



5 Palette of materials

5 Palette of materials

Introduction

A palette of materials and products has been developed for the TLRN. The palette reflects the consistent approach to the quality of materials and products across the TLRN. It embraces and therefore supersedes all previous streetscape advice and guidance by TfL's predecessor organisations.

Options are given where there is a potential for variation to respect local character. Design teams may recommend alternatives to the palette for use in special areas; otherwise, design teams will be required to use the palette.

Confirmation of special area status and the variation of the palette must be approved by TfL's Streetscape Review Group.

The street furniture items shown in the palette of materials shows design intent rather than specific products. The dimensional requirements are mandatory and have been specified on advice from TfL accessibility advisors. The design team should check specifications with manufacturers and select products that resemble the design shown.

Finishes

The following applies to all metal components of street furniture. This includes furniture on footbridges and in subways.

Colour:

Urban areas in central London (highlighted area on map):
RAL9005 (black) in matt micaceous iron oxide with an RAL7004 (signal grey) visibility band.

Other urban areas, suburban and suburban rural fringe areas:
RAL7004 (signal grey) or equivalent in matt micaceous iron oxide with a RAL9005 (black) visibility band.

RAL 9005
Black

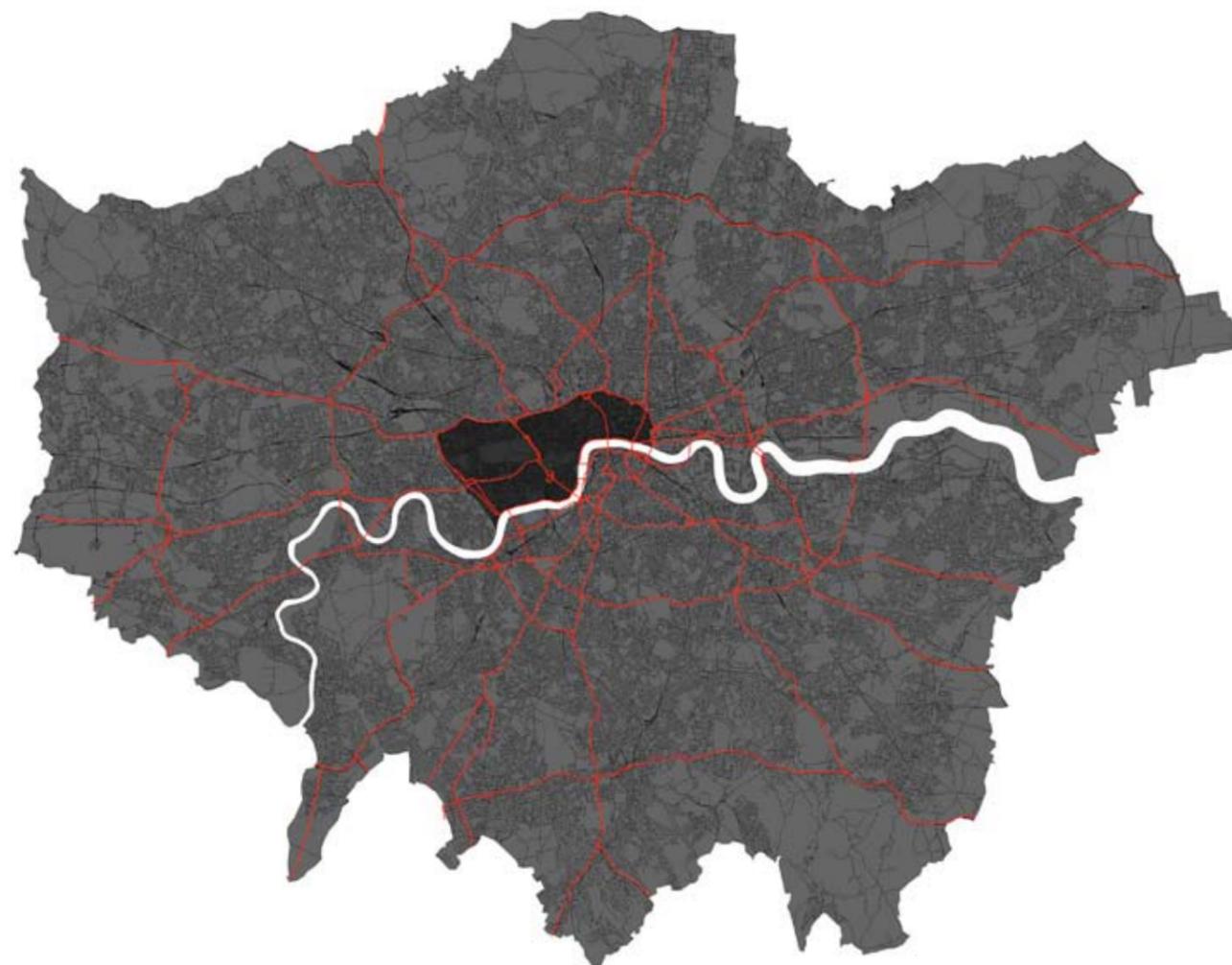
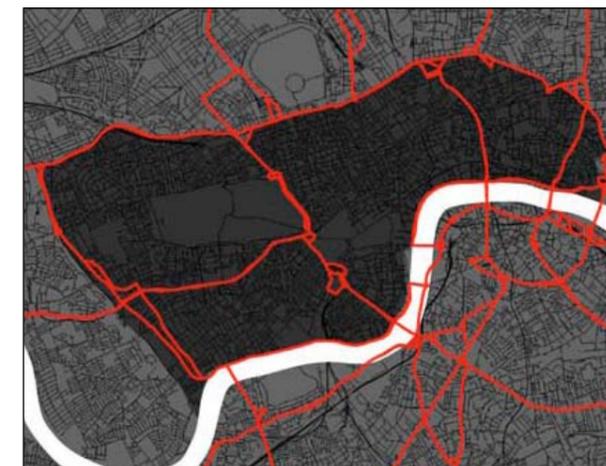
RAL 7004
Signal Grey

Visibility:

Visibility bands are required on all street furniture in areas of high pedestrian flows, with the exception of pedestrian guardrails, seats and wooden bollards.

Special finishes and coatings:

Low profile, clear, anti-poster finish is recommended in areas where fly-posting and graffiti are problems. This coating should be applied up to a height of 3000mm on street lighting columns.



Material	Options	Streetscape Guidance references
Footway		
Concrete flags 900x600x65mm Grey (natural)	Yorkstone flags 900x600x65mm Fine Picked	TfL/SG01, SG04, SG05, SG06, SG07, SG08, SG09, SG10, SG11, SG12, SG13, SG14, SG15, SG16, SG17, SG18, SG21, SG24, SG25, SG26, SG28, SG29
.....		
Asphalt		
Tactile Paving		
Concrete blister paving 400x400x65mm Red at controlled crossings	Concrete blister paving 400x400x65mm Grey (natural) in conservation areas	TfL/SG01, SG02, SG03, SG04, SG05, SG06, SG07, SG08, SG09, SG10, SG11, SG12, SG17, SG18, SG22, SG25, SG26, SG27, SG28
.....		
Concrete blister paving 400x400x65mm Charcoal grey at uncontrolled crossings		
.....		
Concrete ladder paving 400x400x65mm Charcoal grey		
.....		
Concrete Tramline paving 400x400x65mm Charcoal grey		
.....		
Concrete corduroy paving 400x400x65mm Charcoal grey		
Side road entry treatments		
Asphalt With kerbs as restraints	Asphalt No kerbs as restraints	TfL/SG08, SG09, SG10, SG11, SG28



Concrete flags



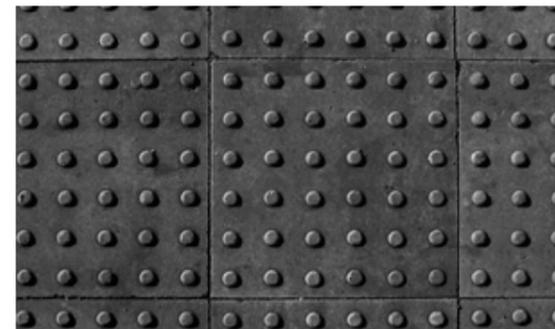
Yorkstone flags



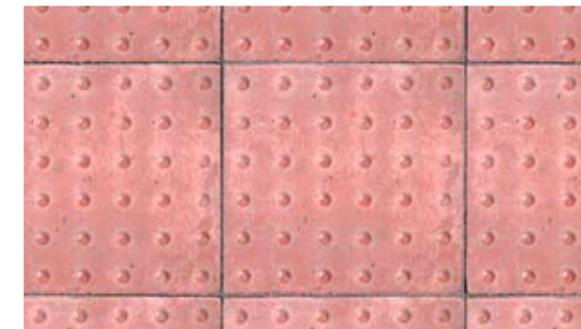
Granite flags



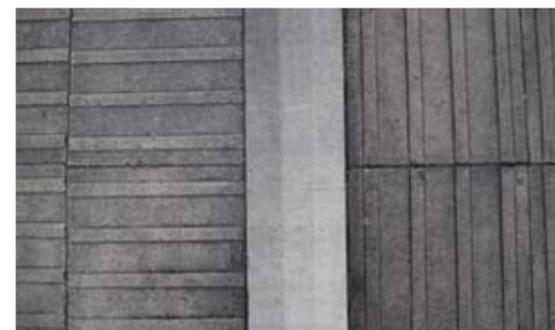
Asphalt footway



Blister paving



Blister paving



Ladder and tramline with raised delineator



Corduroy paving

Material	Options	Streetscape Guidance references
Kerbs		
150mm granite kerb Fine picked straight and radiussed Silver grey at crossings as required	150mm concrete kerb Straight and radiussed	Kerbs and drainage, TfL/SG01, SG06, SG07, SG08, SG09, SG10, SG12, SG13, SG14, SG19, SG23, SG24, SG25, SG26, SG28, SG29
300mm granite kerb Fine picked straight and radiussed Silver grey at crossings as required	300mm concrete kerb Straight and radiussed	
Silver grey fine picked at controlled and uncontrolled crossings		
Granite safety kerb Shaped granite kerbs and other specials	Concrete safety kerb	Kerbs and drainage, TfL/SG25 At-grade pedestrian crossings, TfL/SG02, SG03, SG19, SG20, SG27
Cycle tracks		
Asphalt with green pigmentation (BS381C – Colour 267 deep chrome green) adjacent to asphalt footway		Cycle lanes and cycle tracks, TfL/SG04, SG05, SG10, SG11
Asphalt – no pigmentation adjacent to concrete flag footway		
Concrete raised delineator blocks 400x200x65mm, grey (natural)		
Cycle lanes		
Asphalt with green pigmentation (BS381C – Colour 267 deep chrome green)		Cycle lanes and cycle tracks
Asphalt – no pigmentation		
Shared surfaces		
Asphalt	Paving flags	Cycle lanes and cycle tracks, Footway surfaces, TfL/SG04, SG05, SG10, SG11
Bus Lanes		
Asphalt with red pigmentation (BS381C – Colour 1434 Venetian red)	Asphalt – no pigmentation	Bus lanes



150mm granite kerb



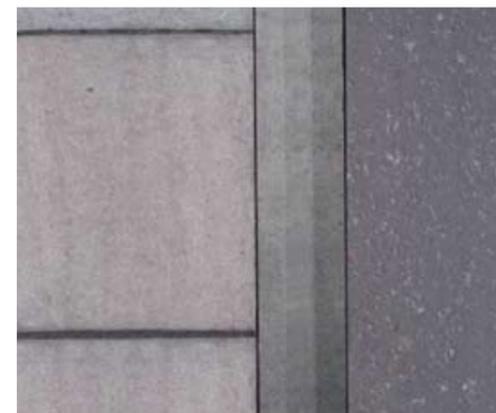
300 mm granite kerb



Granite safety kerb



Radiussed granite kerb



Black cycle tracks



Green cycle tracks

Seats

Seats are to be of a simple contemporary design which meets the dimensions shown this must include a bold side profile.

The dimensional requirements are mandatory and have been specified upon advice from TfL accessibility advisors.

Seats must have armrests of circular cross-section.

Armrests may be omitted from ends of seats to aid wheelchair users or parents with pushchairs. The ends of armrests must be rounded if not connected to the seat.

Seat supports may vary but must not have visible base plates or extend beyond the profile of the seat to create a trip hazard.

Timber is preferred but metal alternatives may be appropriate in some areas. Other sustainable materials will be considered as an exception. Timber must be accredited to the FSC standard or equivalent.

References

Department for Transport:

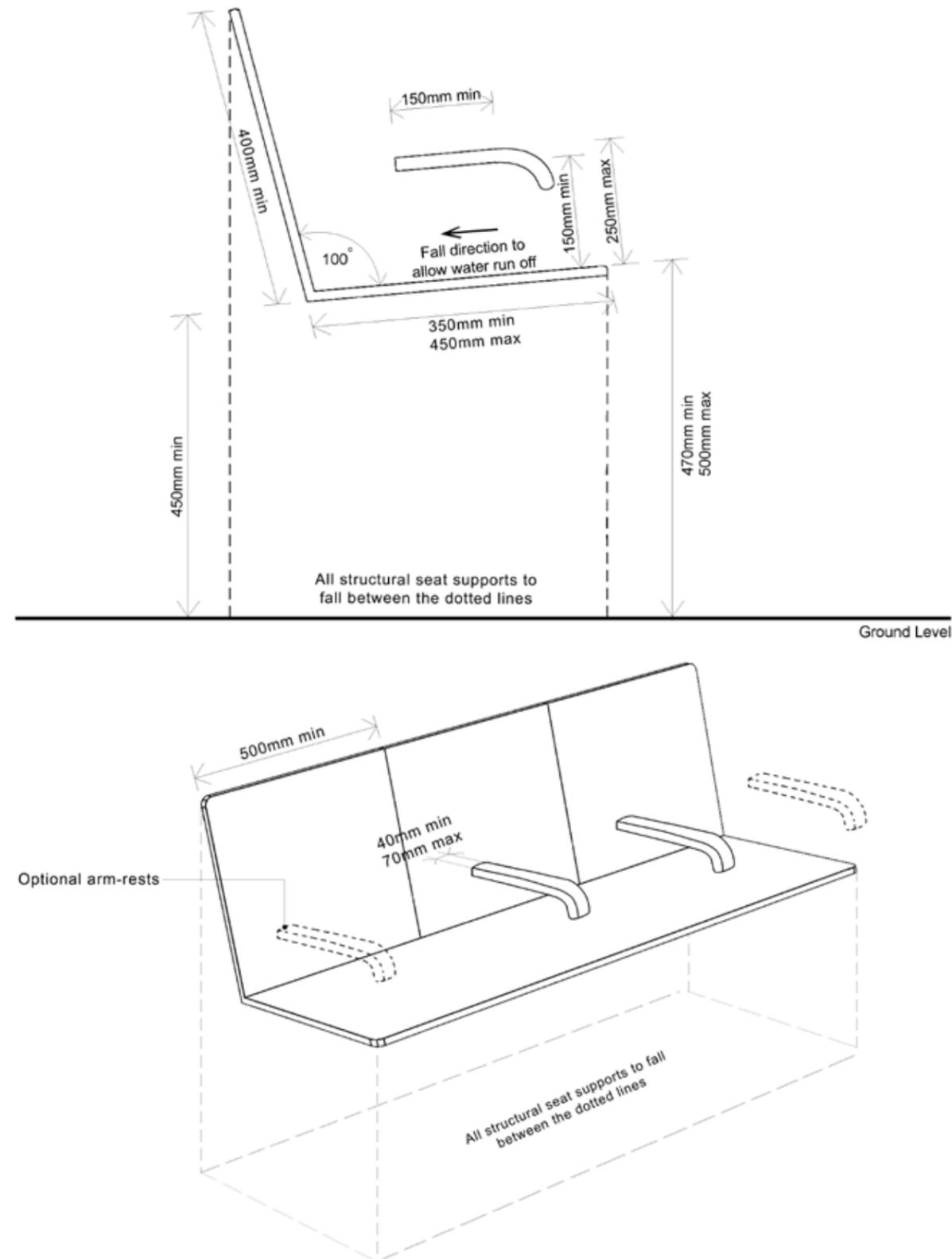
- Inclusive Mobility – A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure, 2002

Streetscape Guidance:

- Technical guidance: Street furniture, Seats

Streetscape Guidance details:

- TFL/SG15 and SG16





Street lighting

Luminaires:

All luminaires must meet the performance requirements of BS 5489-1 and BS EN 13201

TfL intends that luminaires should be of a simple design with smooth lines and slim profiles. The colour of the luminaire housing should match the column.

Those illustrated represent those which currently meet performance requirements and are closest to TfL's aspirations. The appearance of option A is preferred.

Columns:

Tapered (preferred) and standard columns are both acceptable on the TLRN.

Visibility bands may be required in areas of high pedestrian flows.

References

Streetscape Guidance:

- Technical guidance: Street furniture, Street lighting

Streetscape Guidance details:

- TfL/SG02, SG03 and SG23

Cycle parking

Cycle parking stands are to be 'Sheffield' type, usually incorporating a tapping rail.

Widths between stands must be a minimum of 1000mm (ideally 1200mm). Cycle stands must be a minimum of 600mm from the kerb edge.

Refer to Streetscape Guidance details TfL/SG15 and TfL/SG16 for bicycle parking and paving flag alignments which minimise cuts to paving flags.

Options:

- Nylon coated with visibility band
- Stainless steel with visibility band
- Galvanised steel with visibility band (where appropriate and by agreement with Streetscape Review Group)

References

Streetscape Guidance:

- Technical guidance: Street furniture, Cycle parking facilities

Streetscape Guidance details:

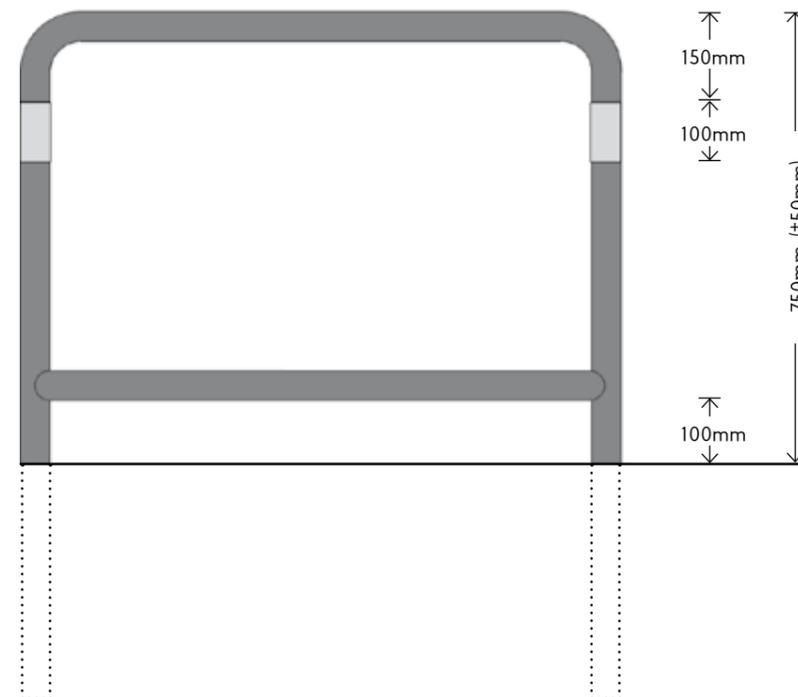
- TfL/SG15 and SG16

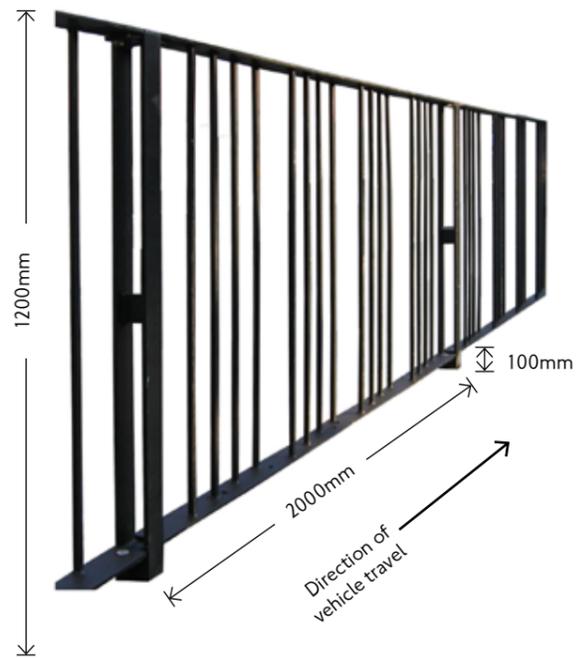


Cycle stands in black

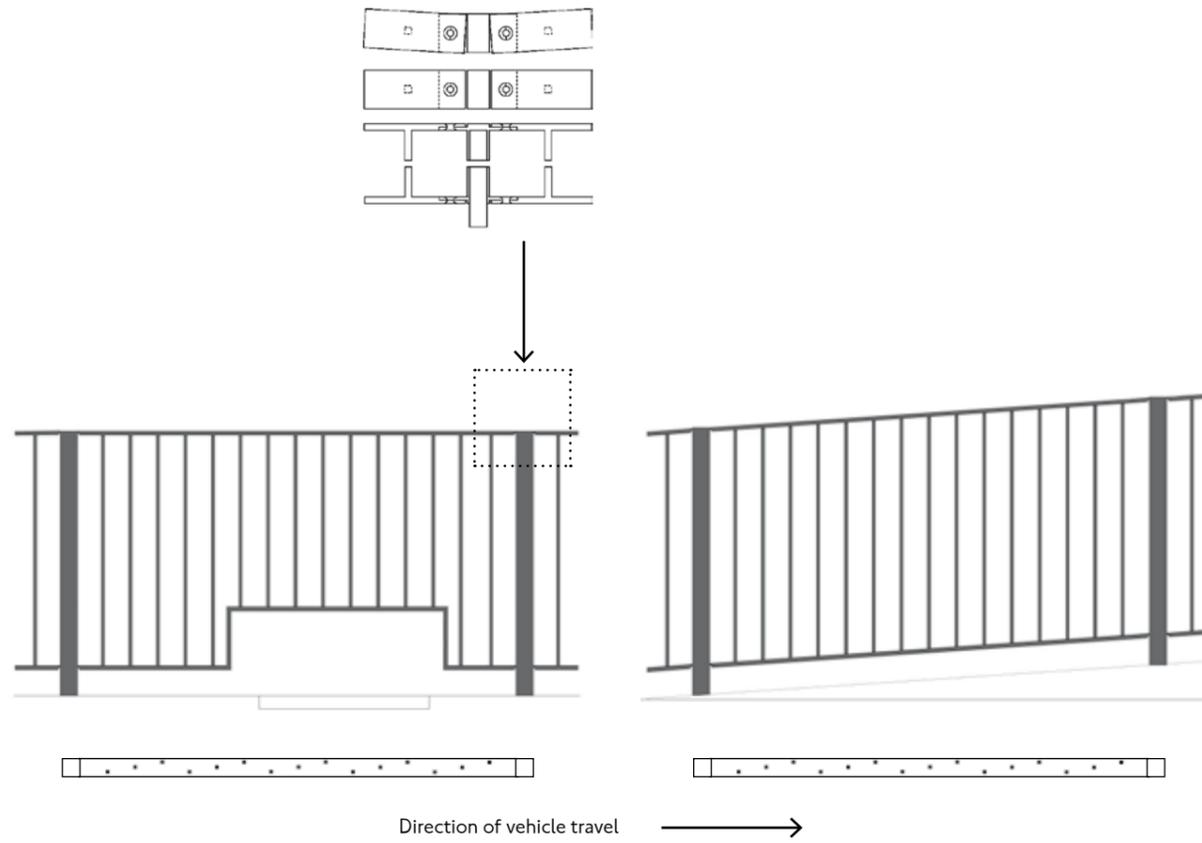


Cycle stands in grey





Pedestrian guardrail



Guardrail over inspection cover

Guardrail on inclined footway

Pedestrian guardrail

Guardrails must contain offset verticals to enhance visibility of pedestrians.

Panels must be screw-fixed to posts, not welded, to facilitate replacement.

All fixings to be countersunk and flush.

References

Department for Transport, Highways Agency:

- Design Manual for Roads and Bridges, Volume 2, Section 2, Part 8, BD 29/04 Design Criteria for Footbridges
- Design Manual for Roads and Bridges, Volume 5, Section 2, Part 4 TA 91/05: Provision for Non-motorised Users

Streetscape Guidance:

- Technical guidance: Street furniture, Pedestrian guardrails

Streetscape Guidance details:

- TfL/SG03, SG07, SG15 and SG27

Pedestrian direction signs

Where pedestrian or cycle routes cross the TLRN, borough designs for pedestrian direction signs may be appropriate to aid legibility.

For stand-alone pedestrian direction signs on the TLRN, or where borough designs are not considered appropriate, signage is to be of a simple contemporary design as shown.

All pedestrian direction signs erected on the TLRN must comply with the Traffic sign regulations and general directions.

The minimum clearance on cycle routes is 2400mm and on equestrian routes is 2800mm.

References

Department for Transport:

- Traffic Signs Manual, Chapter 1

Department for Transport, Highways Agency:

- Design Manual for Roads and Bridges: Volume 6, Section 3, Part 5 TA 90/05: The Geometric Design of Pedestrian Cycle and Equestrian Routes

Transport for London:

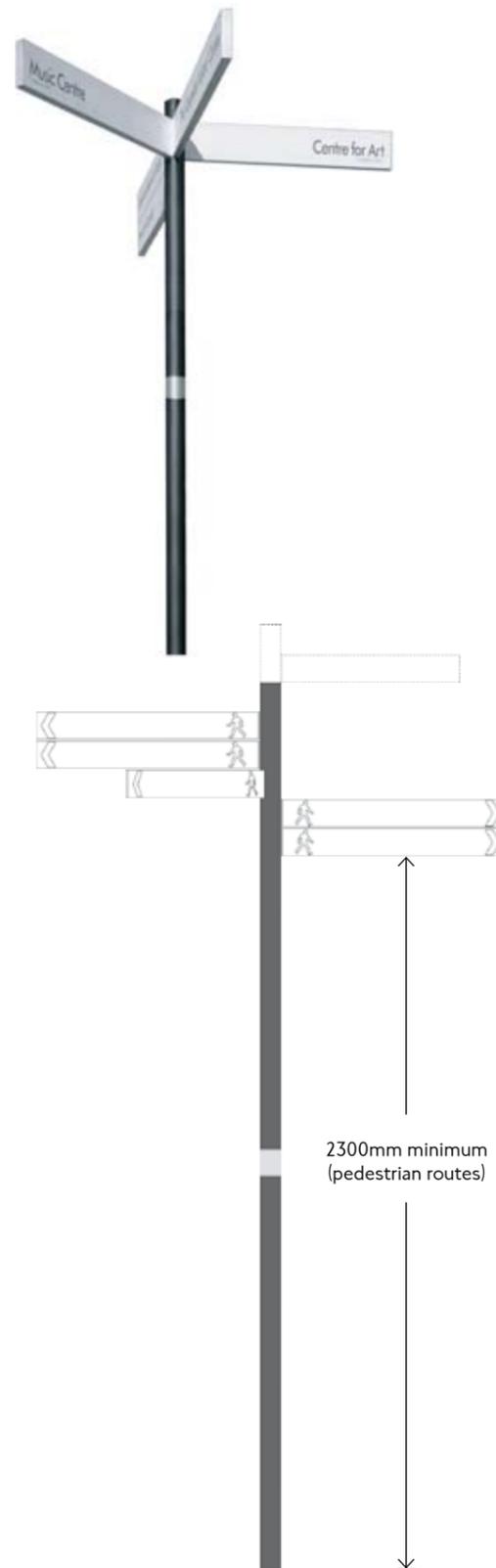
- London Cycling Design Standards, 2005

Streetscape Guidance:

- Technical guidance: Street furniture, Pedestrian direction signs

Streetscape Guidance details:

- TfL/SG15



Legible London

Legible London is a spatial wayfinding system which attempts to break London down into walkable areas and hence develop mental mapping. The key principles of this approach are:

- One system to learn and remember
- Supplying the right amount of information at the right time
- Connecting areas, regions and transport systems
- Fewer signs
- An effective high quality system which benefits from economies of scale in purchasing and maintenance

Spatial wayfinding offers the user more interpretive information and provides flexibility in an urban setting.

The Legible London project uses progressive disclosure to support the development of mental mapping and hence confidence to navigate journeys on foot.

The power of the system lies in a consistency of approach to area and neighbourhood nomenclature across London.

As the system evolves the data would be made available to authorities and developers to ensure consistency.

However, as Legible London is a wayfinding tool, it is not intended that the system would censor the provision of localised information (eg, town centre shopping maps) where it is more timely or relevant to produce this at a very local scale.

Further work on the prototype and subsequent pilots will establish the interfaces between such localised information and the framework of walking wayfinding.

Further information on the Legible London project can be obtained from walking@tfl.gov.uk

Traffic bollards

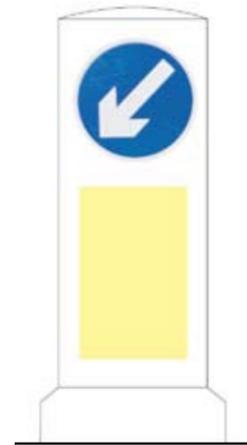
Option A (externally illuminated) is preferred design for urban areas. Refer to Streetscape Guidance details TfL/SG20 for fixing details.

Option B (internally illuminated) is more appropriate for higher speed routes in suburban and suburban-rural fringe areas.

Option C (unlit) is retained as an option to be used within 20m of a traffic signal, provided that the bollard faces in the same direction and is on the same island as the traffic signal.



Option A



Option B
(Must be used on high speed road)



Option C

References

Statutory Instruments:

- Traffic Signs Regulations and General Directions 2002

Department for Transport:

- Traffic Signs Manual

Streetscape Guidance:

- Technical guidance: Street furniture, Traffic signs

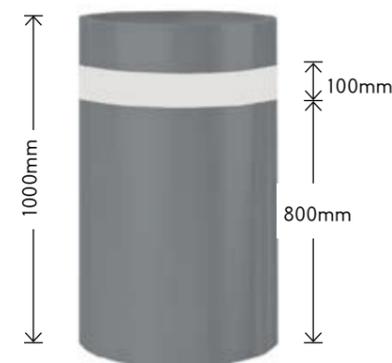
Streetscape Guidance details:

- TfL/SG02, SG03, SG04, SG20 and SG27

Litter bins

Litter bins are usually provided by local authorities.

TfL require litter bins placed on the TLRN to be robust, functional and of a simple design as shown, although variations in terms of size and style are acceptable. In some areas, bins may also have to be blast-proof if recommended by security advisers.



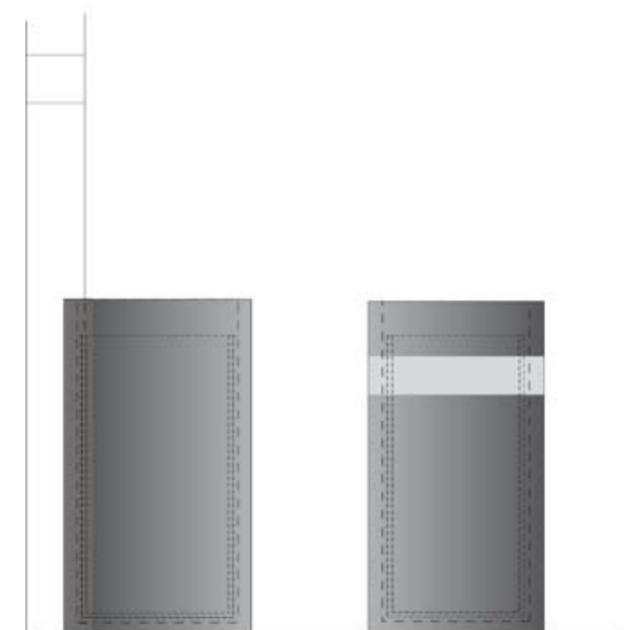
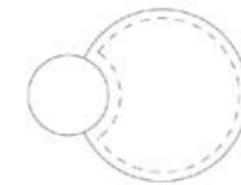
References

Streetscape Guidance:

- Technical guidance: Street furniture by third parties, Litter bins

Streetscape Guidance details:

- TfL/SG15 and SG16



Bollards

Bollards are to be tapered.

Diameter and fixing detail will depend upon material, safety and security requirements.

Wooden bollards in suburban and suburban rural fringe areas for grassed verges. Visibility bands are unnecessary on bollards on grassed verges.

Timber bollards must be made of sustainably sourced timber.

Bell bollards may exceptionally be required where over running is a problem at side road junctions. In isolation, bell bollards present a trip hazard and must only be used in conjunction with other street furniture (eg, high visibility post)

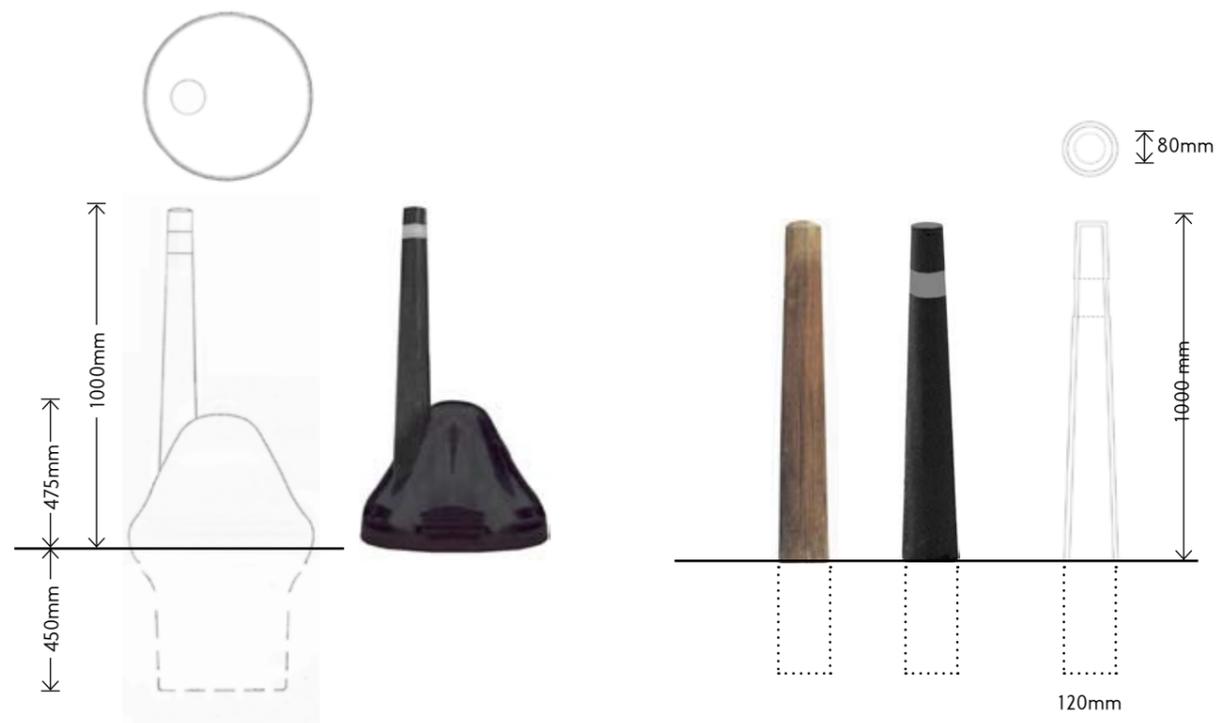
References

Greater London Authority:

- The GLA Group Responsible Procurement Policy

Streetscape Guidance:

- Technical guidance: Street furniture, Bollards



Streetscape components

Introduction

When applying the key design principles to the TLRN, there are certain streetscape design objectives that are common to all character areas. By looking at the street as a series of inter-related components, these common design objectives can be applied across a typical street.

Detailed advice, including general location principles, is given in the Technical Guidance section.

The highway boundary

The quality of the highway boundary, adjacent buildings, landscapes and land uses has a significant visual impact on the TLRN. If they are of poor quality, TfL should endeavour to enhance the streetscape by:

- Ensuring that boundaries within their ownership are well designed and maintained
- Working with local authorities and landowners to improve the quality of environment outside the highway boundary
- Taking account of safety and security issues in consultation with security specialists

When carrying out boundary works, the design team should also take account of views from the TLRN to landmark buildings and surrounding landscapes.

The carriageway

The carriageway makes up a large visual component of the TRLN and therefore has a significant visual impact on the streetscape. The design team should ensure that:

- The visual simplicity of the carriageway is maintained by keeping different coloured surfaces to the minimum required for the effective demarcation and operation of bus and cycle lanes

The kerb

The design and quality of kerbs has a substantial effect on the streetscape and requires careful attention. The design team should ensure that:

- The kerb alignment is consistent and follows smooth and flowing lines to provide strong definition between footway and carriageway. Kerb buildouts and the creation of service or parking bays should relate to the building form and function
- Kerb lines should be formed with radiused kerbs in preference to mitred kerbs
- Kerbs should be carefully detailed and, where necessary, special elements designed and ordered

The footway

Pedestrian access along footways should be facilitated by:

- Maximising footway space where possible and when appropriate
- Ensuring high quality surfaces with consistent joint alignments, no unsightly mortar infills and simple combinations of materials
- Ensuring high quality footways and well drained surfaces, free of trip and slip hazards
- Creating a legible hierarchy of paving materials that visually locates pedestrian, cycle and vehicle priority areas
- Continuing footway paving material across vehicle crossovers

Highway-related street furniture

When locating highway related street furniture the design team should ensure that:

- The amount of signage to enforce the regulations is sufficient but is not excessive in terms of numbers and size of signs
- Key views and landmark buildings are not obstructed by poorly located street furniture, unless there is an unavoidable safety or security need
- Clear pedestrian routes are maintained by removing redundant furniture and locating new furniture outside pedestrian desire lines
- Clutter is reduced by combining elements of street furniture, such as signals and signs on street lighting columns, and by mounting street equipment on buildings or structures wherever it is safe and acceptable to do so
- The highway street furniture elements are co-ordinated with pedestrian street furniture and other streetscape elements
- Street furniture in central reserves is kept to a minimum
- The scale and bulk of highway street furniture is minimised to reduce visual intrusion where it is safe to do so
- New street furniture is readily detected by visually-impaired pedestrians, through the effective use of contrast

- The juxtaposition of TRLN and local highway authority street furniture on side roads is co-ordinated to minimise clutter and visual confusion
- The extent and visual impact of safety fences and barriers is reduced to the minimum required for safety and security to lessen visual impact and severance effects
- Street lighting does not undesirably spill into neighbouring residential properties or cause light pollution

Pedestrian related street furniture

When locating street furniture for the benefit of pedestrians, design teams should ensure that:

- Footways are not obstructed so that pedestrians of all abilities can move along the street independently and unhindered
- Pedestrian guard rails are only used where there is a proven safety requirement to ensure minimum visual intrusion and physical severance
- Pedestrian information and signage is provided where necessary on the TLRN to aid pedestrians to locate local facilities and public transport
- Seats are provided at regular intervals (50m is desirable) along the footway to assist less mobile people to use the streets more easily and to encourage the use of public space
- There is good quality lighting on the footway to improve the use of streets at night

Planting

When choosing plant species, the key considerations are the right species for the right place and user safety.

Design teams should refer to Connecting Londoners with trees and woodlands, a tree and woodland framework for London, March 2005 and Right trees for a changing climate, November 2007.

Design teams should take account of:

- Site conditions to ensure successful establishment and growth
- The surrounding landscape and its ecology to ensure the integration of planting schemes with the established vegetation and landscape character, using locally native species where appropriate
- The space available to allow trees in particular to develop to their mature size without adversely affecting adjacent properties
- The growth habit and maintenance requirements of the proposed species, taking account of operational health and safety requirements such as the need to prevent vegetation overhanging footways and cycleways

Street tree planting should take place where appropriate to reduce the apparent scale of the TLRN and visually enhance the streetscape.

To ensure the feasibility and long-term success of planting schemes design teams should:

- Obtain detailed information on underground services and structures before attempting to locate new street trees
- Co-ordinate tree planting with street furniture, allowing for future growth
- Carry out tests to ensure that the existing soil and subsoil conditions will support plant establishment and growth
- Ensure that maintenance access is possible and that resources exist to maintain the trees in the long term
- Take account of potential nuisance caused by leaves, fruits, insects and birds

Public transport facilities

To encourage the use of public transport TfL intends that:

- Bus stops are sensibly located and accessible
- Bus stops and shelters are fit for their purpose, durable materials are used and are well maintained
- Access to transport interchanges is integrated with the street

Crossing facilities

TfL intends to provide at-grade crossings of the TLRN in preference to footbridges and subways wherever possible and appropriate. Where safety and traffic priorities permit, the design team must ensure that:

- They are located with due regard for pedestrian desire lines and accessibility
- Adequate space is provided for the volumes of pedestrians and cyclists using the crossing
- The amount of pedestrian guardrails and other street furniture associated with the crossing is kept to the minimum required for safety

Where footbridges and subways across the TLRN have inadequate access for people with mobility impairment, or are of poor quality, the design team should:

- Design improvements to create a more pleasant and safe environment for the intended users
- Ensure there is adequate lighting and pedestrian signage

References

Greater London Authority:

- Connecting Londoners with trees, 2005
- Right trees for a changing climate, 2007