SUMMARY

This amendment revised Chapter 3 ‘Retaining Walls’.

INSTRUCTIONS FOR USE


2. Insert new title page.

3. Archive this sheet as appropriate.

Note: A quarterly index with a full set of Volume Contents Pages is available separately from the Stationery Office Ltd.
Incorporating Amendment No. 1 dated February 1997

New Roads
The Road Corridor

Summary: This amendment revises Chapter 3 'Retaining Walls'.

Printed and Published by the above Overseeing Organisations
© Crown Copyright 1992 Price: £3.00

* A Government Department in Northern Ireland
## REGISTRATION OF AMENDMENTS

<table>
<thead>
<tr>
<th>Amend No</th>
<th>Page No</th>
<th>Signature &amp; Date of incorporation of amendments</th>
<th>Amend No</th>
<th>Page No</th>
<th>Signature &amp; Date of incorporation of amendments</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>2/1, 3/1</td>
<td></td>
<td>One</td>
<td>3/2, 3/3</td>
<td></td>
</tr>
</tbody>
</table>

**February 1997**
## REGISTRATION OF AMENDMENTS

<table>
<thead>
<tr>
<th>Amend No</th>
<th>Page No</th>
<th>Signature &amp; Date of incorporation of amendments</th>
<th>Amend No</th>
<th>Page No</th>
<th>Signature &amp; Date of incorporation of amendments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PART 4

HA 58/92

THE GOOD ROADS GUIDE
NEW ROADS
THE ROAD CORRIDOR

Contents

General Preface to the Good Roads Guide series of Advice Notes

Chapter

1. The Road Corridor: Introduction
2. Redundant Roads
3. Retaining Walls
4. Overbridges
5. Side-road Crossings
6. Footpaths and Bridleways
7. Roadside Fencing and Walls
8. Environmental Barriers
9. Kerbs
10. Signs
11. Service Areas and Lay-bys
12. Views from the Road
13. Landmarks and a Sense of Place
14. Junctions of Landform, Barriers and Structure
15. Lighting
16. Enquiries

December 1992
GENERAL PREFACE TO THE GOOD ROADS GUIDE
SERIES OF ADVICE NOTES

Structure of the Guide

0.1 The Good Roads Guide is the name given to the series of documents contained in Sections 1, 2 and 3 of Volume 10 of the Design Manual for Roads and Bridges. The Guide is written in nine parts each of which is published as an Advice Note. The Guide is written to be read as a whole. The Parts of the Good Roads Guide are as follows:-

Section 1 NEW ROADS

Part 1 HA 55/92 Landform and Alignment
Part 2 HA 56/92 Planting, Vegetation and Soils
Part 3 HA 57/92 Integration with Rural Landscapes
Part 4 HA 58/92 The Road Corridor
Part 5 HA 59/2 Nature Conservation
Part 6 HA 60/92 Heritage
Part 7 HA 61/92 Contract and Maintenance Implementation

Section 2 MOTORWAY WIDENING

Part 1 HA 62/92 Environmental Design Widening Options and Techniques

Section 3 IMPROVING EXISTING ROADS

Part 1 HA 63/92 Environmental Design Improvement Techniques

How to use the Good Roads Guide

0.2 Many of the design ideas put forward in Section 1 - New Roads are also relevant to the other Sections and cross references have been provided.

0.3 The first Chapter of each Part of the Guide reviews the issues and topics covered. The subsequent chapters deal with a particular topic. Within each chapter, the key issues are first listed and then discussed with illustrations drawn from roads throughout the UK.

0.4 The Good Roads Guide is not a step-by-step guide on how to build a road or a substitute for professional advice. It is intended to be used by the designer to help in the identification of areas and issues where careful consideration of environmental factors is required. The division of the Guide into Parts and the Parts into topics has been done to aid this process.

0.5 Environmental design of roads is a matter of respecting the special character of each individual location. The illustrations included show solutions devised to meet the requirements of specific sites. The use of standard solutions, irrespective of the location, is not appropriate.

Implementation

0.6 The principles set out in this Advice Note should be taken into account in the preparation of all schemes for the construction and improvement of trunk roads, including motorways.

0.7 Where conflicts exist between environmental design, costs, engineering feasibility and safety requirements, and competing options are available, the Design Organisation will need to advise the Overseeing Department accordingly.

Application in Wales

0.8 Requirements in Wales are primarily covered by the publications "Roads in Upland Areas: Design Guide" (published by the Welsh Office 1990) and "Roads in Lowland Areas: Design Guide" and "Rock Profiling and Vegetation Re-establishment" (both due for publication by the Welsh Office in 1993). This Advice Note supplements these Design Guides.

Application in Scotland

0.9 The Scottish Office Roads Directorate endorses the practice given in the Good Roads Guide. More specific guidance is provided by the Roads Directorate's Landscape Officer.

0.10 The Scottish Office discussion document published in February 1992 "Roads, Bridges and Traffic in the Countryside" addresses related issues.
Applications in Northern Ireland

0.11 The principles set out in this Advice Note are endorsed as good practice by the Department of the Environment (NI). The guidance will be taken into account in preparing schemes for the construction or improvement of all roads in Northern Ireland.
CHAPTER 1 THE ROAD CORRIDOR: INTRODUCTION

1.1 SCOPE
- This Part gives guidance on the environmental design of the road corridor for new roads.

1.2 MAIN ISSUES
- A road will blend successfully with its surroundings only where the right landform and planting have been designed for it, as discussed in Parts 1, 2 and 3. However, success also depends on appropriate design and choice of materials for the features of the immediate road corridor itself: for example, fencing, walls, kerbs, overbridges and planting. Good practice should avoid an unsympathetic assemblage of standard details and provide an integrated design for the road, its corridor and the surrounding landscape.
- The purpose of this part is to describe environmental design opportunities and constraints: safety and structural requirements for the road itself are set out in the appropriate standards and advice notes.
- All design elements need to be considered by the design team as early as possible so that their appearance and environmental impact can be taken into account fully along with costs, feasibility and safety requirements.
- Elements such as lighting, signs and environmental barriers need to be considered in the overall design scheme and not added at such a late stage in the process that good design becomes impossible.
- Designs and finishes of major road-corridor elements like overbridges and retaining walls are opportunities to give a sense of place and provide interest for the road user.
- Good design can create clear, structured views of the road ahead, in a setting related to the adjacent landscape but into which the road does not intrude. A balance between concealing the road and allowing attractive views out can be achieved.
- Design must be at the right scale for the road. Fine details, brief views and confusing landmarks will be missed or will be irritations.

1.3 DESIGN OBJECTIVES
- Walls, fences, environmental barriers, overbridges and other roadside features should reflect the landscape through which they pass and provide a sense of place for the driver.
- Site-specific designs, using local materials and styles, should be used wherever possible.
- Design elements should be simple and clear, reducing visual confusion.
- Views out, landmarks and other design features should be used to give a sense of place and help driver orientation.

1.4 MITIGATION
- Local materials and styles should be used, avoiding over-elaborate detailing and pastiche. Inappropriate standard details should not be imported from an area with a different landscape character.
- New features should be integrated with existing ones through appropriate alignment and use of materials.
- Simple, clear, directional features are the most effective, such as mass planting to identify junctions or a line of trees to indicate a curving road.
1.5 STATUTORY BODIES
● Within this Part, reference to the Department of Transport, English Nature, English Heritage and the National Rivers Authority should also be read as referring to the appropriate statutory authority or adviser for Wales, Scotland and Northern Ireland.

2.1 PRINCIPLE
● Redundant roads should not be left as eyesores. They should be put to good use as access or laybys, or broken out and returned to an appropriate land use.

2.2 KEY ISSUES
● Redundant roads can serve as farm and field access but they need adequate landscape treatment.
● New roads can be aligned to leave sections of redundant roads as lay-bys buffered by the mature vegetation of the old roadside.
● Where a road is to be retained as pedestrian access, it needs treatment at an appropriate scale.
● In rural areas, breaking out - the complete removal of the hard surface - and planting or return to agriculture will help absorb the new road into its setting.
● Careful consideration needs to be given to compulsory purchase and stopping-up orders in relation to redundant roads. Old roads required for planting may need to be included in the draft compulsory purchase order.

2.3 FARM ACCESS

The redundant road has been retained to provide farm access, but it is too prominent. If a better-sited access point could not be found the road should have been fitted into its setting.

Improvement A hedge planted as accommodation works makes all the difference.

2.4 CREATING LAY-BYS

A22, East Sussex The new road has allowed mature trees to be kept. They absorb it into its setting and provide screening for the lay-by on the old road.

2.5 BREAKING OUT REDUNDANT ROADS

In areas of strong hedgerow pattern, retained hedges and trees from an old roadside can help absorb a new one into its setting.

Return to agriculture is often the best solution.
CHAPTER 3 RETAINING WALLS

3.1 PRINCIPLE

- Retaining walls can dominate the road but are necessary on constrained sites. By varying the height, distance up the embankment, texture and materials, together with a choice of suitable planting, an effective, site-specific design is possible. Retaining walls are a major issue in motorway widening and are also dealt with in Section 2: Pt 1, Ch 6.

3.2 KEY ISSUES

- Local materials should be used where possible.
- Two or more retaining walls, stepped up a cutting, can be used in preference to a single high wall. They create more opportunities for plants to become established.
- Modular systems such as gabions or walling offer great flexibility and should be used to full effect in producing a design to take best advantage of the site’s opportunities.
- Planting can soften the appearance of retaining walls and help absorb them into their surroundings, but only where the right conditions for plant growth are provided.
- Patterns and textures next to the carriageway must be bold because they are to be read at speed.

3.3 LOCAL MATERIALS

A30, Okehampton Bypass The use of local stone makes an attractive wall

A41, Shropshire Use of local sandstone in a modular system gives an appropriate character, but new walls using this system must not exceed 1.4m

These concrete slabs are inappropriate for the setting of this historic building

3.4 PATTERN AND TEXTURE

Patterns and textures are needed to provide driver interest and prevent a dreary, stained finish.

Possible techniques A number of techniques, such as grit blasting to expose aggregate, or moulded fibreglass shuttering, exist to provide good textures, but a bold approach is needed.

M25, Surrey A bold pattern on these walls would have improved the driver’s view

A2, Eltham, Kent A simple pattern can be effective
3.5 INTEGRATION WITH PLANTING

A449, Kidderminster Bypass This attractive, bold pattern provides interest for drivers and pedestrians.

Coventry Inner Ring Road Vegetation softens an otherwise harsh environment as the road passes through an urban area.

3.6 REDUCING THE DOMINANCE OF WALLS

The dominance of retaining walls can be reduced by stepping them up the embankment or by setting them back from the road to allow planting to be placed in front of them.
3.7 USING MODULAR SYSTEMS

Modular walling

A267, Mayfield Bypass, Sussex  This modular system has been used in an unsympathetic way. The use of no fines material behind the wall prevents the establishment of vegetation and the grass above is difficult to maintain. A stepped wall with vegetation growing over the top can be more effective: see also Section 2: Pt 1, Ch 6

Gabions

Gabions can be successful if sufficient space is allowed for planting, or if local stone is coursed carefully within the gabion cages.

Side road off the A30, Devon  This well-constructed gabion wall of local stone on a minor road fits in well and is already being softened by vegetation, but new walls using this system must not exceed 1.4m

A13, Essex  The scale of this modular retaining wall is visually overbearing. A more varied texture or staggering to allow planting could have been considered

3.8 CONCRETE PANEL WALLS

These can be difficult to integrate with planting, since the very large coping required makes it difficult to establish vegetation immediately behind the wall.
CHAPTER 4 OVERBRIDGES

4.1 PRINCIPLE

- Overbridges should be designed to be slender and unobtrusive, respecting local landscape character as well as roadside constraints. Solid abutments should generally be avoided, although they may be suitable in some locations.

4.2 KEY ISSUES

- Bridges should spring from the adjacent landform and not from large abutments which dominate the road.
- The approach embankments should be integrated sympathetically with the adjacent landform.
- Local materials should be used wherever possible.
- Extending existing bridges calls for careful design and respect for the historic character of the original bridge.
- Overbridges in cuttings can frame dramatic views which act as landmarks for the driver.

4.3 APPROPRIATE DESIGN AND USE OF MATERIALS

M4, Gwent This bridge could have been much simpler in design without the abrupt, stone-clad abutment

M4, Wiltshire A simpler design is required for a rural setting. The planting does nothing to improve this bridge

A21, Kent The bridge springs from the surrounding vegetation

Good practice: M6, Staffordshire Simple functional design without solid abutments and with local materials used for the piers

Good practice: M6, Staffordshire This elegant bridge in local materials is appropriate to its setting

DECEMBER 1992
CHAPTER 4 OVERBRIDGES

4.3 APPROPRIATE DESIGN AND USE OF MATERIALS CONTINUED

Good practice: M25, Surrey The bridge crosses the road and river in a single, simple structure

4.4 LOCAL MATERIALS

Where solid abutments are chosen, local materials can give character and a sense of place.

M5, Worcestershire These abutments in Triassic Sandstone, adjacent to a sandstone cutting, fit the bridge to its setting

4.5 LANDFORM

A27, Brighton Bypass The mound is far too abrupt and does not fit the landscape

4.6 FRAMING VIEWS

M25, Kent This bridge frames views of the Medway valley for the driver as he/she leaves the North Downs
CHAPTER 5 SIDE-ROAD CROSSINGS

5.1 PRINCIPLE
- Side-road crossings need to be given careful attention at an early stage in a road scheme. The wrong decision can have a significant effect on the appearance of a road.

5.2 KEY ISSUES
- There is usually a choice between putting the side road or the main road in a cutting, leaving the other at grade.
- Skew crossings, or the use of a curved approach to straighten the skew so that more planting can be provided, may need to be considered.
- Grading out of approach embankments should be considered at the earliest possible stage.

5.3 SIDE ROAD OVER OR UNDER?

5.4 PLANTING AND ABUTMENTS
Planting can soften the appearance of abutments and conceal the point at which the bridge springs from the landform: see Ch 4. However, care should be taken not to fill in carefully detailed open spans with solid planting and spoil the proportions of the bridge.

Where embankments are required it is often better to construct to one side allowing for the retention of roadside trees which can immediately offset the visual scale of the new bridge.

In designing side-road crossings full advantage should be taken of levels to minimise the need for earthworks.

5.5 USING NATURAL LANDFORM

5.6 SKEW CROSSINGS
Skew crossings can be difficult and expensive to construct. Realignment to make a skew crossing should retain the existing vegetation and use it as a focus for new planting, as shown here.

5.7 GRADING OUT
Wherever possible the approach embankments for overbridges should be graded out. This is particularly important for footpaths and agricultural crossings, which often approach the bridge parallel to the main line of the road.
6.1 PRINCIPLE

- Footpaths, bridleways and side roads near the road need to be integrated with the landscape and to be made as pleasant as possible for the user.

6.2 KEY ISSUES

- Wherever possible, historic footpaths and trackways should be kept on their original alignments.
- Good design should avoid diverting footpaths and bridleways to run close to busy roads for long distances.
- Earthworks necessary for side roads, footpaths and bridleways need to be identified at an early stage and integrated with the overall design of the scheme.

6.3 MAINTAINING HISTORIC ROUTES

In this example the bridleway along the Roman road running through the historic core of Dorchester on Thames has been diverted to make a much less attractive route. Its historic character has been lost.

6.4 DIVERSION

Where diversion is unavoidable, realignment for long distances parallel to the new road makes an unpleasant route which, as often as not, falls into disuse. Diversion further away from the road can be much more successful.

6.5 EARTHWORKS

Earthworks for side roads and diverted bridleways/footpaths need to be taken into account at an early stage in design.
CHAPTER 7  ROADSIDE FENCING AND WALLS

7.1 PRINCIPLE
- Roadside fences and walls have a significant effect on the appearance of the road in the landscape and they should blend in with their surroundings. Appropriate styles and alignment need to be used.

7.2 KEY ISSUES
- Unnecessary fencing, both within the highway and adjacent to it, should be avoided wherever possible.
- Fences and walls need not follow property boundaries. There are often good design and safety reasons why a fence should follow a separate alignment from such boundaries, which can be shown on the ground by posts if necessary.
- The appearance of fencing against the skyline when viewed from a road in a cutting can be avoided by good design.
- Fencing of sports grounds close to the road needs particular attention.
- Fencing is only provided by the Department of Transport along motorways. For all other roads fences are negotiated as accommodation works by the landowner and the District Valuer, and the style of fencing is subject to that agreement.
- It is often appropriate to back up the fence with hedge planting, which can be negotiated as accommodation works, see Pt 2, Ch 9. The hedge can then be managed by the farmer in a manner appropriate to the landscape setting.
- Fencing at bridge abutments and junctions with parapets need particular attention.
- Standard post-and-rail fencing is often inappropriate. Local styles, often at least as cost-effective, should generally be followed.

7.3 UNNECESSARY AND DOMINANT FENCING

Poor practice The unnecessary fencing on the skyline only accentuates the slope. It could be replaced with a light post-and-wire fence set at the base of the slope and away from the road.

Dominant fencing

Improvement

7.4 IS STANDARD FENCING NECESSARY?

In open, lowland landscapes light fences are appropriate. In arable areas there is often no need for fencing at all.
CHAPTER 7  ROADSIDES FENCING AND WALLS

7.4 IS STANDARD FENCING NECESSARY? CONTINUED

Where the design objective is to make the boundary as inconspicuous as possible in an open landscape, light fencing is the most appropriate style. Black, plastic-coated strained wire on slender, black-steel uprights is often appropriate. Green should be avoided because it rarely blends with its background.

**M6, Shap** Light, inconspicuous, stock-proof fencing appropriate to open landscapes in the uplands

7.5 AVOIDING THE SKYLINE

Good practice: A6, Taddington Dale The light fence is hidden for much of its length amongst the trees

7.6 SPORTS GROUND FENCING

Urban fringe, sports ground fencing can dominate the roadside. There are at least two possible solutions:

- planting where there is sufficient space
- improved fencing design.

Because of their height, sports fences should be as simple and uncluttered as possible and preferably finished in black.

**A6, Loughborough** Robust design on a constrained site

Here the fencing is simple enough. But there is unnecessary duplication and clutter with the wooden fence, and the planting is ineffectual

Improved planting and removal of the unnecessary post-and-rail fence gives a much better result

DECEMBER 1992
CHAPTER 7 ROADSIDE FENCING AND WALLS

7.7 TIMBER FENCES
Local timber fencing styles are often appropriate.

A27, East Sussex Fencing in a local style adjacent to the road

7.8 OTHER FENCE MATERIALS

M25, Essex Urban fencing styles are often inappropriate in the countryside

A27, Brighton Bypass Concrete posts give an unnecessary urban character in rural areas

7.9 JUNCTION OF FENCES

The problem The junction of different fences, which often serve different purposes, and the junction of fences and bridge parapets needs well-considered design - not the application of standard details

7.10 FENCING AND ABUTMENTS

Poor practice A heavy post-and-rail fence on unsympathetic alignment without planting

Good practice A staggered, light fence rising up the embankment lost in planting
CHAPTER 7  ROADSIDE FENCING AND WALLS

7.11 ALIGNMENT
Fences and walls need to follow alignments in sympathy with the road, but also to relate to the alignment of adjacent field boundaries.

Poor practice  Angular alignment in heavy materials is visually disruptive and emphasises the minor cutting

Good practice  Flowing alignment in light fencing draws the eye forward

A40, Northleach Bypass  The wall was not a cheap option, but it emphasises the minor cutting and the way that the road has cut across slightly undulating land

Improvement  The minor cuttings have been regraded and returned to agriculture and the wall placed appropriately at the back of the soft verge

7.12 THE RIGHT MATERIAL IN THE RIGHT PLACE
Walls should be used where they are traditional features of the landscape, closely following local styles.

Drystone walling: A40, Cotswolds

A6, Derbyshire  Limestone walling in the uplands

Devon Bank

Cornwall  Traditional skills in local walling styles are often maintained by local highway authorities and National Park authorities
8.1 PRINCIPLE

- The main purpose of environmental barriers is to remove or reduce the impact of the road on adjacent property and public places. Good design can provide barriers which are integrated with their surroundings and serve this purpose. The design team must review the full range of materials, designs and construction methods available to achieve the site-specific design solutions.

8.2 KEY ISSUES

- Earth mounding is used widely as a barrier in rural areas. Although a steep batter near the road is often required to mitigate noise, where there is sufficient room the backslope can be varied to fit in with the surrounding landform.
- The use of distinctive rural barriers like Devon walls outside their traditional landscape setting is inappropriate to the other landscape and should not be encouraged.
- The sides of mounds must not be steeper than 1:2 in order to allow adequate topsoiling and permit the establishment and management of planting.
- Walls of local materials are appropriate near buildings of historic interest or of special local character.
- In urban and urban-fringe areas, barriers should reflect the built environment. Well-sited and designed barriers can emphasise the change from countryside to town and provide a sense of place.

8.3 MOUNDING

Mounding needs to be graded into its setting, like any other earthwork.

Although the mound is effective in screening views of the road, it is itself an eyesore.

Improvement: Here the mounding is in keeping with the surrounding landscape and continues to provide screening enhanced by more planting.

The design of mounds is also discussed in Ch4, and in Pt 1, Ch 2 and in Section 2: pt 1, Ch 2 which deals with the regrading of backslopes to restore them to adjacent land use. Some other design implications are set out below.

A constant height above the road surface can create an unnatural horizontal line in the landscape. It is better to vary the height of earthworks. Further emphasis can then be provided by varying the height of planting. Integrating structures, fences and earthworks is also discussed in Ch 14.

Varying the mound in elevation can be enhanced by planting

While an abrupt 1:2 slope is often needed on the roadside, a uniform cross section should be avoided except on very constrained slopes.

The ends of mounds need careful design and should grade gently into fences and abutments.

Integrating mounds and cuttings

The junction of fences and mounds.
CHAPTER 8  ENVIRONMENTAL BARRIERS

8.4 PLANTING
Dense planting can be used to add to the effective height of the mound and soften its appearance. If the slopes are not too steep and there is sufficient depth of uncompacted soil it should establish well.

A49, Ludlow Bypass  Mounding and well-established planting protects nearby housing

This elevation can be achieved from both the roadside and the housing side

8.6 CONTINUOUS FENCING
Close-boarded fencing is a convenient environmental barrier for constrained sites. By varying heights and proportions, offsetting and allowing room for planting, the monotony of continuous roads can be reduced.

On a constrained site, the integration of planting, mounding and fencing can often provide the best type of environmental barrier.
CHAPTER 8 ENVIRONMENTAL BARRIERS

8.7 BRICK WALLS

Brick walls are suitable in areas of special character.

The walling and fencing are unattractive and inappropriate to the historic buildings behind them.

- Reduced height of wall in local brick matches the style of the adjacent cottage.
- Raised bank keeps right proportions for the wall and improves the path for pedestrians.
- The carefully chosen coping imitates thatched cob wall and is appropriate to the setting.

Swaythling Link, Hampshire A well-designed wall screens the properties and allows the existing trees to be retained.

8.8 CONCRETE

In urban and suburban areas, simple, bold designs in other materials such as concrete or perspex are appropriate: see the Department of Transport's publication on environmental barriers.

Gatwick Airport Simple, effective design using concrete in a built environment. Alongside a road this would require an integrated safety barrier.

8.9 LIVE WALLING

There are several types of wall which incorporate vegetation; most require watering and regular attention. They do not necessarily integrate with natural landform and vegetation. They should be constructed with sufficient variation in species and height to avoid an unnatural uniformity of appearance.

Live walling This example uses willow.
9.1 PRINCIPLE
- Kerbs should be functional but unobtrusive and aid drainage.

9.2 KEY ISSUES
- Raised kerbs in rural areas give an unnecessary municipal character to the road and should be avoided wherever possible.
- Local patterns and materials can be reflected in kerb design.
- Such materials as extruded asphalt and granite setts may be appropriate, but only in the right context.

9.3 KERBS FOR RURAL AREAS

A303, Thruxton Raised kerbs combined with a clumsy bridge design are inappropriate for a rural road

B road, Oxfordshire The effect of an unnecessary kerb is immediately apparent on this rural road

Good practice: A40, Oxfordshire The inconspicuous, bevelled kerbs in local material, shown left, have been copied effectively in concrete for a widened section

9.4 INCONSPICUOUS EDGES

Good practice: A43, Duddington Bypass The road has simple, unobstructive edges which are easy to maintain, while allowing adequate drainage

Good practice: French autoroute Here, too, raised kerbs are absent, as are gravel-filled drains, resulting in an attractive roadside edge.
CHAPTER 10  SIGNS

10.1 PRINCIPLE

- Siting and grouping of signs for different purposes needs early consideration in the development of a road design.

10.2 KEY ISSUES

- The design team needs to know the positions of signs as early as possible so that there is sufficient time to consider their visual impact in order that property can be avoided and they can be offset by landscape design.
- Placing signs in well-designed groups and elimination of unnecessary ones should be reviewed at an early stage for each scheme.
- On rural roads older signs which often have a regional or local character should be reused wherever possible.
- Some discretion can be used when deciding where signs are to be put. They should be placed away from nearby houses, and where their impact can be offset by existing vegetation or a cutting.
- The landscape design should take full account of the visibility of signs and the potential for screening them from behind.

10.3 PROMINENT SIGNS

A27, Brighton Bypass  Road signs can be prominent in views from public places

A30, Wiltshire  A jumble of signs is unsightly and confuses the driver

10.4 ROUNDABOUTS

Signs at roundabouts can easily become cluttered and overbearing.

A40, Burford  At least the driver gets the message. Such a large number of signs is surely unnecessary

A17, Lincolnshire  The retention of old cross roads signs in appropriate locations can add interest and character to an area
CHAPTER 11  SERVICE AREAS AND LAY-BYS

11.1 PRINCIPLE

- It is Department of Transport policy that motorway service areas (MSAs) should be provided at intervals of about half an hour’s driving time. Much can be learned from the shortcomings of older service areas and best practice in the design of new ones.
- Lay-bys must offer a pleasant environment and a break from the road corridor.

11.2 KEY ISSUES

- The location and design of MSAs is a major issue which is addressed in depth when new sites are chosen. A small selection of issues on location and the quality of facilities is dealt with here.
- The siting of an MSA requires as much consideration as the siting of the road. There can be views of the surrounding landscape, but the MSA itself should not become a visual intrusion. The best sites have landform or woodland nearby that give screening and offset the scale. Open or high ground should generally be avoided.
- Good design provides a feeling of separation from the road within a short distance of it: an essential part of a real break from driving.
- On-line improvement schemes offer the chance to create attractive lay-bys using redundant carriageways.
- Picnic sites provided for the Department of Transport and those run by local authorities near trunk roads can be successful stopping places, if adequate access and signs are provided.

11.3 SITING OF MSAs

M6, Killington, Cumbria  The siting of the MSA makes good use of a spectacular Lake District site. The prominent building is well designed in local materials which blend it with the landscape. Car parking is screened from wider views and the woodland makes an attractive setting

M4, Magor, Gwent  The MSA is sited on a minor ridge with views across the valley of buildings that do not suit their rural setting

11.4 SEPARATION FROM THE ROAD: LAY-BYS

A1, Bedfordshire  Many older roads have lay-bys which give no break from the road, and are often unattractive.

On a constrained roadside site adequate design can be provided by strong planting and a logical layout.

A39, Bideford  Separation from the road does not mean isolation from it. Here an attractive view of Bideford and its approaches has been provided.
CHAPTER 11  SERVICE AREAS AND LAY-BYS

11.5 SEPARATION FROM THE ROAD: MSAs

Good practice: M3, Fleet, Hampshire On a lowland site a woodland setting such as this can screen the MSA and provide separation from the road.

M6, Killington, Cumbria A large site has been well used to provide facilities for picnicking and enjoying the surrounding countryside.

M42, Tamworth In lowland areas there may be no views out from an MSA. Good design, within the constraints of the site, then becomes essential, as shown here.

11.6 USE OF REDUNDANT CARRIAGE WAYS

As shown in Ch 2, redundant carriageways can often be used successfully as lay-bys.

11.7 PICNIC AREAS

A41/A534, Cheshire This picnic area is simple but well-maintained by the local authority. It has a countryside character but is less than 25 m from the road junction.

11.8 IMPROVING EXISTING FACILITIES

M56/A51 junction, Cheshire This lay-by service area is a lost opportunity. A much more attractive setting could have been designed.

Improvement Planting can provide an attractive setting and separation from the road.
12.1 PRINCIPLE
- Preventing intrusive views of the road must take priority over the provision of views of the surrounding countryside. However, views out should be created wherever possible to keep drivers aware of their surroundings and to provide interest and orientation. Improving the driver's perception of the road ahead should also be considered by taking views along the road corridor into account.

12.2 KEY ISSUES
- Screening views of the road is dealt with in Pt 2, Ch 2 and integration with the landscape in Pt 2.
- In general, views of settlement will be screened by landform or planting, but good design can ensure that views of features such as church towers, which add to driver interest, are kept, without having an impact on residential property.
- Views out from the road can be distracting when they change too frequently. At 100 kph a view held for one minute corresponds to 1.7 km of road length. Therefore, simple, broad-scale treatments are needed.
- As a rule of thumb, views from the road need to last at least 20 times as long as views experienced on foot.
- Views along the road corridor must draw the eye forwards and avoid distracting foregrounds.

12.3 STRUCTURING VIEWS OUT

12.4 A CASE STUDY IN GOOD PRACTICE

Peterborough: The bold, widely-spaced clumps of trees and shrubs frame the views to the cathedral successfully but cut out views of the sugar factory.

12.5 VIEWS ALONG THE ROAD

Poor practice: Dense planting of a limited range of species at a uniform distance from the carriageway.

Improvement:
CHAPTER 13  LANDMARKS AND A SENSE OF PLACE

13.1 PRINCIPLE

- This section draws together the elements in road design and alignment which provide landmarks and orientation for drivers and give them a sense of place. Good practice is not a matter of providing extra structures unrelated to the surrounding landscape, but of emphasising existing features which are often of landscape, aesthetic, or heritage interest.

13.2 KEY ISSUES

- Views of changes in landscape type or of prominent landscape features can be effective landmarks telling travellers where they are.
- Landmarks do not necessarily have to be attractive in themselves.
- Features of the road itself, such as distinctive overbridges, are also landmarks.
- Historic features, ranging from church towers to railway bridges retained in the development of the road, are amongst the best landmarks.
- The transition from countryside to town is a particular opportunity for distinctive design and landmarks.

13.3 LANDSCAPE FEATURES AS LANDMARKS

Rock cuttings
Rock cuttings, see Pt 1, Chs 17 and 18, and views framed by bridges: see Ch 4 and Pt 1, Ch 9, can be particularly effective landmarks, as can unobstructed views of marked changes in landform. Alignment needs to take advantage of such views. Planting should not be allowed to obstruct them.

Major landforms

M54: unobstructed views of the Wrekin give an immediate sense of place

Distinctive planting
Distinctive planting such as fastigiate trees and avenues can also remind drivers where they are.

M1, Leicestershire  This group of Lombardy poplars makes a prominent feature in an otherwise bland road landscape (see also Pt 2, Ch 5, where avenues are described)

13.4 ACCEPTING PROMINENT FEATURES NEAR THE ROAD

Major structures such as cooling towers or large industrial buildings cannot be screened: indeed, planting near them draws attention to their size. It is better to accept them for what they are and value the orientation and landmarks they provide.

M27, Hampshire  Views of the Ford plant

A1, north of Nottingham
13.5 FEATURES OF THE ROAD

M25, Junction 12 This unusual bridge, which resolved a difficult engineering design issue, is one of the most prominent landmarks on the M25.

M25, Buckinghamshire This early twentieth-century viaduct has been retained by bringing the two carriageways with reduced hard shoulders through the original arches. A distinctive historic feature has been retained and a landmark provided.

13.6 VIEWS OF HISTORIC BUILDINGS

M40, Oxfordshire This restored nineteenth-century water tower is a prominent landmark in a relatively featureless road corridor.

A55, Bodelwyddan Church spires were always intended to be prominent landmarks.

13.7 APPROACH TO SETTLEMENT

This is dealt with in more detail in Pt 1, Ch 12, and Pt 2, Ch 5.

Avenue Jean Jaurés Nîmes This distinctive scheme designed by Richard Rogers, gives an immediate sense of place and orientation.
CHAPTER 14  JUNCTION OF LANDFORM, BARRIERS AND STRUCTURE

14.1 PRINCIPLE
- Resolving the junctions between different elements - for example, bridge abutments and landform - is at the centre of good design, as in the marrying in of new elements with existing ones.

14.2 KEY ISSUES
- Good design of junctions is dealt with in many parts of this section and is a recurrent theme in fluent design.
- Some of the most frequent junctions to be resolved are:
  New and existing landforms
  Overbridges and landforms
  Different fencing types
  Retaining walls and fencing
  Retaining walls and adjacent uses
- These issues are dealt with elsewhere and a few points of reference only are discussed here.

14.3 EARTHWORKS
Grading new earthworks into existing landform is essential in good design.

Another typical issue is the junctions of cutting with natural landform. These often can be unsatisfactory. A more generous landtake and detailed contour drawing may be appropriate to achieve a satisfactory result.

14.4 FENCING
Junctions of different types of fencing are discussed in Pt 4, Ch 7. The example below illustrates the issue of grading fencing into the landform.

Poor practice  The mounding should have been graded into the existing landscape

Improvement

A27, Brighton  Possible solution

A27, Brighton  Poor integration of fencing and mounding

Possible solutions
14.5 OVERBRIDGES
Marrying overbridges with the surrounding landform can be a significant problem and is reviewed in Pt 4, Ch 4. The example below shows how an overbridge can be better integrated with landform.

A329, Reading  The junction between the wing wall and embankment is unsatisfactory and the large expanse of brick facing does not suit it surroundings.

Possible improvement

14.6 RETAINING WALLS AND FENCING
A1 (M) Retaining walls and protective fencing have not been integrated with the adjacent verge.

Typical solution for which planting has been used.

Typical solution where the retaining wall has been extended as an upstand.

14.7 RETAINING WALLS AND LANDFORM
Integrating retaining walls with landform, particularly where they taper into natural levels, is essential to good design.

Poor practice  A prominent and unsightly junction.

Possible improvement

As discussed in Pt 4, Ch 3 every use should be made of vegetation to soften retaining walls at the top ends.
CHAPTER 15 LIGHTING

15.1 PRINCIPLE

- Lighting is a complex issue and landscape architects and civil engineers need to work with lighting engineers to develop site-specific solutions. The design objective is to provide lighting with the level of performance that achieves night-time road safety objectives while minimising adverse environmental impacts and intrusion. The following points identify major considerations only.

15.2 KEY ISSUES

- Although lighting increases safety, it can create major intrusion through its night-time impact on adjacent property and on countryside character. In daylight the position, shape, height, colours and spacing of columns can have an impact.
- In rural areas, junction and roundabout lighting can be particularly intrusive and this must be taken into consideration in their siting.
- Full advantage should be taken of current developments in the lighting industry.
- Well-illuminated landmarks can help the driver by telling him/her where he/she is and by giving a sense of place.
- Central reserve lighting is generally a better landscape solution than verge-side lighting since the latter is a barrier between the road and the surrounding landscape and requires more columns.
- The colour of the column and bracket is particularly important. In general, darker colours, either dark grey or weathered galvanising, blend effectively with their surroundings. In heavily-wooded areas matt dark brown or black would be appropriate. The luminaire should be finished in the same colour. Light colours stand out and should be avoided.
- Column and bracket design should be simple, elegant and functional. Brackets should be kept short and the joint with the column designed to be unobtrusive.
- Lanterns should be of simple, elegant design. The degree of light control should be appropriate to the location.
- A small number of tall, slender columns is generally preferable to a large number of small ones.
- On landscape grounds the whiter light of high-pressure sodium lamps is usually preferable to the yellow light given by low-pressure sodium in environmentally sensitive locations.

15.3 IMPACT ON THE LANDSCAPE

M62, Pennines The lighting creates a considerable impact on the upland landscape by day and night. The dark columns merge with the background but the white luminaries stand out. Central reserve lighting would have required fewer columns. Leaving areas unlit should be considered where this is compatible with safety

Good siting: A27, Fontwell, West Sussex The approach to this potentially-prominent roundabout is well-shielded by vegetation

Good siting: A27, Fontwell, West Sussex The mature woodland surrounding the roundabout cuts off most views of the columns and much of the lighting. In the long term a similar effect can be achieved by planting. Columns with a darker finish would have merged more effectively with the background trees

Lighting can have a major impact on the landscape
15.4 TYPE OF LIGHT AND SPILLAGE

M25: low-pressure sodium with poor cut off has a substantial effect on the landscape

M25: high-pressure sodium lighting with more stringent light control provides a more natural light

15.5 COLUMNS

Runcorn New Town High Mast lighting of junctions may be necessary in some circumstances. Light spill can be controlled by accurate alignment of lanterns.

A45: Birmingham Airport Where low columns are necessary, such as under flight paths, particular care needs to be given to design. There are better solutions than the one adopted here with its clumsy, heavy columns and lights.
CHAPTER 15  LIGHTING

15.6 COLOUR AND FINISH

Dark colours (dark grey or black) with a matt finish are almost always the best colours in the countryside. Above all, avoid green!

A232, Croydon where green columns have been provided

15.7 LIGHTING AND LANDMARKS

A55, Conwy Castle The driver knows exactly where he is

Dartford Crossing Bridge Where lighting is unavoidable, it can be used to good design effect

15.8 CATENARY LIGHTING

Catenary lighting is widely used elsewhere in Europe. It avoids a forest of masts, gives strong directional guidance and a sense of forward movement. However, there is much more lateral light spillage beyond the highway boundary

15.9 PARAPET LIGHTING

A87, Dornie Bridge, West Highlands Although some maintenance difficulties with parapet lighting have yet to be overcome, it is particularly appropriate in sensitive landscapes
16. ENQUIRIES

Approval of this document for publication is given by the undersigned:

Head of Division
Road Engineering and Environmental Division
St Christopher House
Southwark Street
London SE1 0TE
N S ORGAN
Head of Division

The Deputy Chief Engineer
The Scottish Office Development Department
National Roads Directorate
Victoria Quay
Edinburgh EH6 6QQ
J HOWISON
Deputy Chief Engineer

Head of Roads Engineering (Construction) Division
Welsh Office
Y Swyddfa Gymreig
Crown Buildings
Cathays Park
Cardiff CF1 3NQ
B H HAWKER
Head of Roads Engineering (Construction) Division

Assistant Technical Director
Department of the Environment for Northern Ireland
Roads Service
Clarence Court
10-18 Adelaide Street
Belfast BT2 8GB
D O’HAGAN
Assistant Technical Director

All technical enquiries or comments on this document should be sent in writing as appropriate to the above.