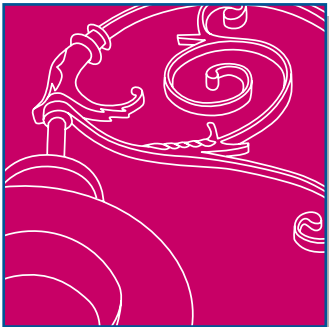


# Streetscape Design Manual



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# Acronyms & Abbreviations

<b>BS</b>	British Standards
<b>CABE</b>	Commission for Architecture & the Built Environment
<b>CBR</b>	Californian Bearing Ratio
<b>CCTV</b>	Closed Circuit Television
<b>CPZ</b>	Controlled Parking Zone
<b>DBM</b>	Dense Bitumen Macadam
<b>DDA 1995</b>	Disability Discrimination Act 1995
<b>DETR</b>	Dept of Environment, Transport and the Regions (now DfT)
<b>DfT</b>	Department for Transport
<b>DTO</b>	Directorate of Traffic Operations
<b>HGV</b>	Heavy Goods Vehicle
<b>HRA</b>	Hot Rolled Asphalt
<b>IEE</b>	Institute of Electrical Engineers
<b>IGP</b>	Illuminated Guide Posts
<b>ILE</b>	Institute of Lighting Engineers
<b>LBI</b>	London Bus Initiative
<b>LCN+</b>	London Cycle Network Plus
<b>MaGic</b>	<i>Camden's geographical information system</i>
<b>MA</b>	Mastic Asphalt
<b>NJUG</b>	National Joint Utilities Group
<b>NRSWA</b>	New Roads and Street Works Act
<b>PEV</b>	Personal Electric Vehicle
<b>SON</b>	<i>High-pressure sodium</i>
<b>SOX</b>	<i>Low-pressure sodium</i>
<b>TAL</b>	Traffic Advisory Leaflet
<b>TCSU</b>	Traffic Control Systems Unit (now DTO, see above)
<b>TfL</b>	Transport for London
<b>TLRN</b>	Transport for London Road Network
<b>TSR&amp;GD 2002</b>	Traffic Signs, Regulations and General Directions 2002
<b>TSS</b>	Traffic Signals Section
<b>UDP</b>	Unitary Development Plan
<b>UTC</b>	Urban Traffic Control

# Introduction



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- 0.01** Introduction, Principles & Aims
- 0.02** Target Audience
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- 0.04** How to '*read*' the Manual
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## Introduction

- This is the second edition of the Streetscape Design Manual, with many additions and changes made to the first edition, published in November 2000.
- The purpose of this manual is to raise the standard of street works consistently throughout the borough of Camden.
- Not only does the manual set standards for the Council's own street works, but it is also intended as a guide for contractors, developers, public utilities and other private agencies working on Camden streets.



Regent's Canal at Camden Lock

# 0.01 Continued

## Principles

- The six key design principles are:
  - 1 Respecting and enhancing the local streetscape.
  - 2 Using a simplified palette of quality materials.
  - 3 Providing a clutter-free environment on our streets.
  - 4 Enabling equal and inclusive access for all road users.
  - 5 Considered, yet innovative complementary design.
  - 6 Making the street environment safer.

## Aims

- The aims of the Manual are to:
  - 1 Identify an overall image for the borough's streets with respect to the appearance of surfacing materials, street furniture and lighting.
  - 2 Provide a reference guide for the use of standard design details, surfacing materials and street furniture to be used in engineering, traffic management and environmental improvement schemes.
  - 3 Use materials and furniture that are attractive, appropriate to the area, durable, low maintenance and practical.



Tavistock Square railings

## Target Audience

- This second edition of the Streetscape Design Manual is primarily aimed at, and written for officers within the Council, particularly those in,
  - Traffic Engineering
  - Highway Engineering
  - Highways Management
  - Boulevard Project
  - Street Policy
  - Forward Planning
  - Conservation & Urban Design
- Council contractors, private developers and other sections of the Council, including Housing and Leisure, will be encouraged to adopt the Manual.
- Other interested parties will include local groups, particularly conservation, transport and disability groups.



Waiting for the bus in Kilburn High Road



# Chapters of the Manual

## Chapter 1: Local Character

### 1.01 to 1.09

This chapter discusses the importance of local character distinctiveness and briefly describes some elements of the streetscape that have a crucial role in maintaining and enhancing this, including historic, listed and modern sympathetic styles, and street trees. Camden's conservation areas are also outlined, including advice on how to refer to and use the Conservation Area Statements in designing new schemes.

## Chapter 2: Carriageway Details

### 2.01 to 2.09

This chapter covers design options for the carriageway, including layouts, traffic calming, crossings and carriageway markings. It also contains information on subjects that need more attention paid to them, such as drainage and materials. This section is intended to complement the Highway Works Contract and TSR&GD 2002, by providing clarity on preferred designs where variation is allowed.



Zebra crossing on Hampstead High Street

## Chapter 3: Footway Details

### 3.01 to 3.10

This chapter gives details on the main paving and kerb options including traditional and modern materials, as well as Boulevard specifications. Footway adaptations for the visually impaired and other mobility impairments are also described in detail, complementing government guidelines on tactile paving and implications of the DDA 1995.

## Chapter 4: Street Furniture

### 4.01 to 4.17

This chapter provides information on major items of street furniture and states preferred designs, colours and positions within the footway and carriageway. With the overarching aim of the manual being to reduce 'visual' street clutter, careful amalgamation, coordination and positioning of street furniture plays a major role in achieving this objective as well as reducing the 'palette' of materials in the street.



Bus shelter neatly positioned at back of footway

# 0.04

## How to 'read' the Manual

- Following extensive consultation with officers and external interest groups, the style of the Manual has fundamentally changed.
- Clearer indexing, extensive cross-referencing and a more direct, instructive style has been adopted to reflect the growing desire for a 'quick reference' manual.
- The Manual is designed to complement other existing guidance and regulatory documents, filling in the 'gaps' where necessary, particularly if Camden has a preferred design within permitted variances.
- As Camden streets vary enormously, 'hard and fast' rules are very difficult to make. The language of the document reflects this and should be read carefully. A brief explanation of the main words of 'positive instruction', are given below. (The reverse statements can also be deduced from the explanations.)



Wooden bench on the Jubilee Walk

**“...must...” or “...is required...”**

A design principle has to be followed ‘to the letter’. Exceptional circumstances are likely to require specific dispensations from Camden Management or Central Government.

**“...should...”**

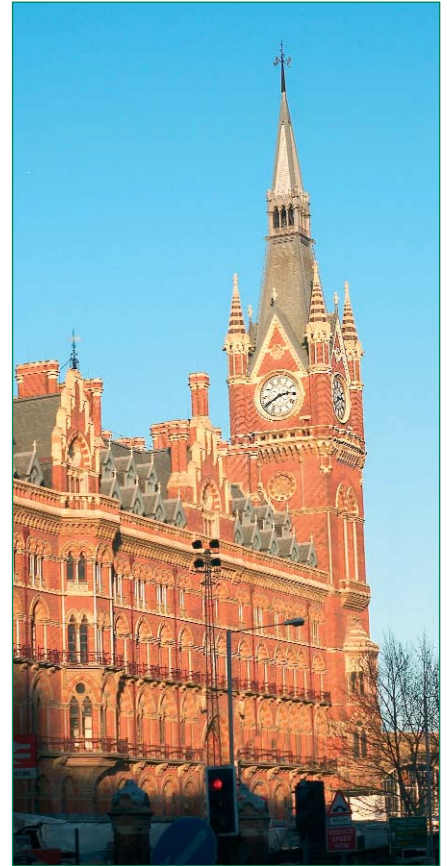
A design principle should be followed, as a matter of course. Variance can be argued, but should only be considered if the design principle conflicts with other requirements or preferences.

**“...is preferred...”**

A preferred design principle has been agreed within Camden and should be followed in most circumstances. Variation is allowed but not generally supported. Advice should be sought from senior management.

**“...encouraged...” or “...can be used...”**

A design principle that should be considered and used wherever possible, but does not have to be followed in every circumstance. This includes principles that may be difficult to implement today, but should be borne in mind for future projects.



St Pancras Station

## Quality through Coordination

- Camden has a rich and varied character. It ranges from the ordered, Georgian town-planning of Bloomsbury's grand squares, to the vibrant street life of Camden Town and the canal, to the intimate scale of Hampstead and Highgate, reflecting their village origins.
- Despite this variety, the basic form and function that streets and pavements must fulfil across the borough is similar.
  - To provide safe, direct and pleasant access for pedestrians, particularly for those with a disability, limited mobility and balance.
  - To provide safe, consistent routes for a variety of road users including cyclists, buses and vehicular traffic.
  - Using durable, cost-effective materials that are easy to clean and maintain.
  - Keeping consistency and compliance with various national highway regulations and standards.
- It is not only the quality of individual components but also their coordinated arrangement that creates a good streetscape.
- Simple designs are usually best, with furniture aligned and positioned consistently, so it not only looks good, but is safe and easy to use and maintain.
- "Bunching" of street furniture, or combining street furniture functions should be considered to maximise 'usable' footway width. For example, place litterbins next to guardrail, or try to combine CCTV cameras with lighting.



High pressure washing of Boulevard footway

- As many different agencies use or control different elements of the highway and street furniture (e.g. Royal Mail post boxes), coordination can be difficult. To overcome these problems, identify and contact the various owners or 'controllers' at the earliest possible stage in a project.
- Coordination with other council services is also crucial; for instance consider and design for the cleansing regime of a street when altering footway widths.
- When designing a scheme, consider removing, 'tidying up' and fixing any broken or 'mismatching' street furniture, road or footway surface in the near vicinity of the project, so that the new scheme blends in well with the surrounding area.



Boulevard improvements in England's Lane

## Recording Decisions

- There are always conflicting demands when designing the streetscape. Some are obvious, while others are not. Laws and regulations support some considerations, while others rely solely on published guidelines or clear (or potential) user demand.
- When designing a scheme, the designer (e.g. engineer, planner, or architect) will have to make difficult decisions, weighing each demand against another. The designer will *never* satisfy all demands, though the result must be professionally sound and safe for all.
- It is crucial that a 'paper trail' or electronic record is kept of the decision-making process, so that it can be shown that the various conflicts have been considered as part of the design process, and *why* the final design was chosen.
- Some of the major demands to consider are:
  - Volume of users
  - Different modes of transport
  - Disability access
  - Ease of use
  - Safety and relative vulnerability
  - Aesthetics
  - Space allocation
- This list is not exhaustive but should provide a basis for the design records of a project.
- A safety audit should be carried out for engineering schemes. If there are elements of a scheme design that do not pass the safety audit but are considered important to keep, the reasons for doing so should be carefully recorded.
- In the worst case, the paper trail may be needed in a court of law, but can also help officers make difficult decisions, e.g. When 'ease of use' and improving aesthetics challenge traditional safety considerations, in the use of guardrail at a new crossing.



The British Library

## Boulevard Project

- The Boulevard Project is aimed at delivering a key target in the Council's Community Strategy:
- “By 2005, the Council will make streets in Camden more attractive through better **cleaning, design, enforcement and lighting**. It will upgrade roads and pavements and keep them in a good state of repair”.
- The Streetscape Design Manual and the Boulevard Project are integrally linked, with the manual describing all *physical alterations* to a street when it is ‘boulevarded’. However, operational changes within the Boulevard Project are not detailed.
- The Boulevard Project operates on a *street-by-street* basis, tackling paving specifications, street furniture, lighting and signs and lines.
- The Streetscape Design Manual outlines this work and encourages the same high standards to be achieved as part of *all other highway works* within the borough, notwithstanding financial constraints in doing so.
- Although there are many common aims of the Boulevard Project and the Streetscape Design Manual (such as reducing street clutter), the most important step-change within Boulevard is the introduction of new paving and sub-base that can withstand a *continental-style cleansing regime*, i.e. high-pressure washing using purpose-built machines.
- As it is intended that, eventually, this street-cleansing regime will be used across the borough, new street works should be completed with Boulevard standard paving, wherever possible.



Boulevard standard concrete paving



## Disability Discrimination Act (DDA) 1995

- The Disability Discrimination Act (DDA) came into partial operation in 1995, and became fully operational in October 2004.
- The implications of the Act are far reaching for every aspect of our lives, not least in our street environment.
- In essence, the Act intends to make the street environment *consistently accessible to all* – it will benefit many people (not just the disabled), including people with children, the elderly, etc.
- Every endeavour must be made to ensure that the street environment complies with the Act; failure to do so will amount to exclusion and discrimination, putting some users' safety at a greater risk and thereby possibly making the Council open to prosecution under the terms of the Act.
- In summary, the Council's main duties under the DDA 1995 are to provide access for all, by:
  - Changing policies, practices and procedures.
  - Overcoming physical features by either *removing* the feature, *altering* it or *avoiding* it.
  - Or to *provide services by alternative means*.
- The Act affects all street works, not just present and future construction, but also all existing features of the street.
- This manual cannot provide definitive information on how the DDA affects every aspect of the street environment; further advice may need to be taken in certain circumstances.
- However, significant changes in working practices, attributable to the operation of the Act, are noted throughout the manual.

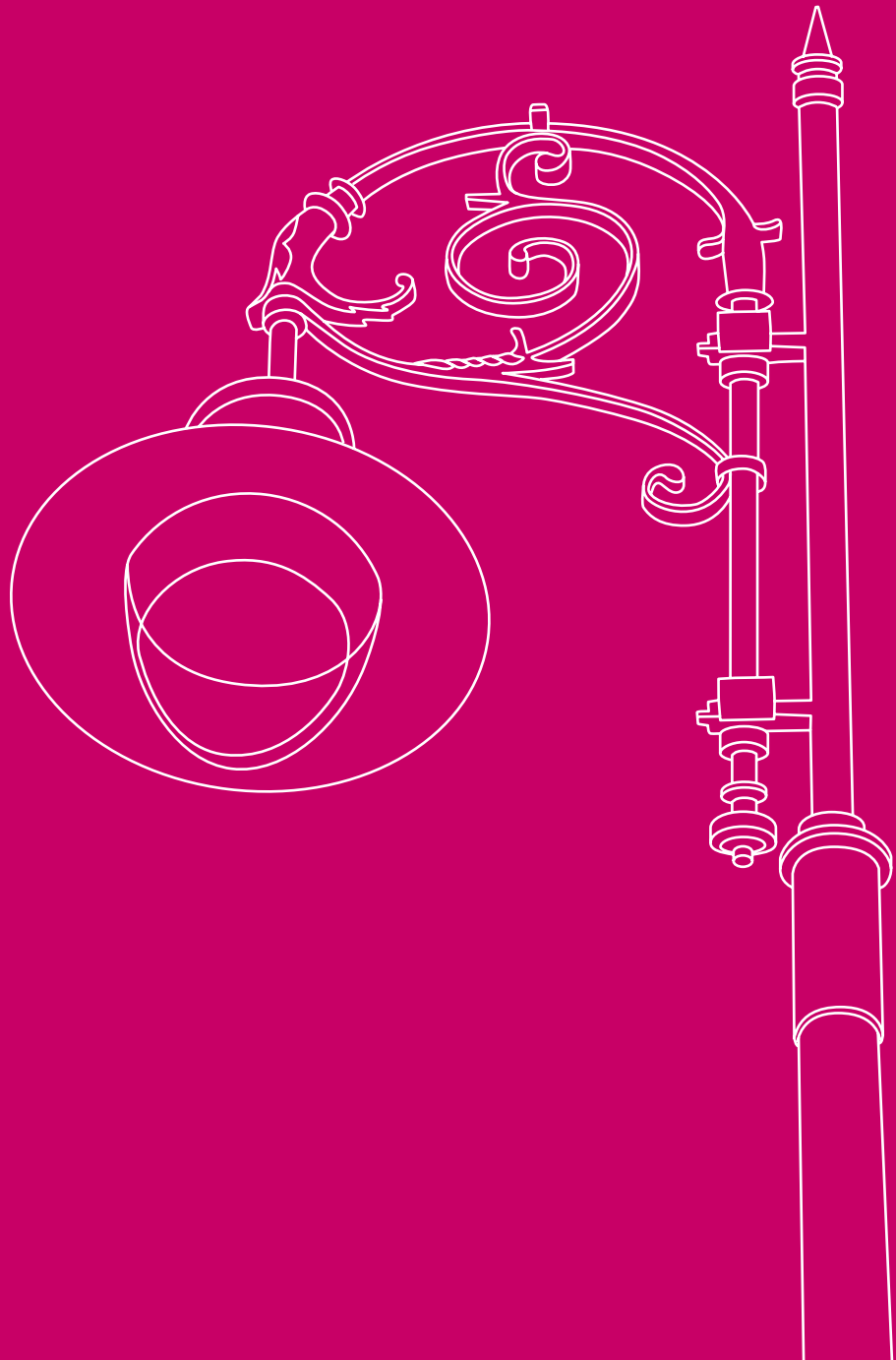
- In some situations, there will be financial difficulties in providing full accessibility within generally accepted 'aesthetic parameters'.
- However, it is fully recognised that there will be situations where no 'compromise' can be reasonably reached, regardless of cost. In these cases, officers must consider the *possible* legal implications of the Act, which may overrule all other considerations.
- All types of disability should be considered, though bear in mind that improving accessibility for one person may adversely affect another person(s) with a different disability – one type of disability should not be considered more important than another.
- However, difficult decisions will have to be made by officers as to how to provide the greatest *overall* access while not excluding some people altogether.
- In these situations, as with all conflicting demands, the decision-making process must be carefully recorded. See section 0.06.



A wheelchair user in Camden

# Notes and Amendments

# Local Character



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- 1.04** Historic Lighting
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- 1.07** Historic Paving
- 1.08** Ironwork
- 1.09** Trees

## Local Character and Distinctiveness

- Places have their own particular character. This character comes from a combination of factors including the topography, geology and history of development and use.
- In order to preserve or enhance local character, it is necessary to recognise and understand its constituent parts and their relationship to each other.
- This includes the original layout and relationship of buildings (or other structures) and spaces, trees and other vegetation, furniture, materials and workmanship.
- The positive things that contribute to this character and make it distinctive should be preserved or enhanced.
- Local examples should be used as patterns and replicated, where necessary, to enhance local distinctiveness.
- Whether in a conservation area or not, some items or structures (as well as buildings) are 'listed' by English Heritage for their historic interest – this gives them statutory protection and they may not be moved or altered without Listed Building Consent.
- The setting of a listed building (or other listed structure) is important and should be sympathetic to its character.
- Maintenance of the existing road network does not need permission.



Colourful houses in Hartland Road



Eclectic shops in Camden High Street



Doughty Street in Bloomsbury Conservation Area

# 1.02

## Conservation Areas

- Conservation Areas are designated (under the Town & Country Planning Act 1990) for their particular character and historic interest. All work in the street should aim to preserve or enhance that character.
- 36 areas in Camden are designated as conservation areas. Their boundaries are irregular and subject to review from time to time. They can be viewed on Camden's MaGlc digital mapping system.
- Over 70% of the borough's built-up areas are in conservation areas, with new conservation areas designated from time to time.
- Most Conservation Areas have an accompanying Conservation Area Statement. These comprehensive booklets include information on:
  - **Location and boundary:**  
Area shapes tend to be very irregular; view them on MaGlc digital map system;
  - **Area history:**  
Process of development;
  - **Character and appearance:**  
Description at street-by-street level;
  - **Streetscape audit:**  
Lists individual elements, including furniture, that contribute to local character (lists are not exhaustive – use them for examples);
  - **Guidelines for building alterations:**  
Includes changes to streetscape design.

### Process for Conservation Considerations

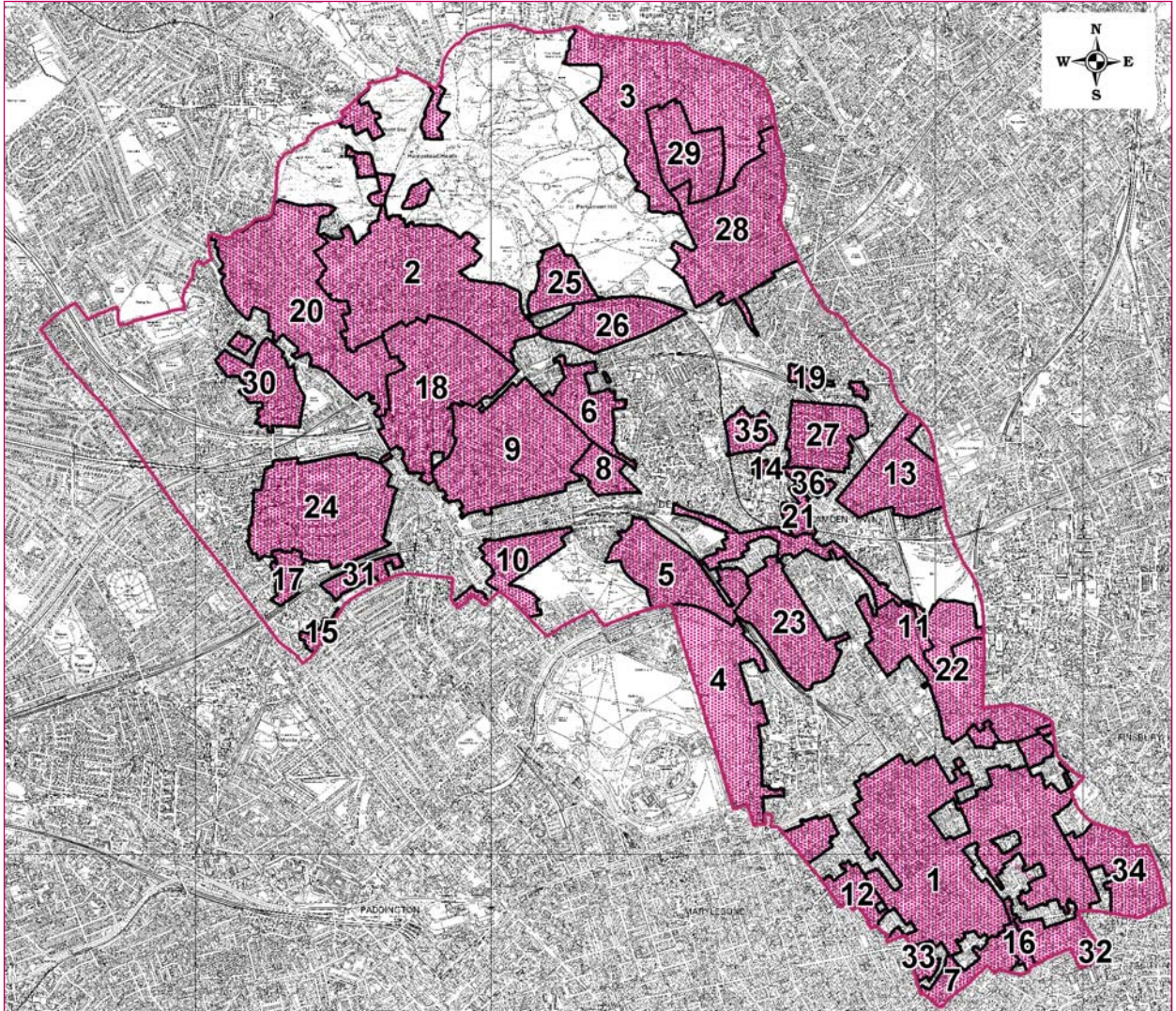
- 1 During the preliminary design stage of every scheme, check whether the location is within a Conservation Area. This can be done using the MaGlc digital maps.
- 2 Read the section on character and appearance of each street involved.
- 3 Check whether any streetscape elements are listed in the streetscape audit (lists are not exhaustive – use them for examples).
- 4 Check if any guidelines apply to the area or to the type of work proposed.
- 5 During detailed design, check each section of the Streetscape Design Manual to see if any design policies differ for conservation areas.



A narrow mews in Hampstead

- Though extra care must be taken while doing works in conservation areas, similar attention must be paid to all other areas, as the Council has proposals for new conservation areas in the next few years.

## Conservation Areas of Camden



- |                       |                            |                                 |
|-----------------------|----------------------------|---------------------------------|
| 1 Bloomsbury          | 13 Camden Square           | 25 South Hill Park              |
| 2 Hampstead           | 14 Kelly Street            | 26 Mansfield                    |
| 3 Highgate Village    | 15 St John's Wood          | 27 Bartholomew Estate           |
| 4 Regent's Village    | 16 Kingsway                | 28 Dartmouth Park               |
| 5 Primrose Hill       | 17 Priory Road             | 29 Holly Lodge Estate           |
| 6 Parkhill/Upper Park | 18 Fitzjohns/Netherhall    | 30 West End Green/Parsifal Road |
| 7 Seven Dials         | 19 Kentish Town            | 31 Alexandra Road               |
| 8 Eton                | 20 Redington/Frogna        | 32 Strand                       |
| 9 Belsize Park        | 21 Jeffrey's Street        | 33 Denmark Street               |
| 10 Elsworth           | 22 King's Cross/St Pancras | 34 Hatton Garden                |
| 11 Regent's Canal     | 23 Camden Town             | 35 Inkerman                     |
| 12 Charlotte Street   | 24 Swiss Cottage           | 36 Rochester                    |



# 1.03

## Listed Structures

- Some items of street furniture are listed, giving them statutory protection. As their location and setting are intrinsic to their value, moving or altering them without listed building consent is a criminal offence.
- The Conservation Area Statements provide excellent preliminary information on listed structures. However the Conservation & Urban Design Team must be contacted for more detailed information, including processes for gaining listed building consent for moving or altering listed structures.
- Listed street furniture and structures vary considerably. They include:
  - Cattle and horse troughs;
  - Drinking fountains;
  - Monuments and statues;
  - K2 telephone boxes;
  - Streetlights;
  - Bollards;
  - Milestones;
  - Bridges.



K2 red telephone box



Cattle trough in Gray's Inn Road



Listed lamp and fountain in Queen Square

## Historic Lighting

- Camden has a wide variety of historic lighting, kept in good working order.
- Historic lighting has a crucial role in reinforcing local character and must be maintained.
- Many historic lamp columns are listed. Check the relevant Conservation Area Statements for more details, or the MaGIC geographic information system.
- Refer to Street Lighting (4.08) for more information.
- Where light levels from historic lamps do not meet current acceptable standards, consider upgrading the light source to white light.
- Additional lighting may also be needed in the area. This might be achieved through additional replica, similar-styled or complementary modern columns. Do not use 'pastiche/faux' heritage columns.
- Alternatively, consider up-lighting of nearby buildings, trees or other structures, though care must be taken to avoid light pollution. Consult Conservation & Urban Design and the Street Lighting team on any proposal.
- When choosing 'similar styled' columns, the scale, profile and level of design detail of the original lighting must be considered.
- See section 4.08 for more details on modern lighting considerations. Also refer to Camden's Lighting Policy.



Traditional lamp fixed to a house in Wesleyan Place

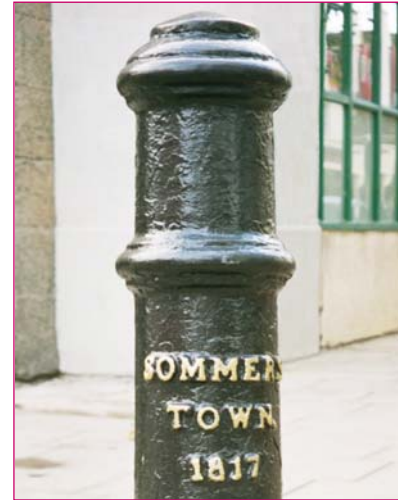


Replica lamp on Chalk Farm Road Bridge

# 1.05

## Historic Bollards

- Several styles of bollard have been used in Camden over the years, with some types strongly associated with (and named after), different areas of the borough.
- Hampstead bollard: used within the old Hampstead Borough boundaries.
- Camden bollard: used within the Camden Town area.
- St Pancras bollard: originating from the old St Pancras Borough, but subsequently has become commonly used in many areas of London.
- St Pancras bollard with shield motif should only be re-used within the old borough of St Pancras.
- When replacing or introducing new bollards in an area, the existing prevalent bollard type should be used.
- Where Hampstead and Camden bollards are prevalent, a St Pancras bollard should only be introduced if the bollard suffers from persistent damage.
- Some bollards are of particular historic interest as they mark the old borough boundaries within the London Borough of Camden. These are usually listed within the Conservation Area Statements.
- See section 4.10 for more details on bollard types, relative strengths, colour banding and conditions for removal, retention or installation.



Somers Town 'canon' bollard



Foundling Estate bollard



Old St Pancras borough bollard

## Historic Street Nameplates

- Provision of street nameplates is required by law under the Town Improvement Clauses Act 1847, and the London Building Act 1939. The signs can be fixed to walls, buildings and other boundary structures.
- Many old street nameplates have been retained for their historic interest and often display the name of one of the three Metropolitan boroughs, later combined to form Camden (Hampstead, Holborn, St Pancras).
- Street nameplates have always been used to distinguish different borough areas by adding the borough name in small lettering. Though borough boundaries have changed over the years, signs with old borough names are retained (e.g. Borough of Holborn), for historical interest.
- Old street nameplates made of ceramic tiles and cast iron should be retained and repaired wherever possible.
- Where a copy must be used, it should reproduce the visual features of the original e.g. particular typeface or font, raised letters, sign shape and thickness.
- For more information see section 4.05.



Use of ceramic tiles



Use of metal plate



Retention of old borough names



Old nameplate in Netherhall Conservation Area

# 1.07

## Historic Paving

- York stone slabs and granite kerbs and setts were an intrinsic part of the character of many streets.
- York stone slabs were often carefully aligned with building geometry, for instance, a larger York stone slab centred on the entrance to a property. This alignment should be maintained when re-laying old York stone.
- Old setts should match original sett size and colour, as well as coursing and joint widths (select setts for each course).
- Careful attention must be paid to the workmanship when re-laying old York stone.
- Modern silver/grey setts might be unacceptable in the context of distinctively coloured old setts.
- Historic granite sett crossovers and other sett paving should be retained but may need re-laying to make them safe.
- Quadrants and radius kerbs add to the quality of the streetscene.
- Drainage channels made of rows of setts are a feature of many old roads and should not be covered or removed.
- See section 3.03 and 3.06 for more details on York paving and granite kerbs.



Setts used in traditional drainage techniques



York stone and old granite setts



Cobbles in Baynes Mews

## Ironwork

- Coalhole covers can be found set into York stone paving outside many older buildings. Through them, coal was delivered direct to each property's cellar. Many coalhole covers were cast locally and display the maker's own pattern, name and address.
- Coalhole covers remain the property of the property owner.
- Coalhole covers and the surrounding York stone slab should be retained when footways are repaved.
- They should not be moved from their original setting in relation to the property, but if there is no choice, they must be repositioned as close to the original site as possible.
- Replication of broken covers and slabs is highly desirable.
- Historic grilles (for light wells or Victorian drainage channels) and other ironwork also contribute to the character of an area and should be retained and maintained wherever possible.



Railings in Bidborough Street



Locally made coalhole cover

# 1.09

## Trees

- Trees are a valuable part of the streetscape and can perform many roles, including improving air quality, breaking up and softening the built environment and creating a traffic calming feature, as well as providing shade.
- Species selection must be made through Camden's Arboricultural Services and involves careful consideration of the historical and physical setting and potential maintenance regime.
- The following information needs to be considered when selecting an appropriate species:
  - Available pavement width (for tree pit width and mature trunk girth);
  - Existing building line (for mature canopy breadth and height);
  - Existing hard surfaces and underground services.



Tree pit in carriageway in Whidbourne Street

### Carriageway Tree Pits

- Tree pits can be built into the carriageway, either protruding from the existing kerb line or freestanding.
- Carriageway pits are suitable where there is under-capacity in street parking. Trees can 'break up' the monotony of parking and can have a traffic calming effect. The footway width is also left intact.
- New kerbing should match the existing adjacent footway kerbs.
- Bollards with reflectors, should be placed on the roadside corners to protect young trees.
- Trees must not be planted where they are likely to obscure lampposts, street signs, CCTV cameras or sight lines at junctions and pedestrian crossings.

### Footway Tree Pits

- Most tree pits are constructed adjacent to the kerb edge. Their design can be altered according to proposed tree species and aesthetic considerations.
- Preferred tree pit dimensions are 1000 x 1000 x 1000mm, with 600 x 600 x 600mm as an absolute minimum.
- A root deflector in the tree pit must be used to prevent roots from growing immediately below the footway. For more details contact Arboricultural Services.
- A minimum clear level footway width of 1.2m should be left between pit edge and the back of the footway, (see section 3.01).
- Where this is not possible, the use of a permeable surface infill (such as 'Sureset') can be used in the pit to provide a firm surface for pedestrians, wheelchairs etc. However, surface infill must be used sparingly due to cost, and must not be added around newly planted trees (up to 3 years).
- A water pipe for watering must be added to every new pit.
- Soil filling in the pit should be kept level with the footway, by 'topping up' after settling has occurred.
- The use of setts to 'edge' small pits is not encouraged due to maintenance problems caused by roots pushing up setts, thereby creating a trip hazard.
- Tree grilles and guards should not generally be used.

### Protection and Maintenance of Existing Trees

- Where changes are being made to the footway or carriageway, the works contract must include procedures for protecting existing trees.
- Information on appropriate protection of the roots, trunk and ground around trees are outlined in NJUG Publication No. 10: Guidelines for the Planning, Installation and Maintenance of Services in proximity to trees (1995), which applies equally well to all highways works.
- Where existing paving slabs have been forced out of line or level by tree roots and cannot be lowered, the paving should either be ramped over the roots or asphalt laid to provide a safe walking surface.
- When in doubt, seek advice from Arboricultural Services on the impact of any works on nearby trees.

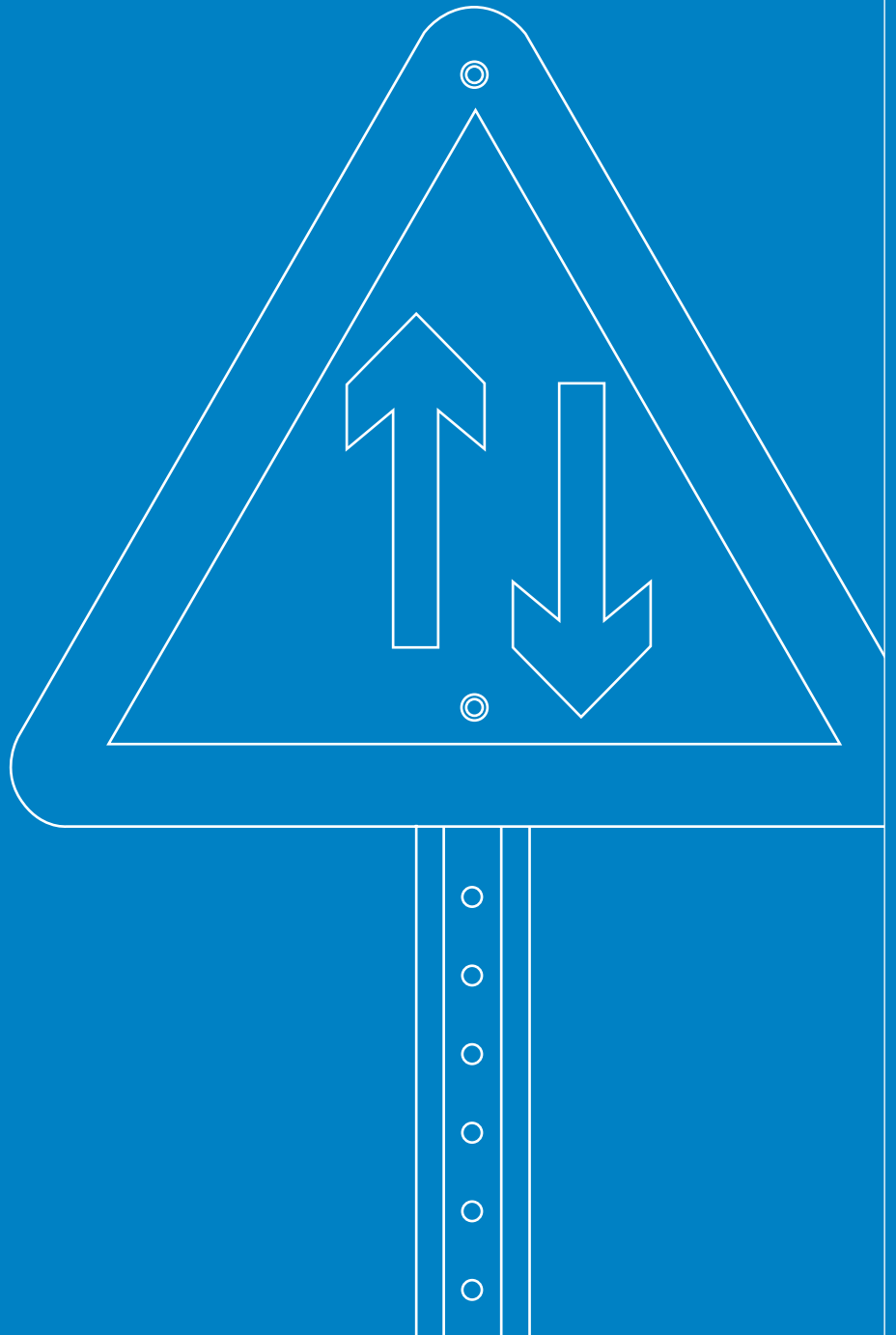


Tree pit in footway with water pipe



# Notes and Amendments

# Carriageway Details



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- 2.01** Changing Traffic Flow
- 2.02** Footway Build-outs & Road Entry Narrowing
- 2.03** Bus Boarders
- 2.04** Speed Humps & Speed Cushions
- 2.05** Raised Entry Treatments & Speed Tables
- 2.06** Pedestrian Refuges
- 2.07** Carriageway Materials
- 2.08** Drainage
- 2.09** Road Markings

## Changing Traffic Flow

- Historically, carriageways were designed with two-way traffic.
- Alterations in traffic flow can be made to improve traffic management and road safety by restricting movement of different carriageway users.
- Restrictions can apply separately to motor vehicles, HGVs, buses, cycles and powered two-wheelers, with preference now given to the movement of pedestrians, cycles and buses.
- Any changes in traffic flow direction and restrictions must be accompanied by clear signage. See TSR&GD 2002.
- Common changes to the road network include:
  - Creation of one-way streets (possibly with cycle contra-flow);
  - “Plugged” no-entry (possibly with cycle exemption);
  - Restricted motor vehicle entry;
  - Banned turns.
- Be aware that traffic speeds may increase, if and when traffic volumes are decreased.
- Consider the effects of displaced traffic on nearby or adjacent roads, which may cause more problems than at the original location. In these situations, a traffic management study should cover a wider area, to look at alternative routes.
- Carriageway and footway layout can be altered to reinforce any changes in traffic flow. Options include:
  - Changing footway widths (section 3.01);
  - Adding footway build-outs (section 2.02);
  - Installing traffic calming (section 2.04 and 2.05).
- However, wherever possible, try to maintain the original geometry and symmetry of a street, usually along the central road axis.
- Effects on carriageway drainage must be considered at the preliminary stages of design (section 2.08).



Plugged 'no entry' with cycle exemption at Red Lion Square



Traffic signal for cycles

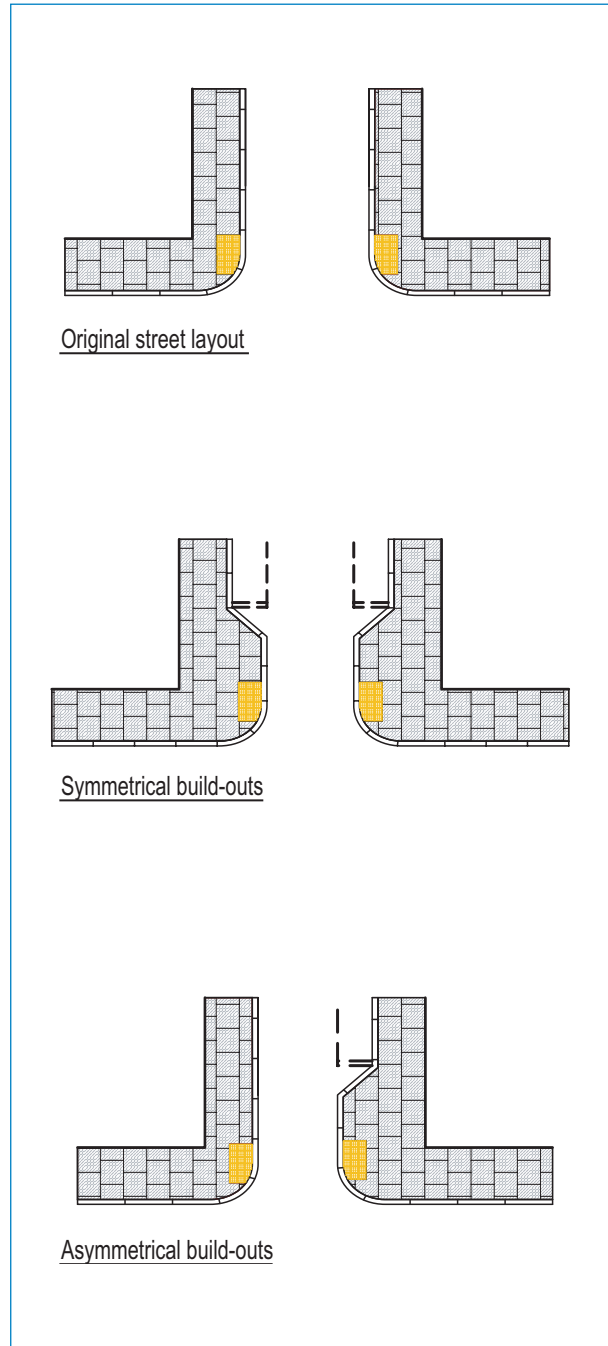
# 2.02

## Footway Build-outs & Road Entry Narrowing

- Footway build-outs can be used to narrow a side road, provide mid-road crossings or bus boarders.
- Narrowing the carriageway has a traffic-calming effect and provides shorter crossing points for pedestrians.
- Build-outs can be used to re-align the carriageway, so that roads meet at perpendicular angles for straight pedestrian crossings and traffic calming.
- Build-outs can either be symmetrical both sides of the carriageway or asymmetrical, depending on location.
- **Advantages of equal build-outs:** Better visibility for pedestrians on two-way roads; aesthetically pleasing and maintains symmetry of road.
- **Advantages of asymmetrical build-outs:** Cheaper construction and drainage; more room for street furniture on build-out; better for enforcing banned turns.



Footway build-out with cycle stands in Grafton Terrace



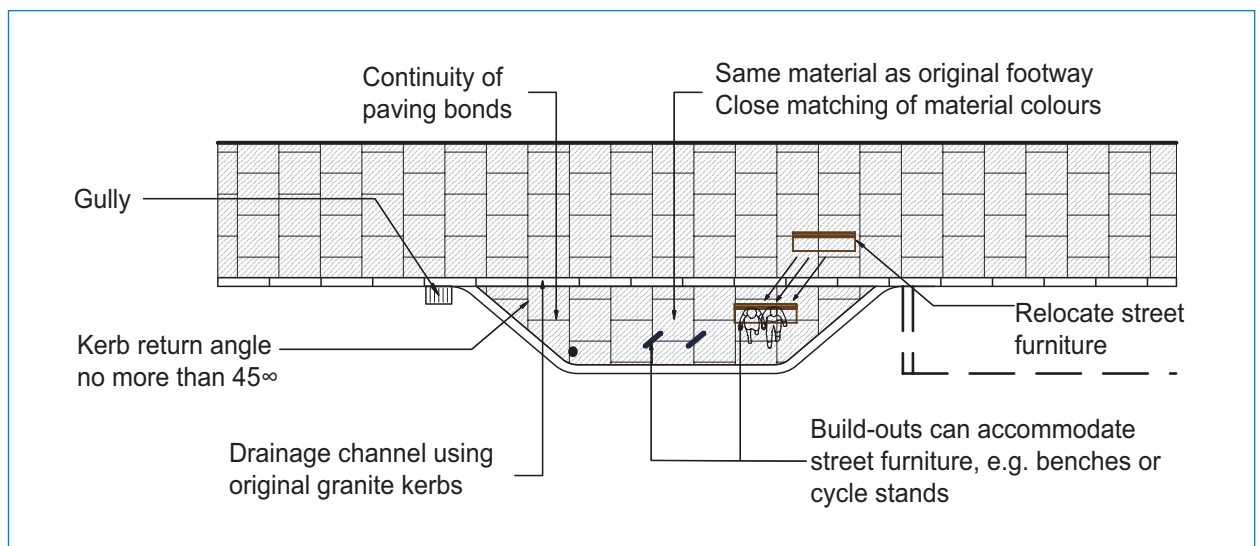
Options for build-outs at a road entry

## Drainage Considerations

- Build-outs have a significant effect on drainage, as normal kerb line drainage is disrupted. The new kerb will often be higher, so a drainage channel will be needed along the existing kerb line. Refer to section 2.08 (Drainage) for more details.
- Drainage channels in the footway can be constructed in several ways, providing a smart delineator between new and old footway. Possible materials include concrete paving, original granite kerbs, flush granite setts or a concrete channel.
- Build-outs should be constructed of the same materials as the original footway, with continuity of paving bonds and close matching of material colours.
- The kerb 'return' angle should be no more than  $45^\circ$  to ease vehicle access to kerb-line parking and to allow easier carriageway cleaning and drainage.
- Build-outs can be used to accommodate street furniture, such as cycle stands (section 4.11), benches (section 4.15) and trees (section 1.09). However, care must be taken not to obstruct pedestrian desire lines and sight lines.
- When constructing build-outs, any street furniture left 'stranded' in a wider footway and causing obstruction to the desire line, must be relocated in accordance with the DDA1995.



Footway build-out in John Street



Considerations for a build-out

# 2.03

## Bus Boarders

- Bus boarders are essentially footway build-outs at bus stops. They enable easier access to the bus by allowing it to draw up next to the new kerb. The required bus cage can therefore be shorter.
- Though it is preferable for the new kerb line to run parallel to the original kerb, an obtuse-angled kerb can be considered if bus operations are compromised.
- Build-outs should be made of the same materials as the original footway, with continuity of paving bonds and close matching of material colours.
- Drainage is affected on the footway as well as the carriageway, as new kerb often needs to be higher than the original kerb to meet the height of the bus door. See section 2.08 (Drainage) for more details.
- Bus boarders can be any width, with 1-2m being most common. Wider bus boarders can be used to accommodate bus shelters with advertising panels without blocking the pavement. See section 4.12 (Bus Shelters).
- Refer to “Bus stop layout for Low Floor Bus Accessibility”, by LBI Partnership 2002, for more information about designing bus stops and bus boarders.



Bus boarder in Belsize Road



Obtuse bus boarder in Adelaide Road

## Speed Humps & Speed Cushions

- Speed humps and speed cushions are installed to physically enforce a speed limit in an area and reduce speeds generally.
- Speed cushions should be installed on roads used by emergency services and buses, as these vehicles are largely unaffected by them.
- Refer to TAL 3/91 and 1/98 for details on cushion profiles and lengths, ramp widths, gaps between parallel cushions and spacing along a road.
- Speed humps are more effective in slowing traffic and cover the width of the road, falling short of the kerb line.
- Refer to TAL 3/91 and 7/96 for details on hump profiles and lengths, ramp widths and spacing along the road.
- Round top humps and cushion profiles are preferred for consistent construction. Refer to the Highway Works Contract for more details.
- Construction in black asphalt is preferred for humps and cushions, with a white triangle(s) marked on the approach ramp. White markings around speed cushions should not be added.
- For roads used by low floor buses, refer to “Traffic Calming measures for Buses – Technical Information” (Bus Priority & Traffic Unit) for more details.



Speed cushions



Speed humps



# 2.05

## Raised Entry Treatments & Speed Tables

- Raised entry treatments are designed to slow down vehicular traffic entering a side road, while providing a level crossing point for pedestrians.
- The 'front' ramp of raised entry treatments must start 'in line' with the main road kerb line. If possible, tighten the kerb radius so that the plateau is on the pedestrian desire line for ease of use, particularly for the visually impaired.
- Ramp gradients can vary between 1:10 (max) and 1:20 (min), depending on speed and vehicle types. Ramps on routes used by buses or emergency services should have minimum gradients, while all other roads should have steeper ramps for greater traffic calming.
- Preferred tabletop length is 5-6m.
- 'Half-height' raised entry treatments with semi-dropped kerbs can be used in exceptional circumstances where the main road traffic speeds are particularly high, e.g. TLRN.
- Raised entry treatments have a significant effect on drainage, as normal kerb line drainage is disrupted. Refer to section 2.08 (Drainage) for more details.

### Construction Materials

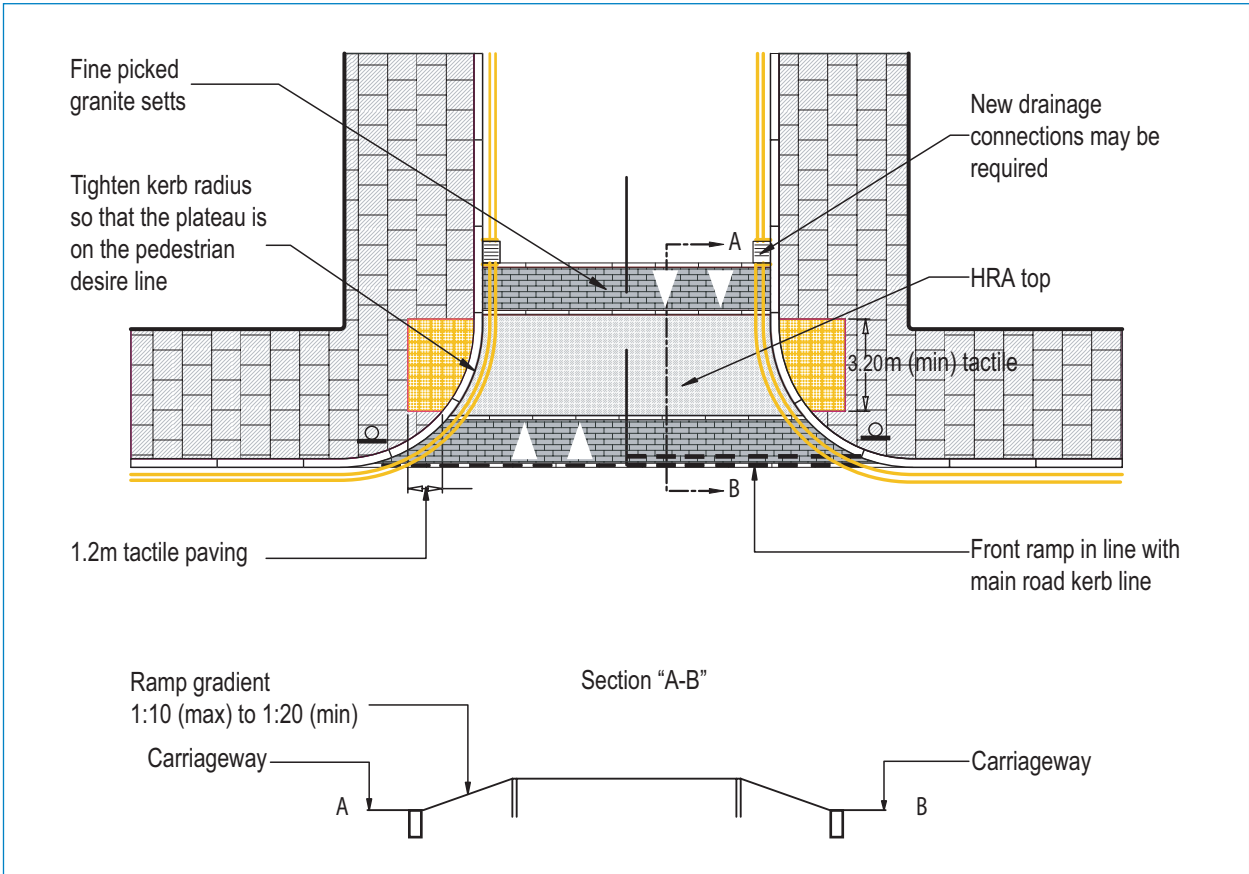
- Level tabletop: Black hot rolled asphalt (or same as carriageway).
- Ramps: Fine picked granite setts (200 x 100mm).
- Other materials should only be used where there is local precedence.
- Refer to section 2.07, (Carriageway Materials) and section 3.05 (Granite Setts) for more details on materials.



Raised entry treatment in St Cuthberts Road



Raised entry treatment in Red Lion Square



Considerations for a raised entry treatment

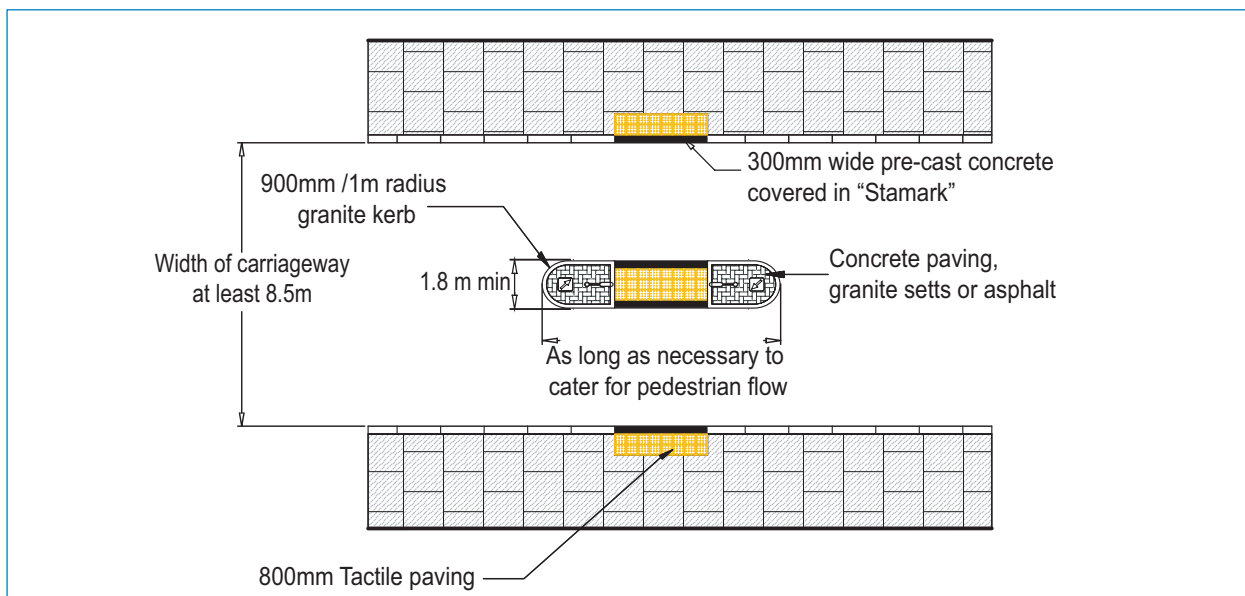
# 2.06

## Pedestrian Refuges

- A pedestrian refuge can be installed on a road to improve crossing facilities where there are relatively low traffic flows and the carriageway is at least 8.5m wide. They can also be installed as a traffic calming measure.
- Preferable minimum width of a refuge is 1.8m, to accommodate wheelchairs, PEV's and buggies. The pedestrian refuge should be made as long and as wide as is necessary to cater for pedestrian flow.
- Traffic islands should be created using 900mm/1m radius granite kerbs. Where space is limited, 450mm granite quadrants, separated by straight granite kerbing, can be used.
- Infill to traffic islands should be either granite setts, asphalt or concrete paving. Herringbone block work can be used in circumstances such as small areas or level changes.
- At either end of the refuge the illuminated guard posts (IGPs) must be in the same style. See section 4.08 (Street Lighting) for more details.
- Consider the installation of additional lighting over the pedestrian refuge to improve safety after dark. See section 4.08 (Street Lighting) for more details.
- For the dropped kerb, pre-cast concrete channel, (300mm) should be laid and covered in white 'Stamark', or similar approved marking.
- Tactile paving must be added to every refuge, with the appropriate colour for controlled or uncontrolled crossings. See section 3.07 (Tactile Paving) and 3.08 (Dropped Kerbs).



Pedestrian refuge on Haverstock Hill



Considerations for a pedestrian refuge

## Carriageway Materials

- High specification, durable materials are to be used on the carriageway. Effective and regular maintenance is also required to maintain good carriageway surfacing.
- Two wearing courses are to be used, either:
  - 1 Hot Rolled Asphalt (HRA)
  - 2 Stone Mastic Asphalt (SMA)
- Site-specific conditions must be taken into account to decide material specification.
- Three factors influence the design, particularly when deciding the thickness of carriageway layers:
  - 1 Estimated type and flow of vehicles
  - 2 Bearing capacity of the sub-soil
  - 2 Water conditions – CBR
- HRA is to be used in most locations.
- SMA can be considered in areas of heavy vehicular traffic.
- For specialised surfacing including anti-skid, and bus lanes, see the Highway Works Contract.



Carriageway in Marchmont Street

# 2.08

## Drainage

- Surface water drainage may be affected by road layout changes, particularly footway build-outs and raised entry treatments.
- Drainage can greatly increase project costs so must be carefully examined as part of project initiation.
- Prior to the start of any works, a site visit must be arranged with the project engineer, the drainage engineer and all contractors involved.
- The Highway Works Contract must be referred to for gully specification and other details.
- Carriageway gully cover specification is 'Double Triangular D400 Ductile Iron', 500 x 500 x 150mm.
- Footway gully cover specification is 'Ductile Iron Hinged D400', 440 x 440 x 100mm.
- Connecting pipe work must be 150mm diameter vitrified clay. Plastic piping is not acceptable. Minimum pipe gradient is 1:60.
- Investigate whether connections to the main sewer system are adequate to cope with any additional water that it may have to cope with.
- New gullies will be subject to a 12-month emptying cycle, so consider the size of the catchment area (>200m<sup>2</sup>), high leaf fall and street cleansing regimes when deciding how many gullies are needed.
- Gully pots must be made of concrete, 1050mm deep, 450mm diameter with 150mm outlet. They must also be surrounded in 150mm concrete.
- New gullies should not be connected to old gully systems if the distance is more than 4-5m. Longer distances require a new direct connection to the sewer system. This must be arranged through Highway Engineering, as term contractors can only work to depths of 1.5m.
- With distances less than 4-5m, the new pipe should be connected to the existing outlet pipe with a Y-pipe junction, not directly into the pot.
- As the position of the grate is critical for cleansing purposes, make sure the gully frame is placed directly over the gully pot so cleansing and access to the rodding eye is possible.

### Catch Pits and Chutes

- Where there is not enough depth to install a pot, catch pit or chute gullies can be used, but must not connect to another catch pit. Advice from the Drainage Engineers must be sought in every circumstance.
- Chutes must not be installed in areas subject to excessive leaf fall or areas prone to flooding.

### Gully Pots

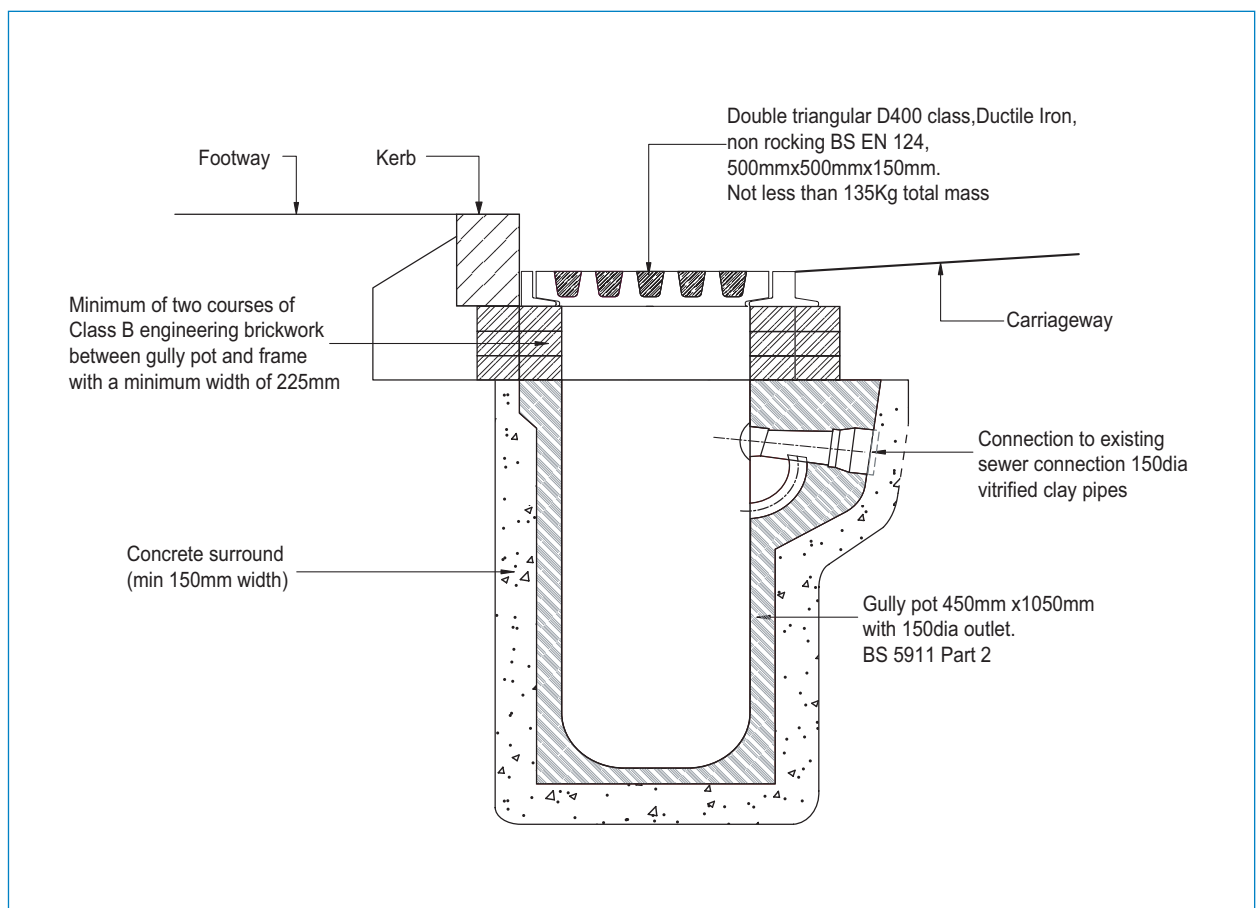
- Trapped gully pots should be used in all circumstances except where depth problems prevent installation.



Carriageway gully cover – Double triangular D400

### Further Considerations

- Be aware of protracted timescales for drainage works, prior to scheme implementation. On average, 10 weeks are required from initial site visit to the start of drainage works, followed by one week (average) per new gully connection and two days per gully move.
- Try to design schemes with safe and accessible gully cleansing and maintenance. If possible, avoid locations where a traffic order or parking suspension is needed to clean the gully.
- Try to position gully covers slightly 'away' from speed humps to avoid initial vehicle impact.
- Take care not to align gully grates so as to be a danger to cyclists.
- Try to keep gullies away from pedestrian desire lines, on the footway or carriageway.
- Highway Engineering must be informed of any changes in highway drainage to be entered into the maintenance database, particularly the creation of new critical gullies.
- All new gully connections require Thames Water Authority approval.



Trapped gully pot detail

# 2.09

## Road Markings

### Yellow Lines

- Refer to the TSR&GD 2002 for more details on yellow line markings.
- When resurfacing roads, yellow lines must be reinstated with 50mm width on all roads in the following situations:
  - On full road resurfacing;
  - On substantial stretches of long roads;
  - On short, separate sections, 'cut off' by other types of marking, e.g. Parking bays, bus lanes, hatching, etc.
- A 50mm gap is required between 50mm width lines.
- Care must be taken when reinstating lines, making sure new markings lie directly on top of old markings.
- When reinstating yellow lines, 'primrose yellow' (BS 310) must be used in all Conservation Areas. It can also be used in other areas, subject to approval by DfT.
- Canary yellow (BS 309 – traditional bright yellow) should only be used when re-marking existing lines of the same colour.
- Where rows of granite setts or cobbles lie adjacent to the kerb (forming a drainage channel), yellow lines must be marked 'outside' rather on top of them.
- For more information, contact Signs & Lines Team, Parking Solutions.



Primrose yellow lines at 50mm width



Canary yellow lines at 100mm width

## Parking Bays

- Refer to the TSR&GD 2002 for more details on parking bay markings.
- Preferred width of standard parking bays is 2m.
- Preferred minimum width of loading bays is 2.4m.
- Disabled bay width should be maximised, given existing road width (min. width 2m, ideal width 2.7m). Disabled bays should ideally be located near to a dropped kerb for wheelchair access onto the footway.
- Doctor parking bays should not be wider than adjacent parking bays.
- Legend letter x-height should be 350mm for specified bays.
- After resurfacing, the following procedures must be followed:
- **Resident, Pay & Display and 'specified use' bays:**
  - Longitudinal markings of 600mm lines with 600mm gaps.
  - Single transverse markings at end of bay.
  - Individual (subdivided) bay markings should *not* be re-instated.
- **Meter bays:**
  - Longitudinal markings of 600mm lines with 600mm gaps.
  - Double transverse markings at end of bay.
  - Maintain individual bays with 'T-bar' markings.
- Where problems of visibility are evident, a minimum of 5m is recommended between junction corner and the first parking bay, protected with double yellow lines.
- For more information, contact Signs & Lines Team, Parking Solutions.



Disabled parking bay near a dropped kerb



Motorcycle bay



## 2.09 Continued

### Hatching

- TSR&GD 2002 allows for local discretion in white hatch markings.
- Hatching delineates areas of carriageway that should not be entered unless absolutely necessary and advises drivers of their road position.
- Extensive or excessive use of hatching undermines its validity and compliance, as well as being visually obtrusive.
- New highway schemes should be designed without the need for carriageway hatching.
- After road resurfacing, carefully consider whether any existing hatching needs to be reinstated. If possible, reduce the area of hatching, or eliminate through improved design.
- Rather than add central hatching to a road, consider the addition of cycle lanes to visually 'narrow' the road.



New hatching in Gray's Inn Road

### Bus Lanes

- Bus lanes are important for providing bus priority on street, enabling services to be quicker and more reliable.
- Refer to TSR&GD 2002 for more details on bus lane markings.
- Preferred width of bus lanes is 4m, with a minimum width of 3m.
- Consideration should be given so that bus lanes can accommodate cyclists.
- Red surfacing should be laid within the bus lane, (see section 2.07, Carriageway Materials) except in some Conservation Areas.
- White line markings 250mm width should be used.
- Bus stop cages should be 3m in width, and marked in yellow to show mandatory compliance. They can vary in length according to bus design, service frequency and parking pressures.



Bus lane in Theobald's Road

## Cycle Markings

- On-road cycle markings perform several functions; indicating or advising of a cycle route or facility, as well as informing other road users of the likely presence of cyclists.
- Refer to the revised London Cycle Network Plus (LCN+) manual for clarification on all details relating to cycle markings.
- Segregated cycle lanes and mandatory cycle lanes (continuous white line) are preferred on roads with fast or heavy traffic as they are designated for sole use by cyclists.
- Alternatively, advisory cycle lanes (intermittent white line) can be used to 'recommend' a route for cyclists and inform drivers.
- Green surfacing should be added to all cycle lanes, See section 2.07 (Carriageway Materials) and the Highway Works Contract.
- Repetitive cycle logos can be used on their own or within cycle lanes to denote a cycle route. Intervals of 60-100m are appropriate, depending on visibility. Cycle logos should be placed immediately after a junction to confirm the route.
- Cycle 'advance stop lines' (ASL) help cyclists through signalled junctions, ahead of motor vehicles. If space allows, they should be added to each arm of a junction. The box should be 4m deep with a 1.78m high cycle logo and a feeder lane. See the LCN+ manual for more design details.



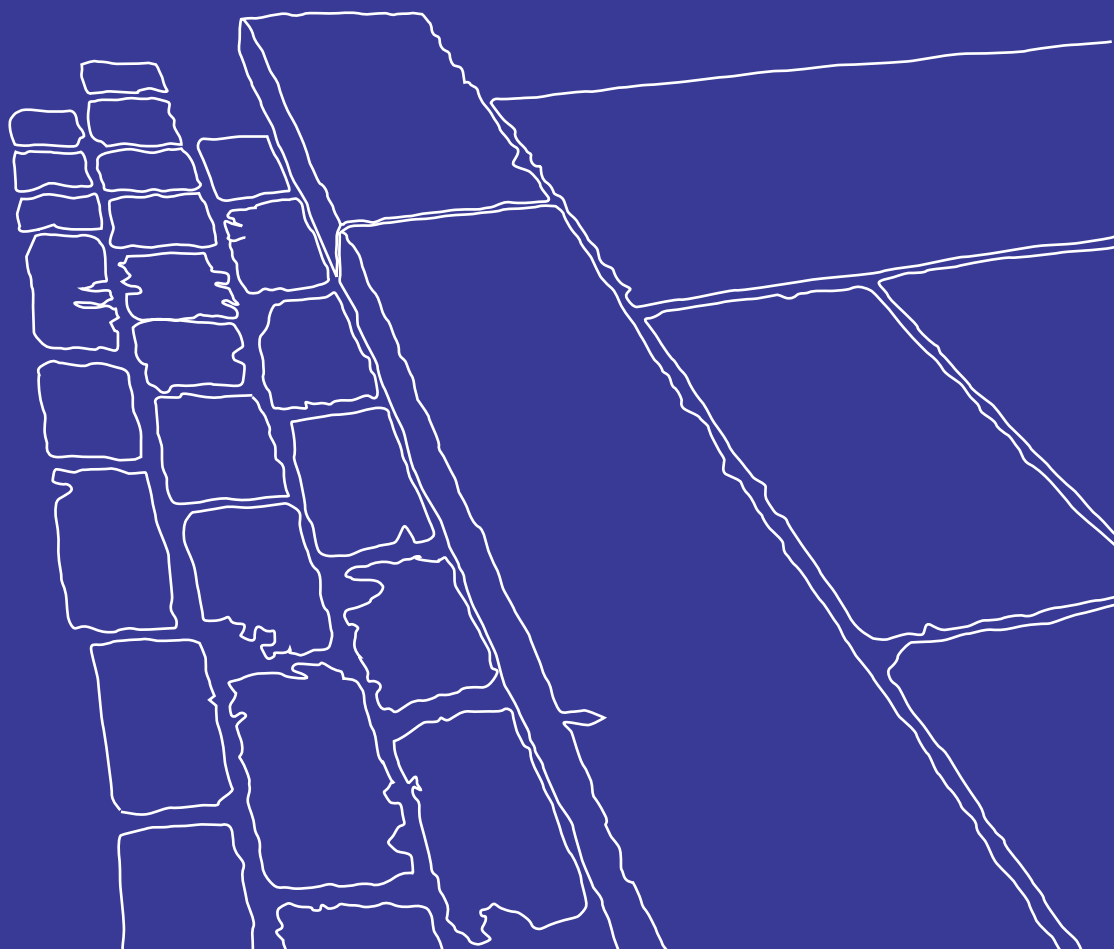
Segregated cycle lane in Torrington Place



Cycle advanced stop line in Cromer Street

# Notes and Amendments

# Footway Details

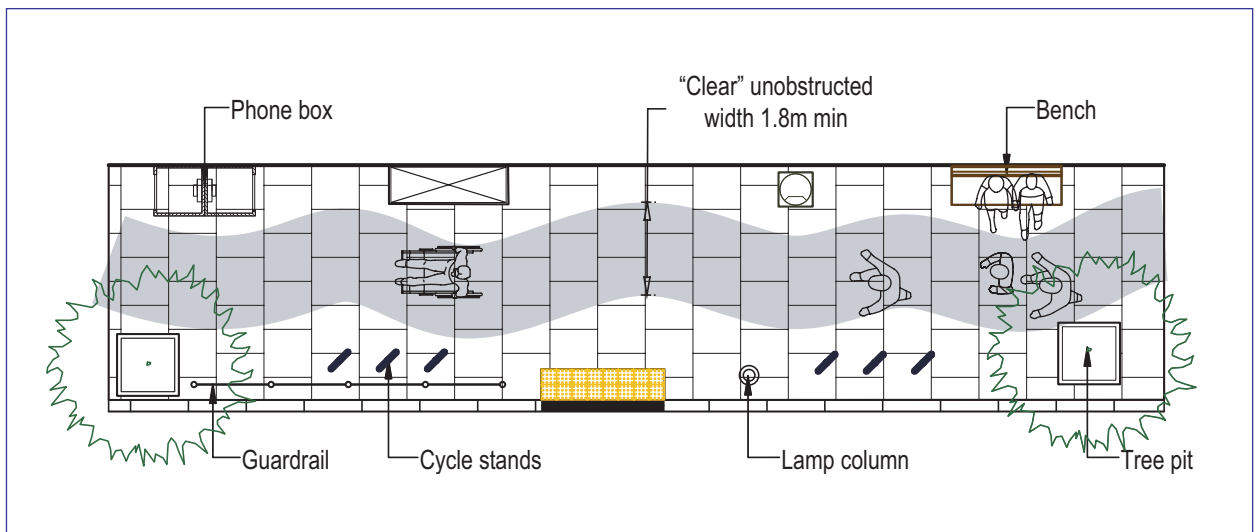


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- 3.01** Footway Widths
- 3.02** Concrete Paving and Boulevard Standard
- 3.03** York Stone
- 3.04** Bituminous Surfaces
- 3.05** Granite Setts
- 3.06** Granite Kerbs
- 3.07** Tactile Paving
- 3.08** Dropped Kerbs
- 3.09** Inset Inspection Covers
- 3.10** Footway Crossovers

## Footway Widths

- Footway widths vary historically. There are, however, guidelines for maintaining 'clear footway' widths for different volumes of pedestrian traffic.
- 'Clear footway' is *not* the distance from kerb to boundary wall, but the *unobstructed* pathway width within the footway.
  - 1.8 metres - minimum width needed for two adults passing.
  - 3 metres - minimum width for a busy pedestrian street, though greater widths are usually required.
- Keeping the footway width *visually* free of street furniture is also important, allowing clear sightlines along the street. Combining or 'bunching' of street furniture can help achieve this.
- When given the opportunity to re-design footway width, try to predict *peak* pedestrian flow on each section and design accordingly. For instance, near school entrances, peak flow will be very high at certain times of the day, requiring wider footways in the near vicinity.



Considerations for maximising 'clear' footway width

# 3.01 Continued

## Reducing Clutter

- Footway obstructions are numerous and varied – some can be remedied quickly, while others require detailed consideration before removal or relocation can be approved.
- Some pavement obstructions are a permanent feature of the street, required by traffic law or current safety considerations.
- **Short-term obstructions:**
  - *Overhanging foliage* from private properties – refer problem to Street Environment Services.
  - *Overspilling street traders, A-boards* – refer problem to Enforcement Team (Street Environment Services).
- **Longer-term obstructions/ other street furniture:**
  - *Trees* section 1.09
  - *Traffic signs* section 4.01
  - *Sign posts* section 4.02/03/04
  - *Guardrail* section 4.09
  - *Bollards* section 4.10
  - *Cycle parking* section 4.11
  - *Bus shelters* section 4.12
  - *Litterbins* section 4.16
  - *Recycling bins* section 4.17
  - *Telephones* contact Highways Management for utility company details.
  - *Postboxes* contact Highways Management, Forward Planning and the Post Office.



Bunched street furniture on Gray's Inn Road



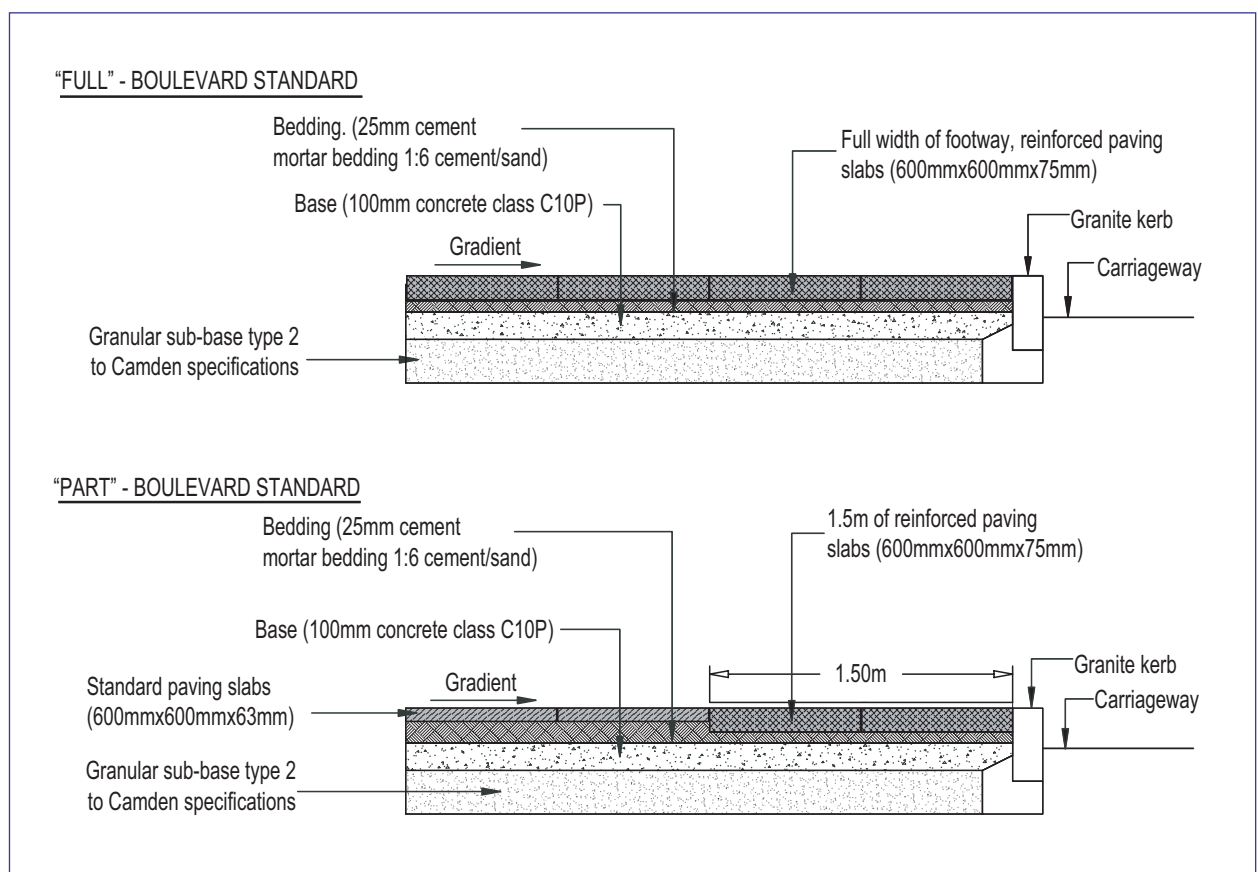
A-boards licensed to be on the footway

## Concrete Paving and Boulevard Standard

- Concrete slab paving is a cost effective, practical alternative to natural stone paving.
- It provides a uniform 'uncluttered' appearance, with a durable surface and is easy to clean and maintain.
- Reinforced concrete paving is thicker than standard concrete paving, but has the same appearance.
- Concrete paving is required for all 'Boulevard' streets, likely to be subject to 'continental-style cleansing' in the near future. For more details on the Boulevard Project see section 0.07.
- The full width of the footway must be laid with reinforced concrete paving to reach 'Boulevard' standard.
- Only 'part-Boulevard' standard is reached when strengthening 1.5m from the kerb. This can be done to protect footways likely to be overrun by heavy vehicles.



Boulevard paving laid with 150mm staggered bond



Boulevard paving construction



## 3.02 Continued

### Slab options

- ‘Marshall’ Liverpool natural re-enforced slabs or an equivalent product are commonly used.
- **Slab size options:**
  - Reinforced paving: 600 x 600 x 75mm  
450 x 600 x 75mm
  - Standard paving: 900 x 600 x 63mm  
750 x 600 x 63mm  
600 x 600 x 63mm
- Larger sizes can be used outside nationally important buildings (900 x 600 x 63mm).
- Small element paving (400 x 400mm) and tegular block paving must not be used and should be replaced whenever possible.
- (At time of writing, trials are taking place using ‘fibre mesh’ reinforced slabs, with slab thickness of 63mm. If successful, this product may facilitate the use of larger slab sizes in the Boulevard programme).

### Laying

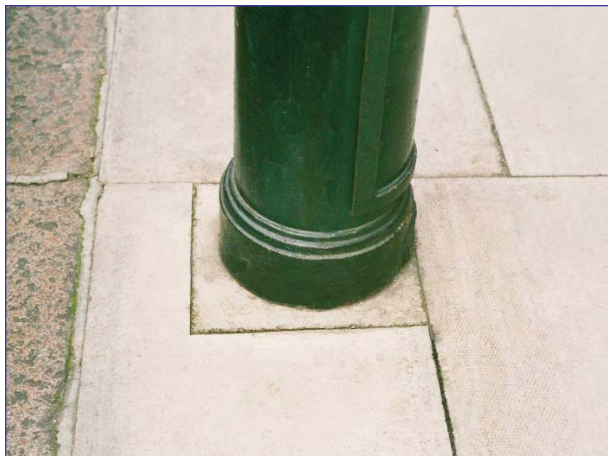
- All paving (including kerbside strengthening) must be laid in a 150mm staggered bond, transverse (90°) to the kerb line.
- For all ‘Boulevard’ streets, slabs are to be butt jointed with a concrete base beneath cement mortar bedding.
- No slabs should be cut to less than 300mm wide or splay cut, until approved by the lead officer, except where abutting street furniture.
- Careful attention must be paid to cutting slabs around street furniture to leave a neat finish.

### Other considerations

- As opportunity arises, reinforced paving should be laid in all major commercial streets for aesthetic improvements and to enable ‘continental-style cleansing’.
- Good reinstatement by utility companies is essential to maintain level and unbroken paving. Compliance with NRSWA standards must be enforced to ensure settlement does not affect paving. Use of fully consolidated material (e.g. lean mix concrete) will reduce the adverse effects of settling.



Boulevard paving on a busy commercial street



Careful attention to cutting slabs around street furniture

## York Stone

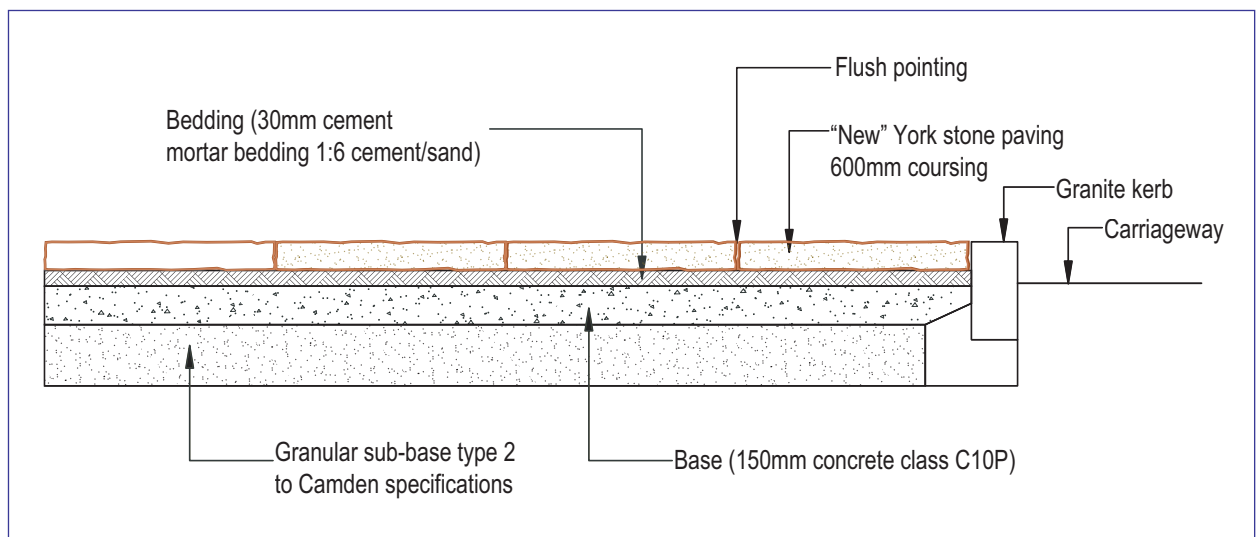
- York stone is the original material used in Camden's footways. It is aesthetically pleasing, but costly.
- 'Old' York stone (from the same site) can be re-laid in situ, with particular care taken on producing neat flush pointing of no more than 10-15mm.
- Second-hand York stone can only be used with the approval of the engineer.
- 'New' York stone should have sawn-cut edges with flush pointing to create a smooth finish.
- Try to match local precedence (in colour, material finish and bonding) when approving samples of 'new' York stone.
- Generally, coloured variations are preferable to bland, consistent colour.
- Coursing of 600mm should be used, laid 90° to the kerb with random slab lengths used to create random bonds.



Old York stone re-laid with flush pointing



New York stone in Argyle Walk



New York stone paving construction

## 3.04

### Bituminous Surfaces

- Bituminous (or “black top”) footway surfaces are the quickest paving option. It provides a smooth surface when first laid, but suffers badly in appearance, if continually dug up by utility companies.
- There are three types of bituminous material used in Camden:
  - 1 Mastic asphalt (MA)
  - 2 Fine graded bitumen macadam wearing course
  - 3 Rolled asphalt sand carpet wearing course, 25mm (HRA)
- Asphalt surfacing can be considered where there is a shallow construction depth or where there are cellars under the footway.
- See the Highway Works Contract for construction specification.



New bituminous footway on Regent's Park Road

## Granite Setts

- Granite setts can be used in certain locations to delineate an area, such as on level loading bays or drainage channels in footway build-outs.
- They can also be used to change surface texture in the carriageway such as on the ramps of raised entry treatments (see section 2.05) or areas where walking is discouraged.
- A flush surface must be achieved where people are likely to walk on the granite setts, using a fine picked finish with flush pointing.
- Cropped granite setts can be used in the carriageway as a slight traffic calming effect, as well as in areas where walking is discouraged.
- Choose granite sett colours by following local precedent.
- Traditionally, granite setts have been laid in random sizes and coursing.
- The use of random sized reclaimed setts is preferred.
- For new setts, the most common size is 200 x 100 x 100mm, laid with a half bond.
- Cubed setts (100 x 100 x 100mm) can be used to match local use.
- See the Highway Works Contract for construction specification.



Flush, fine picked granite setts suitable for walking



New cropped granite setts



Old granite setts in Daleham Mews



Setts in level loading bay in Chalk Farm Road

# 3.06

## Granite Kerbs

- Granite kerbs have traditionally been used in Camden, with different arrangements found across the borough.
- Existing granite kerbs should be retained wherever possible, with the size of new kerbs chosen to match local precedent.
- Standard sizes for new build are:
  - 300 x 200mm
  - 150 x 300mm
- Kerb length will vary from 900 to 1200mm.
- Traditionally, granite setts were placed alongside kerbs to form a drainage channel. Wherever found, the setts should be cleaned and maintained.
- Refer to Highway Works Contract for more detail.

### Flat Kerb

- 300 x 200mm standard kerb arrangement, with 125mm upstand.

### Edge Kerb

- Where a higher upstand (or a narrower kerb width) is required, a 150 x 300mm granite kerb can be used.
- Standard upstand: 125mm.
- Maximum upstand: 200mm.

### Double Granite Kerb

- Double kerbs have been used where the footway is considerably higher than the carriageway, and are effective in preventing vehicles mounting the footway.



Flat kerb with drainage channel made of granite setts



Edge kerb in Haverstock Hill



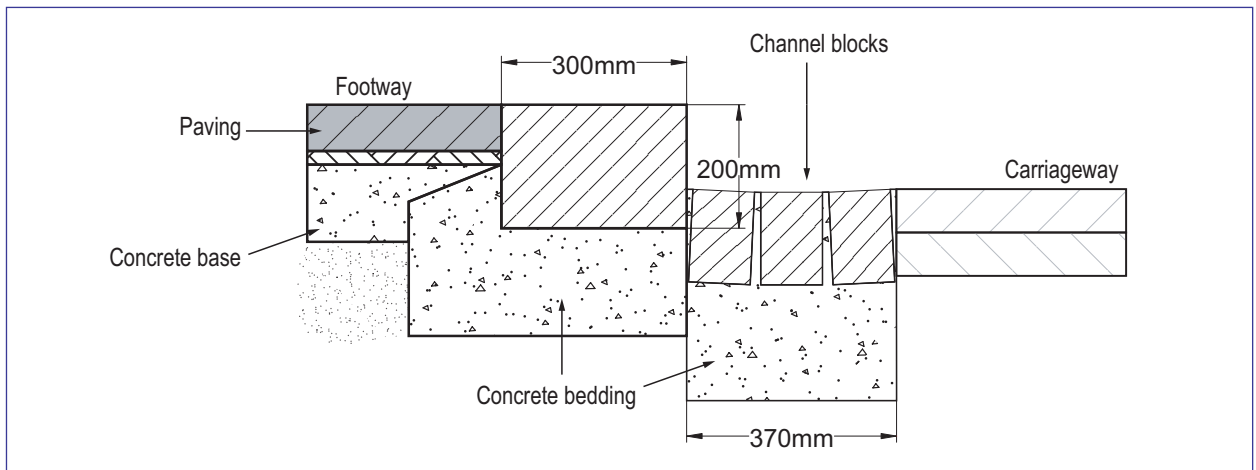
Double granite kerb with drainage channel

### Granite Slabs at Cellar Flap

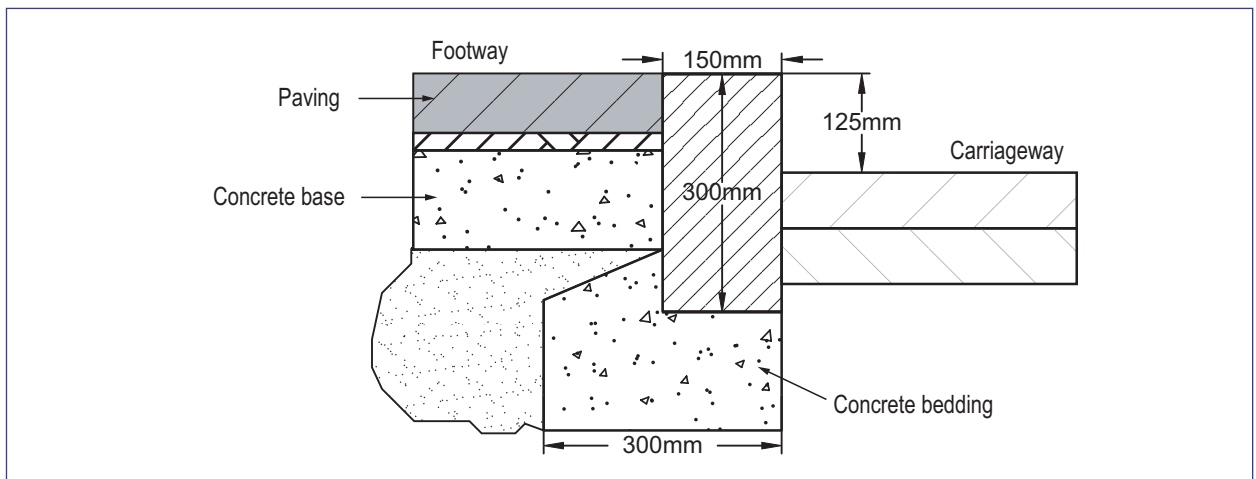
- 'Granite landing slabs' or 'barrel runs' form the original hardwearing paving outside pub cellar doors. Granite setts were also commonly used. If uneven, re-lay slabs or setts to fit with paving either side. If slabs are broken, replace using granite kerbs, to maintain a good walking surface.
- Lay slabs or granite kerbs on a cement mortar bed on top of a concrete sub-base. Finish with flush or struck jointing.



Granite setts laid in front of a cellar flap



Depth construction of flat kerb



Depth construction of edge kerb

# 3.07

## Tactile Paving

- Tactile (or blister) paving is intended to warn and inform, blind and partially sighted people of the existence of a crossing point.
- Tactile paving must be laid at every controlled and uncontrolled crossing point, as well as areas where the carriageway has been raised to the same level of the pavement.
- Refer to the DETR 'Guidance on the use of Tactile Paving Surfaces 1998', for clarification on details in the installation of tactile paving.
- Use of 400 x 400mm tactile paving is preferred. However, where persistent kerb overrun is evident, 200 x 100mm modular blocks can be used for easier maintenance.
- At all crossings, the tactile surface must be laid 'in line' with the angle of the crossing, *not* 'in line' with the kerb line. See DETR Guidance for more detail.
- Different colours of tactile (or 'blister') paving area used at different crossing points to help visually impaired distinguish between crossing types.



Continuity of tactile paving maintained through inset inspection cover



Red tactile paving with stem at controlled crossing

### Controlled Crossings

- i.e. Light controlled and zebra crossings:
  - Red tactile, full width of dropped kerb.
  - At crossing in-line with pedestrian flow – 1200mm depth of tactile with stem back to a point in line with the buildings.
  - At inset crossing ('off to the side' of pedestrian flow) – 800mm depth of tactile with stem back to building/pavement edge.

### Uncontrolled Crossings

- e.g. Side road junctions, raised crossings, 'access road' crossovers, signal junctions without pedestrian phases:
  - Buff or dark grey tactile (whichever provides the greatest contrast to surrounding paving) full width of dropped kerb.
  - At crossing in-line with pedestrian flow – 1200mm depth of tactile. Tactile stem not required.
  - At inset crossing ('off to the side' of pedestrian flow) – 400mm width of tactile. Tactile stem not required.
- See DETR Guidance for situations with overlapping crossings, pedestrian refuges and pedestrian islands. Also see section 2.06 (Pedestrian Refuges).
- Where tactile paving is 'interrupted' by an inspection cover, an inset cover must be installed with tactile paving laid in the same direction. See section 3.09 (Inset Inspection Covers) for more details.



Buff tactile paving at an uncontrolled crossing, on a raised entry treatment

### White Kerb Edge at Crossing Points

- At dropped kerbs and raised crossings, the granite kerb edge should be removed and replaced with a pre-cast flat concrete channel and covered with a white marking ('Stamark') or similar approved.
- Concrete blocks can be used around radii, which must be screeded with concrete for a smooth finish prior to laying 'Stamark'.



# 3.08

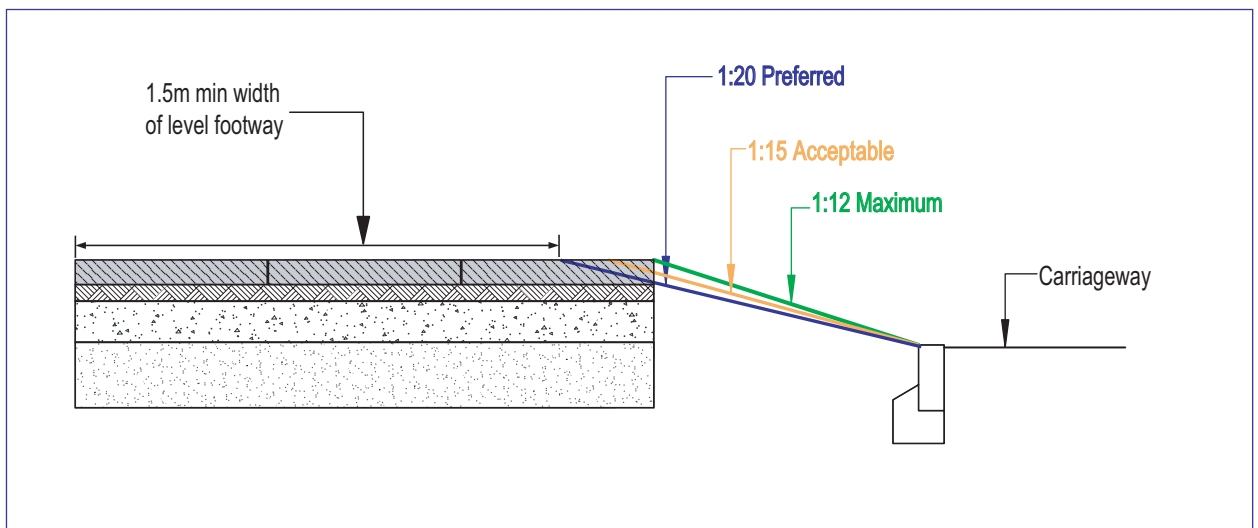
## Dropped Kerbs

- Providing dropped kerbs at crossing points (controlled and uncontrolled) helps pedestrians cross the road, including wheelchair users, elderly and infirm as well as people with buggies and suitcases. Dropped kerbs should also be added at the rear of a disabled bay for wheelchair access from the road.
- The DDA1995 requires the Council to endeavour to install or alter dropped kerbs at every crossing point, such that gradients are as shallow as possible. A shallow gradient is better for all users, not just for the disabled and infirm.
  - 1:20 gradient is preferred, if pavement width allows;
  - 1:15 gradient is acceptable;
  - 1:12 gradient should only be used in exceptional circumstances.
- If a pavement is so narrow that even a 1:12 gradient is not possible (while leaving a 1.5m level footway), then an alternative 'route' or solution must be identified. If necessary, the full width of the pavement could be lowered, with the ramps stretching 'along' the footway.
- Dangerously steep dropped kerbs must not be installed, and existing steep ones removed.
- Dropped kerbs should have an absolute minimum width of 1.2m.
- Tactile paving must be added at all crossing points and busy 'access road' crossovers. However, it must not be added to a dropped kerb required for disabled bay access or at most footway crossovers.



Details of dropped kerbing in John St

- Close attention should be paid to pavement materials surrounding dropped kerbs. The same paving material should be used in creating the dropped kerb as found in the footway.
- Concrete-block paving should be avoided and only used at very difficult sites. Colours should match the paving slabs.

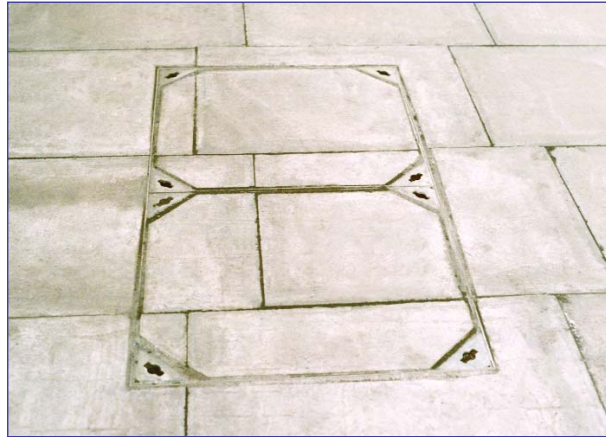


Options for dropped kerb gradient

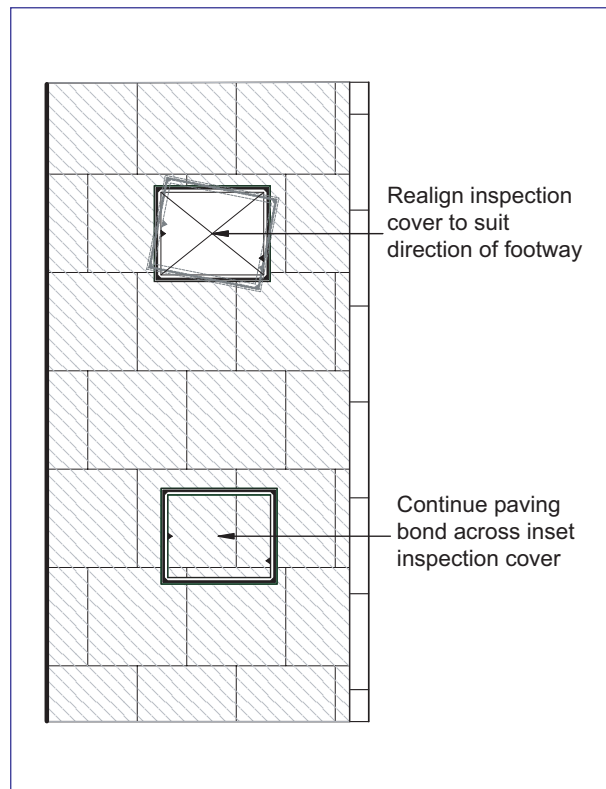
# 3.09

## Inset Inspection Covers

- Inspection covers are installed by utility companies to access underground services. They remain the property of the utility company.
- Utility companies should be encouraged to lay new inspection covers aligned parallel to the kerb. Inspection covers that are less than 5° out of alignment can and should be reset on their existing chamber wall.
- Inspection covers visually disrupt a paved area. Inset covers should be used to create a continual paved surface, where funds permit.
- Utility companies must be informed if covers are changed to inset covers. Contact details are available from Highways Management.
- Inset covers must be used where an inspection cover disrupts the continuity of tactile surfacing, and other paving near crossing points.
- To maintain a continuous appearance, paving bonds should be continued within the inset cover.
- All paving to be dressed into ironwork should have joints and fillets of, ideally, no more than 10mm, or as narrow as any flange surrounding the ironwork permits. Consider chamfering the underside edge of the paving slab to position slab closer to inspection cover.
- Inset inspection covers must be marked to identify the relevant utility company.
- Liability issues surrounding the use of inset covers are currently under review and subject to change.



Inset inspection cover showing careful alignment of paving bonds



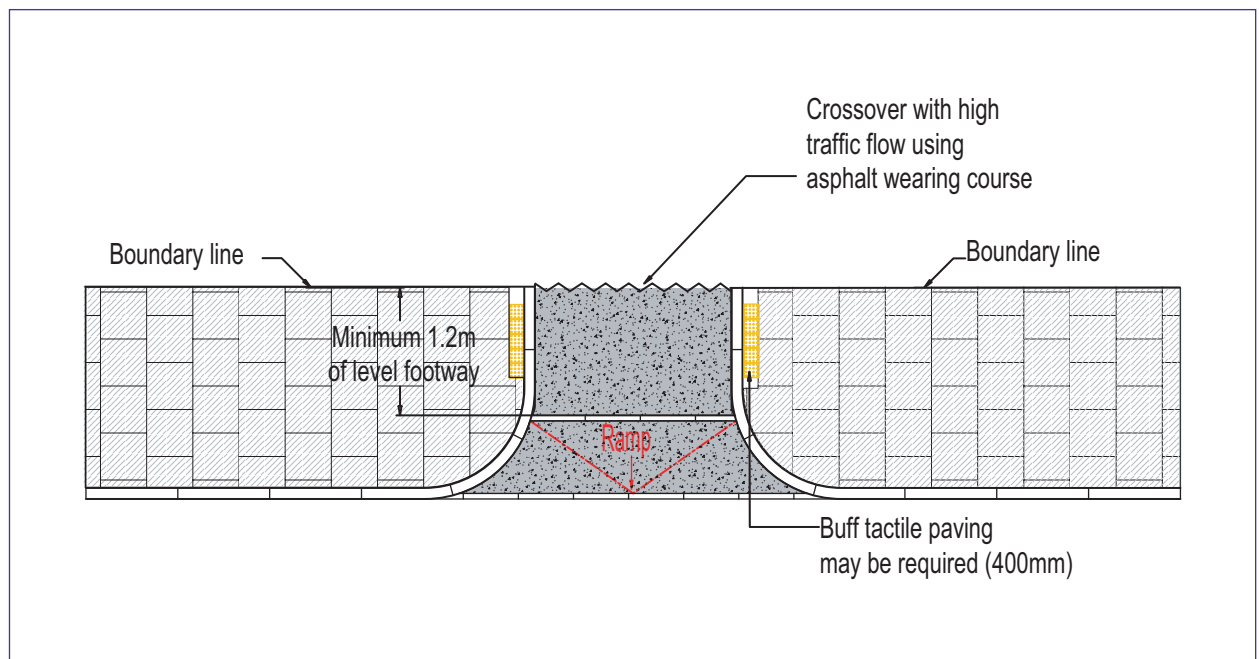
Alignment and fill of inspection covers

## Footway Crossovers

- Vehicular footway crossovers are provided to enable vehicular access to developments and residential off-street parking.
- At least 1.2m width of *level* footway must be retained.
- Footway materials at crossovers should be consistent with the surrounding pavement to maintain a seamless appearance. For example, using strengthened paving slabs of the same size, material finish and coursing as the adjacent footway slabs.
- Crossovers with high traffic flows or heavy vehicles may require a different surface material such as an asphalt wearing course, on a base designed to full carriageway depth with radii kerbs. Tactile paving is usually necessary either side of this type of crossover.



Level footway maintained at crossover with continuous paving



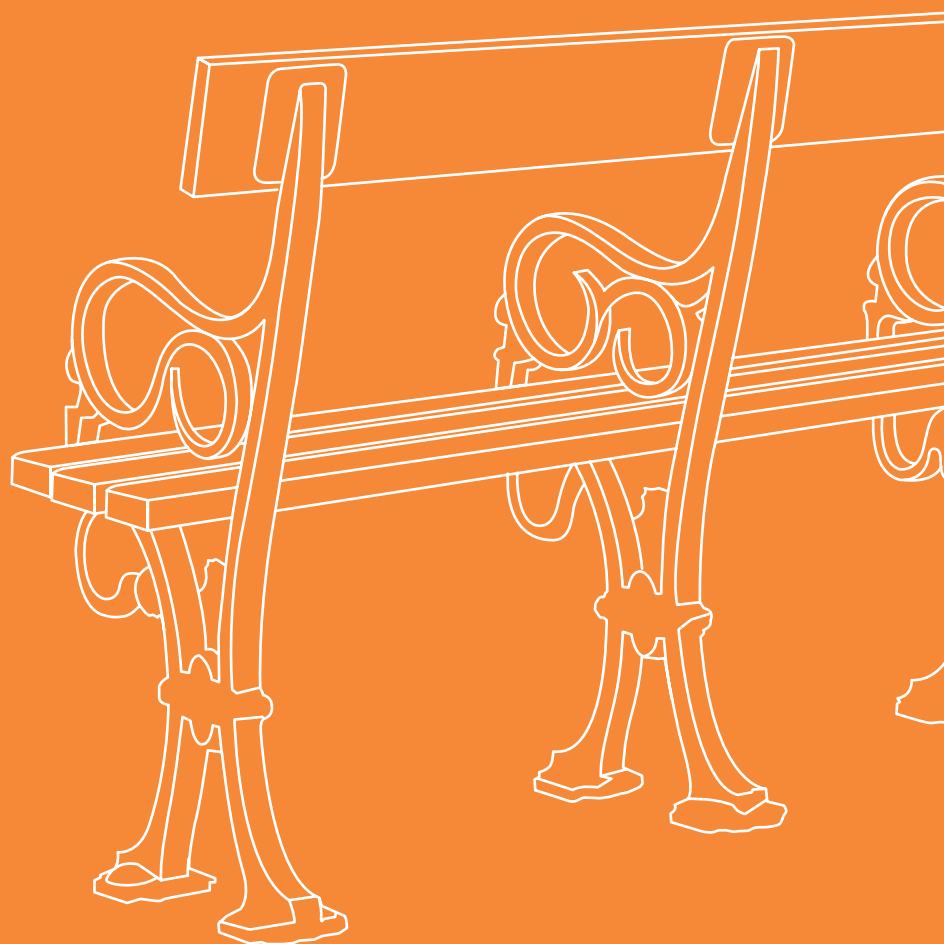
Level asphalt crossover for heavy vehicular flow

# Notes and Amendments

4.00

# Street Furniture

Street Furniture 4.00





## Vehicular Traffic Signs

- The TSR&DG 2002 largely governs vehicular traffic signs. Due to recent revisions, regular reference to this document is recommended to ensure current practices are followed.
- In most circumstances, variation in the size of traffic signs is allowed, within the boundaries set by TSR&DG 2002.
- The letter x-height of traffic signs should be decided upon, given the lawful speed of traffic viewing the sign. Signs on roads with low speed limits can have smaller x-heights than signs on higher speed roads, though signs must be clear for a non-local to follow and understand.
- Signposts, poles, sign backs, brackets, clamps and lamps must all be finished in black.
- Posts must be located where obstruction to the footway is minimised, though traffic signs must be clearly visible from the carriageway.
- The preferred location for posts is at the back of the footway, where footway is 2m wide or less. If necessary, consider using an offset post to improve sightlines.
- The distance from the outer edge of a sign to the kerb should be at least 0.45m (0.5m preferred).



Combined vehicular signs to reduce clutter



Exemption for cyclists in Lamb's Conduit Street



# 4.01 Continued

## Reducing Sign Clutter

- Existing posts, columns and structures should be used wherever possible. If necessary, a shorter post should be replaced by a taller column to carry all necessary signs above 2.15m (from footway to sign bottom).
- 'Combining' signs onto one board can reduce visual sign clutter. This is particularly effective at road entries. Signs can be ordered according to priority, though care must be taken where sign illumination is necessary.
- The practice of neatly fixing signs to structures and buildings is encouraged. The owner's permission is required. Legal templates and information are currently being drawn up to simplify this process.
- Sign illumination must be kept to a minimum, with greater use made of reflective diamond grade material. Requirements for sign illumination for 23 warning signs have been removed on 30mph, single-carriageway roads. See details of exemptions in TSR&GD 2002 (S17, pg 404).
- At a junction where the carriageway is less than 5m wide, certain listed signs are only required on one side of the carriageway. They must be placed within 2m of the carriageway edge. This applies to 'No Entry'; 'No Motor Vehicles'; 'Pedestrian zones' and 'Width restriction' signs.



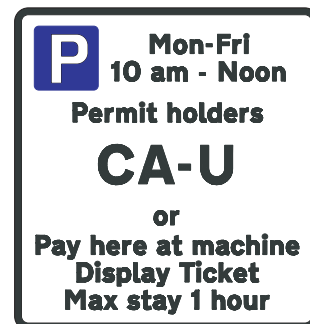
Separated signs carefully aligned on a post



Combined signs for 20mph Zone in Grangeway

## Controlled Parking Signs

- All public roads in Camden are now within 'controlled parking zones' (CPZs), providing marked and signed areas where permits are required to park in the borough.
- Refer to TSR&GD 2002 for more information on the requirements of signing CPZs including locating parking signs within the corresponding bay marking restrictions.
- Parking signs must be clearly visible to motorists at all times to enable consistent, *unchallengeable* parking control.
- Parking bay signs should be spaced no more than 30m apart and not more than 5m from the end of a bay.
- Whilst abiding by the restrictions, signs should be positioned on existing posts, lampposts and suitable street furniture (e.g. railings), wherever possible.
- Locate a new post at the back of the footway, if 2m wide or less. Exceptions to this are when signs would obstruct windows (commercial or residential), areas of excessive foliage or where the post might compromise security to a property.
- In locations with very narrow pavements adjacent to a wall, try to secure agreement from the freeholder for placing the sign on the wall. Legal agreements are required, with Camden willing to take on maintenance and liability for the sign. A (wooden) frame can be attached to the back of the sign so it stands in relief, to allow easier 'bagging' for parking suspension.



Resident parking, 'pay & display' and shared use bay signs

## 4.02 Continued

- Signs attached to walls, fencing or similar structures can be positioned (no less than) 1.5m off the ground. However, where signs are on posts a height clearance of 2.3m is recommended (min 2.15m).
- All new or replacement parking bay signs should conform to the new sign template, with the hours of control listed at the top of the sign. See previous page.
- Signs should be made as small as possible, with x-height of 20mm for small signs and 15mm for complex signs.

### Waiting and Loading Signs

- 'At any time' signs are no longer required to enforce the waiting restrictions on double yellow lines and should not be used.
- Where there are also loading restrictions, signs should be altered with 'At any time' removed, while keeping the relevant loading restriction listed.
- Loading restriction signs are required every 60m.
- Refer to section 4.01 (Vehicular Traffic Signs) for guidance on preferred sign heights and locations within the footway.



Removal of 'At Any Time' plates

## Cycle Signage

- Cycle routes to local and major destinations often differ from vehicular traffic and so require separate signage.
- Refer to the revised London Cycle Network Plus (LCN+) manual and TSR&GD, for clarification on design details of cycle signage, e.g. colours, shape, x-height etc.
- A consensus of uniform sign style and destinations for the LCN+ routes is being negotiated, while local cycle signage can be installed to complement this network.
- Cycle signage should be made compact in shape, to limit twisting of signs.
- Where possible, avoid erecting additional signposts by adding cycle signage to existing posts, above 2.1m height clearance.
- If a new post is required, try to locate the signpost at the back of the footway, to minimise footway obstruction. However, if sign visibility is compromised, kerbside positioning is acceptable.
- Other cycle signs such as sign 955 ('pedal cycle only') and 956 ('shared use route') can be placed on street furniture, including bollards. Sign size options include 150mm and 270mm, depending of sign type.
- Cycle routes should be designed to eliminate the use of "Cyclists Dismount" and "End of Route" signs. They should only be used in exceptional circumstances.




Route signage for cyclists



Use of bollards for signing a cycle route

# 4.04

## Pedestrian Signage

- Pedestrian signs are for residents, tourists and business visitors. The destinations chosen must take into account the need for all three groups.
- Pedestrian signage is particularly important near public transport interchanges, other major 'access' points and complex road junctions where pedestrian routes are not obvious.
- Where possible, avoid erecting additional signposts by adding pedestrian signage to existing posts, above 2.1m height clearance.
- If a new post is required, try to locate the signpost at the back of the footway, to minimise footway obstruction. However, if sign visibility is compromised, kerbside positioning is acceptable.
- Although advice is given in TSR&DG 2002 (Section 7, Part VIII) on suggested pedestrian signing styles, the use of bespoke pedestrian signing is encouraged and allowed within the regulations. For more details, contact Street Policy or Traffic Engineering.
- New 'area-wide' (e.g. town centre) pedestrian signing can be developed using a new 'borough style'. Black lettering on white fingerposts is preferred for legibility and simplicity. It is intended that a uniform Camden style is identified and followed.
- Additional information can be added to fingerposts, including recognisable symbols (e.g. ); distance in metres (or yards); or time in minutes, (roughly 5 mins = 300-400m).



Pedestrian signage in standard 'highway' style



New 'borough style' pedestrian signing

- **Destination categories:**

- 1 Locations considered to be of community or public amenity.
- 2 Locations described as public buildings, often with high visitor numbers.
- 3 Locations considered to be cultural attractions with high visitor numbers and hard to find from a particular direction.
- 4 Transport interchanges.

Location Categories	Location Types
Council Services	<ul style="list-style-type: none"> <li>• Libraries</li> <li>• Parks</li> <li>• Refuse Centres</li> <li>• Leisure Centres</li> <li>• Schools</li> </ul>
Public Buildings	<ul style="list-style-type: none"> <li>• Hospitals</li> <li>• Health Centres</li> <li>• Community Centres</li> <li>• Police Stations</li> <li>• Special Cases (Where public benefit can be demonstrated; if there are substantial visitor numbers; if hard to find)</li> </ul>
Cultural Attractions	<ul style="list-style-type: none"> <li>• Museums</li> <li>• Non-Commercial Public Art Galleries</li> <li>• Theatres and Performing Arts Centres</li> <li>• Geographical areas attracting substantial visitors e.g. Covent Garden, Camden Lock</li> <li>• Historic Buildings (Where there are large visitor numbers) e.g. Kenwood House.</li> </ul>
Transport Interchanges	<ul style="list-style-type: none"> <li>• Tube Stations</li> <li>• Bus Stations and important Bus Stops</li> <li>• Cycle Parking</li> <li>• Powered Two-Wheeler Parking</li> <li>• Car Parks (only if difficult to find on return)</li> </ul>

# 4.05

## Street Nameplates

- Provision of street nameplates at the end of each road and at street junctions is required by law under the Town Improvement Clauses Act 1847 and the London Building Act 1939. The law enables the street name signs to be fixed to walls, buildings and other boundary structures.
- Street nameplates should be positioned in a clear, uncluttered location, keeping the view free from obstruction and foliage. They must be visible for both vehicular traffic and pedestrians. Preferred position is ~3m high attached to a building, though refer to the Act for more details.
- Providing the sign can be seen and read clearly, there is some scope for maintaining local variation in style, while positioning and shape of signs can be altered slightly to fit with surrounding street furniture and building frontage.
- Sans-serif font style is preferred, while Roman or Kindersley font can be used in certain locations for continuity or cross-borough use. The writing is usually black on a white background with a black border, though local variation can be maintained.
- New signs will show the logo, while older signs can be maintained showing the old borough names, for continuity.
- If old ceramic tile signs are damaged beyond repair, pseudo-enamel signs can be used instead. If required, 'hand written' signs can be painted onto blank enamel boards and fixed in situ.



Kindersley font used in old borough signs



Sans serif font on sign attached to a building



Sign neatly attached to private railings

## Traffic Signals

- Traffic signals are currently *installed* and *maintained* by DTO (Directorate of Traffic Operations), made up of TSS (Traffic Signals Section) and UTC (Urban Traffic Control).
- Though the positioning of traffic signals is primarily controlled by the need for good sightlines from the carriageway, there are small variations in design that can improve the streetscape.
- Obstruction to the footway by signal posts should be minimised. For instance, secondary signals could be provided on traffic islands, rather than on the pavement or attached to other signal posts.
- A signal post should be positioned in line with other street furniture, (0.45m from the kerb) using an offset post if necessary.
- Positioning signal posts very close to a pedestrian crossing eliminates the need for separate 'push button' posts. Where the signal post is further away, a 'push-button' must be provided close to the crossing point for easy use by disabled users.
- All new 'push buttons' must have a rotating 'tactile cone' attached, for visually impaired people.
- Traffic lights cannot be mounted on existing street lighting. However, as part of a major redevelopment programme, a new integrated system of lighting and traffic signalling can be developed, at considerable cost.
- Refer to TCSU 6, (Design Standards for Signal Schemes in London, 1999) for more information on signal design.



Traffic signal box with rotating 'tactile' cone (not visible)



Offset traffic signal minimises footway obstruction



# 4.07

## CCTV Cameras

- CCTV cameras are being used for surveillance of street crime, traffic offences and bus lane control.
- Cameras need to be fixed to sturdy street furniture to focus properly. In most situations, this requires cameras to be fixed to purpose built poles. However, where possible, fixing cameras onto buildings should be encouraged.
- Two types of CCTV pole are used:
  - 1 **'TC pole' (Town Centre Integrated pole):**
    - 400 x 400mm base with integral control cabinet, (1.2m high).
    - Requires 1.2m<sup>3</sup> (~3 tonnes) concrete 'anchor' in any shape.
    - Main advantage: Separate control cabinet not required.
  - 2 **'FMT pole' (Flange Mounted Tubular pole):**
    - Slimmer circular pole.
    - Separate control cabinet required nearby. New compact design available with 'perch' seating.
    - Requires 1m<sup>3</sup> (~2 tonnes) concrete 'anchor' in any shape.
    - Main advantage: Requires smaller 'anchor' so can be used where there are many underground services. Also slimmer pole can be used on narrow footways.
- Preferred pole height is 8m. Poles of 10m or 12m high can also be used, depending on location.
- Individual CCTV camera posts should be located with care, so as not to block key sightlines of pedestrians and drivers, particularly at junctions and crossing points.
- Future growth of trees must be taken into consideration when positioning cameras. Persistent pollarding should not be relied upon.



'TC' pole  
with integrated  
control cabinet



'FMT' pole  
requiring separate  
control cabinet

### CCTV and Lighting Combined

- The practice of combining CCTV and lighting is encouraged. Long lens CCTV columns can be designed to carry light fittings, or new lighting columns can be designed to carry short lens cameras.
- Contact CCTV Enforcement Team in Parking Solutions for more details on manufacturers, ducting requirements, aesthetic design options etc.
- See section 4.08 (Street Lighting) for more information.



Combined CCTV and lighting column



New 'perch' seating cabinet for 'FMT' pole or CCTV mounted on lamp columns

# 4.08

## Street Lighting

- Street lighting varies widely across Camden, both in style and light levels with historical and modern lighting co-existing in many areas.
- Adequate street lighting standards for vehicular traffic are detailed in IEE WIRING regulations, ILE Code of Practice and British Standards, BS EN 13201.
- All street lighting equipment and columns must be painted black with a graffiti-resistant coating on main roads or in known problem areas.
- All new lighting should be located at the back of the footway where possible, to maximise *clear* footway widths. Exceptions to this include situations where the column would obstruct windows, compromise security to a property, or streets with particularly wide footways.
- Traditional lampposts should be maintained or restored to reinforce local character. However, where there are pedestrian safety concerns, additional lighting may be required, as light levels from 'historical' designs can sometimes fall below present day standards.
- When replacing or adding new lighting columns, variation in column styles should be minimised by replicating existing styles.
- Standardisation of certain column designs and accompanying light sources will be detailed in the Camden Street Lighting Policy document. The class of road and levels of vehicular and pedestrian traffic will determine the choice of lighting source and column design.



New lamp column style in Camden High Street



Ornate historic lamp column

### Light Sources

- White light must now be used for all new lighting on all roads for better colour rendition.
- Various standards of white light are available. In crime 'hot-spots' the highest standards should be applied to give the best possible colour rendition.
- High-pressure (SON) and low-pressure sodium (SOX) must not be used for any new lighting as the yellow light gives poor colour rendition.

### Pedestrian Lighting

- Installing specific pedestrian lighting (with a separate lower lamp overhanging the footway) has a great effect on perceptions of place; direct lighting of the footway makes the street feel welcoming, reduces crime and 'fear of crime'.
- Additional footway lighting should be considered for all crime 'hot spots'. Where funds permit, other areas can be considered for additional pedestrian lighting, including shopping districts or streets with particularly wide footways or carriageways.

### Other Considerations

- Where a footway is narrow, the Council should try to reach an agreement with the adjacent landowners to replace existing lighting with wall mounted bracket lamps. Legal agreements are required, with Camden willing to take on liability and maintenance.
- Consider the option of up-lighting structures, trees, or other street furniture as an aesthetic alternative to adding more lighting columns.
- If a lighting column causes obstruction to pedestrian desire lines, two white bands (150mm width) should be added at 0.9m and 1.5m from the ground.
- The use of 'back shields' should be considered in residential areas to prevent light pollution entering adjacent properties.



Footway lighting in Drummond Street

## 4.08 Continued

### Lighting with CCTV

- To reduce street furniture, specially designed columns can be used to combine CCTV and lighting functions.
- See Camden Lighting Policy for design specifications for high-resolution CCTV (500m) columns combined with (and made to look like) the standard main road lighting column. This is particularly appropriate for TfL cameras and community safety cameras.
- A lower resolution camera (e.g. Mic 1-300, “Metal Mickies”) can be used to record traffic offences and cover smaller community safety areas.
- These cameras can be added to some existing lamp columns with thick walls. Although not ideal, this option can be considered in locations where there is very limited underground space for a standard CCTV base.



‘Metal Mickie’ camera on a lighting column

### Illuminated Guard Posts

- Illuminated guard posts (IGPs) should only be used on central islands in the carriageway. Although plastic IGPs are commonly used, the use of *externally* up-lit, black metal ‘hoop’ guard posts is encouraged as a more aesthetic alternative.
- Metal hoop guard posts can be considered for many locations, particularly where the signs are less vulnerable to vehicular damage; quiet residential streets, wide traffic islands as well as environmentally sensitive areas.
- A cast iron bollard with a reflective strip or circular disc (150mm diameter) should be used in all other situations, such as on build-outs.
- For more details on metal hoop IGP specification, refer to Camden Lighting Policy or contact the Lighting Team.



Externally illuminated metal hoop ‘keep left’ sign

### Lighting with Traffic Signals

- Where the opportunity arises to completely replace and rewire all traffic signals and lighting in a road, these functions can be safely combined onto the same columns. This is very expensive but would greatly reduce street clutter.
- The new standard main road lighting column is designed to cope with dual signal and lighting functions where funding permits such a large-scale project.
- See Camden Lighting Policy for more details.



Combined lighting and traffic signals in Oxford Street

# 4.09

## Guardrail

- The purpose of guardrail is to guide pedestrians to safer crossing points, on busy roads. It is also guides the visually impaired, and is used as a stability aid by people with poor balance.
- Over the past four decades (prior to controlled parking) guardrail was used excessively, benefiting traffic flow and increasing traffic speeds (the ‘funneling’ effect).
- When guardrail causes unnecessary obstruction and diversion, ‘jaywalking’ often occurs, where people walk ‘outside’ guardrail to avoid being penned in.
- Be aware that guardrail reduces the width of *clear* pavement, (section 3.01, Footway Widths).
- When designing a new crossing, follow pedestrian desire lines as much as possible to eliminate the need for new guardrail.

### Appearance

- When installing new guardrail, ‘Folkestone’ (ornamental) posts should be used, combined with high visibility panelling (e.g. Visirail or Optirail).
- Other styles of guardrail should only be used to match existing street furniture.
- The correct ‘panel plans’ of Visirail or Optirail (or approved equivalent) should be chosen according to junction layout, traffic speed and the angle of vehicular approach. See details in the Highway Works Contract.
- Guardrail must be galvanised with black powder coating or paint finish.



Detail of Folkestone guardrail



Folkestone guardrail with ‘Visirail’



Bollards with railings

- Bollards with joining railings can be used where guardrail is not required, but pedestrian 'guidance' would help.
- Consider the casualty record for a site when investigating guardrail removal or retention. A safety audit should also be carried out.

### Guardrail Removal

- Short lengths of guardrail, i.e. 1 or 2 panels, as these are easily and frequently 'bypassed' by pedestrians;
- Where crossings are altered to closely follow pedestrian desire lines, negating the need for guardrail;
- On the 'downstream' side of a crossing point, where traffic conditions allow;
- Where traffic speeds have been lowered, making it safer for pedestrians to cross away from the designated crossing;
- Where most people are unlikely to cross anyway.

### Guardrail Installation or Retention

- Short lengths of guardrail outside school gates in busy roads or where separate footpaths join the footway of a busy road at right angles;
- Where the crossing point deviates significantly (several metres) from the pedestrian desire line;
- Where the crossing point is very difficult to navigate, for a visually impaired person;
- Where there are divided opinions, guardrail can be removed incrementally from a site, accompanied by studies on changing pedestrian flow;
- Refer to various DfT studies on guardrail use for more information.



People 'jaywalking' around guardrail



# 4.10

## Bollards

- Bollards have many uses: protecting pedestrians from overrunning vehicles at street corners; preventing pavement parking; protecting unstrengthened paving and closing roads to vehicular traffic.
- Uniformity and consistency in bollard type should be achieved through bollard replacement, following local precedent.
- When a bollard is no longer needed, it should be removed to increase *clear* footway widths, particularly for the visually impaired.
- Bollards should be positioned 0.45m from the kerb edge to bollard face. Bollards should not be placed where they obstruct pedestrian desire lines, and must be relocated or removed if causing obstruction, in accordance with the DDA1995.
- See Highway Works Contract for more details.



Hampstead bollard in the Vale of Health

### White Banding

- To help the visually impaired, two white bands (up to 150mm) should be painted on bollards that are:
  - Close to crossing points;
  - Located on busy pedestrian streets;
  - Causing obstruction on a desire line.
- In exceptional circumstances, (i.e. when a bollard is listed, or where the bollard design makes double banding impractical), a single band may be used.
- Use the bollard moulding to define the white banding.



Camden bollard with white banding

### Bollard Removal

- When unstrengthened paving is replaced by strengthened paving, (Boulevard standard).
- In areas under parking control, where bollards are no longer needed to stop footway parking and the footway has been strengthened.
- At crossings (e.g. raised entry treatments) where bollard use can be rationalised to just one bollard either side of a crossing point.

### Bollard Retention or Installation

- At junction corners that are consistently overrun by vehicles, particularly at speed tables and entry treatments.
- Abutting the ‘rear’ of granite wheel deflectors or bell bollards, to highlight their location to the visually impaired.
- Where short-term illegal footway parking would cause serious disruptions in traffic flow.
- To prevent vehicle access where roads are ‘closed’ to through traffic.
- In front of shops suffering from persistent ‘ram-raiding’.



St Pancras bollards with white banding in Reed's Place

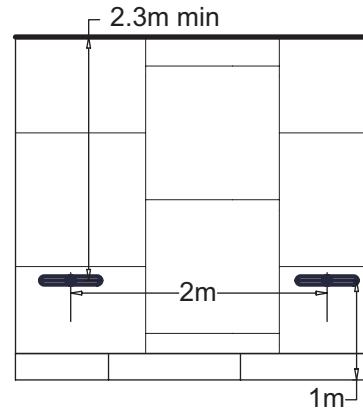
### Bollard Type

- Several types of bollard are used in Camden. Bollards should be chosen according to prevalent bollard type for the area and strength requirements.
  - **Hampstead bollard:**  
To be used in old Hampstead borough area only: not strong – very liable to shear. Black finish required.
  - **Camden bollard:**  
To be used in Camden Town area only; fairly strong, but still liable to shear. Black finish required.
  - **St Pancras bollard:**  
To be used throughout old St Pancras borough and all other areas of Camden, particularly when a stronger bollard type is required; very strong – not prone to shearing. Black finish required.
  - **Bell bollard:**  
To be used where there is a serious problem of overrun on a corner, preferably installed with a tall bollard immediately behind.
  - **Wooden bollard:**  
Use only in semi-urban settings and replace with cast iron bollard in urban areas. Fairly strong – resistant to minor knocks.
  - **Concrete bollard:**  
Must not be used – remove and/or substitute; ugly, and hazardous to the visually impaired.

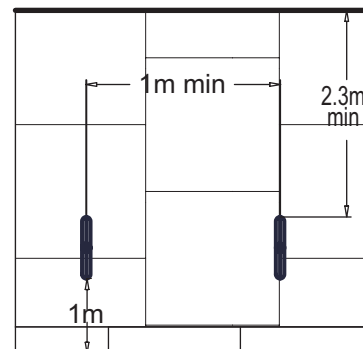
## 4.11

## Cycle Parking

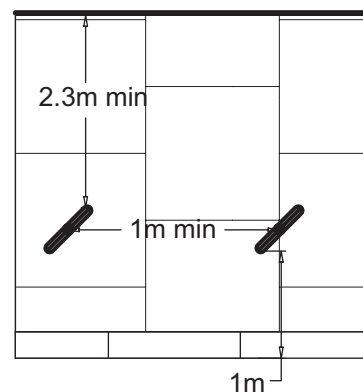
- Provision of cycle parking actively encourages cycle use and should be installed wherever demand is evident, (near shops, leisure facilities, community centres, etc.) and where space allows.
- Sheffield type stands (1m length) should be used.
- Black plastic coating is preferred, though black powder coating can be used as an alternative.
- Care must be taken to ensure cycle stands, with bicycles attached, do not block the pavement or cause an obstruction. See section 3.01, Footway Widths.
- Allow for wheel (and handlebar) ‘overhang’ of roughly 0.5m either side of (and parallel to) a cycle stand.
- Stands can be arranged ‘parallel’ (preferred), ‘echelon’ or ‘perpendicular’ to the kerb depending on the width of footway available. See diagrams for minimum dimensions within the footway.
- If the best location for cycle stands is on private land, try to negotiate with the owners, with all costs and maintenance covered by the Council.



"Parallel" cycle stands



"Perpendicular" cycle stands



"Echelon" cycle stands

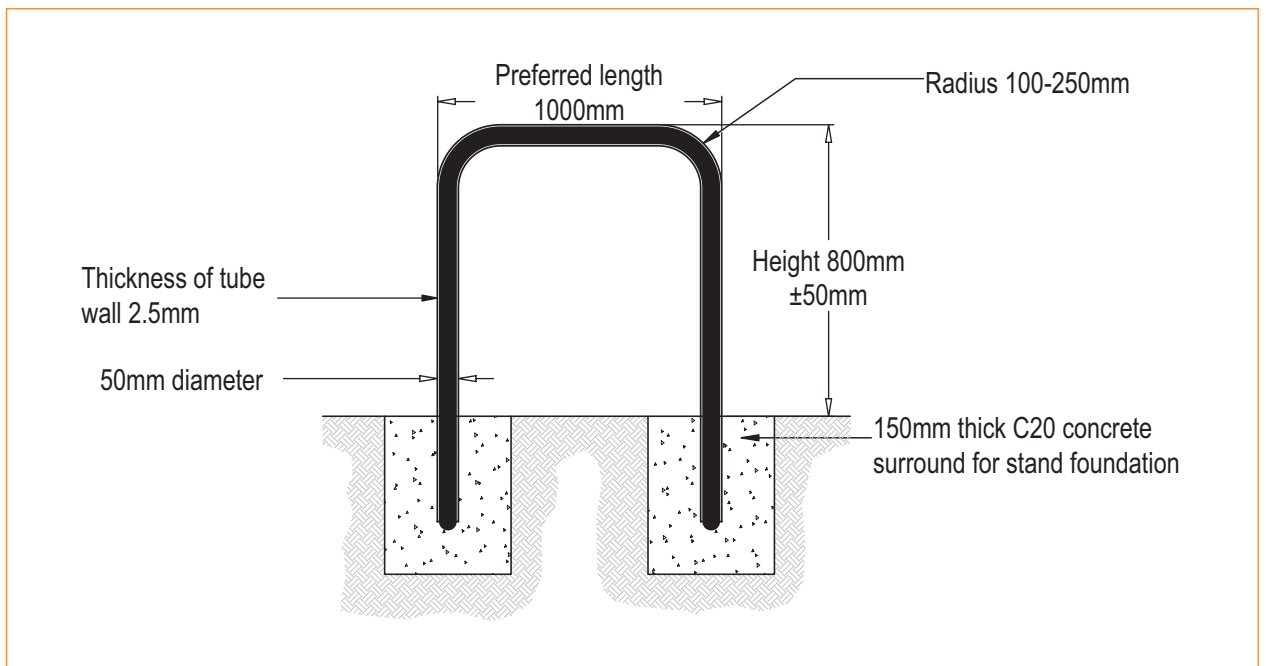
Options and dimensions for cycle parking layout



Perpendicular cycle parking in Queen Square



Parallel cycle parking neatly situated between trees



Cycle stand installation detail

# 4.12

## Bus Shelters

- As part of the Mayor's Transport Strategy, TfL have a rolling programme to install a bus shelter at every bus stop, wherever practicable.
- For Camden, there are two main manufacturers:
  - **Adshel**
    - Contracted by London Bus Services (who collect the advertising revenue).
    - Designs without panel advertising are available.
    - 'Insignia' range normally used, with 'City Heritage' used in exceptional circumstances.
  - **JCDecaux**
    - Private company offering five shelter designs.
    - Panel advertising on all shelters (revenue collected by Camden).
    - Can only be installed on wide footways.
- All shelters should be painted black, with seating provided.
- Refer to the following documents for more information:
  - LBI Partnership, Bus Stop Layouts for Low Floor Bus Accessibility, June 2000 (for correct layout of shelter, flag and road markings);
  - TfL, Bus Stop Layout for Articulated Buses, July 2002.

- Preferred shelter orientation is carriageway facing, at back of footway. However, the proximity of access gates, services (shelter footings: 0.45m), street furniture and bus boarders should be taken into account, when deciding bus shelter orientation.
- Advertising panels generate revenue but should not be installed in narrow footways or crime 'hot spot' areas as they block views down the footway.
- A cantilever shelter (from Adshel) is preferred where the footway width is tight. Clear footway width must be greater than 1.8m, or 3m in busy streets. Side panels can be added if site is exposed.



Cantilever bus stand in Chalk Farm Road

## Advertising & Publicity

- Street advertising should be kept to an absolute minimum in all locations.
- Commercial advertising must not be placed on street furniture.
- Any promotional or educational advertising used by the Council must be erected with a clear time limit, with budget set aside for removal at the end of the initiative.
- Illuminated footway advertising boards, such as those produced by JCDecaux, must not be introduced. Any existing sites should be reviewed to ensure adequate footway widths are maintained and sightlines are protected.
- Advertising panels in bus shelters must only be introduced where footway widths allow and sightlines are maintained along the footway. See section 3.01, Footway Widths.

### Anti-flyposting

- To discourage illegal flyposting and stickering, low profile stippling can be added to metal furniture, giving a sandpaper texture. The use of high profile stippling (Artex texture) is not encouraged.
- The colour of the low profile paint should match the surface beneath.
- On brushed steel furniture, a sacrificial anti-flyposting paint can be used, though this needs to be reapplied every few years.



Temporary promotional advertising for Boulevard Project

# 4.14

## Street-Trading Stalls

- As well as formal markets, there are also miscellaneous street-trading stalls throughout Camden. They can provide interest and positive activity on the streets, but can also have a negative impact if poorly designed.
- Stalls must only be located where there the remaining paving width is sufficient for existing pedestrian flow.
- Locations of new kiosks must be approved by Engineering Services to ensure vehicular sightlines are protected.
- Though the vending purpose of a stall largely determines stall design, the materials and overall appearance must be in keeping with the surrounding streetscape.
- The use of corrugated iron and wood must not be used for any new stalls.
- Adequate sized base-plates must be added to the stall 'feet' to avoid damage to the footway.
- Colours should be discreet and the size of fascia writing should be kept in proportion to stall size.
- The trading area must not exceed the dimensions specified in the licence (usually 3.25 x 1.25 x 3.25m), unless otherwise agreed by the Council.
- Stalls must be easily moveable when any anchoring mechanism is released.
- Street Trading Team (Consumer Protection) must approve each stall design prior to trading and can provide further guidance on request.



Fruit stall in Islip Street

## Seating

- Seating helps create a 'sense of place' and is invaluable for increasing mobility among older people by providing places to rest. Seating is also highly desirable near office buildings for worker 'breaks'.
- Seats should be located where they contribute to the street scene or at the top of hills, but must not cause obstruction to the footway.
- When introducing new seating, try to match to existing seat styles or materials, otherwise choose a style that suits the architectural heritage of the area.
- Try to use wooden materials where people are likely to be seated for some time.
- Central arm rests or dividers should be used to discourage anti-social behaviour.
- Seating can be provided informally by adapting or adding to existing street furniture. For example, adding a wide flat surface on a low wall within a pedestrian area.
- If possible, place any new seating in sunny areas or a location with a view.
- A litterbin should be placed near all new seating.



Wooden seat at the top of Haverstock Hill



Cast iron bench in the Belsize area



# 4.16

## Litterbins

- Litterbins help keep busy streets tidy and should be placed at regular intervals down a road.
- Particular locations may require additional litterbins,
  - close to fast food shops;
  - seating areas;
  - recycling facilities;
  - bus stops;
  - tube and bus stations;
  - leading up to school gates.
- All new litterbins must be plain black plastic, with 'black-on-white' Camden logo.
- Heavy-duty plastic (polypropylene) bins with a concrete 'anchor', should be used in areas that are prone to vandalism.
- Contact Camden Street Environment Services for further advice on bin design and provision.



Heavy duty bin with concrete anchor



Standard black plastic bin in Camden

## Recycling Facilities

- Camden wishes to encourage recycling to fulfil our environmental responsibilities. On-street facilities complement 'home' recycling collection.
- Consider the following when locating recycling bins:
  - Place bins where there is maximum potential demand.
  - Bins should be situated so that pedestrian routes are not blocked, but access to them by foot (and by car) is quick and easy.
  - Easy 'servicing' and emptying of the bins by collection vehicles must be possible.
  - Try to minimise the potential for recycling bins to become 'crime hot spots', by improving nearby lighting or locating them near existing lighting.
- All recycling bins should be black in colour with labels advising their correct usage.
- Signs should be placed at each recycling site, advising people of good practice when using the bins, along with relevant contact numbers to report any problems.
- A black litterbin should be placed next to the recycling bins.
- As part of a new build, a smart enclosure or 'indented' lay-by could be provided to accommodate the recycling bins, making them less visually obtrusive.
- Where space is tight, smaller recycling bins can be provided on street.
- For further advice on recycling bin design and provision, contact Camden Street Environment Services.



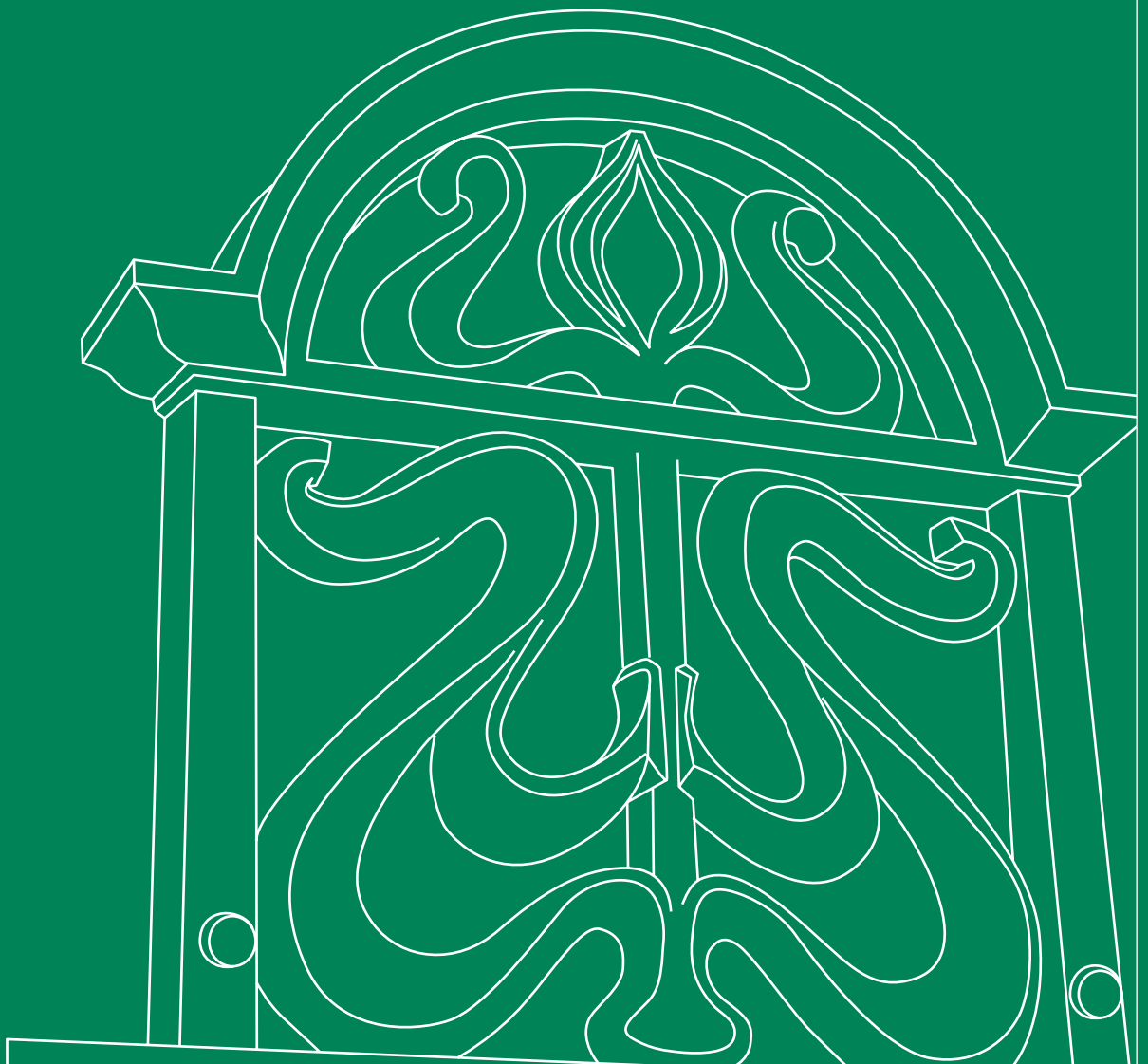
Recycling bins neatly placed in indented lay-by



On-street recycling for paper, plastic and drink cans

# Notes and Amendments

# Appendix



# Index

5.01 Bibliography

# Bibliography

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