Borough Distributor Road*	25	6.75	2.5	2***	5	10.5	33	80	2	2.4	43	
Local street	*Major Access Road*	20	5.5	2	Shared	5	6	25	60	n/a	2.4	25	
	Minor Access Road	20	4.8	2	Shared	8	6	25	60	n/a	2.4	25	
	Shared surface	<20	5.5	n/a*	Shared	8	6	23	40	2	2.4	23	
	Mews court or Housing square	<15	5.5	n/a	Shared	8	4	18	30	n/a	2.4	18	
Town square	*Major Access Road*	Variable	5.5	2.5	Shared	5	6	25	60	n/a	2.4	25	

** Service strips - appropriate low-root growth planting may be required beyond paved sections of shared surfaces*

*** Crossfalls / super elevation to be designed in accordance with DMR8 design standards and guidelines*

****This minimum width is subject to peak-hour cycle flows in accordance with LTN 1/20 Table 5.2. The type of cycle provision should comply with LTN 1/20 Table 4.1.*

Centreline radius to be defined by tracking for all road types

Public transport provision

2.117 As outlined in the Movement chapter of the Design Guide SPD Part 1 - Design Principles, new development should promote the use of public transport and other modes of active travel.

2.118 However, where existing public transport provision is deemed inadequate to serve a development, and the absence of such provision would render a scheme unacceptable, the Council may seek a developer's contribution to improve public transport provision in accordance with relevant statutory tests.

2.119 Smaller developments that do not individually appear likely to have sufficient impact to justify improvements to the public transport infrastructure can still contribute to a negative cumulative impact through traffic congestion, increased journey times, and crowding on public transport services and may, therefore, be subject to a developer's contribution for infrastructure improvements.

2.120 The Council will also generally seek contributions towards facilities that encourage the use of public transport services which have an existing or proposed boarding point within a convenient walking distance of the development. For bus services a convenient walking distance is generally deemed up to 400 metres to the nearest stops (unless the service is 'hail and ride', and for rail services, up to 800 metres to the nearest station entrance).

2.121 Measures that can assist in the promotion of public transport and its use will be informed by the findings of the Transport Assessment/Statement and may be included in an action plan in the ATZ or Travel Plan.

2.122 Where the development itself does not require improvements to local services but is located near, or on likely routes to public transport facilities, the Council may seek the layout of the development to encourage use of these services generally, such as those outlined in the box on page 50.

The Council will consider the following public transport infrastructure improvements from developers

Contributions to existing provision so that they can serve the development better such as:

a. Enhancing routes for pedestrians and cyclists to stops;
b. Providing shelters, better seating and real-time (Countdown) information at stops; or
c. Increasing service frequencies

Contributions towards pooled funds to be used towards a particular provision or type of provision, such as:

d. Bus priority measures extending some distance along a route;
e. An extension to a route; or
f. A co-ordinated series of measures across an area to make public transport safer at night.

2.123 Where the development site is affected by an approved safeguarding line, or where part of the site could facilitate improvements to the local transport network, the Council will seek to ensure that the layout of the scheme does not preclude such improvements in the future.

2.124 This could be achieved through an agreement or unilateral undertaking under S106 of the Town & Country Planning Act 1990, or to a dedication sought under S72 of the Highways Act 1980.

2.125 Possible safeguarding of land, as well as appropriate mechanisms to cover off-site issues, should be discussed with the Highway Authority at the pre-application stage. Many require consent through other legislation, without which the development may not be able to proceed.

2.126 Works in the existing *highway* will be subject to an agreement under the Highways Act 1980, with works to the existing adopted *highway* pursuant to S184 or S278 of the Act, whilst works to 'unadopted' *highways* (private streets) will also be subject to the Private Street Works (PSW) Code set out in S205-S237 of the Act.

2.127 Existing *highway* features like street lights, signage, telegraph poles, utility cabinets or street furniture that may require relocation to enable works will need to be removed, stored and reinstalled or relocated as set out in the *highway* agreement or as directed by the utility company as appropriate at the developer's expense.

2.128 Further details on 'non-planning' consents are outlined on page 66 of this guidance.

Cycle parking

2.129 The Council views cycling as a way to increase residents' activity levels which will also have physical and mental health benefits. Cycle parking should, therefore, be more convenient than car parking as an incentive to get more people cycling.

2.130 Developers must meet the Bexley and GLA minimum cycle parking standards set out in the Development Plan. Cycle parking in the public realm is also addressed as this could also fall under a developer's remit.

2.131 Applicants should adhere to guidance in the London Cycling Design Standards (LCDS) and/or the Cambridge Cycle Parking Design Guide to ensure that cycle parking is conveniently located. Parking should be securely accessed, adequately lit, and benefit from passive surveillance to increase the sense of safety for users.

2.132 Adequate cycle parking must be provided for both short-stay users, e.g. customers and visitors, and long stay users such as employees and residents.

2.133 Cycle parking must be accessible for all users and types of cycle, including non-standard cycles. A minimum of 5% of cycle stands should be designed to accommodate larger and non-standard cycles, in line with LCDS Chapter 8.

2.134 Details of all cycle parking and associated facilities must be presented during pre-application discussions to allow the Council to fully assess the transport implications of the proposal. Following successful determination, planning conditions will be used to secure the retention of facilities.

2.135 Charging for e-bikes is not usually accepted within cycle stores owing to issues arising from trailing leads and the variances between types of batteries and chargers/connectors. If charging under cover is proposed, it should follow the

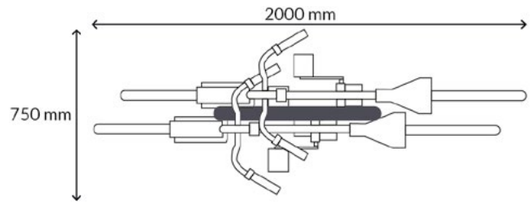


Fig.24 *The overall width and length of two cycles parked on one stand*
Source: Cambridge Cycle Parking Guide

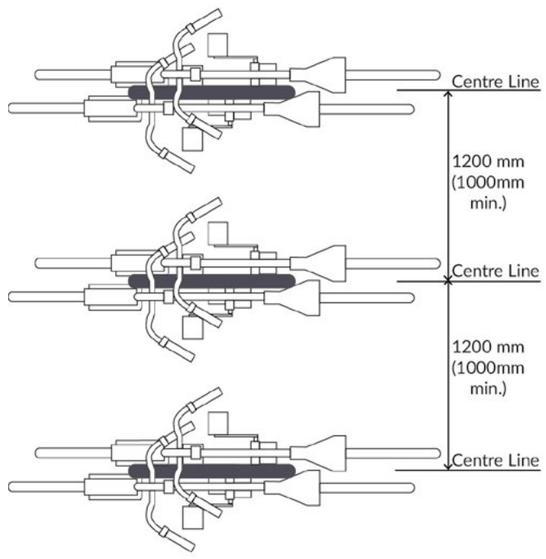


Fig.25 *In line with LCDS Chapter 8, for Sheffield stand bays in a parallel arrangement, applicants should allow 1.2m between stands (and a minimum of 1m)*

guidance set out in the section on Electric Vehicle Charging Points (EVCPs) on page 60. Charging must also comply with the manufacturer's specification, Building Regulations and advice from the London Fire Brigade where appropriate.

Short-stay facilities

2.136 Short-stay parking should be located within the curtilage of a development and not on the *highway*.

2.137 The cycle parking should be no more than 15 metres from a building entrance, or within 25 metres for larger mixed-use developments where frequent surveillance is possible.

2.138 It is important that adequate room is provided for both cyclist and cycles when using the parking provided. This requires an understanding of the space needed by a cyclist to get to the cycle parking and to ensure that the cycle parking itself is adequately spaced.

2.139 Sheffield stands are recommended due to cyclist preference and their use for two cycles on one stand, whilst also being easy to maintain and preventing damage to cycles. Fig.24 and Fig.25 illustrate the space required to accommodate this.

2.140 The stands should be embedded into a minimum of 300mm deep concrete foundations as shown in Fig.26. The addition of a tapping rail is recommended to allow children's cycles to be secured properly.

2.141 As illustrated in Fig.27, it is important that the distance between stands is measured from the centre line and at right angles to the longitudinal axis of the stand, even when stands are at an angle to a wall or a kerb line.

Long-stay facilities

2.142 Residential and commercial cycle parking must be separated to meet distinct

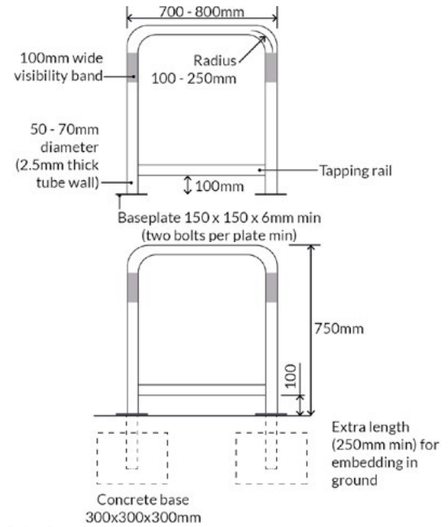


Fig.26 *Sheffield stand dimensions*
Source: London Cycling Design Standards

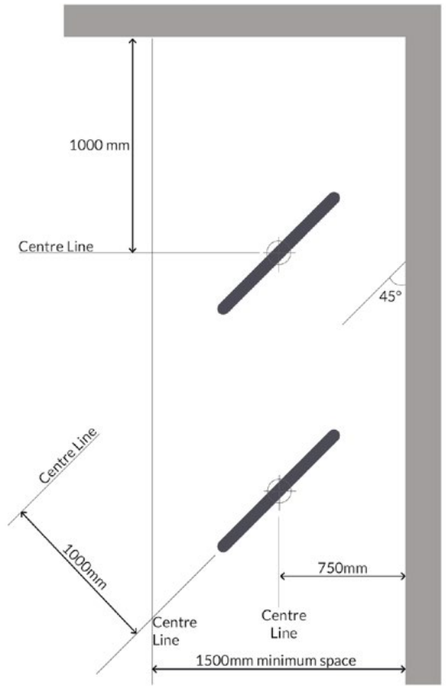


Fig.27 *Stands at 45 degrees to a wall*
Source: Cambridge Cycle Parking Guide

user needs. Fig.28 sets out design requirements for long-stay parking.

2.143 Long-stay cycle parking should be provided in close proximity to the building entrance, with direct, step-free access. If the site has vehicular access and cycles share the route with motor vehicles, the route to the cycle parking must be clearly delineated and applicants must demonstrate that parking can be accessed safely.

2.144 Access should be provided via an entrance that is overlooked, well-lit, secure and convenient to use. Direct access from the street or public realm is discouraged for residential cycle storage. Instead, access via an internal lobby is preferred to enhance safety and security.

2.145 Where internal access is unachievable, external doors fronting footways must open inward to prevent collisions with pedestrians.

2.146 For larger developments, cycle parking should be spread throughout, providing residents with options for secure storage close to their homes. A maximum number of 50 cycles is recommended within each store.

2.147 When located in an undercroft or basement car parking area, there should be separate access ramps for cyclists with a gradient less than 7%. Where ramps are shared with motor vehicles, the minimum width of the ramp should be 3.25m.

2.148 Where e-bike charging points are provided in an undercroft or basement, applicants must demonstrate compliance with Building Regulations and advice from the London Fire Brigade.

2.149 Where the provision of internal cycle storage is restricted, for example when working with an existing building with spatial limitations, or when converting terraced housing to flats, the Council will seek contributions to provide secure on-street cycle parking that is protected from the elements.

Fig.28 *Design details for long-stay parking in residential developments*

- Access should not require passage through more than two doors
- External access doors should be a minimum 1.2m wide, and internal doors a minimum 1m wide
- Doors should be automated, operated via push buttons or pressure pads
- The provision of storage should be a maximum of 75% two tier, 20% Sheffield and 5% adaptable stands
- Within cycle stores, two-tier racks require a minimum aisle width of 2.5m beyond the upper tier frame when lowered for manoeuvrability. 3.5m is recommended for aisles with racks on both sides. The minimum height requirement is 2.6m
- Sheffield stands should be spaced 1.2m apart (1m minimum) to accommodate two bicyles per stand.

2.150 Where it has been demonstrated to the Council's satisfaction that it is not possible to provide long stay cycle parking within a small development, the Council may consider a financial contribution in lieu. This contribution will assist the Council in providing more long stay cycle parking on the public *highway* and will be secured via a S106 legal agreement or unilateral undertaking.

Design considerations for houses

2.151 Cycle parking should be provided within secure, covered and lockable storage preferably to the front of homes. The design should have regard for its impact on the wider *street scene* and materials chosen to respond to the homes.

2.152 Where required, access for cycle parking to the rear or sides of dwellings should be preferably be 1.5m, with an absolute minimum of 1.2m.

2.153 If garages are provided, these should be sized to allow cycles to be parked and easily removed without residents having to first remove their car. Refer to Fig.29 for minimum private garage dimensions.

Design considerations for mixed-use and commercial developments

2.154 Where developments consist of multiple units, each must be provided with cycle parking sized to reflect the capacity of the property.

2.155 In addition to cycle parking, amenities for cyclists should be provided at workplaces and at end of trip destinations, such as showers, changing facilities and lockers.

2.156 For new commercial developments providing food services, applicants should provide adequate waiting areas for short-term deliveries such as food delivery.

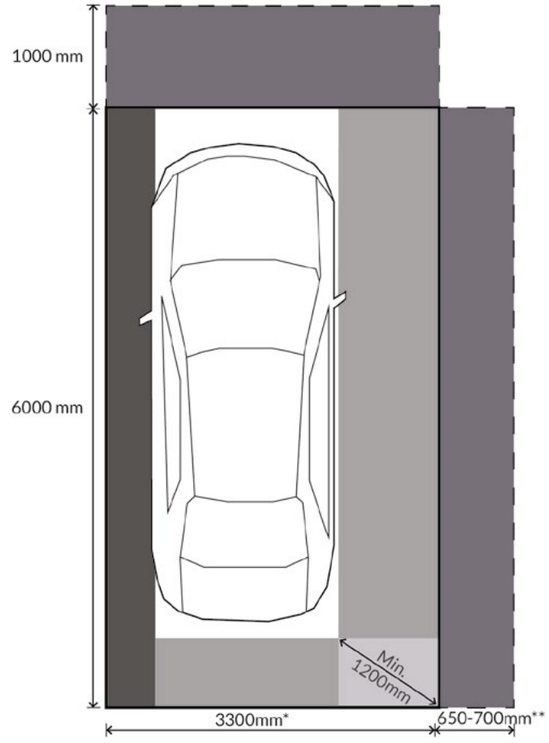


Fig.29 *Private garage with cycle parking*
Source: Cambridge Cycle Parking Guide

Car parking

Parking layouts

2.157 The minimum dimensions for a variety of car parking bay sizes are set out in Fig.30. The minimum width for an aisleway or manoeuvring space where parking bays are perpendicular to the aisle should be 6m.
The Highway Authority can provide guidance on the required dimensions for spaces and aisleways for echelon parking with one-way aisles, which will vary depending upon the angle of the parking.

2.158 Where charging for electric vehicles is proposed it should follow the guidance set out in the section on Electric Vehicle Charging Points (EVCPs) in this guidance, as well as complying with manufacturer's specifications, Building Regulations and advice from the London Fire Brigade where appropriate.

2.159 Where vehicle crossings to footways, verges or footpaths are permitted, the parking space within the site must be sufficient to accommodate the complete vehicle within the curtilage as a vehicle overhanging the *highway* can be a hazard for pedestrians, particularly those with impaired mobility, and this is an offence under the Highway Act 1980 and is subject to a fine.

2.160 If the Council agree to install a vehicle crossing, this does not condone this offence and the Council will take enforcement action as necessary. Where obstructions are caused, it may result in the vehicle crossing being removed and the footway, verge or footpath reinstated to its original level at the occupier's expense.

2.161 Where garages are located in blocks perpendicular to an aisleway, the minimum width of the aisle should be at least 7.5m to allow cars to enter or leave the garage in a single manoeuvre. The minimum width of the aisle may be

Erith Park, Erith
Broadway Malyan

On street parking was provided adjacent to new homes on the estate, with the parking integrated into the design of the street. Soft landscaping is introduced between bays to make the route more inviting and provide greenery to the street for biodiversity benefits and improved climate resilience.

© Park East

Fig.30 *Minimum dimensions for car parking provision*

Type of provision	Width (m)	Length (m)	Notes
Perpendicular (to the access route/street) parking spaces	2.4	4.8	
Perpendicular (to the access route/street) parking at end of a row	2.7	4.8	A wider space may be required to allow sufficient room for opening car doors
Parallel spaces at the end of a row	2.4	5	If both doors can be opened without obstruction, such as spaces along the edge of an access, the width may be reduced to 2m.
Parallel spaces in the middle of a row	2.4	6	
Minimum frontage where vehicle crossings to footpaths are provided	2.4	4.8	These dimensions represent the minimum frontage that must be situated within the property to avoid any possible vehicle overhang onto public *highway*.
Minimum frontage where vehicle crossings to footpaths are provided for vehicles park parallel to the *highway*	4.8	3	In this case, the resident must agree to these conditions in writing before the estimate is provided and accepted by the Highway Authority.
Garage	3.3	6	These are the internal dimensions of the garage. If there is space in front of the garage for a car, this should be at least 5.5m deep.
Disabled parking bay	2.4	4.8	A 1.2m transfer clearance zone should be provided along at least one side and one end (for access to the rear of the car).

reduced if the clear internal width of the garage and its opening can be increased.

Disabled parking provision

2.162 On-street and unallocated disabled parking bays must be designed to ensure that disabled drivers and passengers can get in and out of the car with ease.

2.163 Dropped kerbs and tactile paving should be provided adjacent to car parking and spaced to ensure wheelchair users can access footways and carriageways. It is recommended that spaces for disabled people are generally located as close as possible to building entrances.

2.164 For all developments, designated blue badge parking must be provided in line with the standards in the London Plan, including areas to transfer to wheelchairs along one side and to the rear as appropriate.

2.165 In developments where there are proportionally more older or disabled residents or visitors, then the parking and charging of mobility scooters at or near to the entrances to buildings should be considered.

Car Parking Management Plans

2.166 As active travel is encouraged and prioritised, car parking should be managed effectively and, where possible, repurposed.

2.167 Car Parking Management Plans (CPMPs) are required for the management of both new and existing parking to ensure the most efficient and sustainable land use within a site. CPMPs can take various forms depending upon the level of detail required. All Plans, irrespective of development size, should contain the information outlined in Fig.31, including details of motorcycle and cycle parking, particularly where electric charging is proposed.

Car club vehicles must:

a. Be accessible and available to the wider public
b. Be operated by an accredited car club provider
c. Have dedicated and convenient parking that is identified on submitted Plans and managed according to the CPMP or CPMRP.
d. Have spaces located within five minutes walk (approximately 500 metres) of the development.

Fig.31 *Information to include within a Car Parking Management Plan*

- Design, location and layout of existing or proposed car parking
- How the site is accessed by vehicles and the interaction with vulnerable road users
- Details of spaces allocated for disabled users
- Details of measures to reduce car use such as Car Clubs or cargo bike parking
- Details of electric vehicle charging points
- How the spaces are managed, the usage is monitored, the wrongful use of spaces is enforced, how they are allocated to individual properties and any charging mechanism
- The provision of motorbike or bicycle spaces
- A strategy to reduce the number of on-site car parking spaces in the future by repurposing the spaces for alternative use.

2.168 These can also be in place where parking can be reduced and repurposed in the future should local transport connectivity improve, as set out in Bexley Local Plan Policy SP10 Bexley's transport network. In this case, these may also be referred to as a Car Parking Management and Reduction Plan (CPMRP).

2.169 For parking spaces to be reduced in the future, it is important that they are provided in communal areas rather than in the curtilage of an individual property. If allocated to an individual unit, this should be provided through a lease with appropriate break clauses and not freehold/permanent.

2.170 As with Travel Plans, draft CPMPs often form part of the Transport Assessment or Transport Statement. After planning permission has been granted, Final Plans will be required to manage parking and the impact of parking associated with the ongoing operation of the development.

Car clubs

2.171 The Council supports an increase in the supply of car clubs to assist residents who only need occasional use of a vehicle and can provide an alternative for a multi-car household to reduce their reliance on additional cars.

2.172 Car clubs are also a great solution where parking pressures exist and in areas where there is good public transport infrastructure and connectivity, reducing the need for residents to own a car. The environmental benefits of reduced vehicles should be reinforced by car clubs utilising vehicles using sustainable fuels wherever possible, ideally electric vehicles and either from the outset or as soon as practicable.

2.173 Developments should be designed to facilitate car clubs either when occupied or in the future and should be responsive to changes in local car driving and ownership dynamics. This includes offering the opportunity to change on-street parking spaces with ease and without detriment to the streetscape.

2.174 As an incentive to encourage reduced car ownership, developers should provide each dwelling an initial period of free membership or a specified number of hours free use, with a view to the scheme gradually becoming self-financing as membership and use increases over time.

2.175 Details of the initiatives and targets of the car club, as well as a monitoring and revision regime, should also be included in the draft and final Travel Plans and possibly also included in Car Parking Management Plans.

Off-site parking (including permit prohibition)

2.176 There may be instances whereby a development creates parking demand that would exceed supply and the impact of the parking arising from the development would be harmful to the amenity of adjacent occupiers and operation or safety of the road network.

2.177 In such instances it may be necessary to remove parking permit eligibility through a S106 agreement or unilateral undertaking, while Traffic Management Orders (TMOs) governing existing restrictions may have to be amended, or new orders promoted.

2.178 Permit eligibility will therefore be considered for *major* development proposals and those in CPZs. The predicted introduction or alteration of TMOs owing to the impact of the development, including the cost of installing or amending on-street signing and lining, will be financed by a contribution from the developer.

Electric Vehicle Charging Points (EVCPs)

2.179 Developers must ensure that there is enough power and spare capacity within the electrical distribution boards in the development and submit details of the local electricity grid and confirmation that there is enough power and spare capacity at this location to support all the needs of the development, including all active and additional, anticipated demand from passive Electric Vehicle Charging Points (EVCPs) as well as any other charging facilities when the development is first occupied.

2.180 Whether within private developments or for public on-street use, all EVCPs should be installed with the latest technical requirements and to meet current standards at the time of development, as well as manufacturer's specification and advice.

2.181 Design teams should undertake detailed analysis of the specific risks to determine whether EVs can be safely located and determine what additional fire protection measures are required, such as fire suppression and adequate compartmentation. Such analysis should be undertaken by a competent, suitably qualified professional and should consider the specific nature of a potential EV fire.

2.182 Applicants must meet standards set out in all relevant London Plan policies and comply with Part S of the Building Regulations, as well as any requirements of the Council's own emerging policies. This includes locating as many EVCPs as possible in communal areas, to ensure a greater potential for future use that includes occupiers of flats and apartments as well as those with private/allocated or in-curtilage parking.

2.183 Charging facilities must be provided for disabled users and servicing vehicles where appropriate. PAS 1899 provides specifications to support the building of inclusive electric vehicle charging infrastructure.

2.184 Applicants should refer to TfL's London's 2030 Electric Vehicle Infrastructure Strategy (2021) and the 2025 updated version, Electric Vehicle Infrastructure Strategy, for information on different types of charge points, site selection, power provision and installation.

2.185 All EVCP installations should comply with the IET Standards 'Code of Practice for Electric Vehicle Charging Equipment Installation'.

2.186 There are several considerations in providing EVCPs including the location of development, purpose, vehicle type and required speed of charge.

2.187 As technology develops all parking spaces provided in developments should accommodate 'passive' charging technology, while 'active' provision must meet the minimum levels set out in the London Plan.

2.188 In Bexley, 'active' provision means that the EVCP is installed and ready to use, while 'passive' means the cabling is installed enabling the installation of electric vehicle charging infrastructure, and the future installation of the charging point.

Active provision

2.189 Active provision must be in place prior to the occupation of any part of the development unless there is a specific planning condition exempting the developer from doing so.

2.190 EVCPs should be equipped with Type 2 sockets or other sockets as required by the Council as technology evolves, and prior to granting planning permission the Council will need to agree the proposed arrangements for future maintenance as well as the proposed method of payment by users. There is a preference that shared charge points be provided with credit/debit card payment facilities in order to offer a method of ad-hoc access.

Passive provision

2.191 For passive provision - typically with residential developments - it may be necessary to ensure that the passive charge points have their own separate distribution boards.

2.192 Cabling should be provided for parking spaces that are designated for passive provision. A ground level cap should be installed at the location of each charge point to indicate the location of the cables.

2.193 Developments that have demonstrated to the Highway Authority's satisfaction that parking for essential users can be accommodated on-street will be expected to meet requirements as stated in the London Plan. On-street EVCPs may require a TMO that is subject to separate legislation and public consultation, and in such case until these procedures have been satisfactorily completed at the developer's expense the provision of the EVCP cannot be guaranteed.

2.194 In certain cases, the Council may be prepared to accept a payment in lieu to cover the cost of the TMO to convert an on-street parking bay or for a Lamp Column Charging Point within proximity to the development in the future. This must be agreed with the Highway Authority prior to any planning permission being granted.

2.195 The CPMP should set out details of how EVCPs will be managed and maintained to meet the needs of intended users. The Plan should also address how users will be charged for electricity used (if applicable); how parking spaces with EVCPs will be restricted for use by electric vehicles; when and how maintenance of the EVCP will be carried out; and what procedures will be put in place to monitor EVCP use and trigger the conversion of parking spaces from 'passive' to 'active' EVCPs.

2.196 Information regarding EV charging provision and capacity and future-proofing cabling/ducting, including opportunities for network upgrades to accommodate increased demand, should also be included in any CPMP or Travel Plans associated with the development.

Future maintenance

2.197 The layout of publicly accessible areas essential to the functioning and appearance of the development, including roads (adopted or unadopted *highways*), footways, footpaths and landscaping, will be considered during determination of a planning application. This information, and details of the long-term maintenance strategy should, therefore, be presented during the pre-application process and included within the subsequent planning application.

2.198 The private maintenance of publicly available areas that will not be adopted by the Council will be controlled through a suitable legal agreement, under S106 of the Town & Country Planning Act 1990 and/or S101 of the Local Government Act 1974, which will include the identification of the formal 'Street Manager'.

2.199 Where new roads have significant public benefit, or where they might benefit the wider *highway* network, the roads may be adopted using an agreement between the developer and the Council under S38 of the Highways Act.

2.200 This will be at the Council's discretion, and even where some infrastructure is to be adopted by the Council, ancillary areas such as verges, sight-lines and *sustainable urban drainage systems (SuDS)* may have maintenance liability transferred to third parties. In this instance, the Council will need to retain sufficient rights to ensure that the use of these areas does not prejudice *highway* functions.

2.201 Alterations to the publicly maintained *highway* by the developer will be subject to an agreement with the Council under S278 of the Highways Act 1980, while minor alterations to the footway such as a vehicle crossing will be carried out by the Council at the applicant's expense under S184 of the Act.

Private maintenance agreements

2.202 Where publicly-accessible areas will not be adopted by the Council, and prior to the first occupation of the new development, a Street Management Plan (SMP) should be submitted to, and approved in writing by, the Local Planning Authority to cover all the streets and ancillary areas and the public realm. The approved Plan should be implemented upon first occupation of any new building and remain in place for the lifespan of the development.

2.203 The SMP should include the information set out in Fig.32, particularly the procedure and funding of cyclic and other maintenance inspections and works, and clearly identifying the public areas being maintained privately.

2.204 Suitable signage, confirming the private maintenance status, and that there is not intention to request adoption by the Council in the future, should be installed on site within these areas as required by the Council.

2.205 To ensure the ongoing maintenance and management of streets and ancillary areas within the public domain preserve the quality of development required by the Bexley Local Plan, any repair works undertaken on the *highway* should submit a notification to the Street Works Manager as dictated by the Traffic Management Act 2004.

Adoption by the Council

2.206 Where the Highway Authority considers there is sufficient public benefit for the streets to be adopted by the Council under a S38 agreement, or the existing *highway* is altered using S278, the developer will remain responsible for maintenance of the works until the Final Completion Certificate is issued by the Highway Authority after the satisfactory completion of the maintenance period.

2.207 Signatories to a S38/S278 agreement normally include the Council, the developer and any surety provider. Detailed agreement guidance is available from transportanddevelopment@bexley.gov.uk or highwayagreement@bexley.gov.uk.

2.208 The clauses of the agreement outline the standards the Council requires new areas to be built to, and which the developer will need to uphold satisfactorily for a maintenance period, which is typically a year after Practical Completion. Other clauses in the agreement often include:

- Responsibility for the maintenance of the road prior to adoption
- Payment of fees by the developer to the Council for technical approval and inspection of the works during construction
- Any land transfer or wayleave agreements
- What happens if things do not go as planned.

2.209 The technical approval and inspection process will require the submission of specifications and drawings for approval as required by the Highway Authority as well as before any work can commence on site.

2.210 The permit application will also need full traffic management proposals, while the technical submission in connection with the legal agreement will also include final as-built drawings, asset register details and the Health & Safety file at the completion of the works prior to formal adoption.

2.211 The Council's costs for the agreement process is based on a sliding scale related to the estimated value and complexity of the works and needs to be paid when the agreement is signed. An initial non-

Fig.32 *Information to be included in a Street Management Plan*

- Details of the Street Manager/operator of the SMP, and relationship with future occupiers;
- Phasing of delivery of SMP;
- A maintenance regime for all areas accessible to the public including time periods for any necessary works or cyclic maintenance;
- Means of preventing vehicles using areas of land to be used for amenity purposes or by public on foot;
- Maintenance regime for all road marking and traffic signs;
- Payment for energy costs of any street lighting or illuminated signs;
- A mechanism to ensure that cyclic inspections and maintenance works, as well as any emergency or unplanned incidents, are carried out when required; and
- Confirmation of procedure for emergency repairs, and timescales if not completed that would trigger action by the Council and how any consequent recharge of the costs incurred will be met.

returnable fee that will form part of the final total fee will need to be paid to cover the Council's preliminary costs before the technical audit process commences, as the total fee cannot be finalised until the audit is complete.

2.212 Should the Council require specialist advice for the technical approval, then the costs of the initial non-returnable fee and total fee may need to be increased.

2.213 A bond of surety for the full estimated value of the work will need to be secured in case the Council has to intervene and complete the scheme for any reason. The Council may be prepared to accept a returnable deposit for the full value of the works in exceptional circumstances but this approach is not encouraged.

2.214 Developers will also be responsible for commuted sums for any adoptable infrastructure works that will involve the Council in extra, special or expensive maintenance in the future. Commuted sums may be required for infrastructure in the public realm not directly related to streets and travel (such as lighting, cleansing infrastructure, playground equipment and sports facilities), while in connection with *highways* and streets commuted sums will normally, but not exclusively, be required for:

- Retaining walls and other structures
- Specialised new street furniture
- Soakaway and *sustainable drainage systems* (including rain gardens)
- Trees and soft landscaping
- Innovative construction materials (including blockwork and granite surfaces)
- Any additions or alterations to the Council's (digital) infrastructure.

2.215 Commuted sums will also be required by Transport for London in connection with any traffic signal works or alterations to their bus facilities including digital infrastructure.

2.216 The payment of the fees relating to technical audit and inspection, or commuted sums for future maintenance, does not relieve the developer of their responsibility to apply, pay for, and obtain the necessary licence required before they can start work in the *highway*. This should be sought from the Council's Street Manager reachable at swpermits@bexley.gov.uk or Section50Licences@bexley.gov.uk.

Easements over private land

2.217 In some cases, it may be necessary for an easement to be granted over private land to enable the Council to gain access to infrastructure they are responsible for, such as retaining walls or drainage apparatus. This ensures that this infrastructure can be inspected and maintained by the Council in the future where access is not available from the *highway*.

Other consents and agreements

2.218 The granting of planning permission (and building regulations approval) may not be the only consent required to carry out a development, and many of the others relate to *highway* and transport matters.

2.219 The application for and granting of such licenses and consents may take several weeks, and where the activity needs to be coordinated with other planned or emergency *highway* works this can lead to delays before works or utility connections can be carried out. Developers should allow for potential delays when programming works.

2.220 There are several service areas within the Council that carry out '*highway*' functions, however the principal contact for development-related works is the Transport & Development (T&D) team.

2.221 The T&D team are responsible for setting the Council's policies and acting on behalf of the Highway Authority in many respects including planning applications, monitoring Travel Plans and *highway*-related planning obligations, the technical audit and inspection of *highway* works and maintaining the Council's *highway* records. The usual continuum for developer-related works is shown in Fig.33.

2.222 The T&D team will liaise, and ensure effective engagement, with the other Council '*highway*' teams.

2.223 A summary of contact details for all *highways* services teams are listed in Fig.34. When contacting these teams, the T&D team should be copied into emails to assist with their coordination role and avoid unnecessary delays.

2.224 A general indication of the different consents that may be required in connection with the approval, construction, and ongoing operation of the development, and the '*highway*' team that would process the application is provided in Fig.35.

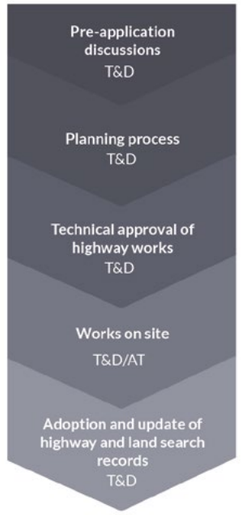


Fig.33 *Council teams for applicants to engage with over the course of implementing a development project*

Fig.34 *Contact details for highways service areas*

Team	Email
Transport and Development (T&D)	transportanddevelopment@bexley.gov.uk or highwayagreements@bexley.gov.uk
Street Works Team (SWT)	section50licences@bexley.gov.uk or swpermits@bexley.gov.uk
Traffic	traffic@bexley.gov.uk
Area Teams (AT)	areateamsupport@bexley.gov.uk
Environmental Services (ES)	highway.enforcement@bexley.gov.uk
Grounds Maintenance (GM)	groundsmaintenance@bexley.gov.uk

Fig.35 *Consents required for a development project and relevant Council team to consult*

Key

T&D - Transport & Development; SWT - Street Works Team; T - Traffic; AT - Area Teams; GM- Ground Maintenance

Development stage	Consent or licence	'Highway' Team				
		T&D	SWT	T	AT	GM
Prior to full scheme approval	Highway Stopping Up Orders and Dedication	•				
	Rights of Way Extinguishment and Diversion	•				
	Traffic Management Orders	•		•		
Prior to commencing works	Highway Condition Surveys	•			•	
	Demolition & Construction Traffic	•				
	Temporary Direction Signs			•		
	Hoarding, Scaffolding and Skip Licences				•	
	Crane or Mobile Elevated Work Platform for Construction		•			
	Storing Materials on the Highway				•	
	Temporary Traffic Orders or Closures for Works		•			
	Rights of Way Temporary Closure or Diversion		•			
	Street Works Licences and Permits		•		•	
	Approval of Temporary Access	•			•	
	Approval of Permanent Highway Works	•				
	Removal / relocation of Street Trees	•			•	•
	Future Maintenance of Public Areas & Infrastructure	•			•	•
	Traffic management plans for temporary arrangements during works		•		•	

Development stage	Consent or licence	'Highway' Team				
		T&D	SWT	T	AT	GM
Prior to commencing works cont.	S58 protection application for highways improvements		•		•	
	Disconnection of utility services		•		•	
During demolition and construction	Highway Cleansing				•	
	Construction of Temporary & Permanent Accesses	•			•	
	Construction of Off-Site Highway Works	•				
	Construction of Future Public Areas	•			•	•
	Crane Licences		•			
	Street Works Notices for off-site highways works	•	•			
Prior to occupation or operation	Approval of Highway Works (inc Privately Maintained)	•			•	•
	Crane or Mobile Elevated Work Platform (MEWP)	•	•			
	Approval of Retaining Walls & Projecting Structures	•				
	Approval of Highway Landscaping	•				•
	Utility service connections		•			
	Street Works Notices for service connections		•			
	Temporary traffic management for utility connections		•			
Ongoing operation	Advertising or A-Boards on the Highway				•	
	Monitoring, Reviewing and Updating Travel Plans	•				
	Crane licences for building maintenance		•			
	Street Works licences for snagging		•			
	Street Works Notices for ongoing maintenance requiring excavation or opening of the highway (visual inspection)		•			

Prior to commencing works

Pre-construction surveys

2.225 Where the Highway Authority considers that demolition or construction works may result in larger or heavier vehicles using roads that may be inadequate, in terms of width, alignment or construction, the developer will be expected to carry out a full pavement condition survey before any work commences on the site. Any part of the road, footway or verge that is not in the same condition after all works have been completed will need to be returned to the previous condition at the applicant's expense.

2.226 Fig.36 sets out information to be included in a *highway* condition survey, to identify the existing state of the *highway* in the vicinity of the site.

2.227 This may form part of a Construction Management Plan or Construction Logistics Plan, or as an agreement under S59 of the Highways Act 1980.

2.228 The Area Team responsible for maintenance will carry out joint visual inspection once the information set out in Fig.36 has been submitted by the developer and before and after the development has been carried out to ensure that any remedial work for possible damage to *highway*, including temporary access(es) at the development's location are agreed. As part of the pre-commencement inspection that applicant must ensure that any temporary excavation licences are applied, paid for and are confirmed by the Council.

Fig.36 *Information to be included in a highway condition survey*

- A plan which identifies the area covered by the survey
- A written report detailing the current condition of the roads and footways, footpaths, verges and any highway structures or boundary enclosures in the vicinity of the site (the Council has the ability to carry out a video survey, which may be available to the developer for a fee)
- A list of highway defects prior to the commencement of works, including specific photographs identifying the individual defects
- A photographic overview of the roads and footpaths in the vicinity of the site
- An estimate of the size, types and level of construction traffic expected to service the site, during the development period (including demolition, construction, and any maintenance/warranty periods for the buildings and/or structures involved).

Demolition and construction traffic

2.229 Management of traffic involved in demolition and construction works, including the size, frequency and routeing of vehicles, will normally be dealt with through a Construction Management Plan or Construction Logistics Plan, or as

mentioned in Travel Plans outlined earlier in this chapter.

Temporary signage

2.230 Permission for temporary direction signs leading to the development should be obtained from the Council in advance. If temporary signs are erected without permission, these may be removed by the Highway Authority who will seek reimbursement from the developer for their associated costs. Further details on temporary signage can be obtained from the Traffic team.

2.231 Unauthorised signs will be classed as fly posters and will be removed. Environmental Services, contactable by the email noted in Fig.34, will issue Fixed Penalty Notices.

Licenses for hoardings, scaffolding, skips & the deposit of materials

2.232 Licences under the Highways Act 1980 for hoardings (S172 & S173), scaffolding (S169), skips (S139) and the deposit of materials (S171) are dealt with by the Environmental Services team.

2.233 The conditions for issuing these as well as application forms and information on applicant's responsibilities can be downloaded from the Council's website.

2.234 Whilst these tend to be related to the on-site construction works rather than transport issues, their siting and maintenance can affect the safe use of the adjoining *highway*, especially if they are positioned at or near the site's boundary.

2.235 The use of 'green hoardings' will be considered where appropriate. These should incorporate climbing plants or grass/wildflower mats that can assist with dust suppression and deter graffiti/fly posting, so may be acceptable provided that they are properly managed and do not result in an adverse impact on lighting or public safety.

2.236 At the time of submitting the application and throughout the period of works, it should be ensured that these items are not positioned within sight lines or across sections of footway, verge or footpath, or so close to street furniture, such as lamp columns, that they preclude access for maintenance.

Cranes & mobile platforms

2.237 Permission is required to use the *highway* for cranes, temporary crane over-sail licences and Mobile Elevated Work Platforms (MEWPs) by the issue of licences/permits under S171 and 177 of the Highways Act 1980.

2.238 Items placed on the *highway* without a valid permit are an illegal obstruction and the Council can take enforcement action, and may seek the reimbursement of costs of removal, storage or disposal from the developer.

2.239 Crane applications should be made through the Council's website under Street Works Licences. Additional information can be obtained from the Street Works Team.

2.240 Crane licences must be notified to the Street Works Register, coordinated with planned activity in the *highway*, and may require temporary traffic management. In such cases, temporary traffic management plans should be produced and submitted for approval prior to works starting.

2.241 Applications for permanent over-sail licences for building projects or bridges above the *highway*, if not identified as part of the planning application, should still be raised with the T&D team.

Temporary closures

2.242 Demolition and construction works sometimes require a temporary road closure or parking bay suspension, particularly where heavy plant and machinery is in use, or excavation of the *highway* is required. Such closures will require the preparation and granting of an Order(s) under S14 of the Road Traffic Regulation Act 1984 to temporarily prohibit vehicular traffic. Further details should be obtained from the Street Works Team.

2.243 If an objection is raised and upheld, then the Order will not be made, and the road cannot be closed.

2.244 Temporary closures must be notified on the Street Works Register and have to be coordinated with planned activity in the *highway*, with appropriate traffic management plans submitted and agreed by the Council prior to the making of an Order.

2.245 The advance notification period for this can vary depending on the extent of the works but can be more than three calendar months. Developers should allow for such delays when preparing their project programmes.

Temporary access

2.246 Under the Highways Act 1980, approval must be given for access to the site for demolition and/or construction whether via a temporary access or part of permanent works.

2.247 A temporary access may require planning permission, as the legislation does not differentiate between temporary or permanent works. Where permanent access requires planning permission, approval for a temporary access as a part of the permanent works should be sought from the T&D team.

2.248 If access is provided by a vehicle crossing over the footway, verge or footpath, under S184 of the Act, details should be agreed in discussions with Area Teams, who will carry out the agreed work at the applicants expense.

2.249 Temporary excavation licences must be applied and paid for prior to works commencing.

Street works permits

2.250 Under the Traffic Management Act 2004, the Council has a responsibility to coordinate and monitor works undertaken on the *highway*. This includes temporary excavation licences for trial holes or proposed alterations to the street under S171 of the Highways Act 1980, or a licence to install apparatus such as drainage or utility services under S50 of the New Roads & Street Works Act 1991 (NRSWA).

2.251 Notices relating to the future commencement of work on site under S171 of the Highways Act 1980 or S50 of the NRSWA, including approval of traffic management, are dealt with by Street Works Team. Applicants are encouraged to make early contact with the team.

2.252 Site safety remains the responsibility of the developer. All sites should clearly display details of who is carrying out the works and contact details in case of an emergency.

Permanent access & off-site *highways* works

2.253 Approval of the details of the permanent access and off-site works is dealt with by the T&D team, who also approve and inspect the construction of *highway* works under S38 and S278 of the Highways Act 1980. The approval of the details of any permanent closure of an existing access (S124 of the Act) will also be considered.

2.254 Advance notification periods are specified within the Traffic Management Act. As the licence holder will not have access to an EToN system, these manual applications will be entered on the Street Work Register by the Street Works Team as part of the permit/licence approval process.

2.255 Safety remains the responsibility of the licence holder and their contractor. All works must comply with the latest safety codes of practice, including Chapter 8 of the Traffic Signs Manual and TfL Temporary Traffic Management Guidance, and any works in contravention of such will be subject to enforcement.

2.256 All sites must clearly display information boards which include the name of the company carrying out the works, and a 24-hour contact number for queries and emergencies.

2.257 If further works are required for snagging, or multiple phases of works planned, these must be notified separately. A licence is valid for one year from the date of issue and can be renewed if remedial works are required following expiry.

Section 58 - protection of the *highway*

2.258 A S58 Notice under the NRSWA may be put in place to ensure the integrity of the *highway* after substantial works, resurfacing or reconstruction of at least 30m continuous length in either the footway, verge, footpath or the carriageway.

2.259 This must be submitted at least three months before the works commence and can be arranged through the Street Works Team as part of the S50 licence process.

Utility service connections

2.260 It is the responsibility of the developer to ensure that utility service disconnections and reconnections under a S50 licence are applied for in good time.

2.261 Standard notification periods are applied in accordance with the Traffic Management Act 2004, which can be as much as three months dependant on the type of works required.

Temporary traffic management plans

2.262 Temporary traffic management plans must be provided for each phase of *highways* works and may incur a cost. Plans should be to scale and be prepared in accordance with Chapter 8 of the Traffic Signs Manual and the Safety at Street Works and Road Works: Code of Practice.

2.263 These must be submitted to the Street Works Team for assessment using the email address(es) in Fig.34

During demolition and construction

Protection of existing *highway*

2.264 Applicants are required to comply with the following legislation to ensure the maintenance and protection of existing *highway* during demolition and/or construction:

- S6 London Local Authorities and Transport for London Act 2013 with regards to damage to the *highway* caused by the developer.
- The Act states that if a *highway* is damaged by, or as a result of, works on land adjacent to the *highway*, the Highway Authority can remedy the damage and seek reimbursement from the landowner, the person carrying out the works, or the person on whose behalf the works are being carried out.
- S149 of the Highways Act 1980 addresses the removal of anything deposited on the *highway* which causes a nuisance or obstruction, for example mud left on the *highway* as a result of works.
- S151 & S163 of the Act 1980 relates to soil washing and water flowing onto and off the *highway*.
- In this instance, the Highway Authority may notify a landowner to their requirement to undertake works to prevent soil and refuse from their land falling, or being washed or carried, onto the *highway* (or sewer or gully) that should cause obstruction to this infrastructure. Following notice being served, the landowner has 28 days to undertake these preventative works.

Prior to occupation or operation

Future maintenance

2.265 With regards to new roads, agreement on their maintenance must be reached with the Highway Authority (T&D).

2.266 S38 of the Highways Act 1980 provides a mechanism for the public maintenance/ adoption of a new *highway* by the Council.

2.267 This section of the Act can be used when a developer proposes the construction of a new estate road for residential, industrial or general-purpose traffic that may be offered to the Highway Authority for adoption as *highway*.

2.268 S37 & S228 of the Highways Act 1980 relates to the adoption of existing unadopted *highway* ('private street') by the Council.

2.269 Where an area of *highway* is to remain privately maintained this can be controlled through a S106 planning agreement or planning condition, or an agreement under S101 of the Local Government Act 1972.

Ancillary items

2.270 When proposing new features along *highways*, applicants must comply with the following legislation:

- S142 of the Highways Act 1980 relates to the licence that may be granted by the Highway Authority to allow the frontager permission to plant, or retain, and maintain soft landscaping such as trees, shrubs, plants and grass on a publicly maintained *highway*.
- S167 of the Highways Act 1980 applies to retaining walls near streets. Plan and section drawings should be provided to the Council for approval alongside relevant specification information.

2.271 Non-compliance with this legislation will result in the applicant paying a fine for contravening the legislation set out in the Act:

- S16 of the London Local Authorities and Transport Act 2013 provides legislation on the installation of Electric Vehicle Charging Points within the *highway* and public off-street car parks.
- Part IV of the Road Traffic Regulation Act 1984 relates to all aspects of parking places, such as the power of local authorities to provide parking places, off-street parking places and the display of information.
- S177 & S178 of the Highways Act 1980 outlines restrictions in place on the construction of buildings and apparatus over *highways*.

2.272 This states that applicants will typically not be permitted to construct a building over any part of a *highway* without a licence granted under this section of the Act by the Highway Authority.

2.273 Any licence granted may include terms and conditions with respect to the construction, maintenance, lighting and use of the building as deemed appropriate by the Highway Authority.

3 Ecology and Biodiversity

Policy context

A range of European, national, regional and local legislation, policy and guidance has a bearing on biodiversity conservation. Biodiversity improvements within Bexley contribute to London-wide and national targets for priority species and habitats. These priorities and targets are, therefore, an important factor in setting our local priorities.

Biodiversity 2020: a strategy for England's wildlife and ecosystem services (DEFRA 2011) is focused on landscape-scale conservation. The Environment Act (2021) carries a commitment to monitor progress of the Biodiversity 2020 strategy against a set of defined indicators as published in A Green Future: Our 25 Year Plan to Improve the Environment.

National priority habitats and species are defined in the list of Habitats and Species of Principal Importance in England, identified under Section 41 of the Natural Environment & Rural Communities Act 2006.

A list of priority habitats and species in London can be found on the GLA website. There are London action plans in place for the habitats and some species. The London Environment Strategy sets targets for the areas of priority habitats to be created and enhanced in London by 2025 and 2050.

Bexley Local Plan Policy SP9 Protecting and enhancing biodiversity and geological assets sets out the Council's position on development that would have significant impact on protected or priority species as identified by legislation and Biodiversity Action Plans (BAPs). Policy DP20 Biodiversity and geodiversity in developments outlines how the mitigation hierarchy should be considered and applied. Policy DP21 Greening of development sites requires that developments complement Bexley's *green infrastructure* network through the retention of existing trees, woodland and hedgerows and through the provision of new, high-quality greening.

London Plan Policy G6 Biodiversity and access to nature outlines a requirement for developers to consider their development's effects on biodiversity from the outset of the design process.

Biodiversity Net Gain (BNG) legislation was introduced by the Government in February 2024 and seeks to leave the natural environment in a better state than it was prior to development. *BNG* measures must be considered alongside approaches to avoid, mitigate against or compensate for biodiversity losses.

With the introduction of this legislation, there is a requirement for all new development (unless exempt) to deliver at least 10% *BNG*. Biodiversity value is measured in standardised units using either the full Statutory Metric or where relevant the Small Sites Metric (SSM). The full version of the metric can be used for any development, but the SSM can only be used for minor developments which do not impact upon protected habitats or species.

A brief summary of the *BNG* requirements is set out in the Design Guide SPD Part 1 - Design Principles and further detail on planning and *BNG* can be found on the Government *BNG* guidance collection webpage, where guidance covers several topics including understanding biodiversity net gain, which provides an introduction to those new to *BNG*.

General guidance

Supporting, enhancing and protecting biodiversity is essential to allowing all to live healthy lives. As such, the Council expects applicants to consider biodiversity from the outset of all development proposals. This should be evidenced during pre-application discussions and in submitted planning information and should include the minimum information needed to assess a development against the mandatory *BNG* requirements as set out in Article 7 of the Town and Country Planning Order (2015). Information on the proposed strategy to meet the biodiversity gain objective for the development should also be provided.

Applicants should consider how biodiversity and ecological enhancements can be made to support Bexley's Climate Change Action Plan.

Protecting biodiversity

3.1 The following guidance applies to all development sites and conveys the importance of applicants considering how their proposal can impact and enhance Bexley's biodiversity.

3.2 When undertaking development of any scale, all sites, including infill, greenfield or brownfield, will be considered as having potential to support biodiversity. It is vital that wildlife and habitats are considered to avoid habitat loss, fragmentation and the potentially damaging impact of human activity on nature. Development sites can put pressure on different habitats, threatening species classified as 'protected' and 'priority'.

3.3 Prior to starting a project, all applicants, including householders and small developers, should enter details of a development proposal into the Wildlife Assessment Check free online tool, which will determine if expert advice should be sought prior to submitting a planning application.

3.4 Illustrated in D 04 and D 34 of the Design Guide SPD Part 1 - Design Principles, Bexley's Sites of Importance for Nature Conservation (SINC) can also be used as a starting point. However, applicants should be aware that there are a number of other habitat features that either host protected species or contribute towards biodiversity within the borough. Professional advice from a qualified ecologist should therefore be sought if there is any likelihood that these habitats will be impacted by the proposed development.

3.5 Developments that will either directly or indirectly impact a designated site of biodiversity or geodiversity importance; a protected or priority species; or priority habitat will need to submit ecological assessments, surveys and reports with a planning application.

In line with the five-point mitigation hierarchy, all applicants should answer the following:

Q: Will the development have a negative impact on species and/or habitats present on the development site?

If the answer is yes, applicants need to then answer the following questions:

a. Can an alternative site for the development be found?
b. If an alternative cannot be found, can the development be redesigned to avoid harm to species and habitats?
c. If harm cannot be avoided, can the harm be minimised and mitigated?

If the answer to all three questions is no, it is unlikely that planning permission will be granted.

3.6 A suitably qualified ecologist should be appointed to carry out any identified assessments. A Preliminary Ecological Appraisal (PEA) is normally carried out to establish whether any further specific surveys are required, give an early indication of possible mitigations that are likely and point out any initial opportunities for enhancements.

3.7 Undertaking a PEA is not usually sufficient to inform the determination of a planning application (other than under the exceptional circumstances set out in CIEEM guidelines), so in most cases a full Ecological Impact Assessment (EcIA) will be required if there are any indications that the development is likely to affect protected habitats and/or species.

3.8 If required, the EcIA and any associated reports should accompany a planning submission, whether at pre-application stage or with a full planning application.

The five-point mitigation hierarchy

3.9 As outlined in the Context section of the Design Guide SPD Part 1 - Design Principles, the Council will assess development proposals against the five-point mitigation hierarchy.

3.10 Based on Section 5.2 of BS 42020:2013 Biodiversity - Code of practice for planning and development, the hierarchy enables the Council to measure the extent of biodiversity protection that has been incorporated into a proposal and sets out the biodiversity impacts applicants should consider during the different stages of the development process.

3.11 A simplified hierarchy is shown in Fig.37 and applicants must provide evidence of how the hierarchy has been followed with planning applications.

3.12 The Plan of Work stages provide a framework for undertaking construction projects from initial, briefing stage through to completion and handover. Fig.38 sets out what is required of applicants during each relevant RIBA Plan of Work Stage, relating the five point mitigation hierarchy to each RIBA Plan of Work stage.

Fig.37 *Simplified five-point mitigation hierarchy (applicants should refer to the Design Guide SPD Part 1 - Design Principles for the full hierarchy.)*

Fig.38 *Demonstrating compliance with the five-point mitigation hierarchy in development projects*

RIBA Plan of Work Stage *(Relevant mitigation hierarchy point)*	Guidance
0 - Strategic Definition **1 - Preparation and Briefing** **2 - Concept Design** *(Information/Avoidance)*	• Survey existing biodiversity of site - this should be undertaken by a professionally qualified ecological consultant who is a member of the Chartered Institute of Ecology and Environment Management (CIEEM) or similar • Cross reference Bexley's policies and Planning Guidance documents with those of the latest versions of regional and national policies that support biodiversity, as listed under References. This will help the applicant create a development that has a positive impact on Bexley's biodiversity. • Assess impacts, constraints and opportunities for biodiversity and prepare ecological reports • Consider biodiversity and potential for biodiversity enhancement in the design process • Prepare plans that clearly illustrate existing habitats and features and any proposed changes. Plans should demonstrate how the proposal has sought to incorporate opportunities to improve and enhance biodiversity within and/or around the development site
3 - Spatial Coordination *(Avoidance/Mitigation)*	• Update plans as required from pre-planning advice • Create an ecologically orientated and sustainable proposal • Plans should demonstrate avoidance of harm and how the proposal seeks to maximise opportunities to enhance biodiversity
4 - Technical Design *(Mitigation)*	• Plans should demonstrate how trees, protected species and foraging areas will be protected during construction • Pre-planning for any Construction Environmental Management Plan (CEMP) needed and its implementation
5 - Manufacturing & Construction *(Compensation/Enhancement)*	• Monitor the protection measures for biodiversity • Ensure measures for CEMP are monitored so they do not impact on biodiversity protection
6 - Handover **7 - In-Use** *(Enhancement and BNG)*	• Ensure any planning obligations or conditions of the permission are complied with • Landscape and Ecological Management Plan (LEMP)

RIBA Plan of Work Stage 0 - Strategic Definition, RIBA Plan of Work Stage 1 - Preparation and Briefing, RIBA Plan of Work Stage 2 - Concept Design *(Mitigation hierarchy stage - information/ avoidance)*

3.13 For all development sites where there is a possibility of an existing habitat for protected species, a baseline ecological survey is required. This will establish the environmental impact a development may have and allow applicants to determine how best to protect and enhance a site's natural value.

3.14 Survey results can be used to inform a suitable approach to addressing policy requirements and ensure the design of mitigation, where necessary, is appropriate for the site.

3.15 Surveys should be undertaken at optimal times throughout the year as described in Fig.40, with a survey trigger list provided in Fig.41 - note this list is not exhaustive.

3.16 It is recommended that ecological surveys are carried out as early as possible in the design process, and in advance of detailed design, to ensure the design proposal adequately accounts for any existing habitats found.

3.17 Survey reports will provide a baseline measure of the biodiversity value of the development site; allowing the potential for biodiversity enhancement to then be considered. Surveys should inform the design and scale of the proposal. If important biodiversity features or characteristics are found, the proposal must be adapted to avoid or otherwise mitigate impacts on the features, following the hierarchy set out in Fig.37.

3.18 Reports will be used to determine the impact of a proposal on biodiversity within the site, the locality, or where appropriate, on the regional or national resource.

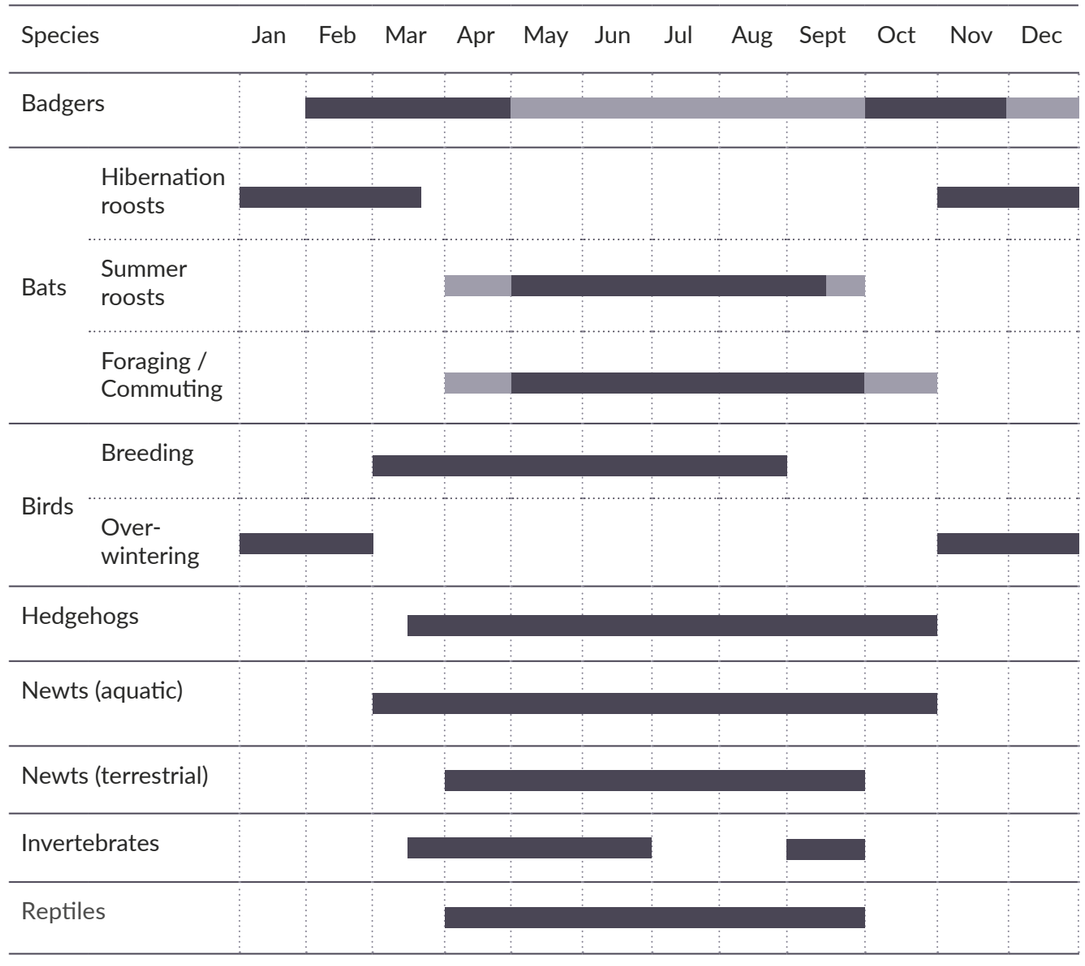
Fig.39 *Wildlife in Bexley*

Protected species occurring in Bexley include, but are not limited to:

- All species of bat – at least nine are recorded in Bexley
- Amphibians: Great crested newt, Common frog, Common toad, Smooth newt, Palmate newt
- Reptiles: Grass snake, Common lizard, Slow worm
- Mammals: Badger, Water vole
- Birds: Barn owl, Bearded tit, Black redstart, Cetti's Warbler, Firecrest, Hobby, Kingfisher, Little Ringed Plover. All wild birds and their nests are protected
- Plants: Stinking goosefoot
- Insects: Stag beetle

Note: this list is not exhaustive.
It is an offence to kill, injure, capture, disturb or damage protected species' habitats.

Fig.40 *Optimal timings of ecological surveys*



Note: some species and habitats surveys can be carried out at any time of year, but for certain species, particular times of year are required to give the most reliable results, as indicated in the table above. Surveys conducted outside of optimal times may be unreliable. All surveys should be undertaken by qualified ecologists and follow published national or local methodologies.

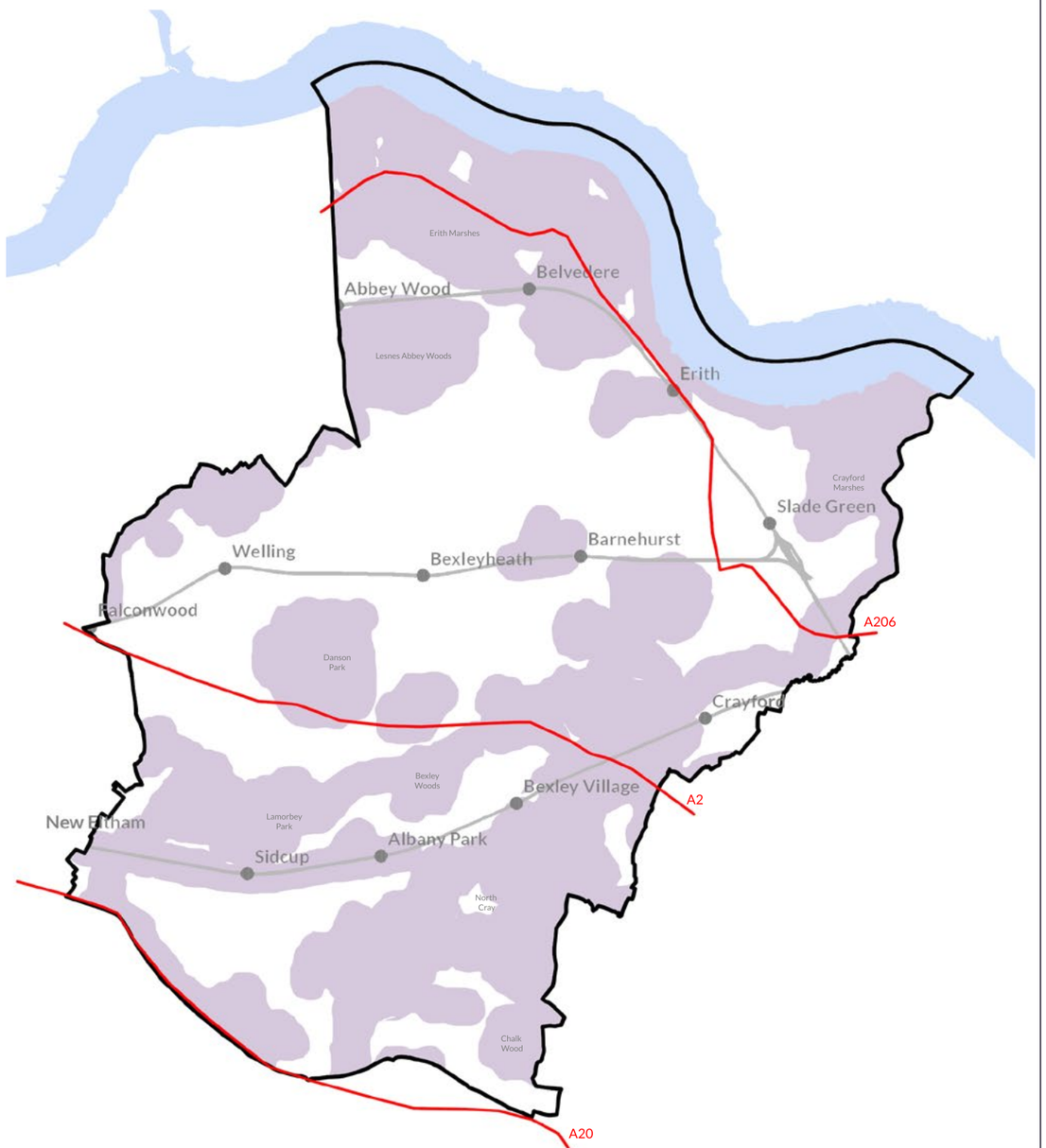
Negative results gained outside the optimal period should not be interpreted as absence of a species. An application may not be valid until survey information is gathered from an optimum time of year. Species surveys should also be taken in suitable weather conditions. GiGL, London's Local Biological / Environmental Records Centre may have useful existing information and records.

Fig.41 *Ecological survey trigger list (where * is denoted, refer to Fig.42, where ** is denoted, refer to Fig.43)*

Criteria	Focus of assessment and details
All proposals on or adjacent to a Site of Importance for Nature Conservation (SINC)	Ecological Impact Assessment of all habitats, plants, birds, invertebrates, other relevant species groups in application site and surrounding parts of SINC, impact assessment, mitigation and enhancement proposals. Preliminary Ecological Appraisals (PEAs) are not sufficient to inform the determination of a planning application other than under the exceptional circumstances set out in CIEEM guidelines.
Proposed development including the modification, conversion, demolition of removal of buildings and structures (especially roof voids) involving (one or more of the following): • Pre-1914 buildings with gable ends or slate roofs, regardless of location • All buildings that are within 200m of woodland, water or large open spaces known to be important for feeding bats* • All tunnels, kilns, ice-houses, air raid shelters, cellars and similar underground ducts and structures • All bridge structures, aqueducts and viaducts	Survey of bat roosts, detailed mitigation proposals if any sign of roosts found
Proposed tree work (felling or lopping) or development affecting (one or more of the following): • Trees older than 100 years • Trees with obvious holes, cracks or cavities • Trees with a girth greater than 1m at chest height	
Proposals involving the lighting of churches or *listed buildings* or floodlighting of green space that are (one or more of the following): • Within 50m of woodland, water or large open spaces known to be important for feeding bats* • Within 50m of hedgerows or tree lines with obvious connections to woodland, water or large open spaces known to be important for feeding bats	Bat surveys including roost and foraging surveys, assessment of impacts and mitigation proposals if bats are found
All proposals within 500m of a pond in the North Cray/Foots Cray area**	Survey of great crested newts, assessment of impacts on newt habitat (terrestrial or aquatic), mitigation proposals

Criteria	Focus of assessment and details
All proposals within 50m of a river or where application site includes or adjoins a river	Ecological survey of water voles and otters, impact assessment, detailed mitigation proposals if water voles or otters present, proposals for river enhancements. An 8 metre vegetated buffer is required beside river
Within 50m of a drainage ditch in Belvedere or Crayford	Ecological survey of water voles, detailed mitigation proposals if present. An 8 metre vegetated buffer is required beside ditch
Greenspace (including gardens) in the North Cray/ Foots Cray area**	Survey of badgers, assessment of impacts and detailed mitigation proposals if setts or other signs of badger activity are found
Derelict land with or close to areas of sparse, open vegetation, where buildings or other structures are to be demolished	Survey of black redstarts with detailed mitigation proposals if found, mitigation proposals for habitat loss
Sites containing rough grassland, heathland, scrub, allotments or open vegetation mosaics, except for isolated brownfield sites with no connections to other areas of habitat	Survey of all reptiles. Mitigation schemes can be dealt with by condition.
Major proposals affecting brownfield land with open vegetation mosaics	All protected species including black redstarts and reptiles, detailed mitigation for these species if found, mitigation proposals for habitat loss regardless of whether protected species are found
All proposals affecting any buildings, structures, feature or locations where protected species (other than occasional foraging bats with no evidence of roosts) are known to occur	Survey, impact assessment and mitigation proposals for the relevant protected species
Major proposals with the potential for significant impact on water quality in the River Thames	Habitats Regulations Assessment of possible impacts on the Thames Estuary and Marshes Special Protection Area
Major proposals with the potential for significant adverse impacts on air quality	Habitats Regulations Assessment of possible impacts on Special Areas of Conservation

Fig.42 *Areas within 200m of woodland, water or known bat feeding areas*



Areas within 200m of woodland, water or known bat feeding areas

Fig.43 *Areas where badgers and great crested newts are highly likely to be found*

Areas where badgers and newts are highly likely to be found, where it is particularly important to consider potential impact on the species during design development

RIBA Plan of Work Stage 3 - Spatial Coordination
(Mitigation hierarchy stage - avoidance/mitigation)

3.19 This is a critical stage whereby nature conservation opportunities and constraints are identified and then accommodated during design development. This aims to create an ecologically orientated and sustainable development.

3.20 There is a risk that some species may be left isolated with no access to suitable foraging areas through a process called fragmentation. As a result of fragmentation, parts of established habitats are lost resulting in smaller, disconnected areas.
Applicants should therefore seek to retain and enhance foraging areas or routes (e.g. for bats) or carry out other provisions that contribute towards conservation of the species on or off-site.

3.21 Lighting should be designed to mitigate its potential negative effects on biodiversity. Designers should consider the use of timers or specific coloured lighting to minimise any disturbance to existing habitats. In certain locations, a lighting strategy or specific lighting may be secured by condition. Further guidance on lighting design is provided in the design considerations section on page 90.

3.22 Where a development site contains significant features of biodiversity value, irrespective of the development scale, the Council will seek to secure, retain and enhance these features. Applicants should consider how new built structures and landscaped elements can contribute to the delivery of wider ecological benefits and enhancements.

3.23 To demonstrate how biodiversity considerations have been incorporated into a proposal, the submitted plans and accompanying report(s) should clearly detail:

Thamesmead Canal Habitat Enhancement Project, Thamesmead
Thames 21

Aiming to create floating ecosystems throughout the canal system, more than 410m^2 of floating habitat islands - including reedbeds - were installed to create islands where native plants can grow whilst enhancing biodiversity. Reedbeds help to filter pollution and the floating islands create wildlife habitats and corridors.

© Thames21

- How the development avoided any impacts;
- How the five-point mitigation hierarchy has been addressed; and
- The positive measures for enhancing and developing biodiversity in the proposed development

3.24 In line with the policies and guidance outlined in the policy context section of this chapter, opportunities must be sought for the incorporation of biodiversity into developments and for habitat creation or enhancing existing habitats in all development proposals.

3.25 Habitat Suitability Maps are a resource that can be used to identify opportunities to create new habitats and can contribute to the habitat creation targets in the forthcoming London Local Nature Recovery Strategy (LNRS). The role of a site in buffering or connecting neighbouring or nearby habitats should also be taken into consideration as part of this process.

3.26 Increasing access to nature is a priority and all developments should maximise opportunities to achieve this. A map of Bexley's areas of deficiency in access to nature can be found in the Bexley Local Plan and the Design Principles. Habitat creation should also seek to strengthen the landscape character of the area, as identified in Natural England's London's Natural Signatures project.

3.27 With any adaptation or mitigation options proposed, a Landscape and Ecological Management Plan (LEMP) may be required and secured by condition or legal agreement as outlined in the Handover and In-use section.

RIBA Plan of Work Stage 4 - Technical Design
(Mitigation hierarchy stage - mitigation)

3.28 Applicants will need to think about how areas of biodiversity value on a

The Clearing, Lesnes Abbey Woods
WonKy

The multifunctional outdoor education space has been created to provide children and young people with access to natural green space for recreation and learning about the local biodiversity thriving within the woodland. The space was co-designed through engagement with a range of local stakeholders to ensure the space reflects the needs of anticipated users.

© 1-2: Jim Stephenson; 3: London Borough of Bexley

development site and in the surrounding area will be protected during the construction phase.

3.29 These measures can be secured through a planning condition or a Construction Environmental Management Plan (CEMP) depending on the proposal and the level of biodiversity that requires protection. Fig.44 sets out what the CEMP should provide.

3.30 As set out in BS 42020, while the format of the CEMP may vary, it should be proportionate and specific to each project.

RIBA Plan of Work Stage 5 - Manufacturing and Construction
(Mitigation hierarchy stage - compensation/ enhancement)

3.31 Fig.45 details potential measures that applicants should consider during construction to minimise the impact on existing habitats. Note these are not exhaustive and development sites may generate other, specific considerations.

RIBA Plan of Work Stage 6 - Handover, RIBA Plan of Work Stage 7 - In-Use
(Mitigation hierarchy stage - enhancement/BNG)

3.32 Applicants should consider how the quality of areas of ecological value that are to be retained, enhanced or created on or around a development site be maintained and managed once the scheme is built out. Where a LEMP has been recommended or identified as necessary, the Council will secure their implementation by either a planning condition or by legal agreement.

3.33 Implementation of the management plan is likely to be a contractor's responsibility and should be considered at the tender evaluation stage. Where the management plan is secured by legal agreement, the developer will be required to report to the Council to evidence that they are implementing the plan.

Fig.44 *A Construction Environmental Management Plan (CEMP) should:*

- Include risk assessment(s) of potentially damaging construction activities
- Identify biodiversity protection zones and areas where invasive species have been found
- Set out mitigation measures and sensitive working practices including the location and timing of sensitive works
- Include a list of responsible persons and their contact details and times when specialists will be on-site
- Define and communicate the roles and responsibilities of an ecological clerk of works or appointed ecologist(s) who will manage biodiversity issues on site.

Fig.45 *Biodiversity considerations during construction planning*

- Timing of works to avoid disturbance to species such as birds in the breeding season
- Use of protective fencing to preserve important ecological areas and reduce direct damage by fencing off storage areas and areas for construction huts, and carefully planning and limiting their placement
- Planning vehicular movements to minimise the impact on ecologically sensitive areas and reduce soil compaction
- In ecologically sensitive areas, keep disruptive elements such as light, noise and human presence to a minimum
- Implement measures to protect watercourses and ground water from pollution
- For sites of significant biodiversity value, or its adjoining sites, a Construction Environmental Management Plan (CEMP) to protect biodiversity during the construction phase may be requested and secured by legal agreement or planning condition prior to the commencement of works on site.

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Biodiversity design considerations

3.34 Development projects can enhance the built environment for wildlife in many ways. The greening of buildings, for example, can make a positive contribution to biodiversity. Buildings can also be enhanced for bats and birds by providing roosting boxes, which can either be built into the fabric of new buildings or *retrofitted* to existing ones. Street planting can also play a role in providing nectar-rich flowers through trees, planters and hedges.

3.35 All new development should be viewed in the context of the borough's ecological network and must play its part in enhancing biodiversity. Opportunities to improve biodiversity connectivity between green spaces should be investigated as part of the design and layout process. In this respect, regard should be given to green spaces and habitats indicated in Bexley's *Green Infrastructure* Study and the borough's Sites of Importance for Nature Conservation.

3.36 The ongoing management of landscape and wildlife features should be carefully planned and adequately resourced.

Installing artificial nesting and roosting sites

3.37 The Council expects all new development, residential and non-domestic, refurbishment and *retrofit*, to incorporate a range of artificial nest and roost sites. The required number will reflect the size and scale of development as set out in the Natural Environment section of the Design Guide SPD Part 1 - Design Principles.

3.38 Artificial nest sites provide nesting and roosting opportunities for birds, bats and some invertebrates. This is particularly important in urban areas where there are fewer natural nesting sites available.

3.39 Invertebrate features can be incorporated through the use of bug boxes and bee hotels or habitat walls. These are discreet features that can be built into the outer skin of cavity wall buildings.

3.40 The type of feature, its location and surroundings will depend on target species. For appearance, durability and maintenance, these features should be integrated into the building fabric to support long-term retention.

3.41 Applicants should avoid installing features near bright lighting, sources of noise and vibration, busy entrances or walkways and windy and exposed corners of the site.

3.42 Fig.46 sets out guidance for specific artificial nesting sites on a development site.

Lighting

3.43 Lighting should be designed to mitigate the potential negative impact on biodiversity, whereby it can encourage the displacement and disruption of species.

3.44 Applicants should refer to the ILP Guidance Note Bats and Artificial Lighting at Night and Artificial Lighting and Wildlife - Interim Guidance: Recommendations to help minimise the

Fig.46 *Design requirements for artificial nest sites and habitats*

Type	Height	Orientation	Other design considerations
Integrated bat bricks	3-5m above ground (and higher where possible)	S/SE/SW	• Lighting: Locate in low- or no-light areas • Access: Clear flight path with no vegetation of signage blocking the entrance • Siting: Group in clusters of 2-3 units across different elevations to provide a range of temperatures and avoid siting near vents, extractor fans and high-traffic areas • Maintenance: No internal cleaning or access required
Integrated bird bricks, such as swift bricks, and nesting features	Tall buildings (over 20m) for peregrine falcons 6-8m above ground for kestrels ≥5m for swifts 2-4m for sparrows and starlings 1.5-3m for small garden birds such as tits and robins	N/E/NE	• Species: Swift bricks can be installed to accommodate different species, including swifts, sparrows and starlings • Access: Ensure no obstructions within 1-2m of the entrance • Siting: Group features for colonial feeders such as sparrows and swifts in clusters of 3-6 and locate away from prevailing winds and prolonged sun exposure. Avoid positions above doors, windows or busy paths due to droppings • Maintenance: Some features will require intermittent cleaning, typically outside breeding season (March-August)
Log piles	Ground	Shaded area	• Design: use untreated hardwood logs between 10-40cm in diameter in varied orientation with horizontal stacks and partially buried upright sections. Branch piles and root plates should be included for diverse microhabitats • Siting: Locate in quiet, (semi-) shaded areas that avoid mowing routes and vehicular activity. Site near planting, hedgerows or meadow edges • Maintenance: Allow logs to decay naturally, adding fresh logs every few years to maintain habitat continuity
Bug hotels and invertebrate habitats	Ground - 1.5m	S for solitary bee habitats Shaded for beetle/ woodlouse habitats	• Design: Protect roofs with overhangs to keep contents dry and fix securely to avoid collapse as a result of strong winds • Siting: Provide multiple, small features rather than one, large hotel. Locate near nectar sources such as wildflowers and flowering shrubs • Suitable materials: Bamboo/hollow stems; rotting wood pieces; straw, bark, pine cones; drilled hardwood blocks; stones and rubble; sand banks for solitary bees

impact of artificial lighting by the Bat Conservation Trust in association with the Institution of Lighting Engineers (ILE) for further guidance on minimising potential harm caused by lighting.

3.45 Where lighting has the potential to harm biodiversity, timers or specified coloured lighting may be required to minimise any disturbance.

3.46 Where designated sites, protected or priority species and/or habitats are likely to be affected, it is strongly recommended that an ecologist contributes to the development of the lighting strategy, in line with Bat Conservation Trust guidelines.

3.47 Where biodiversity enhancement opportunities have been identified, such as bird boxes such as swift boxes, bat boxes or new landscaping, the impacts of lighting on these will also need to be considered in the design. Applicants should ensure schemes are designed to be wildlife-sensitive and limit the amount of illumination around ecological features, whilst also ensuring the safety of people.

3.48 For certain locations in the borough, a Lighting Impact Assessment may be required to be submitted with a planning application and a lighting strategy or specific lighting may be secured by condition. The need for a Lighting Impact Assessment would normally be identified within a development's ecological report.

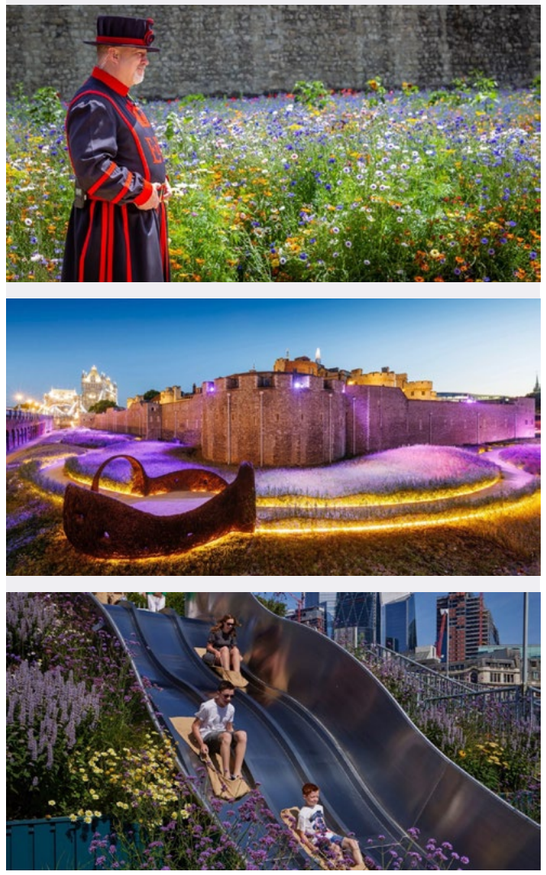
Bexley's green spaces

3.49 Much of Bexley is occupied by gardens and the landscaped areas around housing estates, schools, businesses and other premises, with the majority of this providing housing amenity.

3.50 Private gardens can be havens for wildlife, supporting a wealth of birds and insects and often amphibians if there is a pond nearby. Gardens provide essential stepping stones for wildlife between larger green spaces where these cannot be directly linked. Fig.47 references the types of suitable planting within gardens in Bexley, and those to avoid.

Superbloom, Tower of London
Grant Associates

A meanwhile project to celebrate the Queen's Platinum Jubilee. Its design aimed to prompt further consideration for the potential of urban green spaces in the face of climate change and a need to support and enhance our natural environment. The designers integrated different microclimates, water management systems and considered lighting to complement the ecology present, with materials chosen for their sustainable credentials.



© Alister Thorpe

3.51 Front gardens should be designed to discourage residents from converting them into car parking areas and it is encouraged that front gardens are planted with suitable trees to simultaneously provide shade and enhance the streetscape. Where parking is provided, it should be designed to minimise the amount of hard landscaping and include greenery.

3.52 Much of the ditch and dyke network in Bexley are located within industrial locations. These provide important habitat for water voles and other amphibians. Landscaping around industrial premises offers an opportunity to retain or create ground level open mosaic habitats as brownfield sites are developed.

3.53 Applicants should consider how to mitigate the impact of new roads on wildlife and biodiversity. Where feasible, vegetative crossing points should be designed near existing commuting routes. The use of eco-passages or overpasses should also be considered for inclusion within schemes.

3.54 All planting proposals should be designed for projected climate conditions over the lifetime of a development, rather than solely for present day conditions.

3.55 Climate resilient species, such as those with demonstrated drought tolerance once established, those that don't require prolonged irrigation beyond the establishment period and those that provide multiple ecological functions such as combined pollen, nectar, berry and nesting value, should be prioritised when preparing planting schedules.

Fig.47 *Planting considerations in Bexley's gardens*

- A choice of suitable, native, and non-invasive planting species should be prioritised
- Near-native and non-native species may be deemed acceptable in a mixed palette with native species and where it can be demonstrated that the proposed species would have greater climate resilience, long-term viability and ecology function than a purely native palette. Justification for their use will be required and a solely near-native or non-native palette will not be supported by the Council. No species listed as an invasive species under Schedule 9 of the Wildlife and Countryside Act 1981 should be specified.
- Following a "right tree, right place" approach meaning planting suitable tree species that are specific to the context and provide environmental benefits
- Wildflowers, semi-natural vegetation, rain gardens, and flower-rich perennial planting is encouraged
- Key planting species in Bexley include:
  a. Black poplar,
  b. Lesser calamint,
  c. Bluebells; and
  d. Wild daffodils.
- The use of UK invasive species and those listed on the London Invasive Species Initiative (LISI) - Species of Concern should be avoided.
  This includes, but is not limited to:
  e. Japanese knotweed,
  f. Rhododendron,
  g. Common ragwort,
  h. Buddleia,
  i. Himalayan balsam; and
  j. Giant hogweed

Greening buildings

3.56 There are three primary options for introducing greening to buildings - *green roofs*, façades and living walls. Fig.48illustrates what some of these options may look like alongside design requirements.

3.57 Due to their maintenance requirements, there is a presumption in favour of green façades rather than living walls. If living walls are proposed, detailed technical drawings must be submitted to support the application, including sections and the depth of the growing medium.

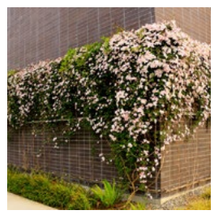
3.58 When proposing green or living facades, applicants should provide an ongoing strategy for maintenance to demonstrate that the longevity of the planting has been considered during design development.

3.59 *Green* and *biodiverse roofs* can be designed to cater for many different needs or situations. Due to limited biodiversity gain, sedum only roofs will be considered appropriate only if there is no other viable alternative.

3.60 In general, Bexley's common building typologies are suited to using photovoltaics (PVs) for energy generation, in which case roof space may be required for both PVs and greening. In these instances, biosolar roofs can be specified, which can enhance ecological benefits such as providing wildlife with additional habitat opportunities and helping plants to recolonise following dry weather spells. The panels themselves benefit from the cooling effect provided by the vegetation, optimising efficiency.

3.61 When proposing biosolar roofs, applicants must demonstrate their approach to fire safety and how the proposal has been treated as part of a coherent fire strategy, evident at planning submission stage.

Fig.48 *Options for greening on buildings* © Optigrün / © Bauder / © Architek

Type	Description	Design considerations	Example
Intensive *green roof*	These are mainly provided for recreational uses and include landscaping features. Whilst the primary aim is to provide amenity carefully considered planting schemes also provide benefits to local wildlife.	• Aspect and orientation to maximise light and shelter from wind • Compatibility of the proposed uses • Security and accessibility to inhabitants or the public • Circulation, desire lines and accessibility for all users • Irrigation and details on locations of taps or pump room • Safety, means of escape and protection from falls • Substrate is deeper (up to 1000mm) and heavier than other *green roofs* • If trees are to be planted at roof level then consideration needs to be given to providing the appropriate planting medium depth and anchoring	
Extensive, *biodiverse* or biosolar *green roof*	The main function is to provide habitat for wildlife and they have many other environmental benefits. *Biodiverse roofs* can include at least 20 different plant species, which usually complement the local area.	• The surface normally consists of rubble over a waterproof membrane • Planting is usually drought tolerant and will need to withstand minimal watering • Substrate depth on biodiverse roofs should be varied (up to 200mm deep) to help make them drought tolerant • Can be combined with PVs (Biosolar roofs). Ensure arrangement of PVs allows for plant growth and that species are suitable • Consider irrigation, particularly during establishment • Extensive roofs are generally lighter in weight than intensive roofs	
Sedum only roof	Generally used for visual amenity. Sedum species can be used on other *green roofs*.	• Shallow substrate and light weight • Limited biodiversity value • Generally grown on mats or blankets that can be installed on roofs	
Blue roofs	This is a form of SuDS, where rain water is collected into water tanks on the roof and released at a controlled rate.	• Other *green roofs* perform many of the functions of a blue roof • Can create biodiverse wetland habitats within this type of system • Useful in areas of known flood risk • Roof must be flat and able to withstand the weight of stored water	
Green façades	Climbing plants are trailed up a wall using a supporting framework such as wires. The low maintenance combined with the high visual effect make green façades a good choice for both new buildings and alterations.	• Planting can be either rooted in the ground or in planters • Maintenance requirements are lower and irrigation reduced if planting is in the ground • Wire frameworks can be designed to avoid obscuring openings and prevent plants from attaching to the wall • Conventional climbing plants can be combined with decorative plants such as wisteria to improve visual amenity	
Living walls	Plants are grown in individual pockets mounted on the wall and irrigated daily using water pumps.	• Consideration should be given to the high cost and specialist maintenance requirements of these systems • Detailed technical drawings must be submitted to support the application, including sections and the depth of the growing medium.	

4 Drainage and Flood Risk

Policy context

London Plan Policy SI 13 Sustainable Drainage sets out the Mayor's aim for managing surface water for new development.
It sets out the well-established drainage hierarchy that helps to reduce the rate and volume of surface water run-off. This hierarchy aims to manage surface water in the most sustainable way, encouraging water reuse on site and reducing the amount of surface water to be discharged off-site. Applying the hierarchy will lead to more sustainable water management and reduce the burden on the capacity of sewers within the borough.

Bexley Local Plan Policy DP33 Sustainable drainage systems sets out clear requirements regarding how new development in the borough should manage surface water drainage and requires that all development manage surface water using sustainable drainage systems. Policy DP32 Flood risk management makes it clear that flood risk must be managed to not cause an increase in flood risk both on and off site.

The DEFRA Non-Statutory Technical Standards for *Sustainable Drainage Systems* (2015) defines the minimum performance standard for runoff destinations, flow control, and storage requirements. The LLFA expects that developments will exceed these minimum standards wherever feasible.

General guidance

Sustainable drainage systems (SuDS), implemented correctly, have the potential to provide multiple benefits, both directly to new development and to the wider area.

If considered at an early stage of the development, SuDS can be incorporated to provide effective surface water management and wider amenity value by creating green spaces throughout the development. Applicants should consider how SuDS can be incorporated into their design to provide the maximum benefits.

The Council's Sustainable Drainage Design and Evaluation Guidance document provides clear guidance on the implementation of SuDS to ensure that proposals meet agreed standards and are maintainable now and in the future.

Integration with urban design and *green infrastructure*

4.1 Applicants should consider SuDS at the earliest stages of design of the development as this will increase their effectiveness and can provide wider amenity value to development.

4.2 Effective SuDS design can offer multifunctional benefits, such as:

a. Enhanced public realm and visual amenity
b. Biodiversity and habitat creation, which could contribute to *Biodiversity Net Gain (BNG)* requirements
c. Urban cooling and climate adaptation
d. Improved air and water quality.

4.3 To maximise the full potential, a sustainable drainage system should be thought of as a series of sequential components, rather than a single standalone solution – known as the 'management train' approach.

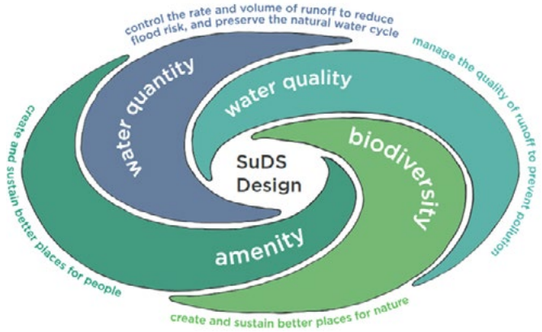


Fig.49 *Principles of SuDS design*
Source: Bexley Sustainable Drainage Design and Evaluation Guide

4.4 Different components will have different, although sometimes overlapping, functions that together deliver the required performance for water quantity, quality and the wider biodiversity benefits. Considering SuDS early on in the design process and incorporating different measures will help maximise the full benefits that they can offer.

Requirements for new development

4.5 All development proposals, whether increasing or decreasing the impermeable area of the site, are required to manage surface water through SuDS.

4.6 All development proposals must demonstrate that:

a. The drainage for the site achieves greenfield run-off rates for all flood events up to and including 1 in 100 years plus 40% climate change
b. Surface water run-off has been reduced by sustainably managing run-off on site
c. Permeable paving has been used for hardstanding areas
d. The nature of water flow (both surface water and groundwater) across a steeply sloping site has been considered in order to provide suitable SuDS, and
e. Water reuse mechanisms have been included for either indoor or outdoor purposes.

4.7 New surface water connections to a foul sewer will not be permitted, as this is the major contributor to sewer flooding. Any existing surface water connections to a foul sewer must be removed and alternative suitable surface water drainage must be created.

Fort Royal Primary School, Worcestershire
A wetland was introduced into a school grounds to enhance biodiversity and create new habitats that contribute to the wider *green infrastructure* network in the local area.

© McCloy Consulting & Robert Bray Associates

Drainage hierarchy

4.8 All new developments must show that they have followed the drainage hierarchy, providing significant consideration for each option.

4.9 London Plan Policy SI13 sets out the well-established drainage hierarchy as shown in Fig. 50. The drainage hierarchy sets out a prioritised sequence for discharging surface water from developments, with the aim of mimicking natural drainage as close as possible.

4.10 The drainage hierarchy should be considered as early as possible and throughout the development design process to maximise their effectiveness and increase opportunities for water reuse and storage across the site.

4.11 The drainage hierarchy in order of preference:

- Rainwater use as a resource – capturing rainwater on site through rainwater harvesting systems, such as blue roofs and water butts, for reuse on site.
- Infiltration to ground – where ground conditions allow, rainwater can be captured on site and released to ground, mimicking natural processes, through the use of soakaways and other infiltration methods.
- Rainwater attenuation in *green infrastructure* – the use of SuDS, such as swales, basins, green roofs and wetlands, to store and slowly release water. *Green infrastructure* presents a great opportunity to deliver wider environmental benefits, including contributing to biodiversity net gain, and creating greater amenity value to new development.
- Controlled discharge to a surface water sewer – This option should only be considered once all the previous steps have been proven to be unviable.

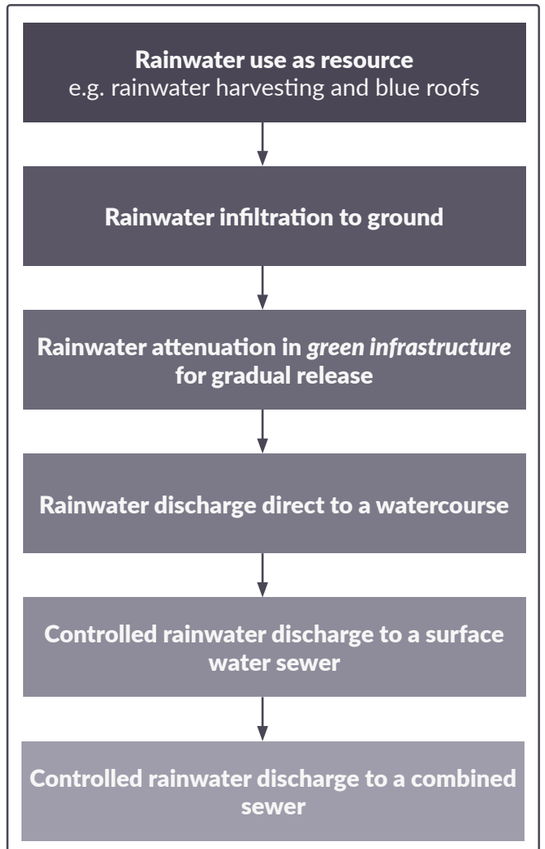


Fig. 50 *The drainage hierarchy*

If selected, it must be shown that discharge rates will be reduced to greenfield runoff rates for all flood events up to and including 1 in 100 years plus 40% climate change.

- Controlled discharge to a combined sewer – This is the least preferred option and will only be accepted once all previous steps have been proven unviable. The sewer must be officially designated as a combined sewer and it must be shown that discharge rates will be reduced to greenfield runoff rates for all flood events up to and including 1 in 100 years plus 40% climate change.

4.12 Surface water connection to a foul sewer is not within the drainage hierarchy and will not be permitted.

Bridget Joyce Square, White City
Robert Bray Associates

The project sought to create a better space for the community and a landscape that manages rainwater using SuDS. Rainwater is captured at roof level from the nearby school and directed into the SuDS landscaping using rainchains secured within raingardens. Permeable paving is used to allow rainwater to pass through the surface and is supported by street trees, raingardens and landscaped basins.

Surface water drainage strategy

4.13 All development proposals on sites of 0.25 hectares or greater require a drainage strategy, which must be accompanied by a suitable maintenance and management plan. This is in addition to a site-specific Flood Risk Assessment (FRA), which is required for all proposals within Flood Zone 2 and 3 and all proposals on sites of 0.25 hectares or greater.

4.14 A site-specific surface water drainage strategy should include:

- Existing and proposed drainage plans
- Greenfield runoff rate calculations
- Details of storage volumes and discharge locations
- Details and justification of SuDS components
- A maintenance and management plan.

Full details of what should be included in the drainage strategy can be found in Fig.51.

Fig.51 *Required contents for a drainage strategy*

Component	Description
Site overview	Location, topography, flood risk context (including Critical Drainage Areas and surface water mapping)
Pre- and post-development runoff rates and volumes	Quantify existing and proposed runoff regimes, including changes in impermeable area
SuDS design	Proposed sustainable drainage features (e.g. swales, basins, permeable paving), their function and location
Drainage layout plan	Plan showing pipe network, SuDS features, flow paths, and discharge locations
Exceedance flow routes	Diagram and explanation of how flows are managed in extreme events or system failure
Discharge point	Justification and evidence of hierarchy compliance, e.g. infiltration testing, Thames Water agreement
Storage volumes	Calculations for all rainfall events up to 1 in 100-year + climate change, showing how storage will be provided
Discharge rates	Calculations for all rainfall events up to 1 in 100-year + climate change, showing the proposed discharge rates
Maintenance plan	Details of who will own, inspect, and maintain the system, including long-term funding arrangements

Drainage calculations

4.15 Planning applications must be supported by drainage calculations to demonstrate that the proposed development will not increase flood risk and complies with national, regional and local policy.

4.16 Applications should follow the revitalised Flood Estimation Handbook (FEH) statistical method to estimate greenfield runoff rates. The IH24 method is considered acceptable for smaller, single dwelling sites, as it has been designed for small catchments.

4.17 The rates must be based on site-specific characteristics, including:

- Soil type and infiltration capacity
- Topography and catchment area
- Proportion of impermeable area post-development.

4.18 Drainage calculations must be submitted for the proposed drainage strategy to demonstrate how the system performs for all return periods and is compliant with all relevant policies.

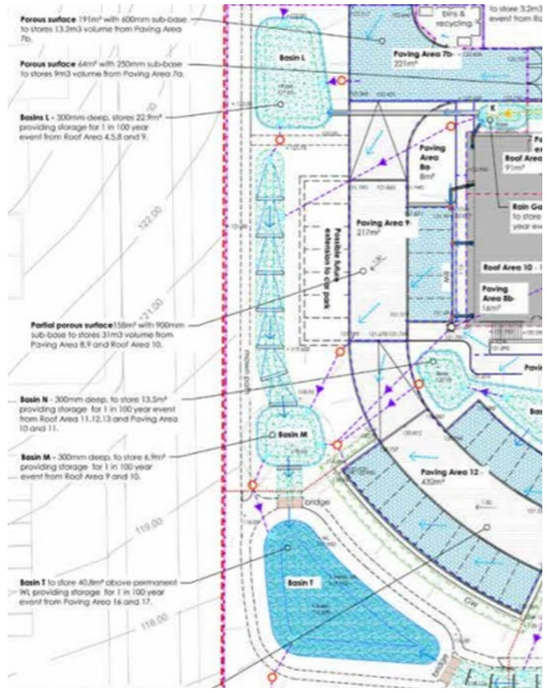


Fig.52 *Example surface water drainage plan*
Source: Bexley Sustainable Drainage Design & Evaluation Guide

Managing exceedance flow

4.19 In addition to demonstrating that on site drainage can manage surface water for all return periods, including the 1 in 100 year plus 40% climate change allowance, drainage systems must also account for events that exceed the design capacity, known as exceedance flows.

4.20 Exceedance routes must be:

- Directed away from the most vulnerable elements of the development
- Designed to avoid property flooding
- Safely routed through landscaping, open spaces and road

4.21 The design of finished site levels is a critical aspect of exceedance planning. Ground levels should direct water away from entrances and sensitive areas, particularly in areas of known flood risk.

4.22 Any planning application must be accompanied with an exceedance flow plan that clearly demonstrates the exceedance flow routes. Site levels should be included on these drawings to show the site topography and help show the flow routes.

4.23 Exceedance flows should be managed on site where possible, being directed to green spaces and open areas of land. If they need to be directed offsite, this must be away from neighbouring buildings and should be into open spaces.

Fig.53 *Example exceedance flow diagram Bexley Sustainable Drainage Design & Evaluation Guide*

Maintenance and adoption of surface water drainage systems

4.24 Surface water drainage systems must be designed with long-term performance, resilience, and maintenance in mind. Without appropriate maintenance, systems can fail, resulting in flood risk, water quality degradation, and costly remedial works.

4.25 Both the London Plan (Policy SI13) and the Bexley Local Plan require developers to provide robust arrangements for the ongoing maintenance and management of surface water systems.

General maintenance principles

4.26 All drainage systems should be designed to be durable, accessible, and easy to maintain and maintenance should be considered from the earliest stages of design, not post-construction.

4.27 SuDS components should favour simple, robust, and surface-based systems, which are easier and cheaper to maintain than buried infrastructure.

4.28 Systems should be designed with minimum reliance on proprietary systems that require specialist maintenance contracts, unless justified.

Operation and maintenance requirements

4.29 An Operation and Maintenance Plan must be included for all developments on sites of 0.25 hectares or more, and set out in accordance with Fig.54.

4.30 The Operation and Maintenance Plan must be proportionate to the scale of the development, detailed and practical.

Adoption of drainage systems

4.31 Developers must confirm the long-term ownership and adoption arrangements for the drainage system.

4.32 Any proposed surface water pump that serves more than one property will need to be adopted by Thames Water. The applicant should submit evidence of this to the LLFA with a planning application.

Fig.54 *Required contents for an Operation and Maintenance Plan*

Component	Description
Maintenance schedule	Routine, occasional, and remedial tasks listed per asset (e.g. monthly litter clearance, annual vegetation management, inspection of inlets and outlets)
Access arrangements	Clear explanation of how all drainage features can be accessed and safely maintained
Responsibility and ownership	Details of the organisation or body responsible for the long-term maintenance of each part of the system

5 Play Provision

Policy context

Bexley Local Plan Policy DP11 Achieving high-quality design states that all new development should provide usable on-site communal, semi-private and private amenity and appropriate play space for children, in accordance with the scale of development.
Policies SP7 Social and community services and facilities and DP15 Providing and protecting social and community infrastructure set out the requirement for the development, and improvement, of Bexley's social infrastructure including play and informal recreation facilities.

London Plan Policy S4 Play and informal recreation requires that development proposals likely to be used by children and young people should increase opportunities for both formal and informal recreation and promote independent mobility through the incorporation of accessible routes.

This is supported by GLA publications Expanding London's Public Realm Design Guide and Making London Child Friendly, with further policy requirements relating to calculating playspace provided in the Play and Informal Recreation SPG.

Safety in Public Space for Women, Girls and Gender Diverse People sets out the importance of designing space where these groups feel comfortable, thus creating spaces that are inclusive for all.

General guidance

Play is an important activity that aids child development and promotes physical and social development as well as good mental health. Whilst play is typically thought of as taking place within traditional settings such as schools, homes and playgrounds, the Council encourages designers to also take advantage of the many opportunities to provide facilities that aid play within a wide variety of environments.

The provision of playspace should follow inclusive design principles to ensure that all children have access to play that is safe and provides opportunities to connect with others and increase access to nature. Such access should be afforded to children irrespective of their age, (dis)ability and social and economic background and playspace should be designed as such.

The borough particularly wants to encourage the provision of incidental play spaces where possible to encourage outdoor play, physical activity and active travel. Schemes should ensure all age groups are catered for including spaces where older children and teenagers feel welcome. Whilst children and young adults are the key focus of the following guidance, the expectation is that playable features be woven through the public realm in a way that makes the environment fun and inviting for everyone, including adults.

The development of playspace should also be considered in the context of borough-wide strategies around health and wellbeing, children and young people and culture.
The Bexley Obesity Strategy, for example, aims to develop and implement a strategy that will support everyone to have a healthy weight and halt the rise of excess weight in children, and adults, by 2025. Applicants should refer to these ambitions when planning new development within Bexley.

Offering play and informal recreation

5.1 As outlined in the Design Guide Part 1 - Design Principles, playspace should be designed and considered according to the parameters described in Fig.55.

5.2 Beyond the provision of playspace as required by the Development Plan, developers are encouraged to consider how the play can be informally woven throughout the public realm to make more enjoyable spaces for all to enjoy, providing both formal and informal types of play facilities within developments.

Engagement

5.3 To design a child-friendly built environment, the Council expects applicants to undertake an engagement process that centres the voices of local children and young people in the development of all play and public space.

5.4 As set out in the Context section of the Design Guide SPD Part 1 - Design Principles, applicants should engage with local communities and resident groups and in particular children and young people. Engagement should be ongoing throughout the design process and be proportionate to the scale of project.

5.5 Applicants should be mindful of the different needs of different user groups and ensure a diverse range of perspectives are listened to during the engagement process.

Formal playspace

5.6 All residential development that generates 10 or more child bed spaces will be required to provide formal play facilities in line with the GLA's Supplementary Planning Guidance (SPG) on Play and Informal Recreation.

5.7 Applicants should use the GLA Population Yield Calculator to determine the quantum of playspace required in these circumstances.

Lesnes to Crossness, Thamesmead
Untitled Practice

The designer created a new square along the route from Lesnes Abbey to Crossness Pumping Station. Designed for the enjoyment of local residents, both formal and informal play space was incorporated into the design to meet the needs of the range of children and young people living in the area. New trees were planted alongside raingardens and swales providing *sustainable drainage systems* and increasing the biodiversity of the area as well as residents' access to nature.

© 1-2: Barry Willis; 3: Untitled Practice

Fig.55 *Requirements of a successful playspace*

Element	Considerations
A suitable location	• Located close to homes but positioned so that the amenity of neighbouring homes is protected. • Facilities for older children need to be well connected to other local amenities such as shops, libraries and schools. • Not be located near areas that have high pollution levels. • Sufficiently sized to be safe, attractive and suitable for children. • Providing a child-friendly map to assist with orientation.
A space that encourages inclusion and diversity	• Freely accessible to all. • Ramps, level surfaces and smooth, wide paths around play equipments can assist children with impaired mobility. • Tactile surfaces for guidance and colour contrast to assist navigation for children with disabilities.
The incorporation of natural elements	• Can greatly enhance the quality of the play experience, particularly for disabled children. • If located adjacent to or within existing environmentally sensitive sites, care needs to be taken to ensure habitats are not harmed. • Trees provide additional value and attract wildlife that can enhance education opportunities for children.
Mental stimulation of young people and children	• Different materials and surfaces can give varied experiences. • The use of colour and texture should be considered for its ability to animate space and provide opportunities for games.
Physical challenges and managed opportunities for children to take risks	• Play equipment should stretch children's physical abilities by providing a number of challenges (refer to Play England's Managing Risk in Play Provision for further information.)
Safety and security	• Ensure an adequate degree of overlooking and passive surveillance according to the use of the space. • Use of well-considered boundary treatments should be explored. • Proper lighting to enhance safety, discourage vandalism, and prevent anti-social behaviour
Management and maintenance strategy	• Helps ensure that spaces remain attractive and safe

5.8 For developments estimated to yield fewer than 10 children, developers will be expected to make a financial contribution to play provision near the development. Similarly, if a contribution cannot be made towards on-site provision for a small development, an equivalent contribution will be required to an existing or new off-site provision of play.

5.9 Proposals should be supported by a Play Strategy, provided within the *Design and Access Statement (DAS)* setting out the proposed play measures and how they are to be delivered. There are generally three categories of formal play facilities identified by age group. The minimum distances for each play group are set out in Fig.56.

Fig.56 *Minimum distances for each play group*
Source: Mayor of London Play and Informal Recreation SPG

Child age	Play facility	Min. walking distance from residential unit
Under 5s	Door stop play	100m
5 - 11	Local and neighbourhood play	400m
12+	Youth space	800m

5.10 The type of play facilities noted are merely a guidance and not intended to be used rigidly. Designers are encouraged to build some flexibility into schemes so that the spaces can be used by groups of different ages.

5.11 The Play and Informal Recreation SPG sets out that applicants should assess the needs of the existing population and the needs arising from new development to adequately propose playspace. Applicants need to consider the quantitative requirement for play provision; accessibility to play and the quality of play provision.

5.12 The SPG provides the steps developers should undertake when auditing existing play provision as shown in Fig.57. Evidence of this analysis should be provided within the Play Strategy.

5.13 The process for determining the playspace requirements for new development are outlined in Fig.58. A minimum of 10m² of playspace per child, irrespective of age, should be provided.

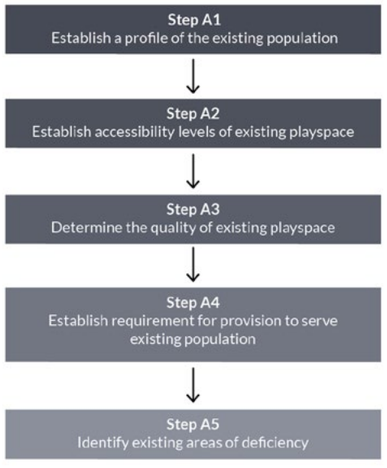


Fig.57 *Identifying, mapping and auditing existing play provision*
Source: Mayor of London Play and Informal Recreation SPG

Door step play

5.14 Door step play is advantageous as it is offered in close proximity to a development and therefore overlooked creating a sense of safety and security for children and young people.

5.15 Provision is typically for under 5s, located close to residential properties. These areas are normally fenced off and are dog-free to allow all children to fully enjoy the facilities.

5.16 Play areas should also include seating areas for those supervising children and sufficient waste and recycling facilities to help those using the space keep the area tidy and inviting.

Local playable space and neighbourhood playspace

5.17 These are playable spaces for children ages 0-11 that are landscaped and feature age appropriate play equipment and seating for parents and guardians to supervise.

5.18 Neighbourhood playable spaces are more wide-ranging than local playable spaces as they can sometimes include play equipment for over 11s such as adventure playgrounds.

5.19 Informal play spaces for younger children, boundaries can be helpful for some children with *invisible disabilities* such as autism. However, boundaries should enhance the playspace and not be purely functional.

Youth space

5.20 These are areas where young people over 12 can socialise and take part in informal sport activities or congregate with friends. These should not be provided on 'leftover space', rather considered in the holistic design of a development.

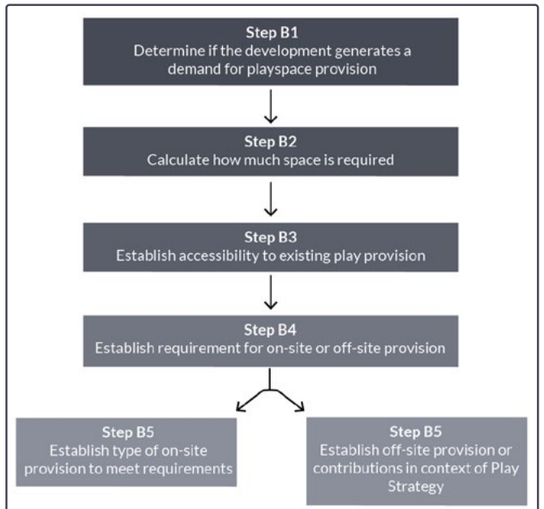


Fig.58 *Determining the play space requirements for new development*
Source: Mayor of London Play and Informal Recreation SPG

5.21 12+ play need not have traditional play features, but should provide a variety of spaces including for wheeled play, ball games, convening, seating, shelter and some level of privacy.

5.22 The Council strongly encourages the provision of on-site play for all children where feasible, particularly those aged 12 and above, as this enables children and young people to continue spending time close to home as they grow.

5.23 Applicants should avoid a 'one-size-fits-all' approach to play and proposals must respond to a specific site, for example whether play is located at ground floor or on podiums/roof level and the type of play equipment provided.

5.24 Applicants are strongly encouraged to avoid the use of generic play equipment, instead drawings on Bexley's history, heritage and cultural context to inform proposals that reflect the place.

5.25 Applicants should be mindful of the barriers than can exist in some traditional play and should refer to guidance from the Mayor of London on Safety in Public Space for Women, Girls and Gender Diverse People to ensure that those traditionally left out of spaces are considered and to accommodate different physical and social needs.

5.26 Play space should be designed to accommodate different sensory needs and applicants are encouraged to refer to PAS 6463 Design for the Mind - Neurodiversity & the Built Environment for guidance on creating a built environment that is more inclusive.

5.27 Play facilities should offer experiences that stimulate auditory, visual and tactile senses, whilst also providing opportunities for calm and quiet as a retreat.

5.28 To enable children of different abilities to play together, applicants should provide a mixture of play features, for example equipment at varying heights.

Riverside Gardens, Erith
Erect Architecture

Developed by the Council, Riverside Gardens was redesigned to create better connections towards the river and to provide new opportunities for play, rest and physical activity with gym equipment installed - aspirations that evolved through extensive engagement with the local community. The design of the new playground celebrates Erith's industrial heritage and new planting creates rain gardens which manage surface water and mitigate against flooding concerns.

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5.29 The specification of materials and the design of routes to and within the play space should promote inclusivity and prevent any barriers to access.

5.30 Consideration should also be given to needs of caregivers, and applicants should provide seating and other amenities in close proximity, also enabling social interaction between these groups.

Informal/incidental play

5.31 Informal play, or 'play-on-the-way', provides playspace beyond the confines of formal areas, with incidental and informal opportunities for child-friendly elements within the public realm.

5.32 Play-on-the-way enables children to enjoy play irrespective of their proximity to open space, playgrounds or sport and recreation facilities.

5.33 These playable areas can easily and sensitively be incorporated into communal open spaces and pedestrian routes through the installation of multi-purpose features, for example art installations that can also be used as seating.

5.34 It is possible to incorporate informal play as part of safe and attractive routes to key destinations such as schools, parks and high streets. This approach supports the Borough's Obesity Strategy by encouraging active travel.

5.35 When considering playable routes, applicants should also take into account the social context of the surroundings in order to avoid any unnecessary conflict.

5.36 Examples of incidental play include multi-purpose features such as playable public art installations and play trails and routes such as linear play spaces where equipment is scattered along a pedestrian route.

5.37 Playable spaces need not necessarily include equipment and can be achieved through the changing of levels, provision of patterned surfaces and imaginative landscaping features.

Outdoor fitness equipment

5.38 Equipment is typically aimed at young adults upwards and can provide a good opportunity for physical, social interaction as well as exercise.

Climate resilience

5.39 To enable children and young people to maximise use of play facilities, applicants should ensure elements of shelter and shading are provided, whether through planting and trees, built structures, or shade sails or a combination of these methods. These should be provided around both play and seating areas.

5.40 The use of water features and misting systems can also contribute to passive cooling during hotter weather and should be duly considered.

Maintenance

5.41 In all development proposals, appropriate arrangements for the long-term management, retention, access to and maintenance of any playspace and communal facilities should be secured. This includes checking any equipment and surfaces, planting management regime and frequent collection of litter.

5.42 Whilst the purchase of high-quality equipment involves a higher initial outlay, it is likely that such schemes will have lower maintenance costs.

5.43 Play areas should include information signs giving contact details of how to report any faults.

Glossary

Adaptive reuse
The process of reusing an existing building in a different capacity to their original use.

Active frontage
The design of frontages can add interest, life and vitality to the street and public realm. Frontages are considered active if they have:

- Frequent doors and windows without blank walls
- Articulated facades with bays and porches
- Lively internal uses visible from the outside, or spilling onto the street
- Concentrations of activity at particular points.

Biodiversity Net Gain (BNG)
Biodiversity Net Gain delivers measurable improvements for biodiversity by creating or enhancing habitats in association with development. Biodiversity Net Gain can be achieved on-site, off-site or through a combination of on-site and off-site measures. See the Natural Environment planning practice guidance for more detail.

Circular economy
A circular economy is an industrial system that is restorative or regenerative by intention and design. It replaces the linear economy and its 'end of life' concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals and aims for the elimination of waste through the design of materials, products, systems that can be repaired and reused.
- Source: LETI Climate Emergency Design Guide

Defensible space
A buffer zone created between a development and the public realm to provide privacy to residents, particularly those in ground floor accommodation.

Design and Access Statement (DAS)
A report submitted to accompany and support a planning application that outlines the social, visual and physical impact of a proposed development, with reference to how the development sits within, and draws from, its context.

Green infrastructure
A network of multifunctional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities.

Green roofs (used interchangeably with biodiverse roofs)
A rooftop fully or partially covered with plants and/or vegetation.

Highway
A way over which the public has a right to pass and repass at all times without let or hindrance, either on foot or by vehicle, that follows a particular route.

Embodied carbon
The carbon emissions associated with the extraction and processing of materials and the energy and water consumption used by the factory in producing products and constructing the building. It also includes the 'in-use' stage (maintenance, replacement, and emissions associated with refrigerant leakage) and 'end of life' stage (demolition, disassembly, and disposal of any parts of product or building) and any transportation relating to the above.
- Source: LETI Climate Emergency Design Guide

Invisible disabilities
A physical, mental or neurological condition that is not outwardly apparent to others, such as mental health conditions, autism, chronic pain, learning disabilities and sensory impairments.

Listed building
A listed building, or structure, which has been place on the statutory list (the National Heritage List for England - NHLE) which is maintained by Historic England.

Statutory listing covers 3 grades, being Grade I, Grade II* and Grade II. Grade I listed buildings are of exceptional interest; Grade II* are particularly important buildings which are of more than special interest; and, Grade II are of special interest. Most buildings and structures are Grade II, with examples which are of particular historic or architectural interest being graded higher.

Any works, generally speaking, which would involve the alteration or extension to a listed building would require the benefit of listed building consent.

Major project
Any application that involves:

- Mineral extraction
- Waste development
- Residential development of 10 ore more dwellings
- Residential development on a site area of 0.5ha or more and the number of dwellings is unknown
- Development of floorspace of 1000m^2 or more
- Development of sites over 1ha.

Operational carbon (kgCO2e)
The carbon dioxide and equivalent global warming potential (GWP) of other gases associated with the in-use operation of the building. This usually includes carbon emissions associated with heating, hot water, cooling, ventilation, and lighting systems, as well as those associated with cooking, equipment, and lifts (i.e. both regulated and unregulated energy uses).
- Source: LETI Climate Emergency Design Guide

Public realm
Publicly accessibly spaces between buildings allowing movement and interaction.

Retrofit
The process of adding new or modified components or systems to an existing building to improve its performance, efficiency or safety.

Street scene
The appearance of all of the elements of a street, including the carriageway, footway, cycle paths, street furniture, planting, trees, and the buildings or structures along its edges, particularly the composition of buildings on each site of the street.

Sustainable drainage systems (SuDS)
Features designed to reduce flood risk, which are built to receive surface water run-off, such as constructed wetlands, permeable surfaces, retention ponds, green roofs and swales.

Whole life carbon
This includes embodied carbon, as defined above, and operational carbon. The purpose of using whole life carbon is to move towards a building or a product that generates the lowest carbon emissions over its whole life (sometimes referred to as 'cradle-to-grave').
- Source: LETI Climate Emergency Design Guide