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11. Transport interchanges

11.1. Vision

11.1.1. The interface between a transport hub and the street is an essential part of the streetscape experience. It needs to provide a seamless journey and a clear transition for passengers using transport facilities, accommodate the needs of the station and demonstrate good practice streetscape design principles.

11.2. Street interchanges

11.2.1. The street almost always acts as an interchange zone, an area encompassing one or more interchange facilities creating a multi-modal hub, and public space. It needs to fulfil several functions to provide a clear transition for passengers. Interchange zones need to facilitate convenient and safe pedestrian movement between different transport modes and allow for the efficient operation of public transport services.

11.2.2. Stations within the context of Streetscape Guidance are defined as any transport hub used to access public transport, which may or may not include infrastructure located directly on the road network. This includes:

- Rail stations – London Underground, London Overground, Docklands Light Railway and Network Rail
- Bus stations – infrastructure which is provided on-carriageway
- Tram stops – operated by London Trams
- Piers – operated by London River Services or others
- Taxi ranks
- Cycle parking hubs

11.2.3. Our Interchange Best Practice Guidelines (2009) should be referred to as a general guide to improving quality and efficiency, and Station Public Realm Design Guidance (2015) referred to when defining the design approach for the station’s public realm. Streetscape Guidance should be referred to when detailing the materials and their
application from any station entrance that directly faces the street.

Station public realm

11.2.4. Stations and the spaces around them are important focal points for an area with the potential to become destinations in their own right, so any design should look to embrace the local character and sense of place, while providing a legible and consistent streetscape, linking effectively with the surrounding street network.

11.2.5. Not every station will include a forecourt, a defined area which connects the station entrance to the streetscape, however, where they do occur the following should be accounted for:

- The space should be flexible such that it can respond to daily trends in pedestrian flows and accommodate different uses at different times. This may include temporary uses of space during quieter periods. The station forecourt should work as a cohesive and legible whole, with clear sightlines and well-defined transport entrances
- Designers should consider the context, proportions of the space and the degree of enclosure, when selecting materials and placing furniture within the forecourt. Please refer to section High quality footways for further information
- Where retail units front on to the forecourt, frontages should be visually cohesive, with outdoor seating managed in designated licensed areas

Wayfinding

11.2.6. Information requirements vary depending on the passenger type and the stage in their journey. The provision of comprehensive and consistent wayfinding information across the interchange should be provided to assist navigation. Please refer to Station Public Realm Design Guidance (2015) for further information. Consideration should be given to:

11.2.7. Appropriate placement of transport infrastructure, such as bus stops, tram stops, kiosks and cycle hubs, to aid natural wayfinding and minimise the need for signage when onward travel infrastructure is located within a direct line of sight from an alighting area
- Where direct line of sight to an onward journey mode is not achieved, routes should be simple with signage provided at key decision points
- Rationalise signage to reduce clutter. Refer to Pedestrian wayfinding, Traffic signs and London Underground Signs manual (Issue 4, 2002) for further information

Footways

11.2.8. Surface materials can be used as a navigational tool and to communicate a change in use. A change in surface materials helps to demarcate the limits of the interchange zone or highlight where there will likely be a greater or different type of pedestrian presence. Each design response should be site specific and
consider its function, performance and context. The following examples are potential approaches to the treatment of the footway:

- A consistent approach to paving the footway in front of the station should be used to maintain visual continuity with the surrounding streetscape. Where designers are looking to extend forecourt paving across the footway SRG approval is required
- Non-standard surface materials require SRG approval but may be considered for use on the footway outside a station, if the design intent is to visually unify the street and interchange zone. This may be useful in larger forecourt settings where a consistency of material can reinforce the station setting and better relate to the surrounding architecture
- Footways should be designed to accommodate peak pedestrian flows, but be flexible so that they also work at quiet times. Refer to Pedestrian Comfort Guidance for London, 2010 for further details

**Carriageways**

- Special consideration to surface materials is required at interchange points due to frequent and heavy use. All materials and treatments must be robust and able to withstand anticipated use
- Clear delineation in surface materials and kerb heights are recommended in interchange zones between footways and carriageway. An upstand of 140mm is recommended
- Containment kerbs may be required where a safety audit has identified a risk of vehicle overrun on to the footway. Please refer to Kerbs for further information
- Signalised crossings should be provided on primary pedestrian desire lines at the entrance to the station to allow people less confident to cross. Please refer to Crossings for further information

**Street furniture**

11.2.9. Street furniture can be used to reinforce different public realm functions, particularly with regards to pedestrian movement: stationary activity can be encouraged by providing seating away from major desire lines; or trees can be used to reinforce primary walking routes towards the station.

11.2.10. The placement of street furniture on the footway adjacent to an entrance or forecourt area should allow for complex pedestrian movements, as pedestrian desire lines will likely not just be along the street. It should also be recognised that people will need more space to stop, orientate themselves and wait for people
• The standard Streetscape Guidance furniture placement design principles still apply (refer to Footway amenities and Safety and functionality), however, back of footway furniture should be carefully considered to ensure adequate permeability between kerb edge services, such as buses and taxis, and the station entrance. The placement of street furniture should not hinder maintenance activities.

• Large cycle hubs may be required to support station facilities and these should be sited in a convenient location which does not impinge on footway space. For normal cycle provision please see Cycle parking. Designers should consider how cyclists will access cycle parking facilities if not at the kerb edge, to ensure that they do not inadvertently create a shared space to the detriment of pedestrian movements. Cycle parking must not create a barrier therefore short strips of no more than six racks should be provided.

• Passenger information, street furniture and signage should all be coordinated in furniture zones, with structures or back of footway to minimise clutter.

Security

11.2.11. The approach to security should be to firstly design out the likelihood of crime through passive measures and good quality design. The layout should ensure good natural surveillance, be well-lit and promote a high sense of personal security by avoiding the creation of blind spots or dark corners. Careful design, selection and placement of street furniture can create passive measures that prevent and discourage crime from occurring without affecting the overall character of a place. All aspects of the design must be in compliance with Section 17 of the Crime and Disorder Act.

11.2.12. Overt use of CCTV can help in some situations to deter crime, but should not be relied upon in itself due to its relation to fear of crime. Cameras should be placed and merged with adjacent street furniture to minimise visual clutter. Refer to Traffic cameras and CCTV for further information.

11.2.13. Where security bollards are required other furniture such as reinforced seating should be considered to provide greater multifunctional value and help to reduce street clutter. Please note that where street furniture is intended to be used as a security measure, it must first be approved by the Centre for the Protection of National Infrastructure. Security bollards should be considered as a last resort where vehicle incursion may occur and carefully detailed to minimise their use. Refer to Barrier free footways for further information.

• Footways and waiting areas should be visually permeable to enable adequate passive surveillance.

Additional information

Transport for London:
11.3. **Transport mode specific design considerations**

11.3.1. The following section outlines mode specific design considerations that should be read alongside Station Public Realm Design Guidance.

11.4. **Rail interchanges**

11.4.1. A large number of major rail stations front directly on to the TLRN including London Euston, London King’s Cross and Waterloo, as well as numerous London Underground, London Overground, Docklands Light Rail and Network Rail stations.
11.4.2. Designing the interface of the street with these stations is crucially important to maintaining the quality and continuity of the streetscape at some of London’s busiest transport nodes.

**Detailed guidance**

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<td>11.4.3. There are several general approaches to surface treatments typically used at station entrances that treat the entrance as:</td>
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<td>11.4.4. An ‘entrance mat’ – using a visually different paving material directly surrounding the station entrance to highlight the entrance. This approach tends not to be used in new stations, but is commonly seen at stations that are listed or in a conservation area. If considering this approach please seek the approval of the SRG</td>
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<td>11.4.5. A distinct space – using a distinct urban realm treatment in the forecourt of the station to distinguish it as a separate space from that of the street, see image above. This approach can be extended across the footway or stop at the edge of the footway. If considering this approach please seek the approval of the SRG</td>
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<tr>
<td>11.4.6. Part of the street – using the same material as the footway up to and perhaps into the station entrance. This is a common approach when the station entrance is directly on the street and there is little or no forecourt space</td>
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<td>11.4.7. Streetscape Guidance seeks a consistent approach to footway paving as seen in High quality footways and Footway amenities. When considering an alternative approach please seek the approval of the SRG</td>
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11.4.8. Street furniture

- Station Public Realm Design Guidance provides detail on when and where it may be appropriate to locate street furniture. If street furniture will be included at the station entrance or forecourt, please follow the guidance set out in:
  - Ambience
  - Footway amenities
  - Safety and functionality

11.4.9. Large cycle hubs may be required to support rail station facilities and these should be located in a convenient location which does not on impede on footway space. Designers should consider how cyclists will access the cycle parking facility if it is not at the kerb edge, to ensure that they do not inadvertently create a shared space to the detriment of pedestrian movements.

**Additional information**

Transport for London:

- Station Public Realm Design Guidance, 2015
- Interchange Best Practice Guidelines, 2009
- London Underground Design Idiom, 2015

Department for Transport:

- Security in design of stations (SIDOS) guide, 2012
11.5. **On-Highway bus station interchanges**

11.5.1. Most of London’s major bus stations are integrated with other public transport modes, in particular London Underground. The interchange experience is therefore a key consideration in delivering an efficient and beautiful public realm which acts as a pleasing transition space between transport modes.

11.5.2. Streetscape Guidance does not provide specific details on bus station design; rather it identifies the key design considerations for ensuring successful urban integration of the bus station with the adjoining road network, and clarifies the aspirations for maintaining the quality and character of the streetscape across the bus station frontage.

### General considerations

11.5.3. Bus interchanges accommodate a high frequency of buses and a large volume of people. Therefore, bus interchanges should aim to provide clear delineation between waiting areas and movement corridors to avoid congestion and ensure the safety of all users.

11.5.4. Provision for cycling is a priority that should be designed in for both on-carriageway facilities and cycle parking.

11.5.5. The design of the station buildings and the configuration of bus bays will depend on site-specific operational and spatial characteristics, and will always require specialist architectural and highways advice. Our Bus Infrastructure team should always be consulted regarding any street improvement project adjoining a bus station or any aspect of a TfL bus station.

### Detailed guidance

11.5.6. Many major bus interchanges will occur on the highway road network where passengers can transfer to another mode of transport like rail or Tube. Brixton
station, Victoria station, King’s Cross station and London Liverpool Street station are just a few examples of where buses stop on the carriageway at frequent intervals to allow passengers to interchange.

11.5.7. These interchanges are often constrained by narrow footways and active frontages. However the following considerations can help relieve congestion and create a smooth interchange:

11.5.8. Footways

- Consider the provision of a centre median along the length of an on-carriageway interchange zone to assist passengers with informal crossings. The median should be paved in the same material as the footways and no street furniture should be placed on it.
- Provide frequent and wide formal crossings on desire lines; refer to Crossings for further information.
- Design teams should use a consistent approach to paving the footway and it should match the material of surrounding footways to maintain visual continuity with the surrounding streetscape.
- Where a forecourt forms part of an interchange, and is public space, designers should first consider the opportunity to create a place when reviewing the approved palette of materials in this guidance. Bespoke materials should only be considered where a strong case can be made as to their value in responding to the character of the space and the surrounding architecture. This will require approval by the SRG.
- Where a non-standard material has been specified, designers should be especially careful in detailing the intersection of the bespoke treatment with the standard footway materials used on the TLRN.

11.5.9. Street furniture

- Street furniture should be kept to a minimum and equipment and signs should be combined where possible; refer to Footway amenities and Safety and functionality for more information.
- Passenger information and bus stop signage should all be coordinated in furniture zones to minimise clutter. Consideration to adjacent frontages when siting bus infrastructure is important and will influence the layout and format of bus stop shelters. Please contact Bus Infrastructure and refer to Kerbside activity for further information.

11.5.10. Carriageway

- Carriageway surfacing should be carefully considered so as to ensure durability.
- Containment kerbs may be required where a safety audit has identified a risk of vehicle overrun on to the footway.
- Please be aware of DfT guidance on highway marking.

Additional information

Transport for London:

Interchange Best Practice Guidelines, 2009
Accessible Bus Stop Design Guidance, 2015
11.6. **Tram interchanges**

11.6.1. Tramlink provides 28km of rapid, street level and off-carriageway services across central Croydon, from Wimbledon to New Addington, Elmers End and Beckenham Junction. Tramlink is a fully integrated public transport service and connects with numerous bus routes, seven mainline rail stations and the London Underground.

11.6.2. Powered by electricity, trams do not emit fumes and so provide a greener public transport solution than motor vehicles. They do however require extensive infrastructure for operation including rail tracks within the carriageway, overhead power lines and raised platforms. Any proposed extension or changes to the route should consider the visual impact on the streetscape, in particular, where possible building fixings should be used to support the overhead. Where this is not possible special consideration should be given to the visual impact that the overhead line supports may have on the urban environment.

11.6.3. London Trams, a division of London Rail, is responsible for maintaining the infrastructure and the vehicles, and overseeing the operations of the Tramlink network and for future enhancements to the system. We are committed to maintaining and improving the tram network by providing higher frequency services, without compromising the road network capacity.

**Location**

- Tram stops may be located within the street environment or off-carriageway and consist of a raised platform, ticket vending machine, Oyster reader, emergency help point, information boards and shelter and seating where space allows
- Tram routes that run within the carriageway either run in mixed traffic or within their own dedicated lanes
- Highway arrangements at on-street stops shall be designed to minimise the speed of traffic through or around the stop. The layout of on-street stops must be designed to minimise the risk of vehicles mounting the platform or hitting the platform edge

**Detailed information**

11.6.4. Platform widths should be designed to cater for the anticipated volume of pedestrian use.
• The minimum width between tramway edge and any structure should be 1,500mm
• The nominal minimum platform width will be 3,000mm for side platforms and 5,000mm for island platforms
• Side platforms with absolute minimum width of 2,000mm may be considered where pedestrian demand profiles are sufficiently low and designs agreed with London Trams on the basis of risk and value management assessments
• Along the full length of the platform, a single row of lozenge tactile paving should be used to delineate the tactile paving edge. This does not need to provide colour contrast
• The kerb height needs to be raised in most instances to 350mm to provide step-free access for boarding the tram
• Poles to support overhead lines should be setback at least 450mm from the kerb edge. These poles should be considered for mounting other signage or street lighting to reduce clutter, while taking into account the maintenance requirements given that strict access arrangements are in place due to the overhead lines carrying 450V DC
• Signalised pedestrian crossings across the carriageway are not generally required at each end of each platform, however, an uncontrolled crossing point should be provided where the desire lines dictate it
• The provision of a signalised crossing will be dependent on pedestrian desire lines, sightlines and vehicle flows and will be determined using risk assessment and industry guidelines/standards
• Tree plantings should be considered where possible

Additional information

Department for Transport:
  Inclusive mobility – a guide to best practice on access to pedestrian and transport infrastructure

Office of Rail Regulation:
  Guidance on Tramways: Railway Safety Publication 2

Transport for London:
  Trams Customer Environments

11.7. London River Services interchanges

11.7.1. The road network is adjacent to a number of our piers, including Victoria Embankment adjacent to Blackfriars, Embankment and Westminster piers, and New Ferry Approach and Pier Road serving the Woolwich Ferry terminals.

11.7.2. The design of the public realm in these locations generally requires minimal alterations to standard arrangements, as for most pier locations the majority of the supporting
infrastructure is provided off the highway and on the river.

11.7.3. Off highway infrastructure includes walkways, waiting rooms and boarding ramps on floating pontoons. Design guidance for these components is detailed in our River Infrastructure Guidelines (2014).

11.7.4. Highway provision is generally limited to a single free-standing ticket kiosk, overhead pier signage, free-standing poster frame units and a Legible London wayfinding totem.

**Ticket kiosk**

- Ticket kiosks should be located in close proximity to the pier entrance on a highly visible stretch of footway
- The placement should be a minimum 450mm from the kerb edge, facing in towards the footway so as to encourage queuing away from the carriageway
- The building should meet current building regulation requirements
- A minimum unobstructed footway width of 4.0 metres should be provided at the ticket kiosk front desk
- Waiting rooms with seating are provided on some piers; however, additional seating may be provided within the footway furniture zone a minimum of 2.0 metres from the kiosk, so as to ensure adequate access to the kiosk door
- Temporary queue management barriers may be erected during opening hours if required. The footway should maintain a 2.0 metre unobstructed width. After hours, barriers should be stored on the pontoon

**Signage**

- Ticket kiosk signage should be clear and concise, to minimise the visual impact on the streetscape, while providing sufficient information for passengers
- Tamper proof vinyls and anti-graffiti overlays should be used in all exterior applications where signage is required
- Designers should refer to the bespoke treatments and approved standards in our London River Services: River Infrastructure Guidelines (2014)

**Additional information**

Transport for London:

  London River Services: River Infrastructure Guidelines, 2014
11.8. **Taxi ranks**

11.8.1. We are responsible for the regulation of taxis and private hire vehicles (PHVs). TfL Taxi and Private Hire is responsible for appointing and revoking all taxi ranks within the London boroughs, other than those located in the City. Taxi ranks within the City of London are not under our jurisdiction, but are appointed and managed by the City of London Police Commissioner.

11.8.2. Designers should consider the contribution that taxis can provide at interchanges for onward travel and ensure that the placement and design of taxi ranks and set down/pick up facilities does not impede general traffic flows while remaining convenient and accessible for passengers, particularly for those with mobility impairments. Taxi ranks are particularly important to disabled people or those who have difficulty accessing other transport modes. Taxi ranks may only be used by taxis (Hackney Carriages) and not PHVs which must be pre-booked via a licensed TfL operator. Please refer to the Taxi Ranks at Major Interchanges: Best Practice Guidelines (2003) for information on general design principles of taxi ranks.

**Location**

11.8.3. Taxi ranks should be located close to transport interchanges and major attractions such as retail areas, bars/restaurants, events, sports stadia and hotels. We can also appoint rest and refreshment ranks to provide a designated space for taxi drivers to take a short break.

11.8.4. Ranks should be positioned with due regard to safety, so that passengers can board from or alight on to the footway from the near-side doors of a taxi. Care needs to be taken with respect to cyclists and cycle routes.

**Materials and layout**
11.8.5. When designing a taxi rank, a length of five metres per taxi is standard. The size, layout and design of the taxi rank will depend upon several factors but must be located within sightline of the venue they serve and at a suitable distance for the passenger. Please refer to Taxi Ranks at Major Interchanges: Best Practice Guidelines (2003) for further information.

- Taxi ranks should be clearly signed and marked according to the TSRGD manual. Set down and pick up areas should have a minimum kerb height of 140mm to allow easier access for those with mobility impairments and luggage
- Footways adjacent to the taxi rank should have an unobstructed minimum width of 2,000mm for alighting and boarding; sufficient for wheelchairs to manoeuvre and to accommodate access ramps and an additional 1,500mm for pedestrians to bypass the rank
- A formal pedestrian crossing with a dropped kerb or raised table should be located near to the taxi rank to allow for convenient, safe access and to discourage informal crossing in-between taxis. However, taxi ranks should not be on the opposite side of the road to the venue they serve which would force the passenger to cross the road before being able to access a taxi
- Seating and shelter should be positioned nearby where space allows

**Road markings and regulations**

- Taxi ranks are bays marked with 50mm wide yellow broken lines on the edge or centre of the carriageway surface and signed in accordance with the TSRGD
- Only licensed taxis are permitted to stop in the areas bounded by the road markings
- For all TfL-appointed taxi ranks on the public highway a taxi rank order must be completed and this is undertaken by TfL Taxi and Private Hire. If the taxi rank is on the public highway then a Traffic Management Order should also be completed to ensure it can be enforced and this will be carried out by the highway authority

**Consultation**

11.8.6. TfL Taxi and Private Hire must be consulted in all projects involving taxi ranks to advise on location, design and layout.

**Additional information**

Statutory instruments:

- Traffic Signs Regulations and General Directions, 2002 and 2015

Department for Transport:

- Inclusive mobility – a guide to best practice on access to pedestrian and transport infrastructure, 2002

Transport for London:

- Taxi Ranks at Major Interchanges: Best Practice Guidelines, 2003
- Transport for London appointed taxi ranks, 2014
11.9. **Cycle parking hubs**

11.9.1. This guidance should be read in conjunction with the London Cycling Design Standards, 2014: Chapter 8.5 – Cycle parking to support different uses. It provides guidance specifically for cycle hubs adjoining the TLRN.

11.9.2. Cycle parking hubs are designed to provide a large number of secure cycle parking spaces in areas of highest demand, while also offering a range of related facilities which may include cycle maintenance, secure long-stay parking and cycle hire.

11.9.3. Hubs are most often located near rail stations but may also be considered for major trip attractors such as shopping centres or landmark buildings. Reliable cycle parking facilities and hubs at stations will become an increasingly important way of supporting cycling as a viable interchange mode for onward travel.

11.9.4. The installation of large cycle parking facilities at stations may be complicated by land ownership and commercial relations. Local authorities are encouraged to work in partnership with landowners and ourselves to provide facilities that can accommodate and support the anticipated future growth in cycling.

**Location**

- Where the TLRN adjoins a station forecourt, a cycle parking hub may be considered within the road network boundary, as long as complementary measures are put in place to maintain appropriate unobstructed footway widths. This may include footway widening or decluttering of other street furniture.
- As a minimum, footway widths of 3.0 metres should be provided adjacent to hubs, to allow for a waiting cyclist to gain access to a facility without blocking the full width of the footway.
- Cycle hubs should be located within convenient access of the station entrance, no more than 200 metres away, so that cyclists are less inclined to fly-park closer to the entrance.
- The location should ensure high levels of natural surveillance, supported by CCTV coverage.
Design considerations

- Any new structure should aim to accommodate current summer demand for cycle parking and provide an additional 20 per cent of space where practicable.
- The placement should not obstruct existing pedestrian desire lines or create unnecessary conflict between pedestrians and cyclists crossing the footway to access the hub. It may be appropriate to provide a shared use area around the hub, with dropped kerbs to allow for safer, more comfortable cycle access.
- For any secured facility, designers should carefully consider the management regime, staffing requirements, tariff rates, and access arrangements, so as to maintain a viable and efficient facility.

Detailed Information

- Parking stands should provide two lockable points, so the frame and both wheels of the bicycle can be securely fixed, as detailed in Cycle parking facilities.
- Gated compounds should allow for 24-hour access.
- Any covered structure should ensure a minimum head clearance of 2.4 metres. This might be an opportunity to create a structure that responds to its context, and act as a beacon or icon.
- Roofs should be sloped so as to reduce the accumulation of debris and discourage antisocial behaviour.
- Cycle hub surface materials should respond to the local context. The use of setts should be avoided in favour of 900x600mm slabs or asphalt.
- Street furniture must be kept to a minimum to allow for regular and numerous pedestrian and cycle movements (refer to London Cycling Design Standards, 2014).
- Where the cycle hub is located on the footway dropped kerbs should be provided and shared use areas should be considered.

Additional information

Transport for London:

London Cycling Design Standards, 2014: Chapter 8 – Cycle parking