



4.0 Industrial and Commercial

4.0

4.1 Introduction

4.1.1

The following advice covers the design of new commercial developments in Swindon, specifically the basic highway criteria against which planning applications will be assessed.

4.1.2

Industrial estate roads must be designed specifically to cater for use by large commercial vehicles. In this respect the Freight Transport Association (FTA) 'Designing for Deliveries' guide should be referred to regarding vehicle type, length, width, height, turning circles, manoeuvring capabilities and parking layouts. In addition designers may refer to the Transport and Road Research Laboratory Report 608.

['Designing for Deliveries' \(FTA - Aug. 1998\) TRRL Report 608](#)

4.1.3 road hierarchy

The hierarchy of Industrial Roads is defined by two types:-

- Major Access Roads
- Access Roads

In addition information is given regarding private access facilities to the highway network

4.1.4 types of development

The most common forms of industrial and commercial types of development are:-

- Out of Town Shopping Centres
- Industrial Estates
- Science Parks
- Lorry Parks/Transshipment Depots
- Exhibition Centres
- Theme Parks
- Sports Centres and Stadia
- Individual Site Development

The following advice refers mainly to industrial estate roads and individual site development.

4.1.5 vehicle types

The manoeuvrability of heavy goods vehicles depends upon their size, the number of axles and whether rigid or articulated. Industrial development will therefore involve a considerable range of vehicle types and sizes.

'Designing for Deliveries' (FTA - Aug. 1998)

4.1.6 industrial trading estates & estate roads

The layout of individual factories and depots should be designed in such a manner as to provide a safe and efficient means of access, however this should not be done without regard to road safety. Those requiring access may range from workers, visitors and delivery vehicles that might be anticipated from a variety of industrial and commercial activities.

Estate layouts will vary according to the size and topography of the site, the mix and size of factory units and the points of possible safe access from the existing distributor road network.

4.1.7

In developments likely to generate less than 250 commercial vehicle trips per day i.e.. possible equivalent to about 125,000 m² of gross floor area (gfa) or less, access to individual factory units can be from a single industrial access road; however, a looped arrangement is preferable. A cul-de-sac up to 250m in length may be acceptable if site conditions require it, subject to the provision of adequate turning facilities.

Transport in the Urban Environment

4.1.8

In larger developments a number of industrial access roads should feed to the main industrial distributor road. Access to individual factory units should not be made directly from a distributor road. Again a looped arrangement is preferable so as to prevent the possibility of creating a rat run for main road traffic.

4.1.9 pavement foundation

For information on pavement foundation design please see section 3.2

Section 3.2

4.1.10 vertical alignment

For information on vertical alignment please see section 3.3. In addition to this information the following can be used when Designing industrial estate roads:- A 'K' value of 6.5 shall be used. The minimum vertical curve length shall be 30m.

Section 3.3

4.1.11

Adequate provision must be made within industrial estates for safe and convenient manoeuvring and turning of vehicles.

Within cul-de-sacs a turning head, to an approved layout, will be required in order to avoid reversing of vehicles over long distances, and prevent damage to adjoining paths and verges.

Where there is no footway or service strip around the perimeter of a turning head, any boundary wall, fence or hedge shall be kept at least 1.0m back from the carriageway to avoid damage by manoeuvring vehicles. This distance should be increased to 2.0m at the end of turning heads. These strips will be included within the area to be adopted as highway.

4.1.12 specialist design elements

All adoptable parts of the highway network are to be positively drained, lit with road lighting etc. Therefore, in addition to the information already given in this section the designer will need to know information applicable to all road types. This information can be found in Section 4.0 Specialist Design Elements.

[Section 4.0 Specialist Design Elements](#)

4.2 Major Industrial Access Road (MIAR)

4.2.1 concept

A major industrial access road is a link between industrial access roads, cul-de-sacs and the primary/district distributor road.

4.2.2

Generally this type of road will serve developments generating more than 200 commercial trips per day.

4.2.3

Major Industrial Access Roads shall be designed in accordance with current standards in particular the 'Design Manual for Roads and Bridges' following referral to the following Local Standards and requirements.

4.2.4 cycle tracks

Cycle facilities will be required where there is a cycle route integral with the local distributor corridor.

4.2.5 Major Industrial Access Road (MIAR)

- Design Speed - <(48kmph) 30mph
- May take access from - distributor/classified roads or MIAR
- Minimum carriageway width- 7.3m
- Footway provision - Footways will be required where there is a pedestrian route Integral with the local distributor corridor.
- Verge width - DB32 – 3.82 Verges must be provided between carriageway and footway/cycle tracks. Minimum width 2.0m.
- Gradients - 8% (1 in 12.5) maximum
1% (1 in 100) minimum
- Horizontal curve radius - 90m minimum
- Vertical curve length - 30m minimum
- Forward visibility - 60m minimum
- Junction spacing - 30m (centre line spacing) from another junction on the same side of the road.
15m from another junction on the opposite side.
- Junction radii - 15m - junction with distributor road.
10m - junction with IAR
- Junction 'X' distance - 9m
- Junction 'Y' distance - 90m

4.3 Industrial Access Road (IAR)

4.3.1 concept

An industrial access road is a link to either a major industrial access roads or a primary/district distributor road. It can also connect to another IAR.

4.3.2

Generally this type of road will serve developments generating more than 200 commercial trips per day.

4.3.3

Industrial Access Roads shall be designed in accordance with current standards in particular the 'Design Manual for Roads and Bridges' following referral to the following Local Standards and requirements.

4.3.4 cycle tracks

Cycle facilities will be required where there is a cycle route integral with the local distributor corridor.

4.3.5 Industrial Access Road (IAR)

- Design Speed - <(48kmph) 30mph
- May take access from - distributor/classified roads or MIAR
- Minimum carriageway width - 7.3m
- Footway provision - Footways will be required where there is a pedestrian route integral with the local distributor corridor.
- Verge width - Verges must be provided between carriageway and footway/cycle tracks. Minimum width 2.0m.
- Gradients - 8% (1 in 12.5) maximum
1% (1 in 100) minimum
- Horizontal curve radius - 40m minimum
- Vertical curve length - 30m minimum
- Forward visibility - 60m minimum
- Junction spacing - 30m (centre line spacing) from another junction on the same side of the road.
15m from another junction on the opposite side.
- Junction radii - 15m - junction with distributor road.
10m - junction with IAR
- Junction 'X' distance - 9m
- Junction 'Y' distance - 90m
- Construction depth - See section 6.2.8

Section 6.2.8

4.4 Private Access Roads & Individual Development

Private Access Roads

4.4.1

All new build 'green field' sites involving in-depth development shall be designed to Local Standards and built to an adoptable standard. The Advanced Payments Code (APC) procedure will normally apply.

See Section 8.3 Advance Payments Code

4.4.2

However, consideration for adoption can only be given when:-

- the development directly abuts public highway
- where the site access road linking to the highway forms part of the development proposal

Generally the Highway Authority will seek to adopt all such roads, however, for small areas of light industrial units served by an enclosed courtyard type layout, adoption may not be required.

Individual Development Sites

4.4.3 access widths and gate positions

All individual development sites should have an access width of at least 6.1m, with any entrance gates set 10m or 15m back from the carriageway edge depending on entrance radii. Any security gate check facility should be sited at least 20m from the highway boundary so that administrative formalities can be carried out without disrupting other vehicular or pedestrian traffic.

4.4.4

At the entrance to the site junction radii shall be in the region of 7.5m – 15m depending upon the type of site development and the form and frequency of traffic movement.

4.4.5 visibility

Visibility - junction 'X' distance – 4.5m
 junction 'Y' distance – see Section 3.6.4

4.4.6 parking and manoeuvring

All developments are to provide for the appropriate parking requirements in accordance with Local Standards.

For parking layouts refer to the 'Designing for Deliveries' guide by the Freight Transport Association.

For developments fronting Major Industrial Access Roads and The majority of Industrial Access Roads, on site HGV manoeuvring facilities must be provided. For layouts refer to the 'Designing for Deliveries' guide by the Freight Transport Association.

'Designing for Deliveries' (FTA - Aug. 1998)

4.4.7

Well designed loading areas located away from the highway will overcome problems associated with loading on-street. They should therefore be incorporated in all new shopping, Industrial and freight handling developments.

'Designing for Deliveries' (FTA - Aug. 1998)

4.4.8

Some developments will be under cover and the service areas of some split level shopping developments may be below ground or underneath the main shopping level.

The maximum height of vehicles likely to be encountered in such a situation is 4.2m (i.e.. a standard container on a suitable flatbed vehicle). Minimum headroom provided should therefore be 4.65m exclusive of any additional space required for lighting units and service pipes or ducts.

Additional clearance will be required if there is a possible requirement for a surface overlay in the future. Changes in gradient may also reduce the effective headroom for long vehicles. Consideration should be given to the provision of an alarm or warning device for drivers of oversized vehicles and the headroom provided should be indicated on warning signs.

