opus

Landscapes Working For Bridgend County Borough

Design Guidelines

Volume 2

2

Bridgend

January 1997

WDA

CONTENTS

Introduction

SECTION 1.0

1.0 INTRODUCTION

1.1 General

This document is Volume 2 of a series of four documents which together make up the Landscape Strategy entitled 'Landscapes Working for Bridgend County Borough'. The Guide to the Strategy Document in Section 1.4 explains the titles and contents of the other three volumes.

The intention of this volume is to provide clear, free standing landscape design guidance for all those who are involved in the design, development, planning or management of the Bridgend County Borough landscape or whose proposals will affect it. It should be noted that the Study Area coincides with the area of Ogwr Borough Council before local government reorganisation. This document has no official standing in the area that is now part of the Vale of Glamorgan County Council.

The aims of the design guidance are to promote best practice and to reinforce the sense of place of each of the landscape character areas. It does this by expressing a vision for each area, describing a palette of materials for the area, focussing on key sites or issues and setting out references which may be of value to the reader.

These guidelines are not meant to limit innovative design but to provide a sound framework and information base from which truly good design and management can emerge.

1.2 Structure of Guidelines

The report is split into three main parts:

Overall Design Themes for the borough which address key issues and which all development should work toward achieving

Character Area Design Themes which are place specific and to which the designer should only need to refer to the sheet relevant to the proposed project.

Design Briefs which are prepared for the main development sites within the Study Area.

A Bibliography is located at the back of the document.

1.3 A Vision for Bridgend County Borough's Landscape

As a context for the design guidelines we describe below our vision for the Borough's landscape

The Study Area covers an area of varied landscape, from the exposed tops of the coalfield plateau through upland and lowland valley landscapes and coastal plateau to the coast with it's dunes and cliffs. Historically, it has been a place of two halves, the valleys where a hard living was gleaned, first by farmers and then by miners, and the lowland coastal plateau which is the westerly extension of the Vale of Glamorgan, which has been more densely settled since Roman and Norman times and yielded a more comfortable living. Now, while the Valleys still seek a new purpose after coal, Bridgend, located on the M4, expands into its hinterland of agricultural land.

Our vision for Bridgend is an area where care for the environment and economic development will go hand in hand, and the landscape will be cherished, used and cared for by local communities. Investment in the environment will contribute to a prosperous local economy, and a sustainable balance will have been achieved. A healthy environment will result in a productive workforce and the quality of life for residents of the area will be increased.

Each place would have a distinct identity expressed in the use of native species and local materials and by the sensitive expression of special local places and features.

A full network of convenient community footpaths and cycle routes will link settlements, open spaces and employment areas together and provide access to the wider countryside and national routes. They will be integrated with the public transport network to promote energy efficient transport.

River corridors will be free of litter, pollution and overdevelopment and fulfil their full potential as wildlife habitats and links, recreational assets and open space links.

The three broad landscape zones will have developed in different ways:

- The upper Valleys landscapes will be transformed by the management or planting of disturbed land for positive use and/or nature conservation value. The post-industrial settlements will be integrated into the valley sides through planting while retaining features of heritage interest and will be sought after places to live. Both the valleys and the upland landscapes will be used for recreation and tourism while enhancing their nature conservation value.

- In the central area [mid Ogwr], development will respect the landscape character and quality of the area and will be integrated into the landscape. Development will be concentrated in settlements [brown field sites] at densities which will prevent encroachment into the landscape. The character of the landscape will be enhanced by positive management.

- The coast will balance a vibrant tourism industry with the conservation and integrated management of it's superb natural and historical assets.

1.4 CHECKLIST AND GUIDE TO CONTENTS

To obtain maximum value out of this document we suggest you follow the checklist below:

1 Is this the most appropriate document for your needs? Look at the **Guide to Strategy Document** opposite for contents of each of the four volumes.

2 If you intend to carry out a scheme within the Study Area locate your area/site of interest on Figure DG11. Refer to the appropriate **Character Area Design Theme** [DG12-DG26]. You may find that your site is covered in the **Design Briefs** Section 4.0 [DB1-DB14].

3 Refer to all **Overall Design Themes** relevant to the project type [DG1-DG10].

If you want further detail and background follow the list below

4 What is the Landscape Context?
Refer to Volume 4 Technical Annex 2.0 and Bibliography.

5 What is the Ecological Context?
Refer to Volume 4 Technical Annex 3.0 and Bibliography.

6 What is the Economic Context?
Refer to Volume 4 Technical Annex 4.0 and Bibliography.

7 What is the Planning Context?
Refer to Volume 4 Technical Annex 5.0 and Bibliography.

8 What is the Tourism Context?
Refer to Volume 4 Technical Annex 6.0 and Bibliography.

9 What is the Sustainable Development Context?
Refer to Volume 4 Technical Annex 7.0 and Bibliography.

10 What is the Community/Consultation Context?
Refer to Volume 4 Technical Annex 8.0 and Bibliography.

GUIDE TO STRATEGY DOCUMENT

Each Volume of the Strategy has a specific function relevant to different people and organisations and all are interrelated.

Volume 1 Main Strategy

Contains.
***Key issues** relating to Bridgend County Borough's landscape resource*
*A **Vision** for the County borough's landscape*
***Strategy Themes** and Recommendations*
*A **Strategy for each Landscape Character area***
*Mechanisms for **Implementing the Strategy***
Bibliography

Volume 2 Design Guidelines

Contains:
*A **Checklist** for Developers*
***Overall Design Themes** for the County Borough*
***Design Palette** for each Character Area*
***Design Guidance** for specific sites*
***Design Briefs** for key development sites*

Volume 3 Action Programme

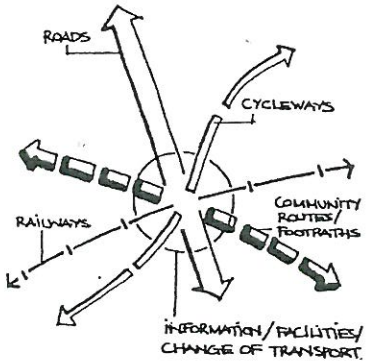
Contains.
*53 **Landscape Schemes** for Implementation in a prioritised and costed list*

Volume 4 Technical Annex

Contains:
***Background Information** for the Strategy*
Including Appraisals of Landscape, Ecology, and issues relating to the local Economy, Planning, Tourism, Sustainable Development and Community Consultation
*An **Action Plan** for activities to implement the Strategy*

Overall Design Themes

SECTION 2.0

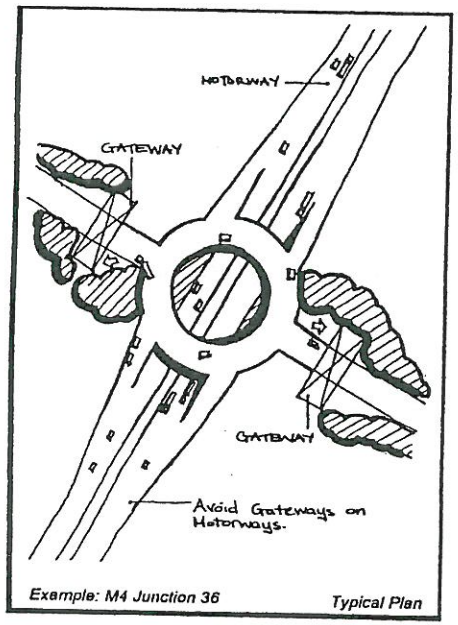


Accessibility to transport hubs should be maximised for all modes of transport.

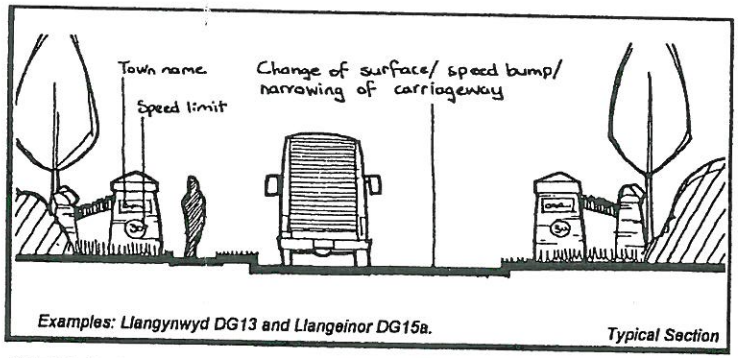
Information and high environmental quality is essential at these hubs

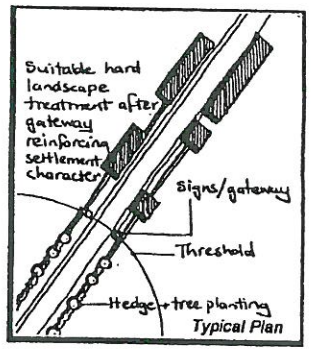
Diagrammatic Plan

A) COMBINED TRANSPORT HUBS

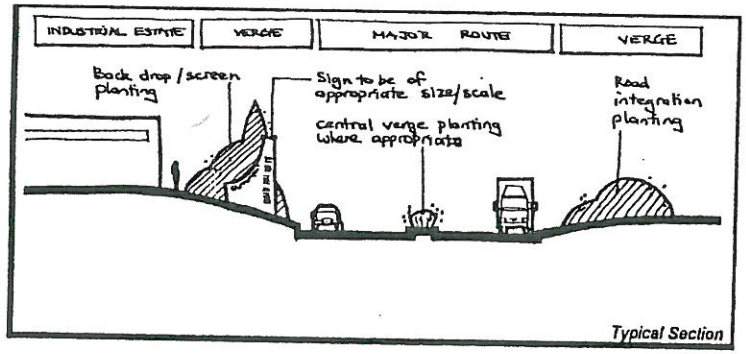


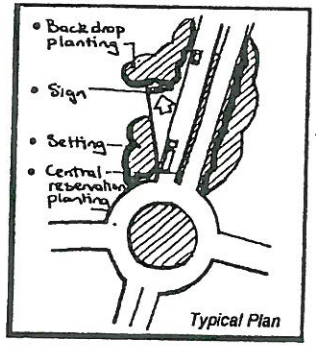
B) MOTORWAYS



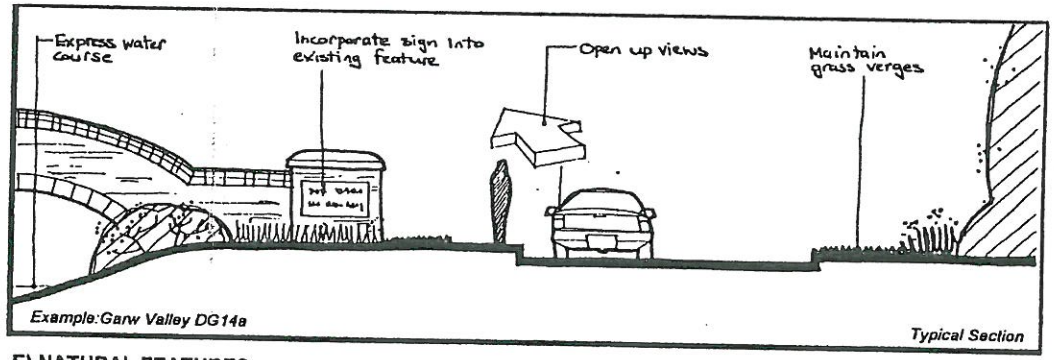


C) RURAL SETTLEMENTS





D) MAJOR ROUTES



E) NATURAL FEATURES

AIMS

- To define thresholds of settlements or place.
- To promote a positive first impression of an area.
- To promote a 'sense of place'.
- To inform the viewer.

DESIGN PRINCIPLES

- Gateway treatment should be appropriate in scale, design and materials to place.
- Gateways should define both entrance and exit from a place.
- Gateways should be integrated with their surroundings using landscape treatment preceding and subsequent to them.
- Features can be combined with traffic calming on appropriate roads to reduce speed and maximise safety.
- Features must comply with current best practice above and highway regulations.
- Maintenance of features to be of a high standard but sustainable.
- Rural Gateways should be agreed with local community in position and design.

REFERENCES

Main Strategy Report Volume 1: 4.8 and LS7

Related Design Guidelines Volume 2: DG2, DG3, DG9, DG10, DB9, DB14

Action Programme Volume 3: Site no. 2 and 5

Overall Design Themes
Figure DG 1
GATEWAYS

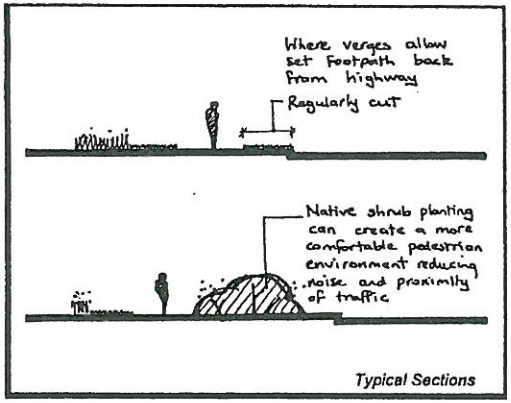
Opus

REFERENCES

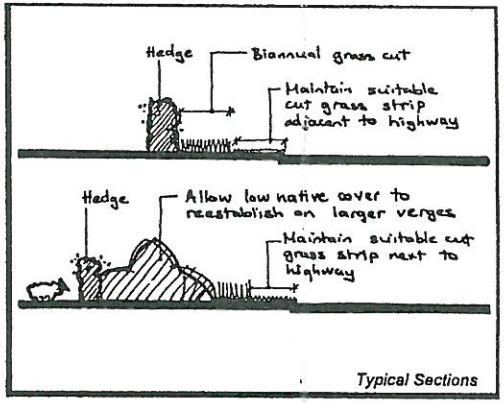
Main Strategy Report Volume 1: 4.8 and LS7

Related Design Guidelines Volume 2: DG1, DG3, DG9 and DG10

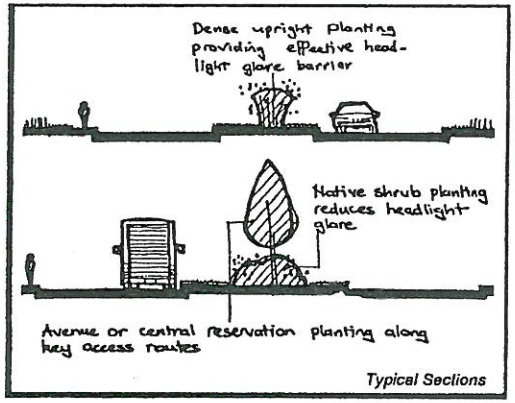
Action Programme Volume 3: Site no. 2, 4, 11, 12, 20 and 45



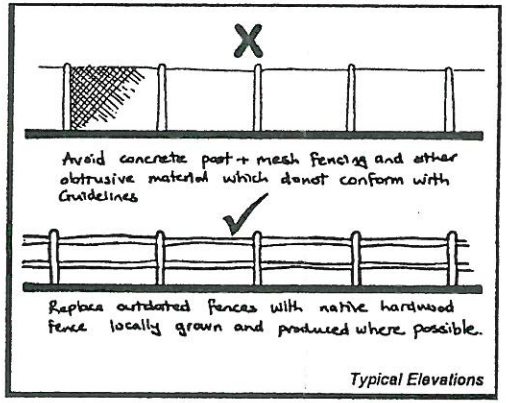
B) FOOTPATH POSITIONING



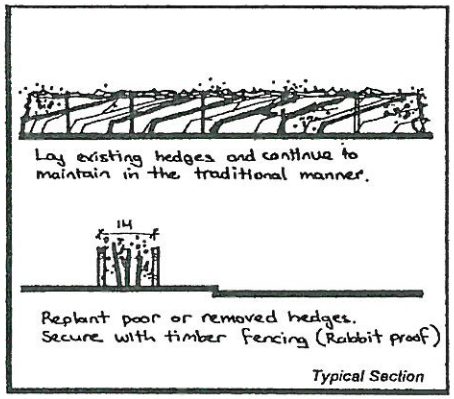
E) MAINTENANCE REGIMES



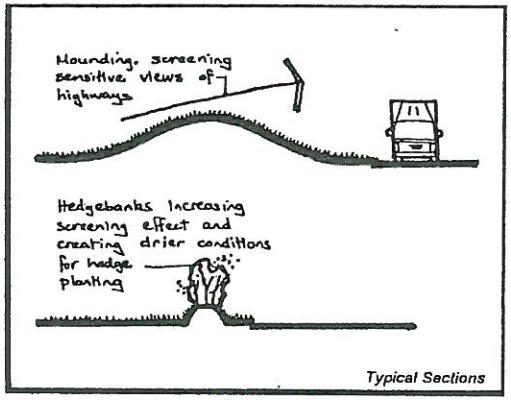
C) CENTRAL RESERVATIONS



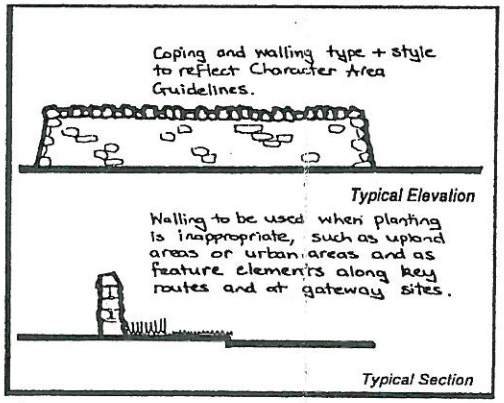
F) FENCES



A) HEDGES



D) MOUNDING / HEDGEBANKS



G) WALLING

AIMS

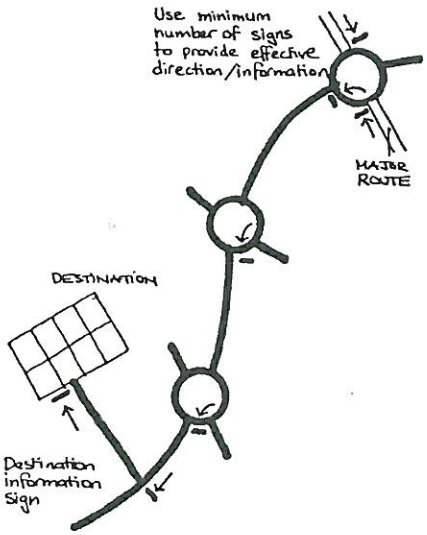
- To create consistent and appropriate roadside treatment with maximum visual and nature conservation value with minimum capital and maintenance cost.

DESIGN PRINCIPLES

- **Fencing**
  To provide a long-term approach to the maintenance and replacement of roadside fences with suitable, visually sensitive materials appropriate to individual areas.The use of locally grown and milled hardwood timber fencing would prove an additional outlet for timber producers and provide an opportunity for local employment.
- **Maintenance regime**
  The use of defined mowing strips adjacent to carriageways minimises maintenance operation and allows grassland to flower annually aiding species diversity in places.
- **Central reservations**
  Planting wider central reservations creates visual improvements on main routes and helps reduce headlight glare.
- **Footpath positioning**
  The positioning of footpaths set-back from roads improves safety and provides a more comfortable pedestrian environment reducing noise, vibration, pollution and road spray. The planting of strips between the carriageways and pedestrian routes further reduces the impact of vehicles on pedestrians.
- **Hedges**
  Existing hedges should be managed and maintained to increase their effectiveness as live stock and pedestrian barriers, and improves their nature conservation value. The planting of roadside hedges should be increased in appropriate character areas, to improve nature conservation value and reduce impact of roads where necessary.
- **Mounding / Hedgebanks**
  Mounding and Hedgebanks provide an additional method of increasing screening of roads. Mounding is appropriate for open grassland areas where extensive tree and shrub vegetation would be inappropriate. Hedgebanks incorporate screening properties and allow improved drainage for hedges in damp areas.
- **Walling**
  Appropriate to many Character areas as a traditional roadside treatment which can be used to increase screening of roads, and creating features along main routes and at Gateway Sites.

Overall Design Themes
Figure DG 2
ROADSIDE TREATMENT

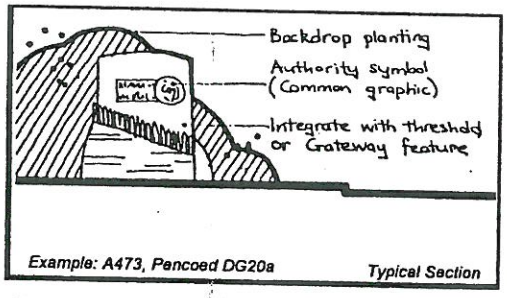
Opus



Example: Brackla/Litchard Estate DG21a

Diagrammatic Plan

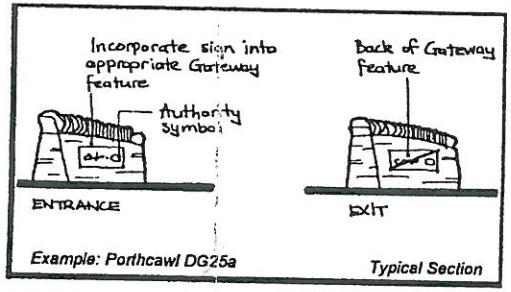
A) SIGN LOCATIONS



Example: A473, Pencoed DG20a

Typical Section

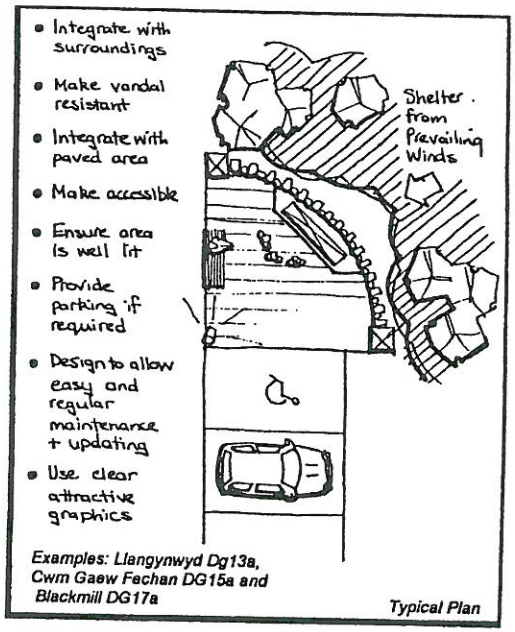
C) BOROUGH SIGNS



Example: Porthcawl DG25a

Typical Section

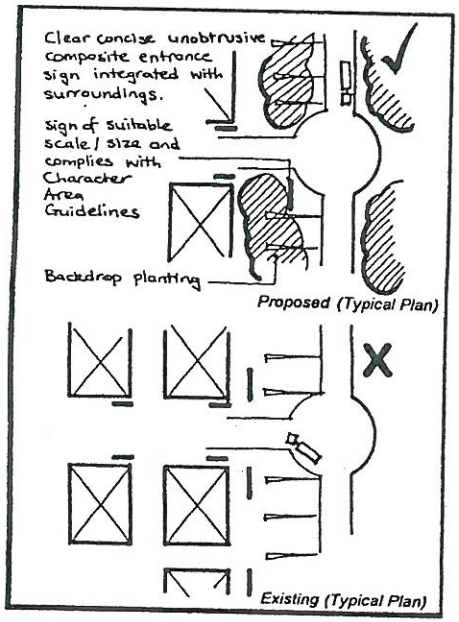
D) TOWN SIGNS



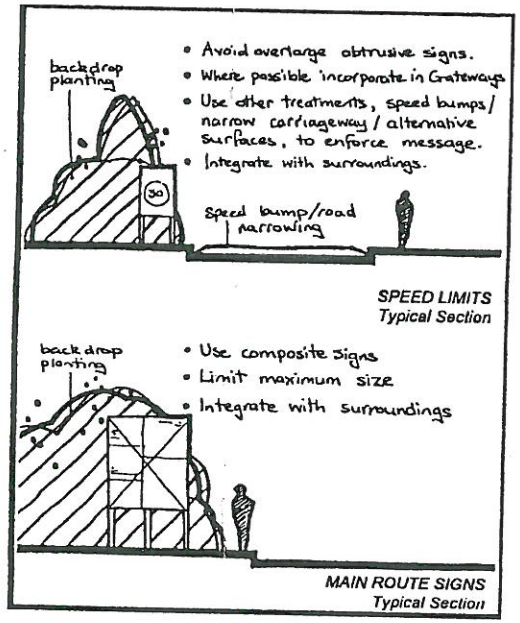
Examples: Llangynwyd Dg13a, Cwm Gaew Fechan DG15a and Blackmill DG17a

Typical Plan

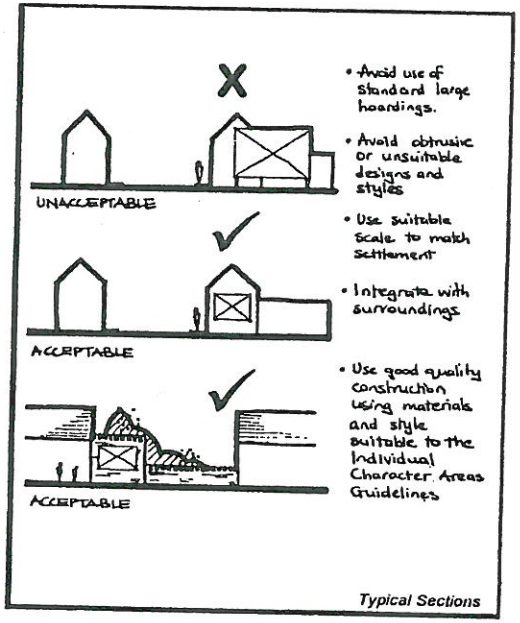
F) INFORMATION / INTERPRETATION SIGNS



B) DEVELOPMENT SITE



E) ROAD SIGNS



G) ADVERTISING HOARDINGS

AIMS

- To clearly convey information.
- To make a positive visual contribution to place.

DESIGN PRINCIPLES

- Convey accurate information with minimal obtrusiveness.
- Signage should be consistent in terms of wording, graphics and size.
- Rationalise signage to minimise number.
- Design to be robust and easily maintained.
- Materials and surroundings to be appropriate to the place.
- To comply with best practice, planning constraints and highway regulations.
- To clearly guide visitors from major routes/roads to their destinations.
- Reinforce signage with other treatments / hard and soft landscape e.g. backdrop planting.

REFERENCES

Main Strategy Report Volume 1: 4.7, 4.8 and 4.9

Related Design Guidelines Volume 2: DG1, DG2 and DG7

Action Programme Volume 3: Site no. 1, 4, 6, 18, 39, 41, 45, 51 and 52

Overall Design Themes
Figure DG 3
SIGNAGE

Opus

SPECIFIC PRINCIPLES / EXAMPLES

Bus Pick-Up Points are highly visible on road corridors and can have a strong impact. Strategically placed, well designed units can have a positive effect in urban and rural areas.

- Units to be clearly visible and well lit with good all-round visibility to maintain users' safety.
- Signage and information to be clear and concise using common graphics and symbols.
- Possible use of digital displays to inform passengers of 'time of next bus' on main routes.
- A variety of standard designs for different positions, importance of routes and frequency of use.
- Position units to be sheltered from prevailing winds and integrate with surrounding landscape allowing good paved access.
- Shelters should be well maintained and regularly cleaned to make them pleasant to use.

Seats designed in a variety of combinations following the same design philosophy and style giving the flexibility of choice for differing situations.

- Good proportions and comfort of use are essential.
- Construct avoiding materials which have wide seasonal temperature changes.
- Allow free drainage of rain water.
- Locate in well lit areas, sheltered were possible.
- Define paving adjacent to bench and allow adequate passing space for pedestrians.
- Position a good distance from traffic.
- Locate in a variety of suitable areas for leisure use (river side, parks etc), short term use (lunch breaks, restbreaks), in shopping areas, at bus pick-up points without seats, and in association with telephone kiosks as waiting areas.

Litter Bins should be located within reasonable distances of bus stops, public seating areas, open spaces and gathering points where the need is identified.

- The design should allow easy emptying by key holders, allow a generous aperture for rubbish but minimising the chance of rubbish blowing out in high winds.
- The style to be coordinated with the other street furniture elements.
- The design should minimise features which may collect rubbish or water on the structure.
- Position in visible areas, with easy access for maintenance.
- Ensure they are positioned a reasonable distance from seating avoiding contact with insects and unpleasant odours.

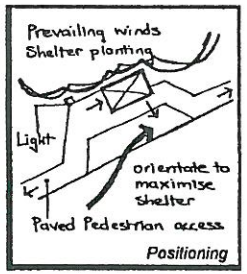
Bollards provide an effective barrier to protect pedestrian space in street situations or in conjunction with seating or bus pick-up points.The inclusion of drop bollards in the same coordinated style offers further flexibility of use.

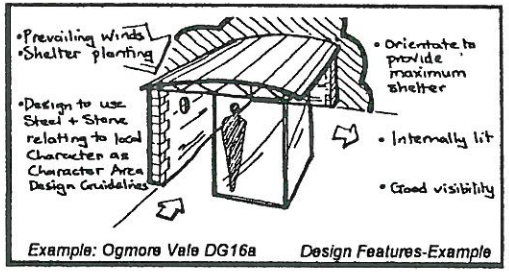
- Over use is to be avoided as this may create clutter.

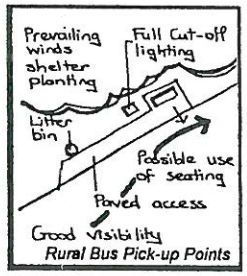
Planters are to be avoided as they are high maintenance, a cumbersome street element, provide poor conditions for planting, and have no vernacular precedence.Where planting is required street trees are more appropriate.

Street Lights offer a range of uses.

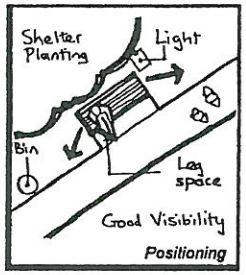
- Decorative fitments provide a feature element in town centres.
- Key approach roads should be considered for high grade lighting schemes.

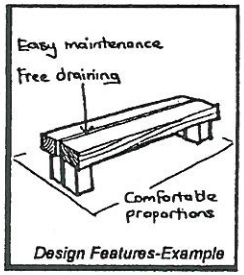


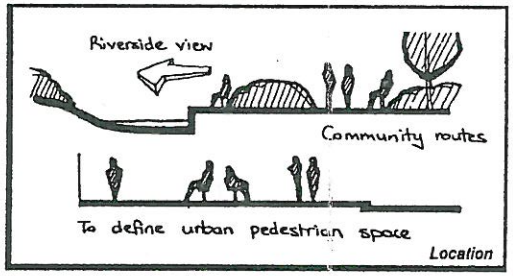




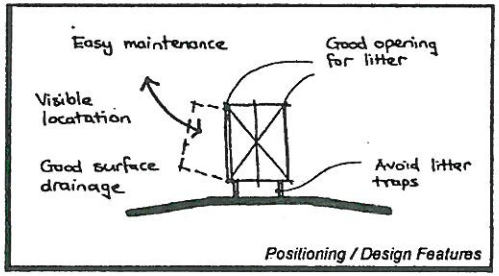
A) BUS PICK-UP POINTS



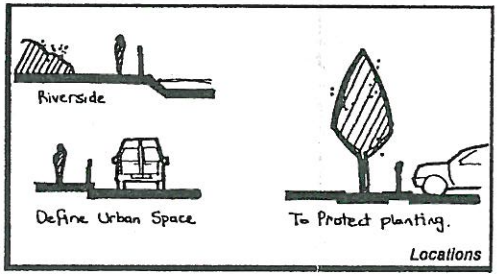




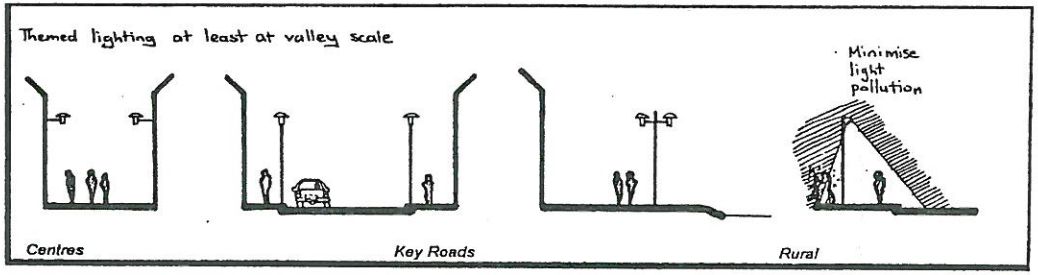
B) SEATS



C) LITTER BINS



D) BOLLARDS



E) STREET LIGHTING

Examples: Maesteg DG12a, Pontycymmer DG14a and Ogmore Vale DG16a

Street Lights continued.

- Full cut-off, and semi cut-off lighting should be used to reduce light pollution in rural areas and smaller settlements.
- A variety of combinations increase the effects with free standing single standards, multiple headed standards, wall mounted lamps and bollard lights.
- The over use of decorative standards should be avoided.

AIMS

- To upgrade street furniture in the public realm for the benefit of the community and to create a positive image of the borough.
- To target those areas with poor image at present and key road corridors.

DESIGN PRINCIPLES

- Create a coordinated and rationalised system of street furniture. Variation should only occur in conservation areas and special development areas such as Bridgend Town Centre.
- Designs should be high quality using traditional materials in an innovative way. Materials must be appropriate to the area (see Character Areas Design Guidelines) and they should preferably be readily available and manufactured locally.
- Designs should be fire and vandal resistant.
- Designs should be easily maintained. Budgets should be structured to allow adequate regular maintenance for cleaning, repair and replacement.
- A coordinated colour scheme should be selected, avoiding primary colours.
- Positioning of facilities should be carried out after resident consultation / involvement.
- Overuse of street furniture elements is to be avoided to reduce clutter.

REFERENCES

Main Strategy Report Volume 1: 4.9

Related Design Guidelines Volume 3: DG2 and DG3

Overall Design Themes
Figure DG 4
STREET FURNITURE

REFERENCES

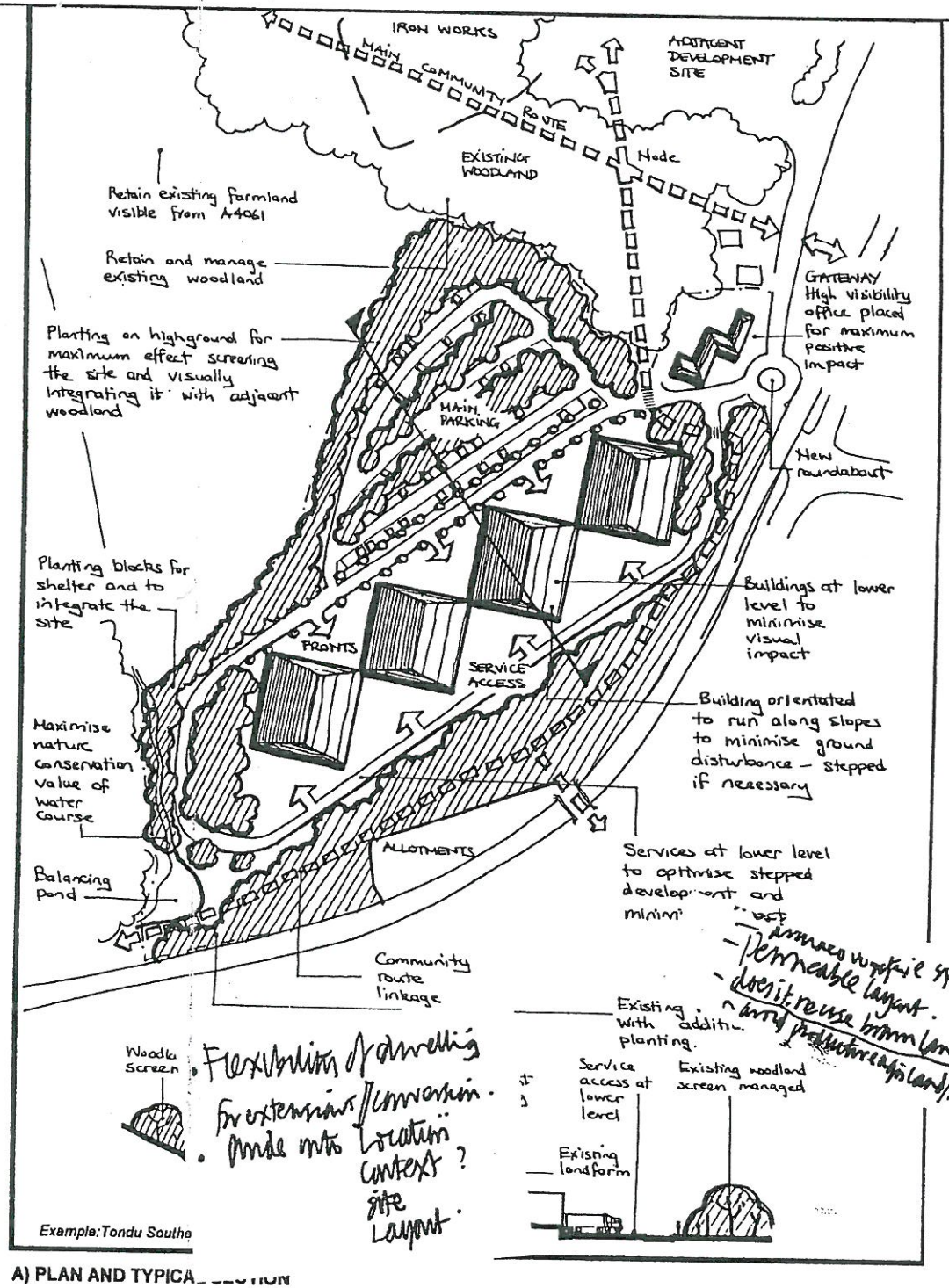
Main Strategy Report Volume 1: 4.2

Related Design Guidelines Volume 3: DG9, DG10 and DB3

Technical Annex Volume 4: Section 7

Bibliography:

Barton et al (1995)
Bentley ???? (1985)
DoE (1994): Sustainable Development
Ecotec (1993)
DoE (1996): Sustainable Settlement and Shelter
Doe + DoT PPG 13: A Guide to Better Practice



A) PLAN AND TYPICA_ SECTION

AIMS

- Minimise non-renewable resource input to the construction and running of development.

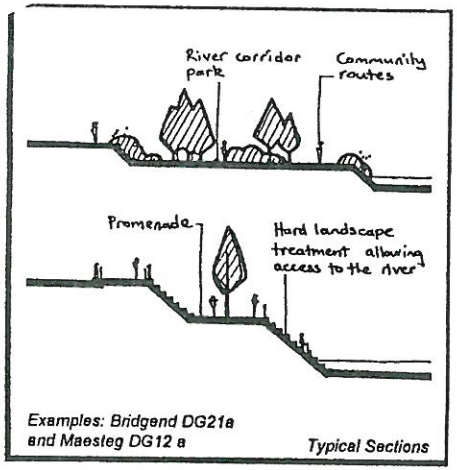
DESIGN PRINCIPLES

- Locate development close to centres of population and in places easily accessible to public transport routes.
- Maximise accessibility to/within sites to pedestrian, cyclists and vehicles.
- Increase density/concentration of land/building use close to public transport routes and nodes.
- Minimise car parking provision on site to encourage use of public transport and optimise density/site use.
- Thoroughly integrate and appraise site and its context in terms of physical characteristics, opportunities and constraints.
- Design layout to avoid/minimise impact on natural features which would require expensive/energy inefficient measures to control and remediate e.g. river floodplains, aquifer, wetlands. i.e. design with not against nature.
- Conserve existing natural site features such as watercourses and semi-natural vegetation. Build on and link these with new planting/open space/external wildlife corridors to improve nature conservation. Design open space/vegetation blocks to maximise aggregation, minimise boundary length. Avoid planting for decoration only.
- Use low cost/energy input construction techniques using local materials where possible. Design structures to have longevity and to be flexible to accommodate different uses over time. housing/offices or to be cost effective energy efficient to build and demolish, (e.g. steel sheds).
- Allow maximum penetration of rainfall into ground water avoiding contamination. Consider use of permeable surfacing, french drains and balancing ponds.
- Deal with contamination on site if possible limiting impact on surrounding area.
- Orientate road layout and buildings to maximise solar gain. Longest facades of buildings should be orientated within 45° of south. Overshadowing within 30° of south should be avoided with buildings and evergreen trees a minimum of twice their height apart. Building on south facing slopes is desirable.
- Reduce exposure to winds (south west prevailing) by use of trees for shelter.

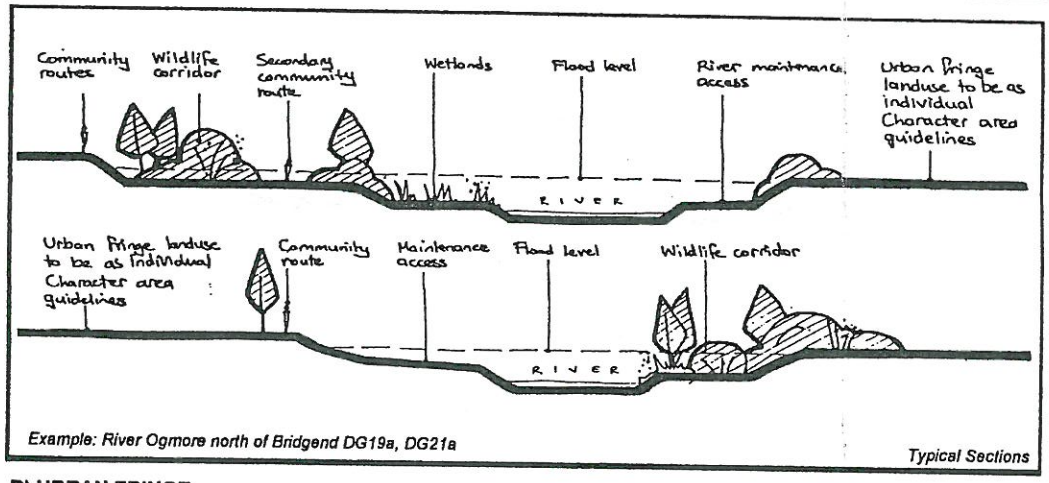
Design buildings to minimise external wall area and north facing windows and maximise insulation.

Use solar and wind energy generating techniques and combined heating and power systems (CHP) where possible.

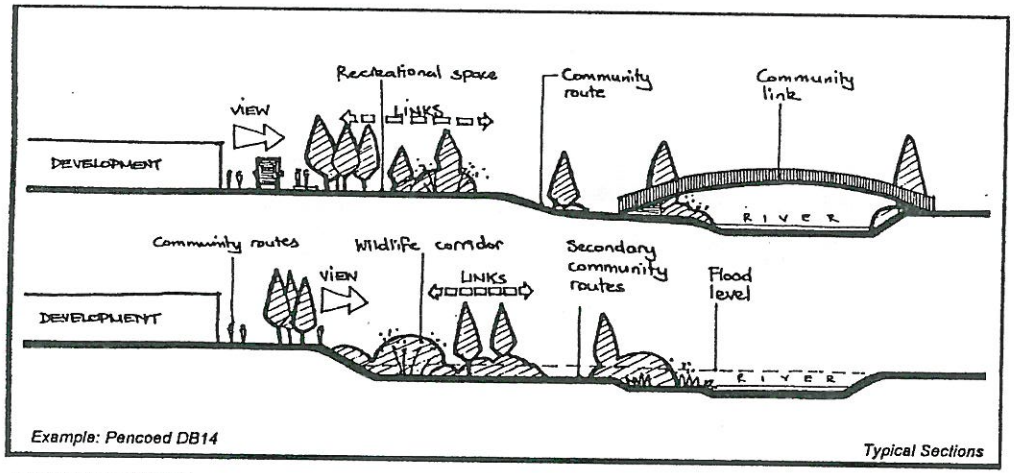
Case Study Design Theme
Figure DG 5
WORKING TOWARDS SUSTAINABLE DEVELOPMENT



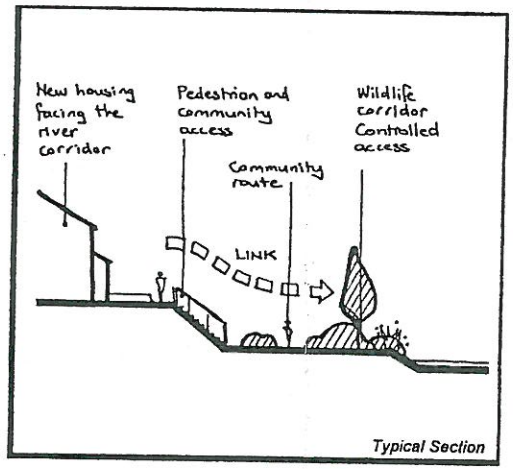
A) URBAN



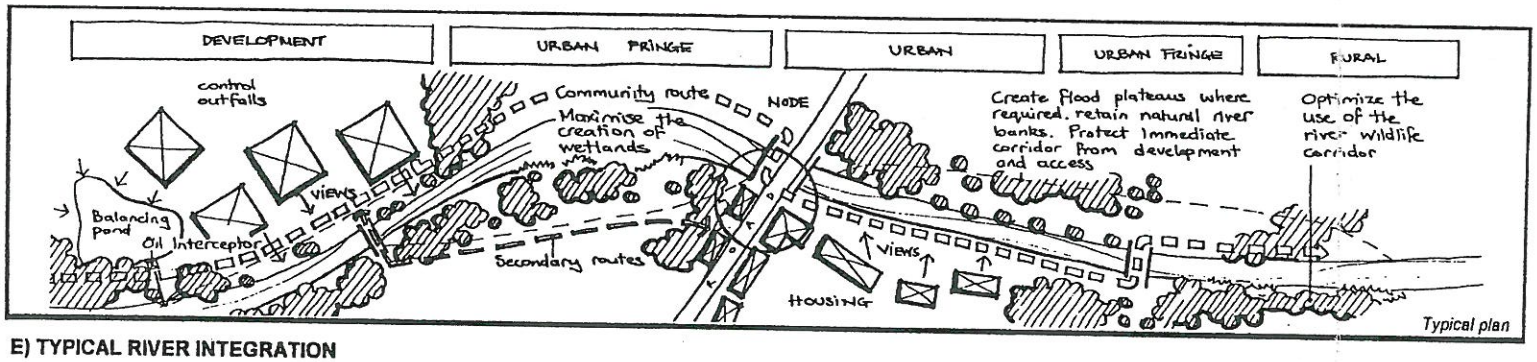
B) URBAN FRINGE



C) DEVELOPMENT



D) HOUSING



E) TYPICAL RIVER INTEGRATION

AIMS

- To optimise nature conservation value of river corridors.
- To improve access to and along rivers.
- To reconcile the above two aims with the creation of complex riverside network of community and ecological linkages.
- To integrate water courses with development as a positive asset.

DESIGN PRINCIPLES

- The intrinsic quality and value of watercourses is to be established before design is begun.
- Retain and conserve stretches of watercourses and river banks of high intrinsic value.
- Enhance water courses of low intrinsic value.
- Development to address rivers and use them as a positive design element particularly in relation to leisure facilities.
- Improve bank profiles to allow access to water at key points for informal and formal recreation e.g. fishing, canoeing. Reconcile conflicting needs.
- Improve permanent access along rivers with footpaths and cycleways placing bridges and seats where required.
- Improve habitat value and diversity for flora and fauna through design and management.
- Use design to minimise potential for litter dropping and dumping.
- Carry-out all works in conjunction with NRA catchment plan and with NRA approval

REFERENCES

Main Strategy Report Volume 1: 4.9 and LS8

Related Design Guidelines Volume 3: DG7, DG8, DG9, DG10, DB2, DB4 and DB14

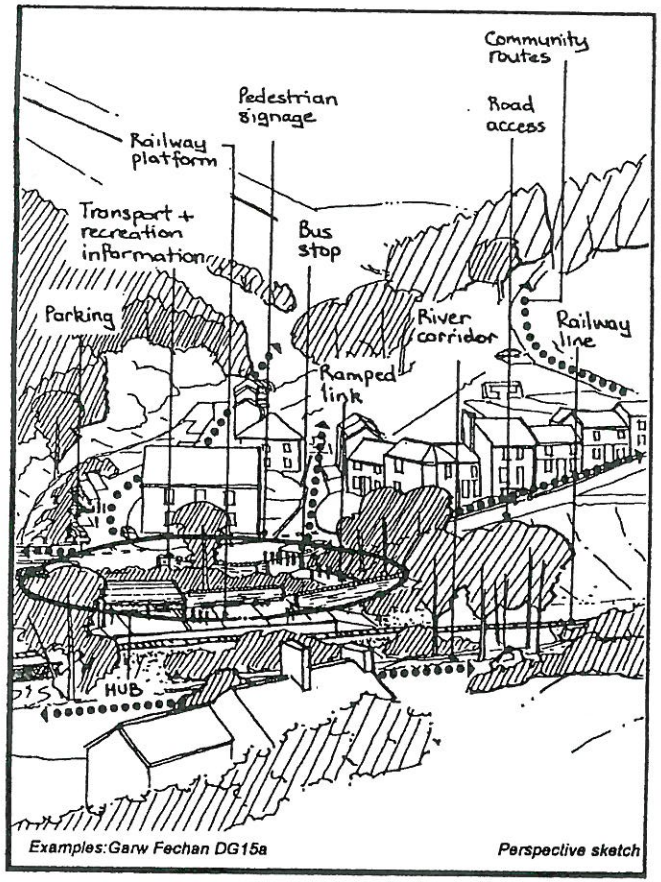
Action Programme Volume 3: Site no. 25, 25, 28, 30, 32, 36, 47 and 50

Bibliography:

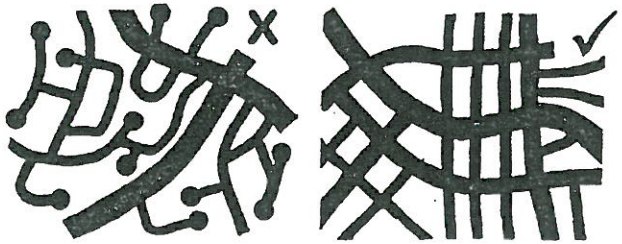
National Rivers Authority (1996): Catchment Management Plans

Overall Design Themes
Figure DG 6
RIVER INTEGRATION

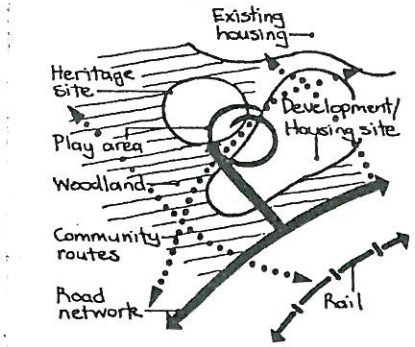
Opus



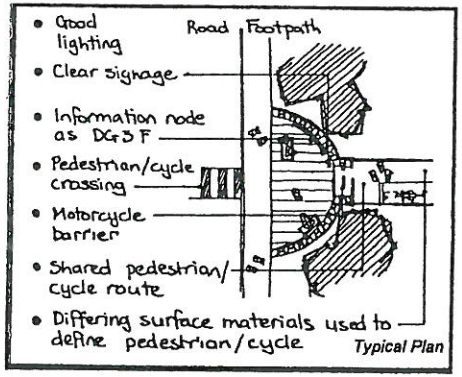
A) ACCESS HUB



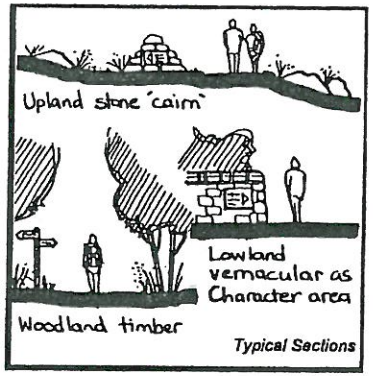
B) LINKAGE + ACCESS



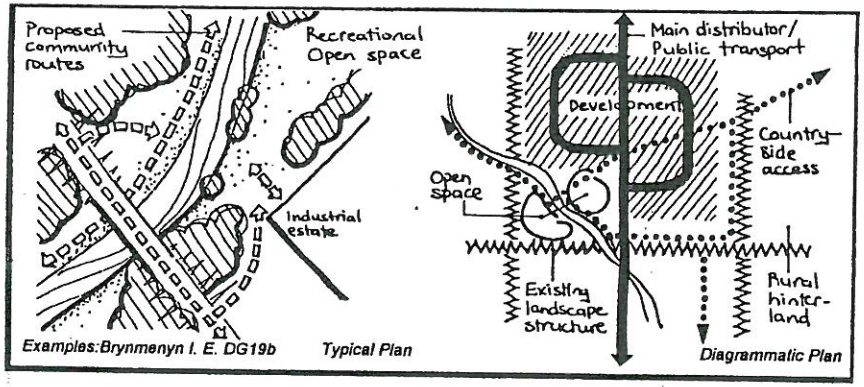
C) COMBINED RECREATIONAL RESOURCES



D) COMBINED CYCLE/PEDESTRIAN ACCESS



E) SIGNAGE APPROPRIATE TO THE PLACE



F) INTEGRATION OF DEVELOPMENT AND RECREATION LINKS

REFERENCES

Main Strategy Report Volume 1: 4.7, LS6 and LS8

Related Design Guidelines Volume 2: DG6

Action Programme Volume 3: Site no. 28, 33, 34, 35, 37, 40, 47, 48 and 49

Technical Annex Volume 4: 6.0, TA8 and TA9

Bibliography:

Countryside Council for Wales (1994): Campe
Countryside Council for Wales (1994): Good Practice for Country Parks
Forestry Commission (1992): Forest Recreation Guidelines
Ogwr Borough Council + Groundwork Ogwr: A Strategy Promoting Countryside Access (Draft)

AIMS

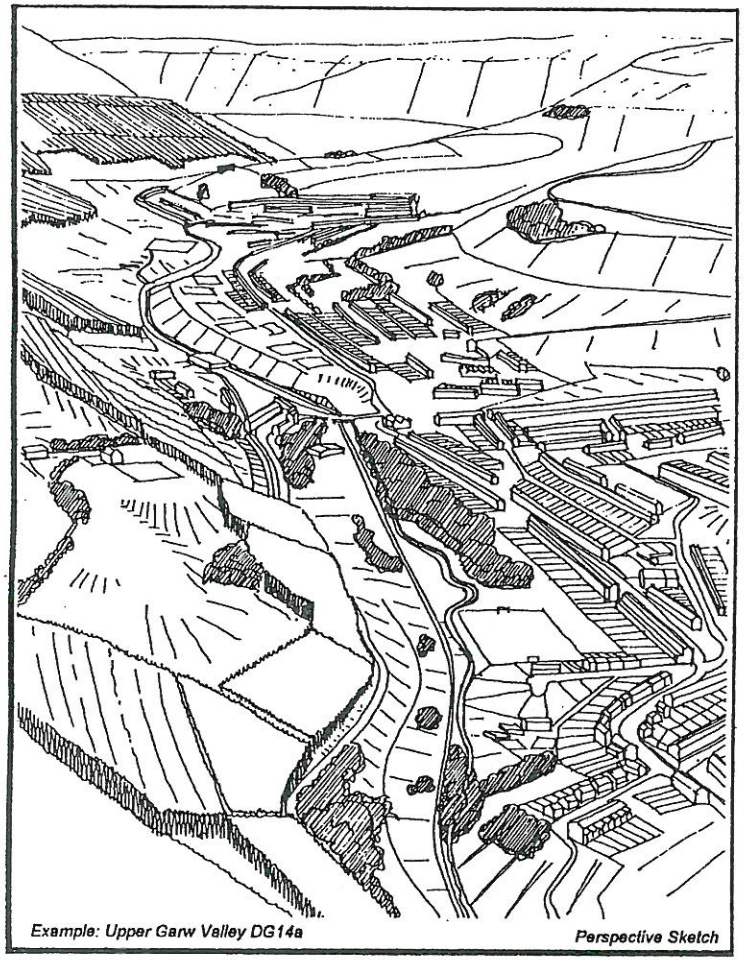
- Optimise access from urban areas to green space and the countryside to enable people to enjoy safe and convenient local recreation.
- Create a complete network of paths and cycleways linking open space, recreation areas/centres and heritage sites.

DESIGN PRINCIPLES

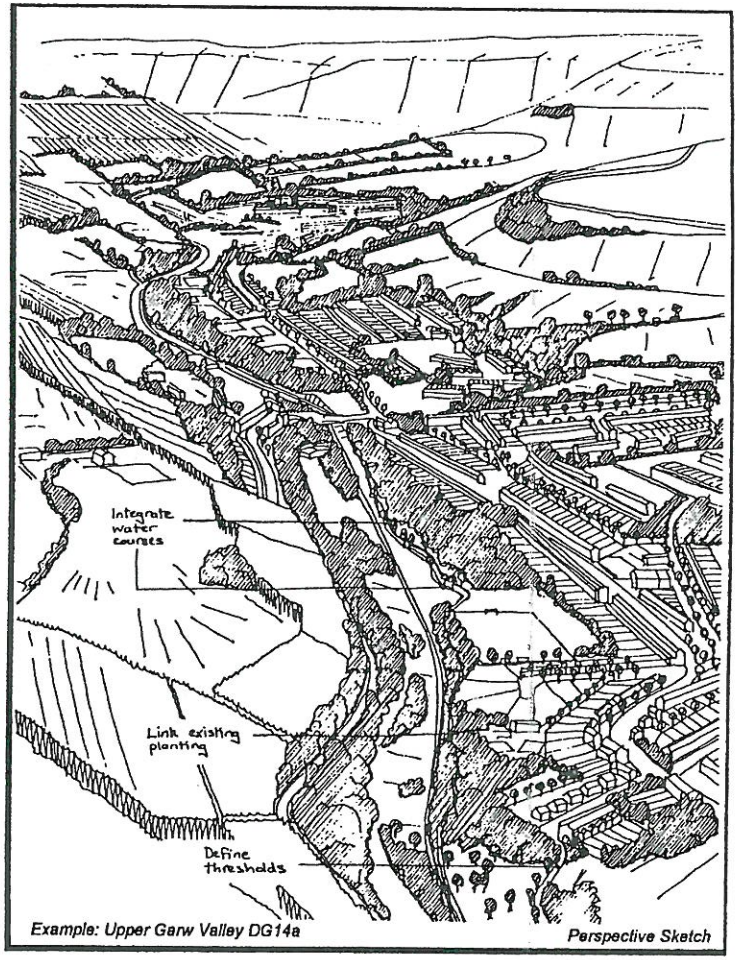
- Integrate a local network of footpaths and cycleways, (community routes), with long distance routes and public transport to ensure convenient access using transport hubs and local connections.
- Integrate new development with roads, public transport, footpaths, cycleways and open spaces to maximise accessibility for all.
- Avoid cul de sac developments.
- Design in convenient access for disabled wherever possible where this does not compromise the natural wealth or value of the landscape.
- Design shared footpath and cycleways so users can comfortably pass each other safely. Inform both sets of users to ensure mutual respect and understanding.
- Deter motorcyclist and other vehicle users on cycle and footpaths by appropriate gates.
- Create continuous open space networks to allow safe movement of people and wildlife using natural corridors such as rivers where possible.
- Combine play areas for toddlers and older children and adventure play areas with other informal recreation facilities and heritage sites with the open space networks in safe locations, overlooked where possible.
- Use local materials in the construction of paths and outdoor furniture to reflect the sense of place.
- Provide clear signage, information and interpretation at key points to enable people to make best use of the resources.
- Use lighting on main routes in urban areas in a sensitive manner to optimise safety but without major visual impact.
- Use the opportunity of new pedestrian/cycleway links for planting and nature conservation corridors/ stepping stones.
- Control access in sensitive areas of nature conservation or heritage interest such as at Merthyr Mawr.

Overall Design Themes
Figure DG 7
ACCESS AND RECREATION

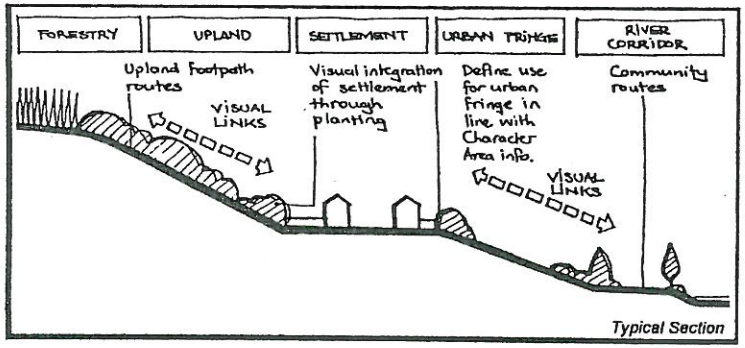
Opus



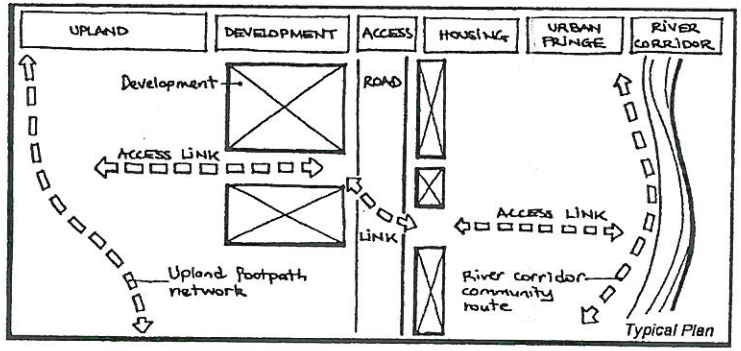
A) TYPICAL EXISTING SETTLEMENT



B) PROPOSED VISUAL INTEGRATION



C) TYPICAL INTEGRATED SETTLEMENT



D) INTEGRATION BY IMPROVING LINKS

AIMS

- To integrate existing settlements and proposed development into the surrounding landscape in visual, access and ecological terms.

DESIGN PRINCIPLES

- Ascertain the intrinsic nature conservation value of areas which provide gaps between settlements and forestry/upland slopes before considering planting.
- Use existing natural features such as side valleys and watercourses as linkage features for planting and easy access.
- Use man made linear features such as railway embankments as above and link into existing routes and vegetation.
- Plant native species appropriate to Character Areas, (see relevant sheet(s).
- Plant blocks of planting as large as possible to maximise visual impact and nature conservation value and field boundary patterns to maximise linkage.
- Avoid decorative or complex shaped planting.

REFERENCES

Main Strategy Report Volume 1: 4.6, LS5 and LS8

Related Design Guidelines Volume 2: DG6

Action Programme Volume 3: Site no. 17, 22, 25, 26, 38, 39, 49 and 50

Bibliography:

Forestry Authority and Forestry Commission (1995)
Forestry Commission (1992) Community Woodland Design Guidelines
Forestry Commission (1994)
Hibberd, B.G (1989)
Moffat et al (1994)
WDA (1987)

Overall Design Themes
Figure DG 8
INTEGRATION OF BUILT FORM

Opus

DESIGN AND MANAGEMENT FOR NATURE CONSERVATION

General Principles

- Reduce fragmentation and isolation of wildlife habitats by consolidation through creation of new habitats and rejuvenation of existing to increase connectivity.
- Enhance nature conservation value by maximising extent of areas of wildlife habitat interest.
- Habitat creation to use existing areas of semi-natural habitat as a stereotype, with use of plant material from local provenance.

Broadleaved Woodland

- Develop horizontal and vertical habitat structural variety, undertaking management by coppicing and group selection thinning, and encourage natural regeneration.

Grassland

- Use of grazing management, scrub and bracken control to develop areas of open grassland habitat with patches of grassland/scrub mosaic.

Wetland

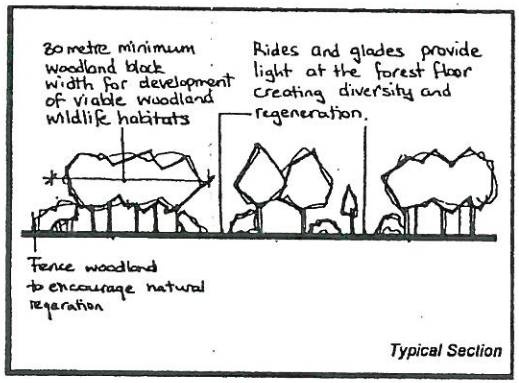
- Maximise structural variety by creation of shallow scrapes and ponds of value for aquatic and semi-aquatic invertebrates, waders and wildfowl.

Riparian

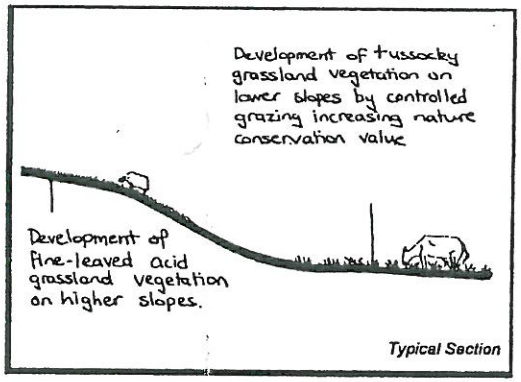
- Maximise habitat structural diversity in terms of channel form and vegetation, with enhancement of areas modified by river channel engineering.

Field Boundary Hedges

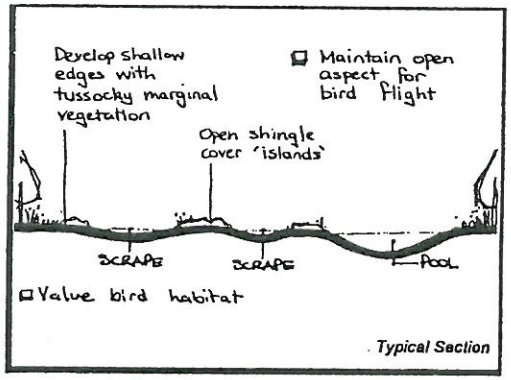
- Relax intensive hedgerow management to create more structurally varied field boundary wildlife habitat.



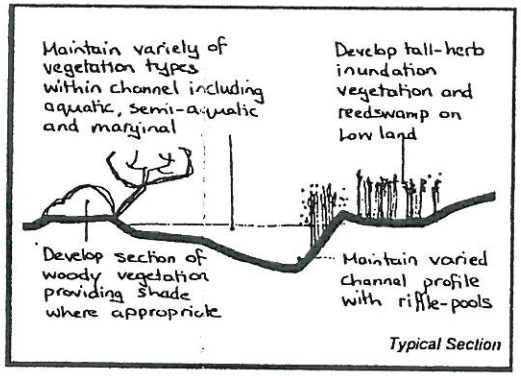
A) BROADLEAVED WOODLAND



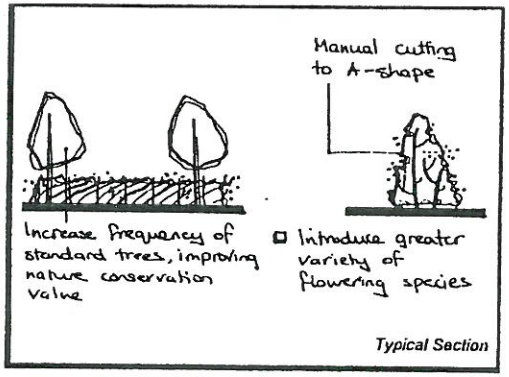
B) GRASSLAND



C) WETLAND



D) RIPARIAN



E) HEDGEROWS

REFERENCES

Main Strategy Report Volume 1: 3.3, 4. and, LS8

Related Design Guidelines Volume 2: DG6, DB2, DB4, DB7, DB8 and DB14

Technical Annex Volume 4: 3.0

Bibliography:

Helliwell (1985)

Overall Design Themes
Figure DG 9
DESIGN AND MANAGEMENT FOR NATURE CONSERVATION

Opus