

Grade separated streets

Grade separated streets – with raised footways either side of a carriageway – is a tried and tested form of street design and can be designed according to simple rules.

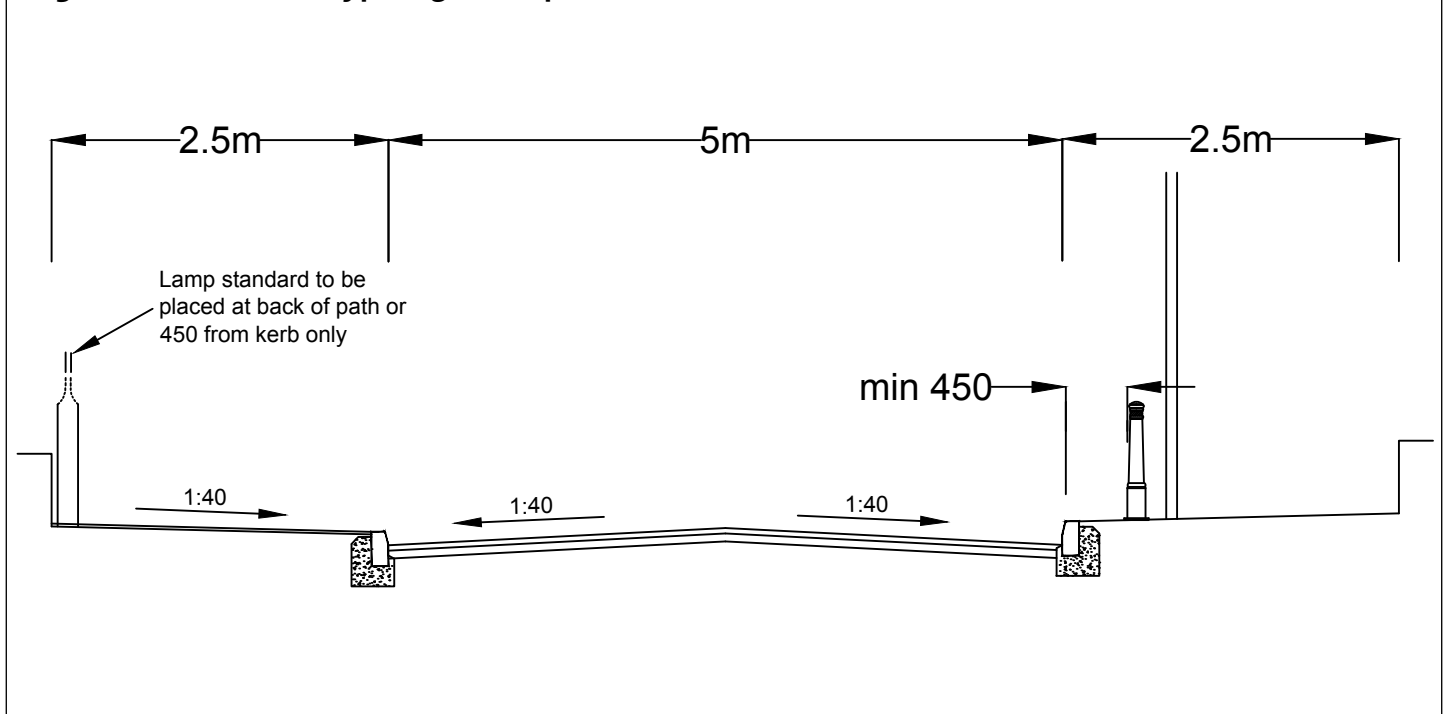
Grade separated streets are appropriate for most sizes of development. For larger developments the widths of carriageway and footways will need to be increased to take into consideration public transport requirements and / or on-street parking.

They provide more certainty for pedestrians, particularly visually and mobility impaired users.

Such streets need to conform to minimum widths to be able to accommodate the requirements of modern vehicles and healthy transport networks whilst maintaining the safety of all road users.

Adequate space for parking would be expected to be designed into the streetscape to deter footway parking and to allow for greater parking flexibility for all users.

Fig 1: Cross section of typical grade separated street



Detailed design

Further detailed design requirements for grade separated streets are set out in the following table:

Table 1: **Grade separated streets – detailed design**

| Consideration | Minimum Requirement |
|--|---|
| Number of dwellings | <p>1 point of vehicular access: 150 dwellings</p> <p>2 or more points of vehicular access: more than 150 dwellings</p> <p>Ensure permeability for pedestrians, public transport users and cyclists in all cases</p> |
| Max Design Speed | 20mph |
| Minimum carriageway width subject to layout and swept path analysis | <p>5.0m absolute minimum width for running lanes</p> <p>Higher usage routes may require additional width (5.5m excluding parking)</p> <p>Additional width will be required for parking bays where on-street parking is anticipated</p> <p>6.2m (excluding parking) where public transport is required to use the route in both directions – subject to swept path analysis</p> <p>Widening on bends will be required, and dictated by swept path analysis</p> |
| Swept Path requirements | <p>Any residential roads put forward for adoption must be able to accommodate:</p> <p>11.4m long refuse vehicle passing a large car,</p> <p>Two 3.5T box vans passing</p> <p>Turning areas must include appropriate waiting restrictions to prevent them from being blocked by parking vehicles</p> |
| On street parking | <p>For design principles see <i>Car Parking</i></p> <p>Width to be provided in addition to the running lanes. The amount/type shall be determined subject to local requirements.</p> <p>On-street parking spaces must be adjacent to running lanes, not to the rear of footways</p> <p>Parallel</p> <p>2m wide x 6m length, 5.5m length for end bays</p> <p>45 degree splays at the ends of bays</p> <p>On public transport routes</p> <p>2.5m wide, 2.75m where loading is anticipated.</p> <p>Perpendicular:</p> <p>2.4m wide x 4.8m long</p> <p>400mm additional footway width is required adjacent to perpendicular bays to allow for vehicular overhang</p> |

| Consideration | Minimum Requirement |
|---------------------------------|---|
| Footways | <p>2.5m minimum width</p> <p>Where there is no street furniture (lighting columns etc) or on-street refuse collection, and pedestrian volumes are very low, 2m may be accepted</p> <p>On streets with anticipated high activity an increased widths may be required. Refer to Designing for Pedestrians Guidance</p> |
| Buffer strips | <p>Where there is no housing or active frontage on one side of the carriageway and therefore no need for pedestrian movement, it may not be necessary to provide a footway on this side. In this case a 0.5m buffer must be provided from the edge of the adoptable highway to protect adjacent structures or boundary treatments</p> |
| Cycleway | <p>Where low volumes of traffic / cycling, to be accommodated on-carriageway. See TDMG Designing for Cycling section</p> |
| Max Gradient | <p>Maximum: 1:20</p> <p>Minimum: 1:100 to ensure positive drainage</p> <p>(Where longitudinal gradient is slacker than 1:120 channel blocks will be required).</p> |
| Horizontal Curve Radius | <p>Shall be determined by using swept path analysis of the largest vehicles likely to use the road.</p> <p>The volume and composition of traffic needs to be assessed to determine whether it is necessary to cater for two large vehicles passing each other at the bend, as long as there is sufficient inter-visibility to enable one driver to stop and wait for the other to pass.</p> |
| Vertical Curve Lengths | <p>For design speeds of 30mph or less, the minimum length of vertical curvature must be based on the required forward visibility to achieve the minimum Stopping Sight Distance (SSD). A speed limit of 20mph requires an SSD of 25m.</p> |
| Effective Straights | <p>Where carriageways will be straight, speed reduction measures must be provided every 40m.</p> |
| Junction radii | <p>Roads must meet at a 90 degree angle with a maximum radius of 6m to minimise crossing distances. Depending on the vehicles that are likely to use the junction this radius could be further tightened subject to swept path analysis, in order to maximise pedestrian priority and reduce traffic speeds. Larger radii may be required where on public transport routes.</p> |
| Minimum Junction Spacing | <p>A minimum distance between accesses and junctions must be 20m</p> |
| Visibility | <p>Refer to Visibility guidance section.</p> |
| Turning space | <p>Where there is no through route available, all adoptable culs-de-sac will require a turning head usable by 11.4m refuse vehicle with turning areas safeguarded from obstruction by parked vehicles</p> |

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|-----------------------|--|
| Service Strips | National Guidance applies – See <i>Standard Details for Recommended minimum spacing for utilities</i> See also <i>Underground Utilities Guidance</i> Services must be kept within the footway Landscaped service strips will not normally be adopted. |
| Materials | Normally bituminous material suitable for adoption – see Standard Details and Palette of Materials |
| Drainage | See Drainage Guidance and Flooding and Drainage principles outlining the West of England SUDS guidance. We do not currently accept SUDS within the adopted highway as a full drainage solution For crossfalls and longitudinal falls refer to <i>Standard Details</i> . |
| Lighting | Lighting designs must be in accordance with Bristol City Council's <i>Street Lighting Specification</i> |

Fig 2: Example of grade separated street layout, © Emmett Russell

