

DS.128 Inset Parking Bays

Rev.	Status	Created by	Date	Approved by	Date
A	Final	D.Farnham/D.Vasquez-Rossainz	12.03.12	D.Waters	10.04.12
B	Final	D.Farnham	01.05.13	D.Waters	10.05.13
C	Final	D.Farnham	05.11.13	D.Waters	14.11.13
D	Final	G Lake	19.06.19	D Foden	07.08.19



1 Introduction

1.1 Notes

- a. This standard explains requirements about the use and design of Inset Parking Bays (Inset Bays). These are parking bays that are protected by footway Build Outs at either end so that they appear to be fully or partially recessed into the footway (or other area beside the carriageway).
- b. See the SSDM webpages at www.southwark.gov.uk/ssdm.

1.2 Discussion

- a. Inset Bays may be preferred to other forms of kerb side parking for various reasons. These include improved protection of parked vehicles and perceptual expansion of pedestrian areas. Both reasons may serve to positively influence the behaviour of users of the carriageway and so promote more courteous riding and driving. In-setting vehicles can also benefit pedal cyclists who will not then need to deflect out into the carriageway to negotiate around vehicles. This can be stressful for cyclists as they may then be squeezed together with other following vehicles. However, the construction of Inset Bays inevitably reduces flexibility to amend the street environment. This may frustrate other as-yet unknown future improvements. In addition, on less heavily trafficked roads weaving around cars parked at the edge of the carriageway is likely to be less of a concern for pedal cyclists. In these circumstances non-Inset Bays can be beneficial as the 'edge friction' they introduce can help encourage lower general traffic speeds.

2 Use Requirements

2.1 General requirements for the use of Inset Bays

- a. Table 1 explains requirements for the use of Inset Bays in new and existing streets and spaces.

Condition		Use requirements
A.	Streets carrying \leq 400 vehicles in peak hours in the near side lane (except for where any of B-F below apply)	Location of parking in non-Inset Bays at edge of carriageway generally preferred (see note 1) Use of Inset Bays is acceptable but not a requirement - unless there are already existing Inset Bays along a section of street (measured junction to junction) in which case Inset Bays should be used for any new parking spaces unless a level 1 departure is agreed
B.	30mph streets	Parking should be located within Inset Bays (see note 2). Any existing formal or informal parking spaces that are not in Inset Bays should be relocated into these wherever possible
C.	20mph streets carrying $>$ 400 vehicles in peak hours in the near side lane	
D.	Streets accommodating bus routes (excluding diversionary routes)	
E.	Shopping streets and parades (irrespective of traffic conditions)	
F.	On carriageway cycle parking in any location (including London Cycle Hire Scheme stations)	
NOTE		
1) This helps maintain flexibility for future rearrangement of the street. Use of parking in such circumstances can also help slow traffic through 'edge friction'. However, Build Outs may never the less be required at junctions and other accesses to discourage parking through or in the vicinity of these. See standard DS.118 for further information.		
2) This helps provide for smooth lines for pedal cyclists on these busier, higher speed streets – reducing the risk of conflict with following vehicles. In respect to cycle parking, it can help protect stands and users of these from potential conflict with other parked vehicles and users of the carriageway.		

Table 1 - Use requirements for Inset Bays

2.2 Considering impact on the future introduction of street trees when designing Inset Bays

- a. Introducing Inset Bays along lengths of existing footway (or other non-carriageway areas) that are without street trees is subject to provision of tree planting to DS.501 requirements to that length of footway to that side of the street (see note 1). Those trees should be located at maximum 22m spacings with a minimum of 2 per Inset Bay (irrespective of the number of spaces within this). These requirements may be waived if it is clear from utility plans that statutory undertaker's apparatus will prevent the planting of trees or by level 1 departure if it can be shown that the existing footway (or other non-carriageway area) is wide enough to accommodate future tree planting and sufficiently free from underground utilities for this to be feasible.

NOTE 1: Those trees may either be located within the footway running alongside the bays else in Build Outs that enclose and/or divide bays.

2.3 Reducing existing footway widths to accommodate Inset Bays

- a. See standard DS.100 about the permissibility of introducing Inset Bays by reducing the width of existing footways (or other non-carriageway areas) rather than extending those areas to enclose a former piece of carriageway space.

3 Design requirements

NOTE: Typical details showing examples of Inset Bay arrangements meeting the requirements of this section can be found in drawings LBS/1100/040 and LBS/1100/041.

3.1 Enclosure by Build Outs (and depth of inset)

3.1.1 Build Outs at Bay ends

- a. Inset Bays should be enclosed at both ends by Build Outs. These should be designed as standard DS.118. That standard also describes the:
 - i. minimum length of Build Outs along

the carriageway. This will be an important factor if it is intended to use them as dividers between a number of successive Inset Bays

- ii. geometry of associated lead in tapers and kerb returns at the ends of Inset Bays.

3.1.2 Depth of inset/width of enclosing Build Outs

NOTE: The fully developed section of a Build Out (referred to here as the 'Body') is that section excluding start and end tapers when the Build Out is at its characteristic width.

- a. Except where a departure is agreed as per 'b', any Build Out that encloses an end of an Inset Bay should protrude from the existing kerb line by
 - i. (if there is a designated parking space within it) as far as the limits of the marked designated parking space. See section 3.6 for further information about marking out designated spaces
 - ii. (if there is not a designated parking space within it – see note)
 - ≥ 2.0m in existing streets and spaces
 - ≥ 2.3m in new streets and spaces.

NOTE: E.g. it is intended that the bay is used for informal parking only.

- b. As an exception from 'a' – but subject to level 1 departure - if the width of the carriageway after narrowing would be less than the values in Table 2 then the width of a Build Out (and depth of the Bay inset) may be reduced down to an minimum of 1.0m, though it should not be reduced any further than strictly necessary as this undermines the effectiveness of the feature as a parking deterrent (see note 1). It must be demonstrated that this is unlikely to encourage inappropriate parking behaviour by foolish motorists (given the residual street width and local traffic conditions) and that it will generally be appropriate in respect to local street form. Use of such reduced width Build Outs by level 1 departure may also be acceptable in other circumstances if it can be demonstrated that:

- i. this would be beneficial to street form and not create any safety or parking enforcement issues
 - ii. the width restriction would impact unacceptably on traffic flow (see note 2).

NOTE 1: This may permit Build Outs to be provided where it would not otherwise be possible. For instance, in some circumstances the introduction of 2-2.3m wide Build Outs to all sides of a junction may narrow the carriageway to such an extent that vehicles would not be able to turn acceptably. Reduced width Build Outs are likely to be preferable to none given the road safety and ease of crossing benefits they offer.

NOTE 2: This will generally require the submission of a computer simulated vehicle auto-tracking assessment. Vehicle and lane use assumptions should be agreed with approving officers before commencing this.

Street type (see notes)		Minimum width (metres)
A	Streets accommodating traffic equivalent to that on Road Category 1 and 2 and 3A roads (see note)	6.3m
B	Streets that form part of the Strategic Road Network	
C	Streets accommodating bus routes (excluding diversionary routes)	
D	All circumstances other than A-C above	4.8m
<p>NOTES See standard DS.601 for details of the level of trafficking associated with different Road Categories. Alternatively, this can be advised by approving officers upon request. Where new streets are proposed then the appropriate Road Type will be advised by approving officers. This will be determined by scaling of the estimated vehicle trafficking.</p>		

Table 2 - Minimum carriageway widths beneath which reduced width Build Outs/inset depths may be used

3.2 Profile of Inset Bay

NOTE: See drawings LBS/1100/040 and LBS/1100/041 for depictions of the XC and XF profiles discussed below. Broadly, XC Bays are those where the cross fall in the Bay descends from the footway towards the carriageway, whilst XF Bays are those where the cross fall descends towards the footway.

- a. In new streets and spaces Inset Bays should be designed with an XC profile (see note). However use of an XF profile may be permitted by level 1 departure where
 - i. kerb heights < 125mm are permitted to the edge of the carriageway
 - ii. the carriageway has a central crown or is side hung with a cross fall towards the Inset Bay; and
 - iii. a small kerb check as section 3.3.3 cannot reasonably be provided to the interface between the bay and carriageway to prevent surface water ponding there.

NOTE: This is to help visually integrate areas of parking into pedestrian areas whilst minimising the perceived extent of carriageways.

- b. In existing streets and spaces, XC profiles are also preferred. However, it is recognised that existing levels may constrain the potential to achieve these in some circumstances. Therefore, XF profiles may be used by level 1 departure. It must be demonstrated that levels constraints would make the use of XC profiles impractical or result in an unsightly detail.

3.3 Kerb steps to interfaces with footways and main carriageway running lanes

3.3.1 General

- a. All the various kerbs that enclose Inset Bays (including those to the ends of enclosing build outs and interfaces with the carriageway) should always be ≥ 300 mm wide - irrespective of the standard kerb width required for the relevant SSDM/RP designation(s) (see note). If a double step kerb detail is used then this width should be measured against the combined width of the two kerb units.

NOTE: The standard kerb width for each SSDM/RP designation is stated in standard DS.603.

3.3.2 At interfaces with footways

NOTE: The majority of the time this will consist of a Type 2 profile kerb that has a 50mm high 60° battered face.

- a. As a supplement to 'a', if an Inset Bay is either
- prescribed wholly or partly for loading,
 - likely to be used by commercial vehicles for informal waiting or loading, and
 - the neighbouring footway has an unbound precast concrete flag or natural stone slab surface.

Then, in order to avoid local damage to the footway from dynamic wheel loads during occasional overrun

- a further 200-300mm strip of modular cube units should be provided immediately behind the kerb on the footway side – but only to the main kerb that runs parallel to the bay and not to the end return kerbs
- the specification for those modular units should be as provided in the SSDM Surfacing Materials palette for the relevant SSDM/RP designation(s). Cube units should be laid in a stack bond
- the units should be bedded onto the concrete backing of the kerb using [L-MH1], [L-MH2] or [L-MHX] fine bedding concrete
- unless otherwise instructed by approving officers, units should be jointed using
 - (for precast concrete blocks and clay pavers) the same materials as used to the surface of the neighbouring footway
 - (for natural stone setts) [J-MH1], [J-MH2] or [J-MHX] high performance mortar

Approving officers have discretion to instruct use of this detail when they have reasonable grounds to suspect that 'ii' applies.

3.3.3 At interfaces with main carriageway running lanes

- a. At interfaces with main carriageway running lanes, a 25mm high kerb check as 'b' should be used if any of the following apply.
- The general kerb step to the carriageway edge in the near locality of the bay is $\geq 125\text{mm}$.
 - The bay has an XC profile (see section 3.2) whilst the carriageway

has a crown or is side hung with the cross fall being towards the Inset Bay.

- The bay is located on a principle road and anything other than a Type 1 profile kerb that presents a minimum 90mm high upstand is used to delineate its interface with the footway.
- The bay contains London Cycle Hire Scheme docking points

Omitting the feature when any of the above apply requires level 1 departure. Including it in other circumstances is desirable but not mandatory. However, if it is not included a flush kerb (0mm upstand) should be provided instead – even if both the bay and carriageway use the same surface.

NOTE: This will help prevent surface water from the carriageway entering into the bay or ponding at its edge. Providing an XC profile is used, this is likely to reduce the overall number of gullies required. In addition, it will help slow vehicles as they enter the bay and – conversely - provide a reminder to street cleansing operatives and London Cycle Hire Scheme users that they are about to enter main carriageway running lanes.

- b. The check should be formed using a Type 2 profile kerb (see note 1). The height of the battered face should be 25mm. The base of the battered face should be flush with the carriageway surface (0mm upstand). The width of the kerb should always be 300mm wide – irrespective of the standard kerb width required for the relevant SSDM/RP designation(s) (see note 2).

NOTE 1: The battered Type 2 profile helps avoid a potential trip hazard for pedestrians and wheel trap for cyclists travelling close to the carriageway edge else turning into bays from acute angles.

NOTE 2: The standard kerb width for each SSDM/RP designation is explained in standard DS.603.

- c. See also '3.4b' about structural reinforcement of kerb footings if bays are prescribed (or likely to be used informally) for commercial vehicle waiting or loading.

3.4 Structural design of pavements

- a. See standards DS.601, 602 and 603 about the structural design of the pavements and edge restraints associated with Inset Bays.

NOTE 1: Note in particular the requirement of standard DS.601 that the front edge of any footway should be constructed to an enhanced Heavy Overrun Area standard to accommodate potential vehicle overrun. This should follow the inset of the Bay.

NOTE 2: On 20mph streets it may be acceptable to locate subbase reservoirs for attenuation of infiltration of surface water under Inset Bays. Similarly, it may be acceptable to extend rooting zones for street trees under Inset Bays by using special subbase systems and – subject to certain caveats - cover these with pervious block surfaces. See standards DS.602 and DS.501 for further information.

NOTE 3: See also standard DS.118 for some further pointers on the structural design of associated enclosing Build Outs.

- b. If an Inset Bay is
 - i. prescribed wholly or partly for loading
 - ii. likely to be used by commercial vehicles for informal waiting or loading then the footings to the kerb that interfaces with main carriageway running lanes (as section 3.3.3) should be reinforced using pre-bent embedded steel fabric, as required in SSDM drawing LBS/1100/34 details.

3.5 Surface landscaping of Bays

- a. If an Inset Bays is located within
 - i. a new streets or space then it should be surfaced with small unit modular paving
 - ii. an existing street or and space it may be surfaced with *either* small unit modular paving or bituminous mixture surfacing. However, if there are existing instances of modular surfaced Inset Bays on the street then modular units should also be used to any new Bays.
- b. Where a surface is used to a Bay that contrasts with main carriageway running

lanes (for instance block paving – see note) then this should extend the entire length of the Bay. It should also normally extend for the entire width of the bay – as defined by the width of the enclosing Build Outs and any informal or designated space for vehicle waiting or loading within. However, on occasions where Bays are only partially inset or where one of the enclosing Build Outs is narrower than the other, the width of the surfacing (and arrangement of retaining kerbs at the interface between the Bay and main carriageway running lanes) will be agreed with approving officers on a case specific basis. They have discretion to instruct such arrangements as they consider appropriate.

- c. See standard DS.130 for further requirements about the visual design of surfaces, including acceptable bonding patterns for modular paving.
- d. See standard DS.219 about accessibility related issues in surface design, including surface textures and the need for visual contrast with pedestrian only surfaces.

NOTE: As per the requirements of the above standard, the surfacing used to any Inset Bay will generally need to provide a visual contrast with that of any adjoining footway or other non-carriageway area.

- e. See section 3.7 about marking/ delineating any waiting or loading spaces that may be prescribed within an Inset Bay. In some circumstances this may dictate the acceptable surfacing material to the Bay.
- f. See standard DS.118 about surface landscaping requirements for Build Outs added to existing footways in order to ensure their successful visual integration.

3.6 Marking parking spaces within Inset Bays

- a. See standard DS.005 about acceptable methods of delineating/marking out any waiting or loading spaces that may be prescribed within Inset Bays. In some instances it may be required to achieve this by using a visually contrasting surface within the Inset Bay rather than through use of conventional road markings.