Horizontal deflections are particularly effective when considered at the network level and used in combination with restrictions in forward visibility (see Section 4.4.6 Alignment and Curvature and Figure 4.70). When deployed throughout a network on *Local* streets they can also be used to discourage through traffic (see Section 3.4.1 Vehicle Permeability). Deflections can be created by varying the kerb line/street alignment causing the carriageway to broaden and narrow and/or creating a series of directional adjustments. Car parking may also be used to similar effect (see Section 4.4.9 On-Street Parking and Loading). Other methods that may be considered at the network level include off-setting junctions to create a 3 Way Off Set Network (See Section 3.4.1 Vehicle Permeability).

Singular treatments include pinch-points that narrow the width of the carriageway over a short section of the street. These can be used in combination with raised tables at key locations on *Local* streets and/or within the *Centres* (see Figure 4.71). To be visually effective a pinch point should seek to reduce the width of the carriageway by a minimum of 0.5m for a minimum length of 6m.[38]

38 A minimum of 3.7m (3.1m at 'gateways') is required for fire vehicle access as per Table 5.2 of the *Building Regulations* 2006 (Technical Guidance Document B – Fire Safety).

Figure 4.70: Examples from Poundbury, Dorchester, UK, where changes in the kerb line and carriageway alignment calm traffic by limiting forward visibility, creating pinch points and requiring multiple changes in direction.

Figure 4.71: An example from Ingress Park, Kent, UK, of how the path and speed of a vehicle is altered within a low speed environment through the use of vertical and horizontal deflections (and material changes).

4.4.8 Kerbs

Kerbs traditionally provided a street drainage function but have more recently come to define the pedestrian domain from the vehicular carriageway. In so doing kerbs are key to establishing the level of segregation or integration which is to occur within a street. Lower kerbs, or lack thereof, can therefore create a greater sense of shared space and can be used to calm traffic. Lower kerb heights are also easier for pedestrians to negotiate, particularly for the mobility impaired.

With regard to the height of kerbs:

- The standard height for kerbs is 125mm and this provides a clear definition of a segregated street environment. These should be used on all streets where design speeds and pedestrian activity are more moderate, such as on *Arterial* and *Link* streets.

- Lower kerbs of 60mm are more appropriate in areas of higher pedestrian activity and where lower design speeds are applied, such as on all streets within *Centres*, around *Focal Points* and on *Local* streets (see Figures 4.72 and 4.73).

- Where a shared surface is proposed a kerb should not be used. Designers may consider embedding a kerb line or drainage channel (see Figure 4.74) into the carriageway to indicate an area of pedestrian refuge. This is particularly important for visually-impaired users who feel less comfortable on shared surfaces and also require a kerb line for navigation (see Section 4.3.4 Pedestrianised and Shared Streets).

Changes to kerb lines can also be used to slow drivers at critical points by changing the alignment of the carriageway to create pinch-points, build-outs and horizontal deflections (see Section 4.4.7 Horizontal and Vertical Deflections). Build-outs should be used on approaches to junctions and pedestrian crossings in order to tighten corner radii, reinforce visibility splays and reduce crossing distances (see Sections 4.3.2 Pedestrian Crossings and 4.4.5 Visibility Splays).

Figure 4.72: Example of a low kerb from Drogheda, Co. Louth, which is used to reinforce lower design speeds and create a greater sense of shared space.

Figure 4.73: Example from Clongriffin Co. Dublin, where the footpath, kerb line and vehicular carriageway are at the same level. Whilst pedestrian and vehicular space are still clearly defined, a greater sense of shared space is still created.

Figure 4.74: Example of an drainage channel on Exhibition Road, London. The kerb line indicates an area of pedestrian refuge and is used to guide the visually impaired.