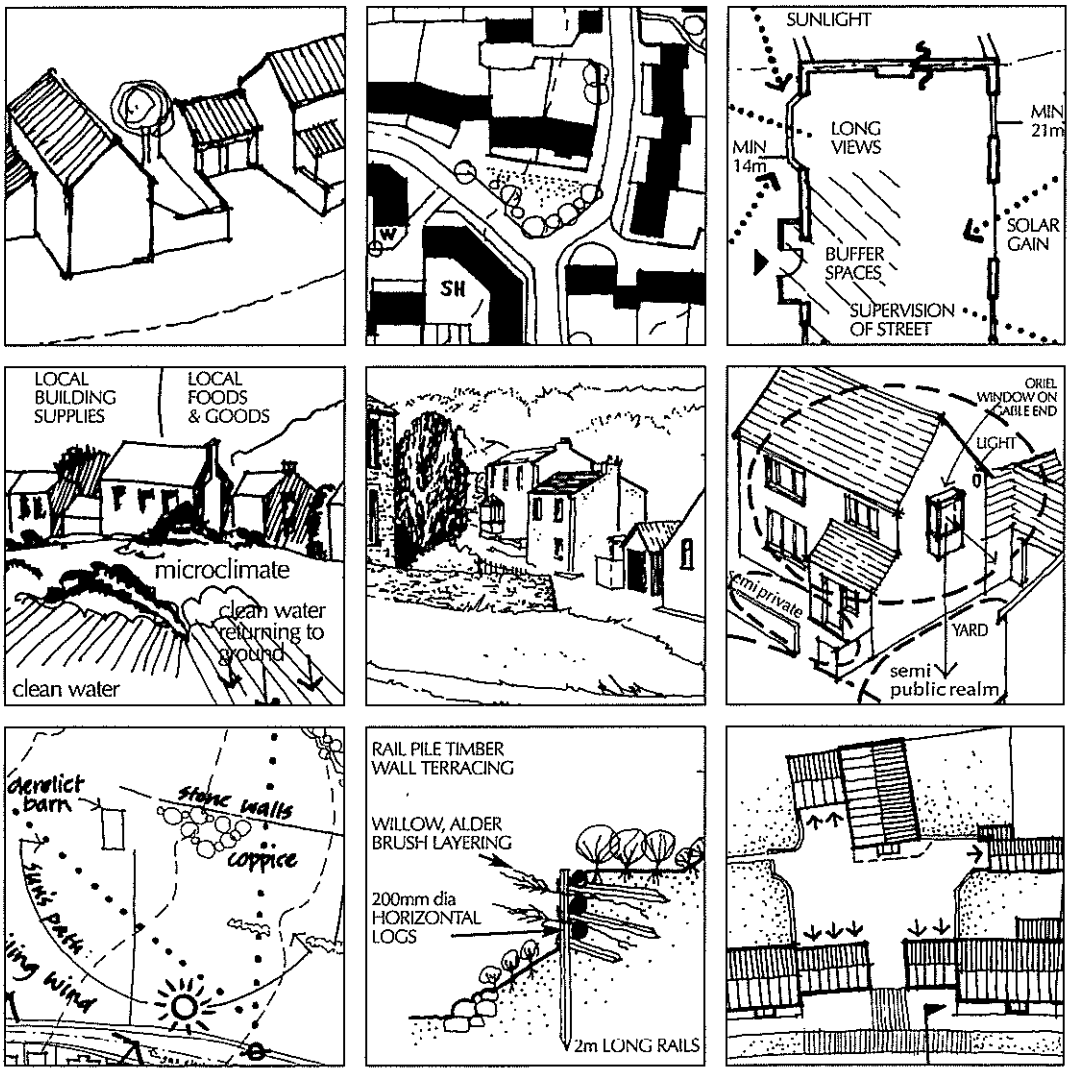
# Forest of Dean

# RESIDENTIAL DESIGN GUIDE




University of the West of England
for
Forest of Dean District Council

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# RESIDENTIAL DESIGN GUIDE

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This document was produced by staff in the Faculty of the Built Environment at the University of the West of England for the Forest of Dean District Council in close collaboration with their members and officers and other key agencies.

**University of the West of England**

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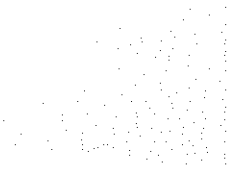


# INTRODUCTION

section 1

This guidance has been produced to assist those seeking planning permission for residential development within the District. The need for additional guidance has become apparent with recent unsuitable development proposals. The Authority is keen to avoid the sort of schemes that (a) might be built "anywhere" and (b) ignore generally accepted environmental concerns. Hence two fundamental issues underpin this guidance:-

- The design of individual dwellings and the grouping of buildings should reflect the local characteristics which give each part of the District a sense of place and identity.
- Applications should demonstrate how environmental concerns and the issue of sustainability have been incorporated into the design.

The purpose of the guide is to make developers more aware of the policies and approach adopted by the Authority and hence encourage a speedier and more efficient design and planning process.

This document has been adopted by the Forest of Dean District Council as Supplementary Planning Guidance to the Local Plan.

The information contained in the guide is applicable throughout the District. However those familiar with the Forest of Dean will be aware that the character varies considerably from one part of the District to another. This implies that a design which is acceptable in one area of the Forest may be inappropriate in another part of the District. The guide provides assistance by examining the local distinctiveness of

- different locations within the District
- various forms and sizes of settlement
- the position of a proposal within a settlement.

Advice is restricted to predominantly residential development, although some mixed uses are encouraged in larger schemes. This guidance is intended for groups of dwellings and has not been produced for the design, extension and alteration of single buildings although the principles established will be relevant for individual buildings.

Central Government has declared its views on design with the Planning Policy Guidance Note 1 (1997). This identifies three themes which underpin the Governments' approach to the planning system

- sustainable development
- mixed use
- quality of design

*"Local Planning Authorities should not attempt to impose a particular architectural taste or style arbitrarily. It is, however, proper to seek to promote and reinforce local distinctiveness particularly where this is supported by clear plan policies or supplementary design guidance."*

paragraph 18, PPG1, 1997.

*"Those aspects of our past which have been identified as being of historic importance are to be valued and protected for their own sake, as a central part of our cultural heritage. Their presence adds to the quality of our lives, by enhancing the familiar and cherished scene and sustaining the sense of* ***local distinctiveness*** *which is so important an aspect of the character and appearance of our towns, villages and countryside."*

paragraph 32, PPG1, 1997.

***"Sustainable Development*** *seeks to deliver the objective of achieving, now and in the future, economic development to secure higher living standards while protecting and enhancing the environment."*

World Commission on Environment and Development, 1997.

Central Government is also promoting Local Agenda 21 which seeks to improve local and global environmental conditions. There has also been an initiative on Quality in Town and Country (1996) which calls on local authorities to produce more locally distinctive design solutions. These policies are reflected at the strategic level in the Gloucestershire County Structure Plan and more specifically in the Forest of Dean Local Plan. The intention of this guide is to demonstrate how these policies can be incorporated in the design of new residential development.

**Sustainable Development according to HMG**

*"The Government therefore supports the principle of sustainable development. This means living on the earth's income rather than eroding its capital. It means keeping the consumption of renewable natural resources within the limits of their replenishment. It means handing down to successive generations not only man-made wealth (such as buildings, roads and railways) but also natural wealth, such as clean and adequate water supplies, good arable land, a wealth of wild life and ample forests."*

Cm 2426 (1994)

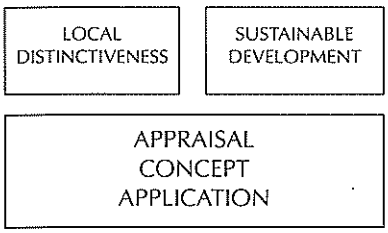
In line with recent legislation (The Crime and Disorder Bill), Forest of Dean District Council is committed to creating a strategy to reduce crime and disorder. In recognising the effect the built environment can have on crime and the fear of crime, the Council seeks to influence the design of all development with the express intention of reducing the opportunity for crime and anti social behaviour.

This document offers general principles for new development, it is not intended to be so rigid as to produce repetitive and unimaginative layouts irrespective of the requirements and character of each site and its locality. It is intended that the use of this document will be sufficiently flexible to preserve and enhance the existing character of conservation areas, areas of architectural or historic interest, rural areas generally, and urban areas where the existing character needs to be respected.

Whilst this document can be used as a 'stand alone guide', it is nevertheless recommended that applicants should discuss proposals with officers at the earliest opportunity. Regular contact will enable specialist advice regarding Planning, Building Control and Highways to be fed into the design process at the appropriate stage.

Above all this guidance should be seen as indicating opportunities and providing helpful advice for the designer. There is no intention to use this guide to restrict creative solutions which achieve the broad aims of this document.

Preparation of this guide follows extensive consultation with a wide range of individuals and agencies from architects and builders to conservation groups and civic societies, all of whom are concerned with maintaining and enhancing the quality of life in the Forest of Dean.




## Approach

This guide has been assembled in a form that follows the design process and forms a basis for discussion with the Council's officers. For simplification the process can be considered as three stages:

an appraisal of the issues
a design concept
the formal application.

At each stage of the design process you are advised to test your thinking against the twin criteria for new residential development in the Forest of Dean:

that the proposal reflects local distinctiveness
that development is environmentally sustainable

The design approach will probably involve a series of steps which will result in key issues being revisited several times. In order to keep this document simple the contents have been structured in a linear form. When using the Guide the reader can move between sections in any order. Each of the four key sections of the guide integrates the twin concepts of local distinctiveness and sustainable development. They are:

Appraisal of Character
Identification of Key Design Principles
Comparison of different forms of layout
Design of individual buildings.

## Character

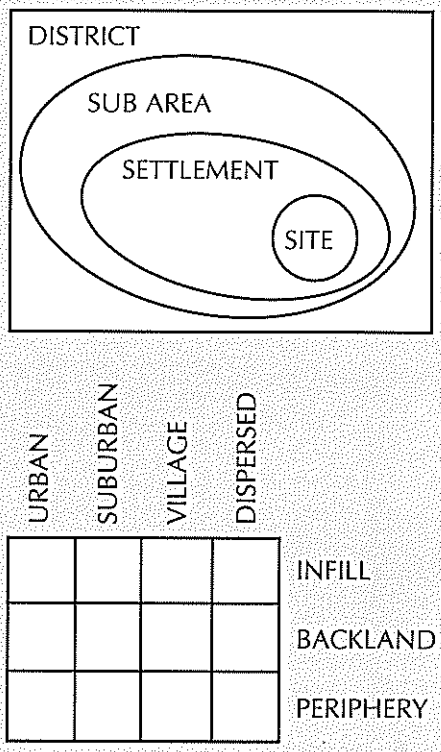
Applicants should be aware that there are several sub areas within the District. Each has its own distinctive characteristics (see Section 2 for details). Six sub areas have been identified:

Forest Core
Commons
Wye Valley
Severn Vale
Northern Farmland
May Hill.

There is also a variety of settlement types with their own development layout characteristics. Four common forms of settlement are:

Urban
Suburban
Village
Dispersed.

The form of development may vary according to its position in each settlement (see diagram opposite).




## Design Principles

Designs should be based on a set of principles that uses resources in a sustainable way whilst making an attractive and locally distinctive contribution to the building stock of the Forest area. The following principles are addressed fully in Section 3:

Design Strategy
Local Need
Housing Balance
Mixed Use
Work
Movement & Security
Energy
Water
Open Space & Wildlife
Aesthetic Quality.

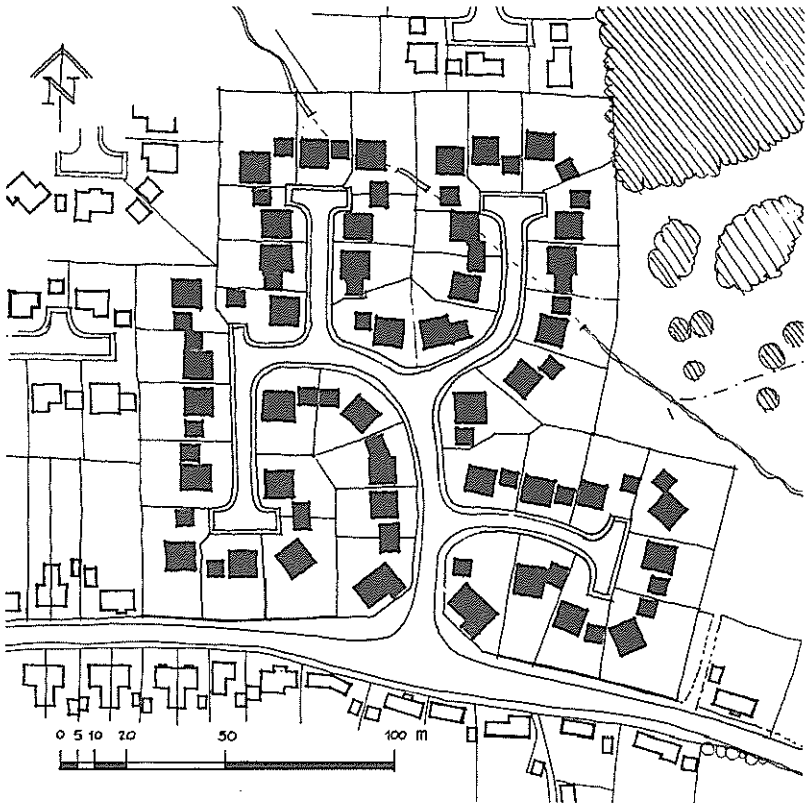
## Site Layout

Care should be taken to avoid the 'anywhere' solution. Applicants should pay strong attention to the setting and characteristics of the site. Full guidance on site layout is provided in Section 4. Illustrations of unacceptable and acceptable layouts are shown below.

### Unacceptable Approach

- suburban character
- monotonous appearance
- dominated by roads
- inappropriate house types
- inward looking
- ignores natural features
- poor orientation

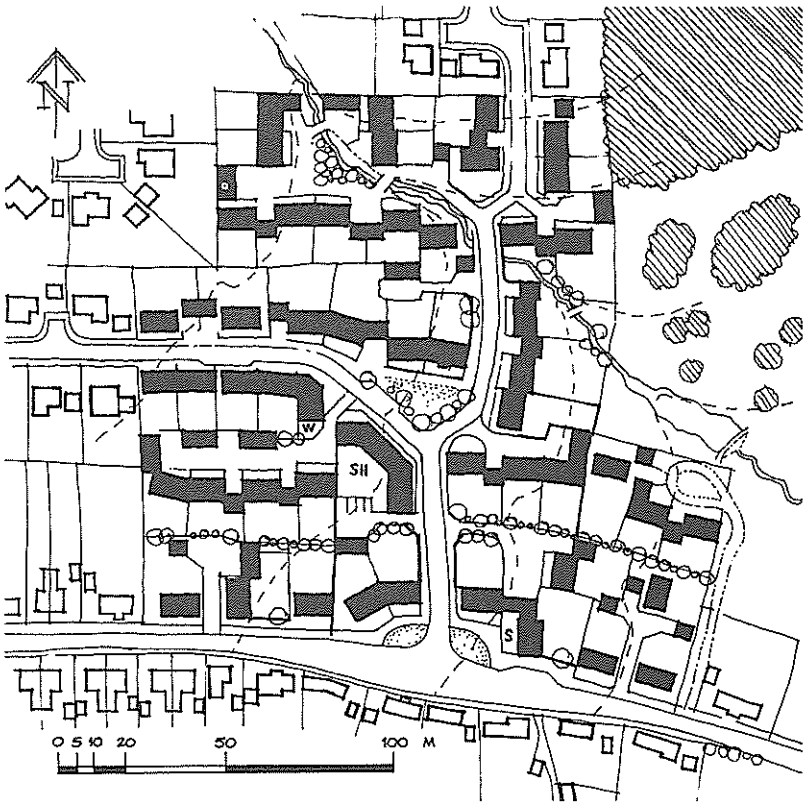
42 dwellings




### Acceptable Approach

- creates series of spaces
- appropriate house types
- traffic calmed
- routes to local facilities
- good orientation
- incorporates mixed uses
- enhances existing features
- creates wildlife habitats
- improved security

49 dwellings



## Building Design

Guidance on building design is provided in section 5

The architectural forms of traditional houses in the District are essentially simple, but arranged and extended with an appealing complexity.

The scene from the Forest Core below illustrates the informal grouping of buildings, including:

- Consistent use of the long, shallow plan house (both side and end on to the street)
- A variety of terraced forms (buildings are often linked)
- Continuity of boundary structures
- Mixed uses
- A varied and harmonious roofscape.

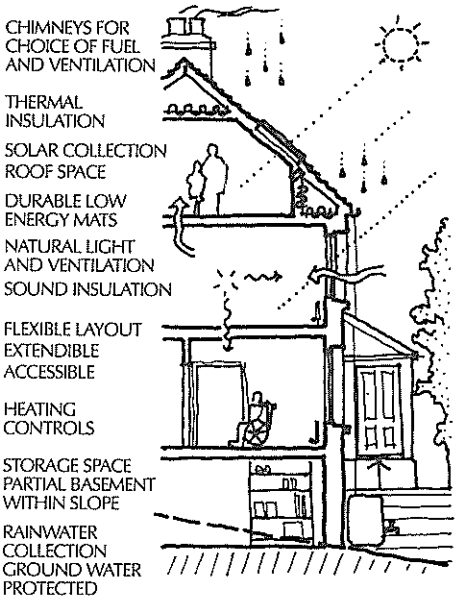
House design, learning from precedent and providing for the future, should be characterised by:

Adaptability: for example

- making full use of any slope
- permitting utilisation of roofspace
- allowing for future extension
- providing flexibility in choice of energy systems (short & long term)
- suiting the needs of young, disabled and elderly people, as well as families.

Resource Conservation: for example

- water conservation & collection
- excellent thermal insulation
- heating controls, solar collection
- durable, easily repaired materials
- materials of low embodied energy
- natural lighting and ventilation.




# Summary Checklist

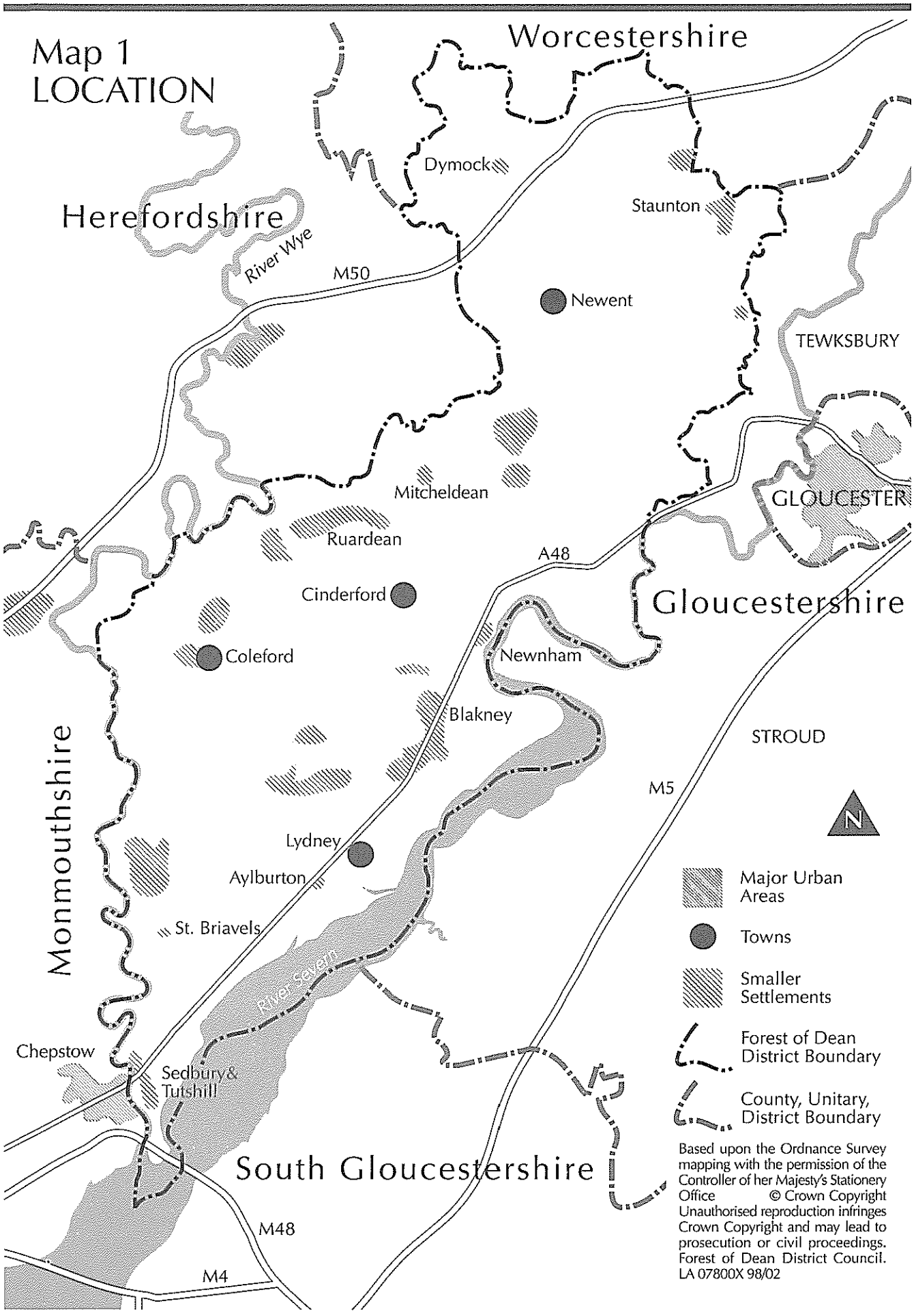
The guide has been structured in section 3, 4 and 5 to identify key concerns. These are set out as a checklist below

## Section 3 Design Principles



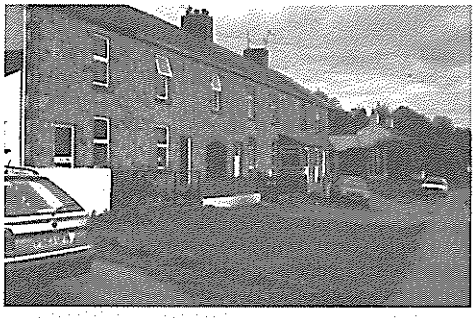
## Section 4 Site Layout

## Section 5 Building Design



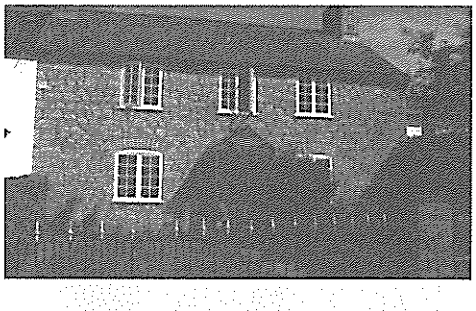
Prior to undertaking the detailed design of a development, applicants will be expected to demonstrate that their proposals have had regard to the setting of the site and the characteristics of the site. This section provides some basic information on the characteristics of the different parts of the District and the different types of settlement in the District.

The area covered by the Forest of Dean District Council is sharply defined on its southern half by the two magnificent yet contrasting valleys of the Severn and Wye, converging at the Districts southernmost tip, and to the north by the softer rolling landscape defined by administrative rather than physical boundaries.



The District has a clear character which lies in the amalgam of the characteristics of a number of sub areas, rather than it having a uniform character throughout. Some of these sub areas are contained solely within the District whilst most are shared with adjacent districts (see Map 2).

**Topography and Geology** are the principal determinants of the character of the District; from these spring its local building patterns, its rural and forest character and its dramatic range of levels from coastal flatlands to elevated areas of over 230 metres. Its unique inheritance of small scale extractive and industrial activity and its somewhat remote location and individualistic culture and settlement pattern add to the distinctiveness of the area.

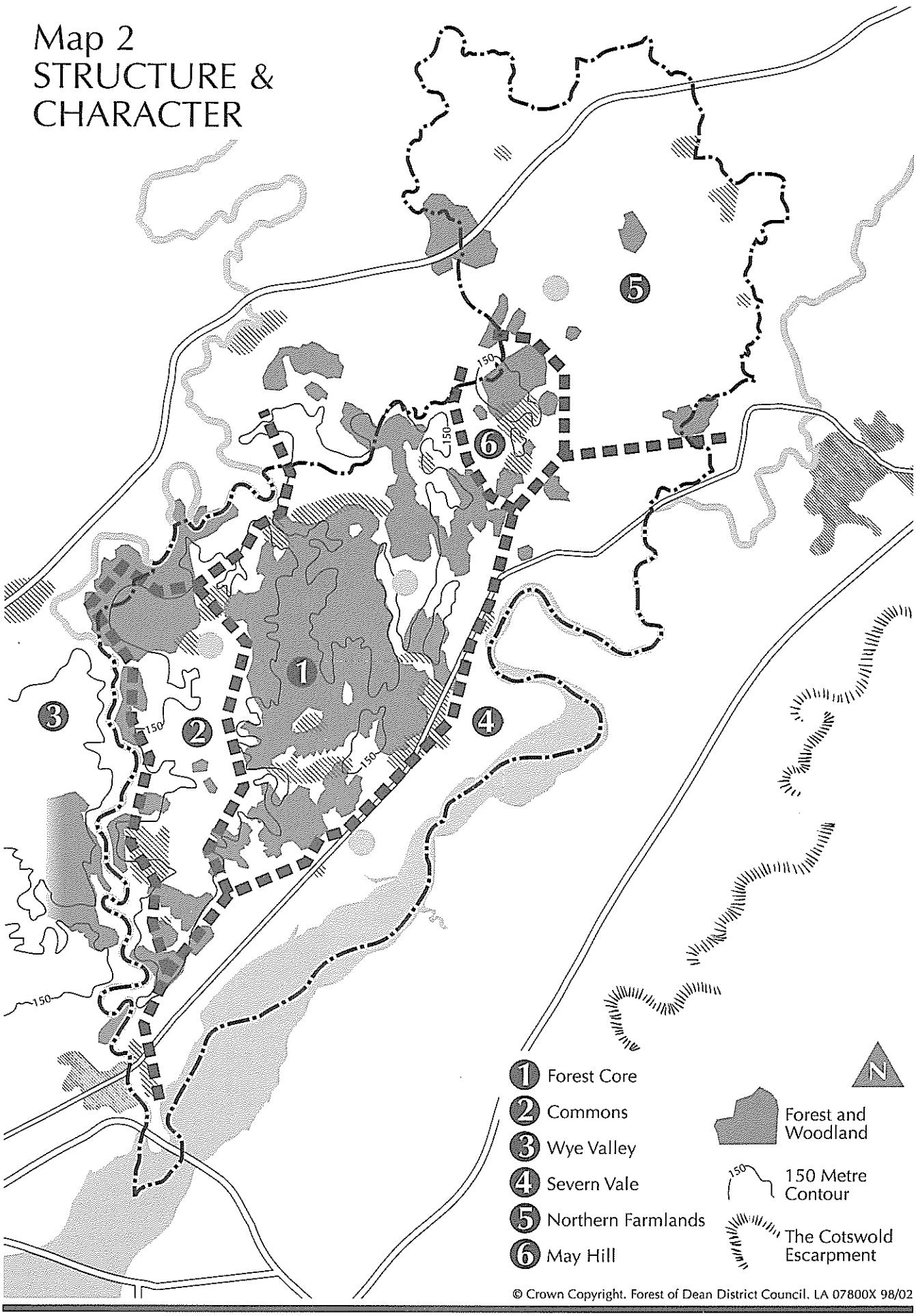


The existence of the Forest, which covers just under half of the District has resulted in an infrastructure of laws and rights which manifest themselves in the existence of the network of small scale 'free mines', squatter-originated settlements and the sight of sheep ranging freely throughout the area.

**Settlements** are generally small towns, (some expanded in the 19th and 20th centuries) low density loose conglomerations of hamlets and building groups, and areas of detached suburbia. These types are defined in detail later in this section.

**The Building Patterns** which give the area its character are those from the late medieval period to the late 19th Century, and consist of buildings which were constructed from locally occurring materials, often stone, rarely timber, and were built by local people to accommodate their everyday needs. (see Map 3) This pattern, known as vernacular architecture, was simple in form and was sited to make the best use of shelter and local conditions. In these ways vernacular architecture gives a place its local distinctiveness; and although the buildings may not be special in an architectural sense, every one of them is an indicator of the character of an area.

# Map 2
# STRUCTURE & CHARACTER



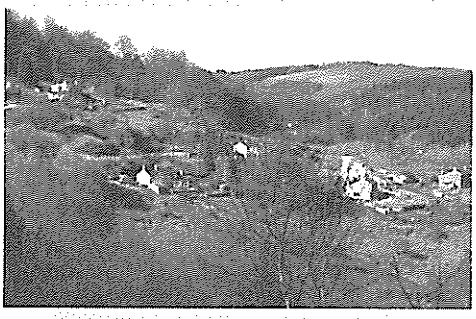
# The Sub Areas

These are 1 Forest Core, 2 Commons, 3 Wye Valley, 4 Severn Vale, 5 Northern Farmlands and 6 May Hill (see map 2).

## 1 The Forest Core

### Geology and Building Materials

The main building stone is Carboniferous Sandstone, mainly Pennant and its derivatives. The stone is associated with coal bearing measures, giving rise to the reminders of its extractive, railway and industrial inheritance which occur sporadically and unexpectedly throughout this sub area. The stone is grey green in appearance, often enlivened by purplish patches. In its densest form Sandstone is used as lintels, cills, quoins and parapets. Otherwise the stone is used for building and boundary walls - usually coursed but rarely ashlar. It tends to be friable over time. Pennant is particularly effective as a paving material (as seen in Newnham).



A pinkish brown sandstone (of an Old Red Sandstone type) is visible in the west of this sub area - chiefly in Coleford, where it is used in ashlar blocks on main elevations. Forest Sandstone - a greenish variant is quarried in the Forest on a significant commercial basis. Brick is also manufactured within this area. Traditionally it had an orangey semi engineering quality and is usually applied to minor elevations in 19th and early 20th Century buildings.

### Topography

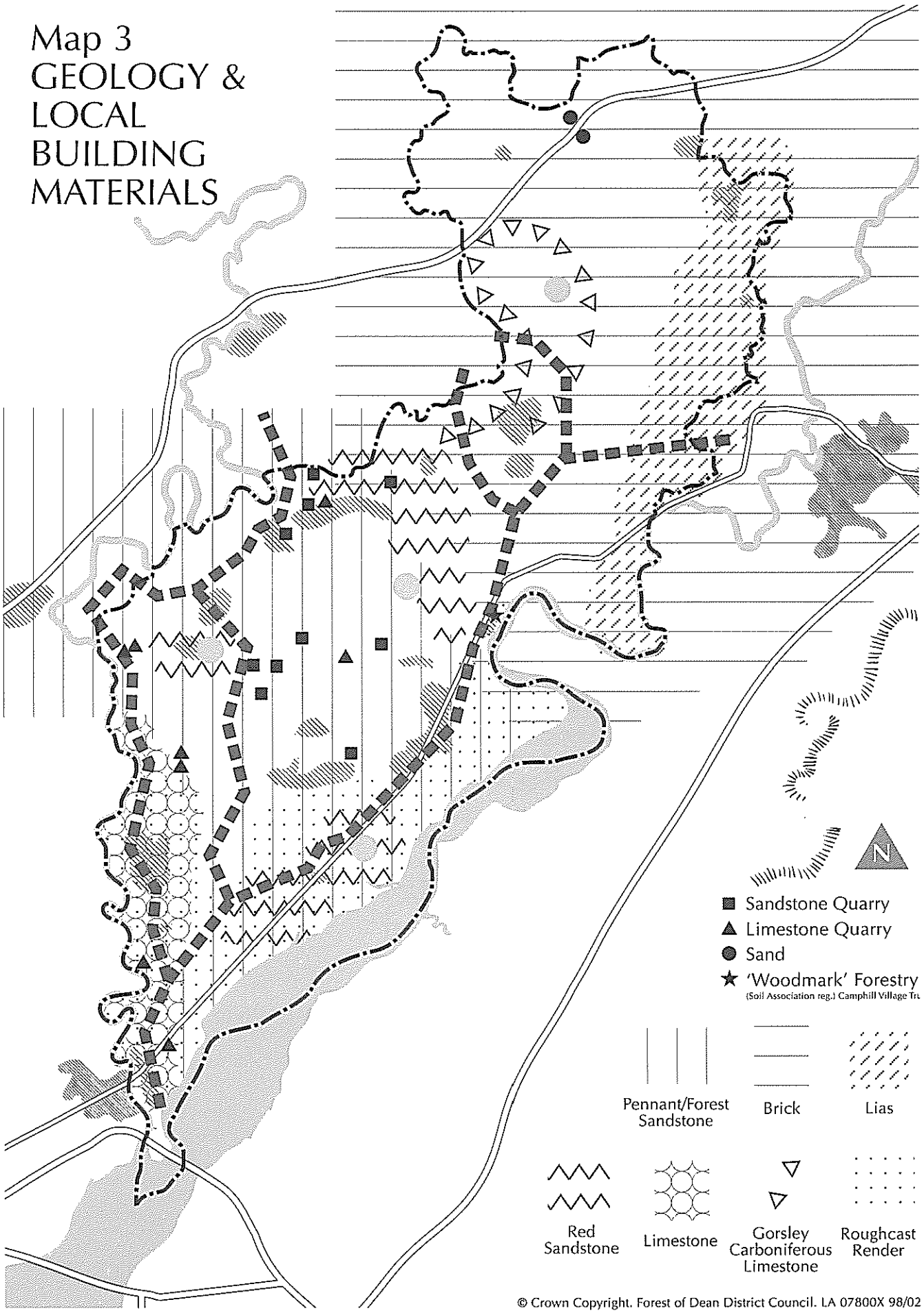
This is the most elevated part of the District rising to well over 230 metres. The land comprises high plateaux and ridges with quite deep valleys. The extensive tree cover of Deciduous and Coniferous trees, mostly standing very tall and some of considerable age, give the area its great attraction. The Forest creates a backdrop and edge to most settlements. Settlements rarely interrupt the skyline but some can be seen across valleys climbing up from the valley floors in characteristic informal and loose terraces.

Long views are numerous from the higher points - to distant ridges, to the great bends in the Severn Valley to the ridges of the Cotswolds including the Tyndale monument, and to the Black Mountains to the west. A more local sight is that of smoke rising from domestic chimneys, a rarity elsewhere.

### Settlements

The predominant types as identified on page 15 are (a) Urban e.g. Cinderford and (d) Sporadic Low Density e.g. Pillowell and Bream, although (ci) Small Settlements, nucleated e.g. Mitcheldean Coleford and Littledean are earlier. Individual vernacular buildings are usually aligned with their long axes parallel with contour-lines and often directly backing onto roads or tracks.

# Map 3 GEOLOGY & LOCAL BUILDING MATERIALS



## 2 The Commons

These more open areas exist on the west and south west side of the District, between the Forest core and the Wye Valley.

### Geology and Building Materials

The Pennant stone on the eastern side gives way to Limestone, white / grey in appearance. It is usually cut into small blocks for buildings, or coursed rubble for boundary walls. It is not particularly extensively used and will often be seen in association with other materials (chiefly render, and sometimes red sandstone in the north, or pennant elsewhere).

Limestone is still quarried but mainly for aggregates. Existing buildings and boundaries built of Limestone are important indicators of this vernacular and consequently will be identified and their loss resisted.

### Topography

These areas are elevated although not as high as the Forest core. They comprise open undulating country with hedgerows and some unenclosed areas. There are few wooded areas.

### Settlements

Generally settlements are very small, tending to be situated below the skyline. The settlements are usually of ancient origin and are either type (ci) smaller settlements of a nucleated form e.g. St Briavels or, type (d) but of a very open grain e.g. Hewelsfield.

## 3 The Wye Valley

This thin strip forms the western edge of the District.

### Geology and Building Material

The comments for sub area 2, the Commons, apply here.

### Topography

This is a dramatic river valley, winding through gorges in places, where limestone cliffs dominate the narrow valley. The valley is generally heavily wooded. The area has strong literary and pictorial associations, chiefly associated with the Romantic movement (Wordsworth and Gilpin amongst others). The Welsh side boasts major landmarks, Chepstow Castle and Iron Bridge, Tintern Abbey and Goodrich Castle, all visible from the District.

### Settlements

Very small waterside settlements, such as Brockweir, are spread thinly along the valley. The main impact on the valley is in the south at Tutshill/ Sedbury, which is generally of a detached suburban character from the interwar period to the present.

It is important that the Victorian picturesque architectural response to this dramatic setting should be maintained and enhanced - i.e. sporadic buildings of some dignity framed by trees and addressing the view. At Symonds Yat there are some well observed alpine architectural references. To the south the style is simple early Victorian elegance.

## 4 The Severn Vale

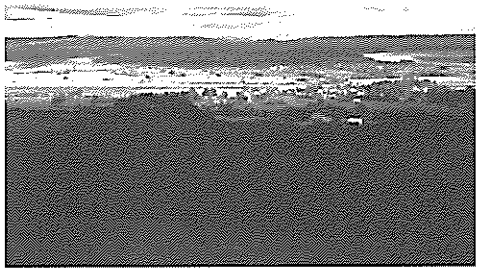
The Severn forms most of the eastern boundary of the district.

### Geology and Building Materials

The geology of this sub area is relatively complex and varied in its structure. In the south, Red Sandstone predominates, with some conglomerates and traces of Limestone. To the north Lias Limestone is used for building and boundary walls. The new Red Sandstone and conglomerate is usually utilised as random or coursed rubble. Render is also widely used throughout the area. Roofs tend to be Welsh slate or double Roman Clay tiles.

### Topography

The sub area gently slopes to the river and is very low lying to the north, whilst being undulating for most of its length. The land is in agricultural use with some orchards. There are relatively few points of access to the river.

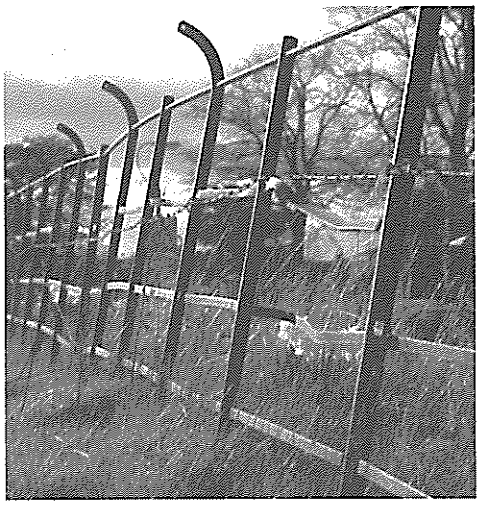


*The bend of the Severn at Newnham from Pleasant Stile*

### Settlements

The A48 provides the main spine or axis to the area with most settlements being small and linear (cii) along this route. Additionally large farmhouses indicate a once affluent local economy. Farmhouses are often quite shallow in plan but tall - usually 3 storeys with a characteristically deep space between the upper window lintels and the eaves.

## 5 The Northern Farmlands



### Geology and Building Materials

The underlying geology does not yield much stone except for Lias in the east and pockets of new Red Sandstone and a small area of yellowish Gorsely Limestone in the southwest of the sub area. Brick is predominant. The brick is a brown-red, originally made locally. Timber frame buildings are apparent, especially in the centre of Newent.

### Topography

The land is open and rolling with views of the Malverns and Black Mountains to the North and West. This is classic, lush Welsh / Midlands border farming country of large fields and hedgerows. The centre of this area is associated with the Dymock poets (early 20th century), and the abundance of wild daffodils in fields.

### Settlements

These are varied; the chief one being Newent, a nucleated settlement centred on a market place (ci) with recent expansion. Dymock is more linear (cii) in quality although its church and green form a focal point. The Chartist settlements including Lowbands and Snigs End, Staunton, have a distinctive low density layout and symmetrical single storey form and scale. Other small villages are more compact in form and are widely dispersed.

## 6 May Hill

This small circular area lies at the interface between the Forest Core, the Northern Farmlands and the Severn Vale.

### Geology and Building Materials

The Western half of the area is composed of the Carboniferous Sandstone of the Forest Core, with the local variant, Gorsley limestone - a golden buff stone, evident in buildings in the north and west of the area. Old red sandstone which underlies most of the Northern Farmlands, is in the eastern half of the area. There are scattered examples of timber frame buildings of the western square panel type.

### Topography

The area is defined by the gentle slopes of the conical May Hill, the highest point in the District at 296 metres. The upper reaches of this and its neighbour Huntley Hill are wooded, with May Hill having a distinctive clump of trees at its crest. The area is more open than the Forest Core, yet it is more intimate and more constrained by valleys and hillsides than the Northern Farmlands.

*Square framed terrace at Longhope.*

# Settlement Character

The origin, form and appearance of the settlements within the District are diverse and to some extent quite distinctive. The design of a new development should be sensitive to the essential characteristics of the settlement in which it is located, if we are to improve the quality of the built environment.

The settlement pattern of the District can be grouped into 4 broad types, with some sub types

(a) Urban
(b) Suburban: (bi) Standard, (bii) Garden City
(c) Smaller Settlements: (ci) Nucleated, (cii) Linear
(d) Sporadic low density.

Moreover each settlement is likely to have a structure consisting of an original core (often with mixed uses), an inner ring (mainly residential with some mixed use) and an edge (usually at lower density residential sometimes with recent retail or commercial uses).

## a Urban Settlement



These generally expanded considerably in the late 19th Century from much smaller earlier settlements. Their characteristics are those of the industrial / railway vernacular; but of a less rigid structure than the mining towns of South Wales or northern England.

Thus there are short terraces often built by different builders producing subtle variations on the typical by-law type terrace house design. There is a hierarchy of terrace housing from the more modest houses fronting the back edge of the footpath, to those which have gables, bay windows and short front gardens. There are also semi detached and detached types, with pronounced boundary walls and longer front gardens. Plots are usually rectangular with narrow fronts and long gardens.

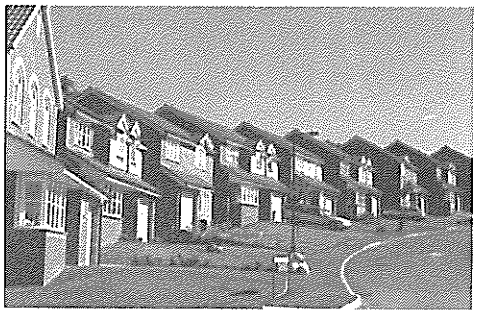
Streets are straight and characteristically have a number of acute angled intersections, usually in order to accommodate the substantial changes in level.

The settlements are generally domestic in scale with few buildings over 2 storeys, even in town centres. The main buildings which break this pattern are the Chapels and Churches. Chapels occur at almost any point in these settlements, as do small independent shops, but they can often be found at the sharp intersections noted above.

Examples: Cinderford, much of Lydney.

## b Suburban


*Standard suburban layouts*



The familiar residential environment of the 20th century. It is generally located on the periphery of settlements in the District and in some cases is the dominant form of a settlement. It is the product of three sets of standards; planning (density, space standards), building control (requirements of Building Regulations), Highways (sight lines, road and footpath width and curves etc) plus the standardisation of the building industry (volume house builders standard house plans and standardised building materials and components). Inevitably the result is a residential environment which lacks local distinctiveness or any variation in layout.

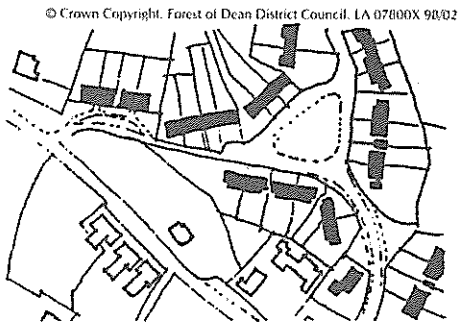
### bi Standard Suburban

Interwar suburban development (whether owner occupied or local authority) was usually laid out to a strict density of 12 houses per acre (approx. 30 per ha), and about 8 per acre (20 per ha) in rural areas. The form was semi detached giving 12 x 6m approx. hipped roofed villas with 5m front gardens and 3-6 metre spaces between. Gabled bay windows were often applied to owner occupied houses.

Post war suburban development has increasingly became characterised by detached individual buildings on smaller plots, with great prominence given to the garage. The premium on land availability has resulted in very narrow gaps between houses, and in smaller back gardens, whilst front gardens have remained at about 5m.

Generally the roads are between 4.5 and 5.5m wide with 1.8m footpaths on either side giving a much wider profile to the streetscape than hitherto.

Examples: Lydney, Sedbury.

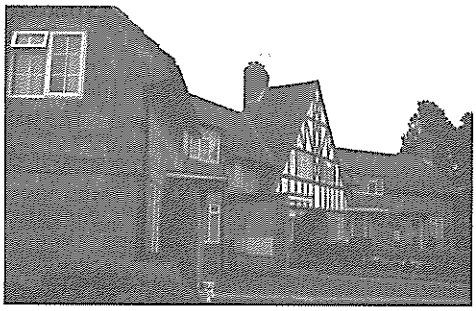



*Garden city layouts*

### bii Garden City

Whilst often at similar density to interwar development above, there is a conscious attempt to inject a structure and hierarchy to the spaces between buildings e.g. in creating greens and more variety in street types. Buildings are grouped in short wide fronted terrace types and are laid out to create emphasis at corners or terminate views.

Examples: Lydney, near the Church (1920), Aylburton on north side.

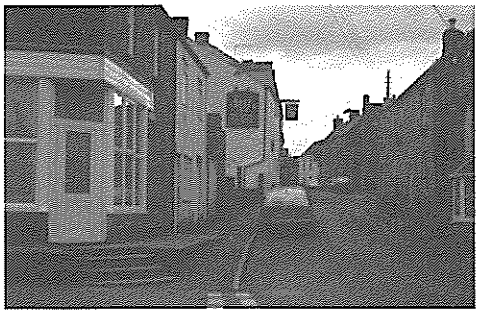


## c Smaller Settlements

In this type the essentially medieval origin of the settlement is still detected in its street and plot layout and built form even though its inner ring and periphery is dominated by 19th and 20th century.

## ci Nucleated





The settlement is centred on a market place, which is usually an expanded street rather than a formal square. Within this central space there may also be a market building and/or church, (although more often the church is located within its own quiet, green churchyard, set apart from the central space by buildings which front the market place.

Virtually all main routes converge on this market place (a deliberate intention to intensify economic activity). Buildings are often 3, 3.5 or 4 storeys in the centre with continuous frontages often subtly following the curving line of the street.

The plots are likely to be 'burgages' i.e. narrow fronts, 5 or 6 metres with considerable depth, often 30 metres or more. Outhouses extend some way down these plots. The effect is of high urban density on the frontages trailing off to low density, 'soft' backlands addressing the open countryside. The church tower, or more generally the spire, dominates the skyline. The buildings are generally of medieval origin (west midlands square timber frame) but were largely refronted in the brick or stone georgian tradition in the 18th and early 19th centuries.

## cii Linear

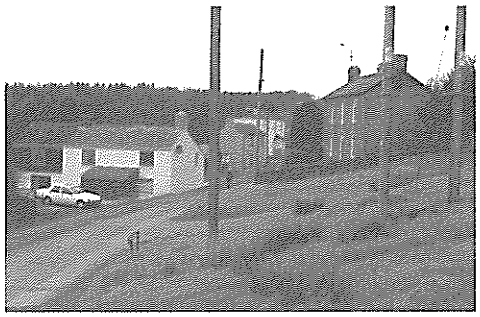


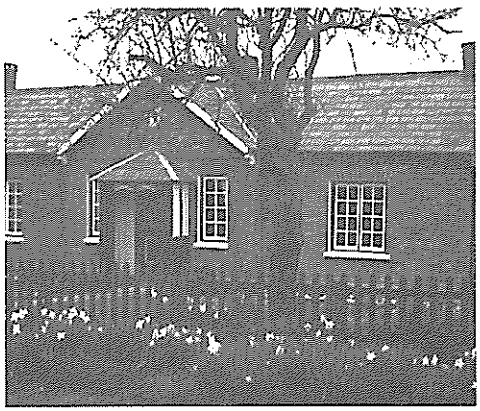
Many characteristics as above, especially the burgage pattern, but essentially the settlement consists of a single road running through it, usually expanding in a curving frontage to create a small market place. Smaller scale buildings.

Example: Aylburton.

## d Sporadic Low Density







*Chartist cottage*

This settlement pattern is virtually unique to the district, there are 2 types; (di) the unplanned, 'squatter' type developments within the Forest Core and (dii) the Chartist settlements in the north east of the District.

## di Unplanned Settlements

These developments are often in clearings in the Forest within a treed, hillside setting. The wide rectangular plots can often be very large mainly over 0.4 ha. Characteristically the buildings are at the corner or close to the front of the plot. Buildings will often be of the late 19th Century terrace form built as a detached building or sometimes as a double bay detached type. Earlier settlements will be typified by the lower, shallower wider 1+ storey rural vernacular house type.

Access is usually by narrow roadways and tracks the latter sometimes unmetalled. - Roads intersect at acute angles as in the urban type. Plots are often set back from the roadway by irregular verges grazed by sheep. Boundaries are important, to deter sheep.

Examples: Pillowell, Berry Hill.

## dii Chartist Settlements

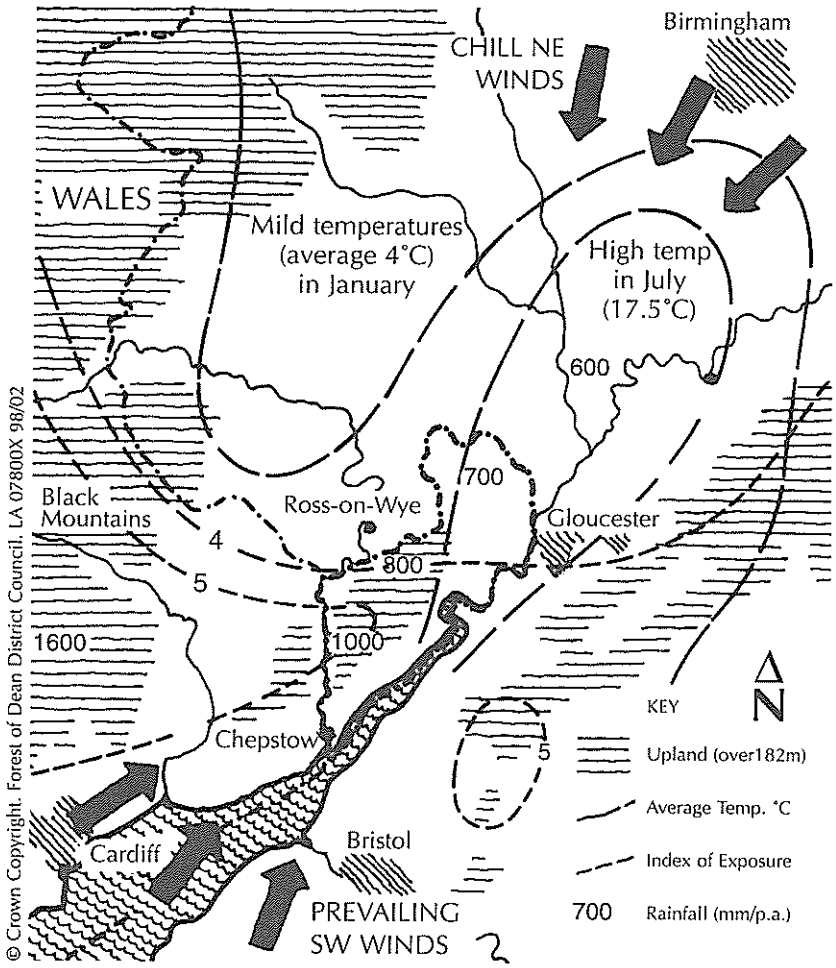
These again are characterised by very large plots, more regular than above and slightly more geometrically laid out. The house designs are quite standardised, being single storey and symmetrical with a central pediment.

Examples: Staunton, Corse and Lowbands.

# Climate and Ecology

## Climate

The District is considered by the Met. Office as part of the Midlands region, but with some features in common with SE Wales. The diagram shows its location in the broad funnel of the Severn Estuary, in the path of prevailing winds from the SW, and at times subject to chilled air from the NE.






**In winter**, the maritime influence creates mild conditions well inland, as indicated by the line of the 4°C average January air temperature. However, the upland southern half of the district suffers from severe exposure, as indicated by the 'driving rain index' figures. In both areas, more 'moderate' exposure is experienced on sites protected by dense planting or topography such as a valley.

**In summer**, the sheltered inland areas enjoy high average temperatures similar to those in the London basin (17.5° in July). Though the combined effect of mild winter and warm summer is favourable for fruit growing, as in nearby Vale of Evesham, the rainfall in the north is significantly lower than in the south, and during summer months is less than the rate of evaporation and transpiration: water deficiency is a serious problem.

In the absence of strong winds, the area is prone to mists, cold katabatic air currents, and lingering dampness. Cloud cover obstructs direct solar radiation at the beginning and end of the heating season.

## Ecology

**The ecology of the Forest of Dean**, especially the soils and trees, actively contributes to the equilibrium of the climate. Tree growth fixes carbon from the atmosphere, lessening the impact of fossil fuels. The energy consumption of a new house is balanced by the planting of 1-2 hectares of forest. Soils, which are the most significant carbon sink on land, need to be conserved, by avoiding over-grazing, intensive agriculture, and disruption by development.

Trees also serve as atmospheric scrubbers, removing up to 75% of particulate pollution. This is particularly valuable in view of the large concentration of industry along the Bristol Channel to the west ( the direction of the prevailing winds).

At the local level, the ecology is best conserved and enhanced by adoption of appropriate land management, using traditional and permacultural systems that also benefit biodiversity, local employment, recreation and amenity.

***The sustainability of development** is improved by design that responds to these specific climatic conditions, such as:*

- *Using sites that are sheltered from the wind, with good solar access.*
- *Shelter-belt planting, and retaining existing hedges and trees.*
- *On-site collection of rainwater, use of drought resistant species.*
- *Effective ventilation of buildings.*

# Building Form

The architectural heritage reflects the rural simplicity and industrial development of the past. The lines of the buildings are generally soft, although the plan forms are rectilinear. The crisp lines of modem fabrication, and frivolous decoration, are absent. Houses are small, plain and honest, but have been extended over time (and as resources have allowed) to create a jumbled informality.

**Plan**: A distinction can be made between the main house shell, and the extensions or additions to it. The main house typically has a long narrow plan form. The depth of plan is derived partly from the maximum span of the timber joists (under 5m) and rafters.

**Section**: All roofs are duo-pitch, with a pitch of 300 or more to suit slate covering. The gable is strongly distinctive. Hipped roofing is very uncommon. Eaves are low, and plain, except in association with brickwork facades where boxed cornices are used.

**Facade**: The overall appearance is plain and austere. Walls appear thick and heavy. Openings in the main elevation are arranged in a regular pattern, often in three bays. The heads of the openings line up horizontally, including that of the doorway; the reveals also line up vertically. Sills and lintels are substantial; at the reveals the windows (traditional box sashes) are set behind masonry nibs. All timberwork is painted (not stained).

Masonry is often of local origin - taking advantage of the rough by-products of the mining and other heavy industry. Except for the brickwork in the north, such walling requires quoins in brick or dressed stone in order to provide true comers. The saw-tooth pattern of quoins is a distinctive feature on the stonework facades, especially around openings.

**Boundaries**: despite informal grouping, the plots are joined with continuous boundary walls and fences, generally in stone. In more urban situations, ironwork on dwarf walling is common.

## Table of Materials and Construction

(breakdown of elements based on R W Brunskill, 1987, Illustrated Handbook of Vernacular Architecture).

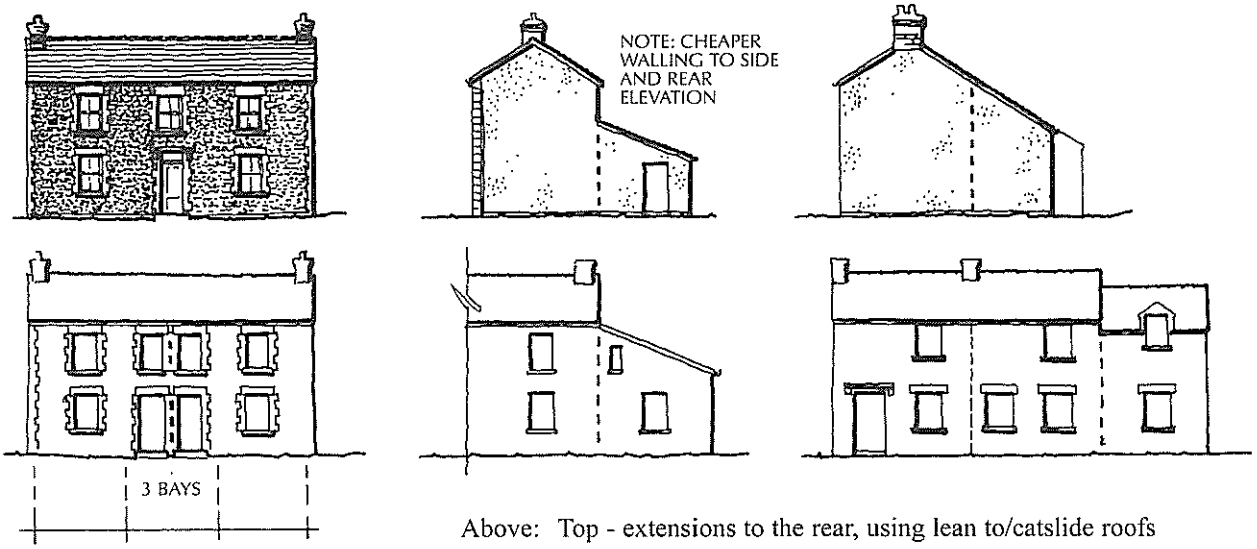
There are two main types of house defined by the use of stone, and brick. The 'render type' seen on the chart is a 'hybrid' in that the render has usually been added to these two types at a later date. Timber buildings are less common (for residential use) but have been included especially because the material is a sustainable alternative.

# Materials and Construction

| | Stone | Render | Brick | Timber |
|---|---|---|---|---|
| Walling Materials | Rubble stone, flush pointed (refer to geology to identify types). | Underlying masonry varies: stone, and brick. | Fairfaced Brick-work in flemish bond, in lime mortar; flettons to backings. | Timber frame of native broadleaf trees. |
| Secondary Walling Materials | Flush quoins (in 'sawtooth' pattern) of dressed stone blocks, or 2-3 courses of brickwork. | Soft lime-based tender, smooth-faced, often scored to imitate stone. Pebbledash is relatively modern finish. | A very limited use of stucco mouldings, and stone details. Most details executed in brickwork. | Render and brick. Lapped horizontal boarding, with / out waney edges. |
| Walling Details | Massive timber lintels, or segmental stone arches (using large blocks).<br>Pronounced stone sills, with deep reveals.<br>Note the distinctive Severn Vale agric. bldgs where eaves are far over the top lintels. | Pronounced stone sills and deep reveals; no lintel expressed. | Flat arches of rubbed/voussoir brickwork.Pronounced stone sills, and deep reveals. Some bldgs have stucco or timber mouldings or architraves. 3-course oversailing string course at level of first floor; projecting brick plinth. | Timber lintels not as deep as on the stone house). Often windows did not have deep reveals. |
| Roof Shape | Duo-pitch with gables; pitch 30-35°<br>No projection at eaves, located above first floor lintels. Later versions have exposed rafter ends under projection.<br>Extensions are pitched lean-to's, inc. catslide. | Duo-pitch with gables; pitch 30-40°.<br>No projection at eaves, located over window openings. | Duo-pitch with gables; pitch 45-50°.<br>Projecting eaves, with cornice or boxing, located above lintels. Extensions to the rear produce valleys (plain and swept) between pitches. | Duo-pitch with gables; pitch 45-50°. |
| Verge Detail | Plain flush verge boards. No parapets. | Plain flush verge boards. No parapets. | Verges are plain and flush; decorated barge-boards are rare. No parapets. | |
| Eaves Detail | Plain timber eaves boards, typically meeting in front of stack. Cast-iron gutters and downpipes. | Plain timber eaves. Cast-iron gutters and downpipes. | Boxed eaves, or timber cornice with brackets, or rendered mouldings, or brick corbels in dentil pattern. | |
| Roofing Material | Slate roofing in regular courses. | Red / brown clay tiles. | Plain tiles (clay) | |
| Ridge | Plain grey ridge tiles. Only some later versions have decorative ridges. | Matching ridge tiles. | Undecorated red ridge tiles. | |
| Chimney Position | At gable ends. | At gable ends. | At gable ends. | Some located in centre of frontage. |
| Chimney Details | Squat chimneys of brick with oversailing courses, small pots and flaunching. Verge / barge-boards meet in front. | Squat chimneys, of brick with oversailing courses. External breasts recessed in raking tiers. | Tall chimneys of brick with oversailing courses. Large pots and flaunching. | |
| Dormers | Generally an addition, with gables and cheeks; some Edwardian dormers have 'blind' walling surrounds. | Generally a timber-framed addition, gabled with cheeks, sometimes flat-roofed. | Gabled or hipped; gable ends may be rendered & half-timbered. | |
| Plan Form | Wide frontage, shallow plan | Wide frontage, plan varies. | Wide frontage, deep plan. | |
| Sectional Form | 2 storey, symmetrical. | 1.5 - 2 storey. | 2.5 - 3 storey | |
| Stairs, Steps | Stone threshold. | Stone threshold. | Stone threshold. | |
| Window Shape | Vertical (Victorian), all the same, in a regular Pattern. | Vertical, with greater variety of shape and disposition. | Vertical (Georgian), differ by floor, in regular pattern. | |
| Window Frames | Painted timber sashes. Note the glazing bar pattern on Edwardian houses. | Painted timber sashes, but sometimes with side-opening casements. | Painted timber sashes, with glazing bars. | |
| Porch / Canopy, and Bays | Door canopies of plain stone slabs, built into the wall, on a pair of stone brackets.<br>Bays are untypical. | Either stone or timber flat-topped roof over entrance, with brackets. The addition of bays with pitched roofs is late Victorian or Edwardian. | Timberwork flat roof over entrance, with swept brackets; metalwork (lead) covering. Some shallow stone canopies. | |
| Door Details | Door width and head line up with windows. Solid panelled doors, and fanlight. | Solid panelled doors (some partly glazed), and fanlight. | Solid panelled doors, and fanlight. | |
| Relationship b / n Buildings | Detached and terraced (typically in reflected pairs). | detached and terraced. | Generally linked / adjoining, or a non-terraced row. | |
| Boundaries | Rubble stone, including compacted earth. | rendered stonework, railings, with some brick details. | railings, with some brick (eg for dwarf walls). | agriculture railings, and fencing. |

# Typical Building Forms

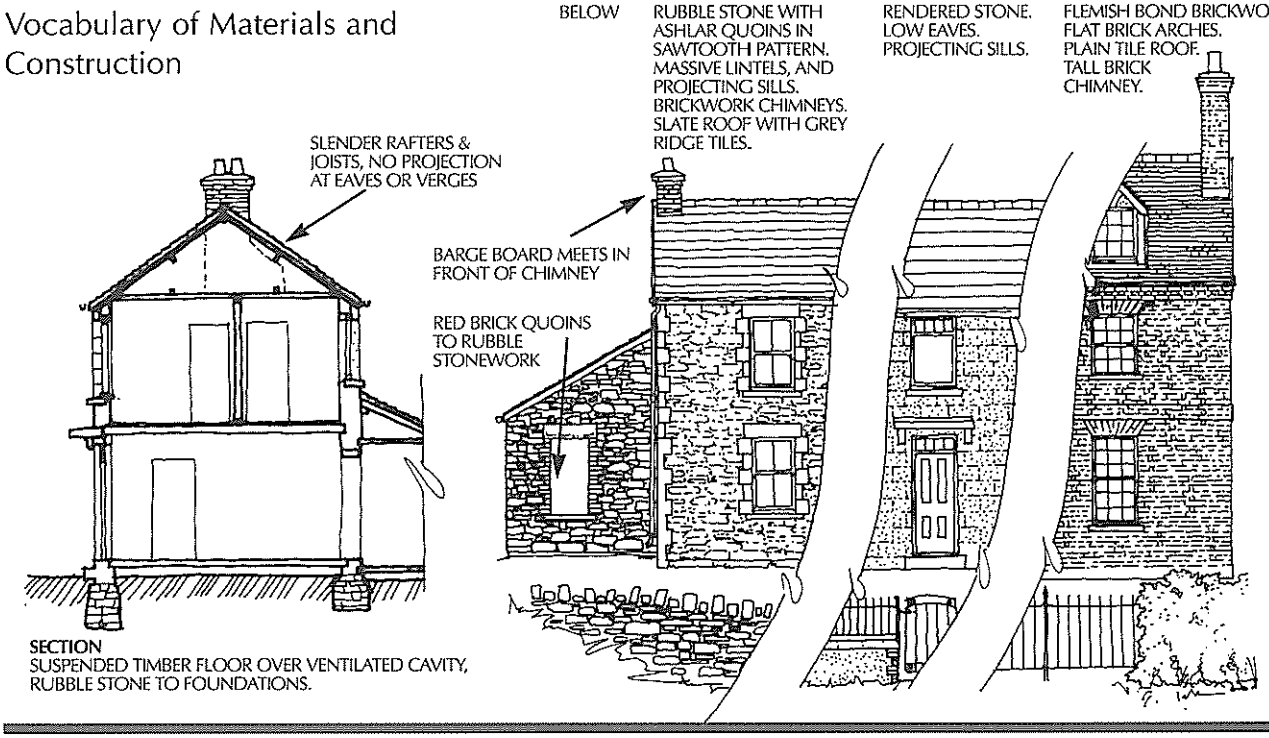
**Informal Grouping**
-variations on a theme
(a scene from the Forest Ring)




The basic Shell - with extensions

Above: Top - extensions to the rear, using lean to/catslide roofs
Bottom - extensions to the side

## Vocabulary of Materials and Construction




**SECTION**
SUSPENDED TIMBER FLOOR OVER VENTILATED CAVITY, RUBBLE STONE TO FOUNDATIONS.

## Introduction

This chapter sets out the way in which the principal decisions for any proposed housing / mixed site should be approached. It focuses on the design stage after the appraisal of site and context, but before the detailed design (sections 4 & 5) The strategic design process is conventionally reduced to a bland estimate of dwelling capacity and presumptions about vehicle access and servicing. This is not adequate. Applicants will need to be explicit about their proposals and satisfy specific criteria in relation to the issues listed in the right hand column. These design principles are aimed at achieving a high quality of environment now and for future generations, an environment that provides for our needs and uses resources in a sustainable way, and at the same time is an attractive and distinctive contribution to the Forest area.

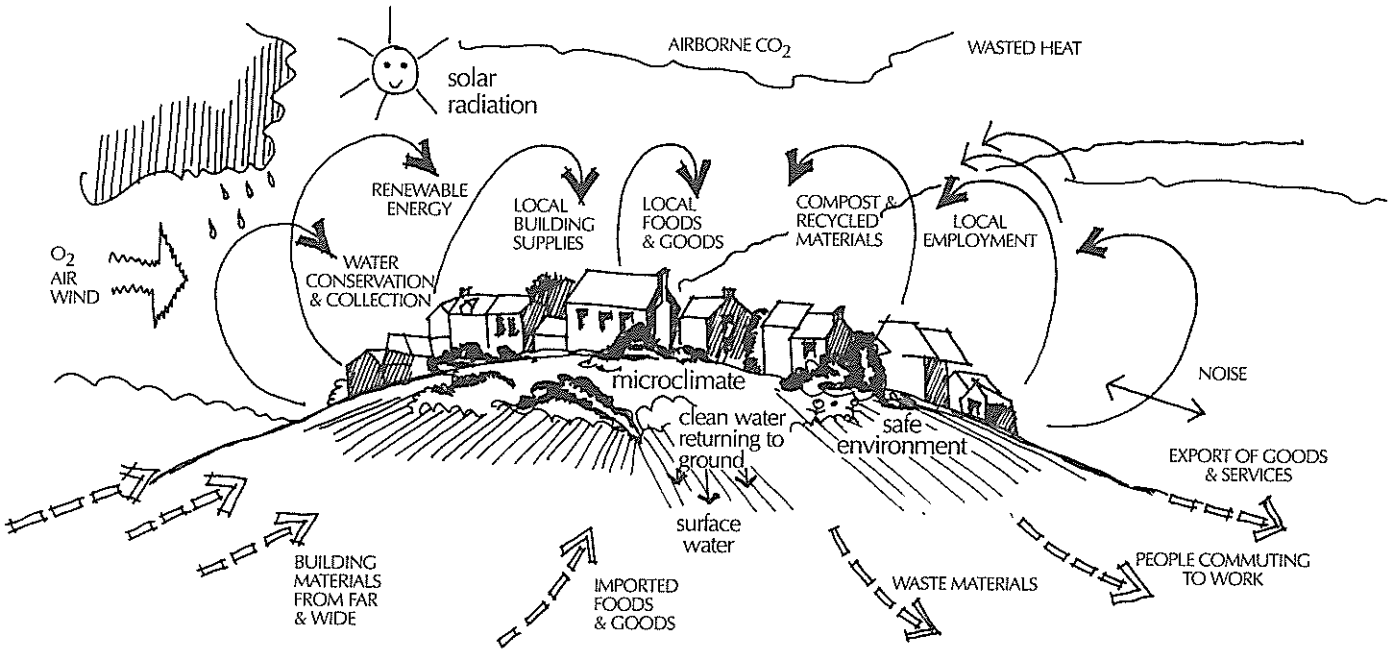
A central concept in planning for sustainability and aesthetic quality is **locality.** Every locality (village, neighbourhood or small town) should ideally be as self-sufficient as possible, providing opportunities for choice of accommodation, jobs, facilities to residents; reducing its need to 'import' scarce resources such as building materials, water and energy; at the same time reducing its export of pollution and waste to the wider environment.

In this sense each locality can be seen as an **ecosystem**, providing a convenient, attractive, low-cost, long life habitat for human beings.

Each new development can and should make a contribution to increasing the locality's innate quality and self-sufficiency.

### The contents of this section:

- An integrated design strategy for sustainability and local distinctiveness (question 1).
- Satisfying local needs in terms of housing, work, recreation, schooling etc (questions 2-5).
- Providing good and safe access by foot, pedal, bus and car (question 6).
- Effective design to conserve water, energy and wildlife (questions 7-9).
- Responsive to the character of the site and the area (question 10).



## Q1 Integrated design strategy

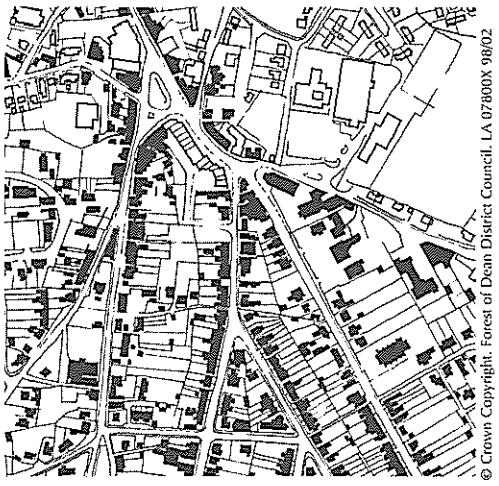
**Is the general character, density and arrangement of development on the site designed to reflect and enhance the distinctive character of the locality and achieve more sustainable development?**

The prevailing character of new development in the District, is standardised and nondescript. The main purpose of this "strategy" chapter is to ensure that, instead, future development reflects local needs and creates a more distinctive and attractive environment. The lesson of the chapter is that there are normally quite straightforward logical reasons for developing any site in a unique way. The job of the site planner is to integrate the various objectives into a coherent design strategy.

The Council believes that well designed, distinctive new residential development will not only increase the enjoyment of residents and local pride in the environment but also increase the attractiveness of the area to entrepreneurs.

Will mixed uses be appropriate? Consider provision for small workspaces both in association with some house types and grouped in courts in neighbourly locations. Shops and services will need to be visible from routes within the public realm beyond the proposed development, if they are to be viable.

At the broader level the intensity of development is a key issue. Generally higher densities are favoured, to minimise the pollution and poor accessibility caused by the low density sprawl, and to safeguard the open and forested countryside as much as possible. The character of the countryside is the District's principal asset and should not be lightly jeopardised by the inefficient use of development sites.




*Urban development pattern*

The significance of settlement form and density for transport energy use and $CO_2$ emissions is considerable. In-town sites, or those greenfield sites within walking distance of town centres, should be quite intensively used, while those sites in less accessible fringe locations, or in villages which by-and-large lack local work or facilities, should be less intensively used. The variety of density should also reflect the variety of aesthetic character.

Open spaces should be designed and located appropriately to their specific functions, e.g. toddlers play, older childrens' activity areas, sitting out areas, amenity etc.

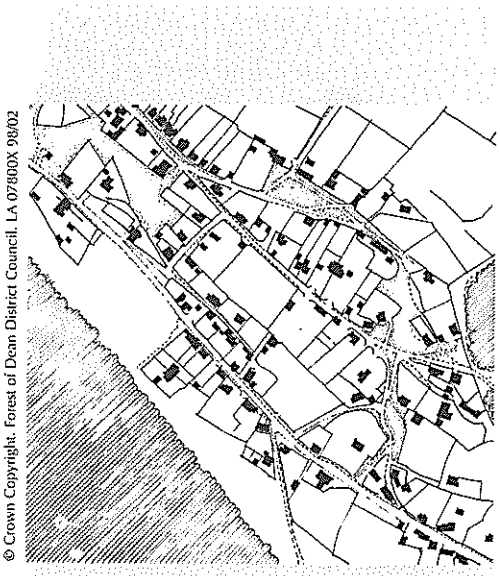
The previous section distinguishes 4 different kinds of development locations - urban, suburban, smaller settlements and sporadic development - and the density criteria below vary accordingly.

### Criteria

**Does the proposed level of development on the site recognise the distinctive setting and accessibility of the site?**

- **Town Centre Sites** - within or on the edge of town centres - should be used as intensively as is consistent with the general character of the area. Normally larger sites (over 0.2 ha) should include retail / social / commercial uses as well as residential. Flats and terraces, up to four storeys in height, should predominate. Density guideline 60-75 dph.

- **Other in-town sites** - brownfield or enclosed greenfield sites within 800m walking distance of the town centre - should be used quite intensively, often more so than their immediate surroundings. Normally frontage development should be the rule, reflecting 19th Century patterns, with terraced development the norm, up to 3 storeys. Density guideline 50-70 dph
- **Suburban sites** - allocations on the periphery of development, normally within 1500 m walking distance of a town centre - should be mixed / varied in character, incorporating detached, semi and terraced development, up to 3 storeys and preferably at significantly higher density than the post-war norm : guideline 30-60 dph.
- **Village high street sites** - sites fronting onto the main village street near local facilities - should reflect local patterns, often with frontage development and some terracing, including units adaptable to commercial / workshop use, normally 2 storeys. Guideline density 30-60 dph.
- **Compact village sites** - other sites allocated within compact or closely-knit villages, or "exurban" sites located away from the towns - should provide a variety of accommodation, including some terracing, but with a higher proportion with large gardens. Large gardens offer greater potential for residents to recycle household waste, grow their own food, and perhaps in the future achieve water and energy autonomy. Not more than 2 storey. Guideline density 20-40 dph.
- **Sporadic development sites** - normally sites in open or dispersed rural settlements - should preserve the informality of arrangement and varied plot sizes, creating informal open spaces, and requiring a high degree of energy efficiency and water autonomy (see new Structure Plan Policy H10) Guideline density (though each settlement is unique) 15-30 dph. Note, however, Local Plan policy to keep the distinctive openness of dispersed settlements.




*Sporadic development*

| LOCATION | NORMAL DEFINITION | AVERAGE NET DENSITY | STOREYS | OTHER GUIDELINES |
|---|---|---|---|---|
| Town Centres | Within or on the edge of town centres | 60-75 dph | 2 - 4 | Mixed use usually for small and large sites. High proportion of flats / tenants |
| In-town sites | Brownfield and enclosed greenfield sites within 800 m walking distance of the town centre | 50-70 dph | 2 - 3 | Frontage development, some Terraced dwellings on plot corners |
| Suburban sites | Suburban and edge of town sites within 1500 m walking distance of the town centre | 30-60 dph | 2 - 2.5 | |
| Village high street | Sites fronting onto the main village street near local facilities | 30-60 dph | 2 - 3 | Including workshops where feasible - frontage development, some terraced |
| Compact village sites | Other sites allocated within compact / closely knit villages and outlying suburbs | 20-40 dph | 2 - 2.5 | |
| Sporadic development sites | Sites allocated within dispersed / open rural settlements | 15-30 dph | 1.5 - 2 | Varied plot sizes, sporadic pattern, preserving/creating informal open spaces |

*good infill housing meeting local need: Chepstow*

## Q2 Local Need

**Does the development provide satisfactorily for housing needs in the locality?**

It is self-evident that a site should provide for those who are likely to benefit from its characteristics, and conversely should not provide for those who might be penalised by it. For example elderly or infirm people (in, say, sheltered housing) need a relatively level site within easy walking distance of a range of local facilities.

Specific local housing needs (e.g. for social or affordable homes) are identified by the local authority, often in consultation with the Parish / Town Council. Developers should be alert to any perceived local needs (which represent potential market opportunities) and may be required by the Local Authority to provide local needs housing.

- Is it clear who the housing is intended for? (i.e. which sectors of the market, what particular groups)
- Does the proposal fulfil the requirements of the local authority in relation to specific needs?
- Are the needs of the group or groups provided for appropriately satisfied by the location and style of development? For example:

  Elderly or disabled - units designed for these people should normally be within 400 m of a general store / supermarket and of a bus-stop giving access to the town centre, plus a range of other facilities such as a pub, park, church etc. Flat or shallow gradient approach is essential.

  First-time buyers / young families - normally should be within 800 m of a primary school, local shops and park / playground.

## Q3 Housing Balance

**How far does the proposal help to ensure a good range of housing - in terms of tenure, cost, size and type - is available in every locality?**

A diversity of housing is important at the scale of the village, small town or urban neighbourhood, in order to free up the various housing markets and allow households the maximum opportunity to select locations convenient to their needs and thus reduce the need to travel; also to avoid the peaks and troughs of demand for local facilities which can result when an estate is all for one household type - leading to recurring poor levels of provision.

Housing mix can also be significant in ensuring the local availability of a wide range of skills and professions, increasing the chance of businesses finding local employees and helping the sense of community. It also helps safety on the streets by increasing the likelihood of informal surveillance.

- All developments irrespective of size should complement the existing pattern of housing in the area to achieve diversity of provision and variety of design.
- **For developments up to 5 units** there need not necessarily be a range of housing on site, but the development should complement and diversify the range of housing available in the street.

- **For developments in the 6-25 unit range** there should be a mix of dwelling sizes and a range of garden size, complementing the pattern in the neighbourhood or village.
- **Developments over 25 units** should provide for a range of tenure, including a proportion of affordable homes if required by the local authority, a range of price levels reflecting quality, a mix of dwelling sizes and types, ranging normally from one-bed flats to 4 bedroom houses, plus a range of garden sizes which vary for each house type / size as well as between them, giving wide choice to consumers.
- The authority will look favourably on proposals that diversify the housing options available in an area, and in particular wishes to encourage more self-build, shared equity, rented and co-housing schemes.

Further information:
UWE, Sustainable Settlements (1995) p111.

## Q4 Mixed Use

**What, if any, non-housing uses are provided for on site and how do these complement facilities available in the locality?**

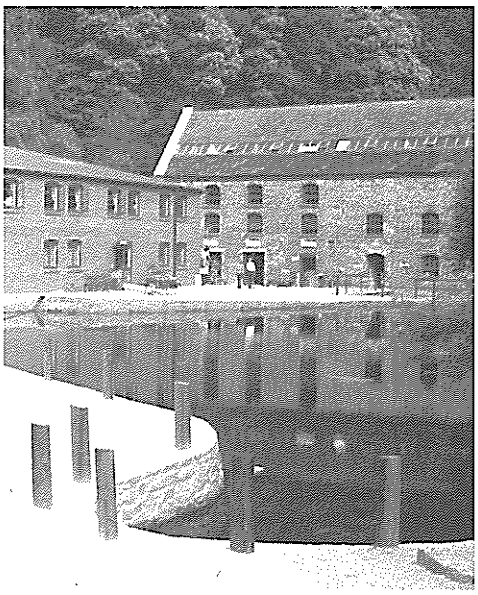
A rough balance of homes, jobs and facilities in every town is a basic principle of sustainable development. The reasons are social, economic and environmental. Socially, a local choice of jobs, shops, schools and other facilities increases the opportunities for all groups of the population to lead a full life. It also makes for a safer environment because people are more often on the street, policing the area informally. In economic terms the costs of travel are reduced, freeing household income for other purposes. Environmentally the reduction in the need to travel (especially by car to more distant locations) cuts health-damaging pollution, safeguards the global ecosphere, and conserves energy resource. Less car use also means fewer accidents on the roads.

### Criteria

- The local authority wishes to see all new housing areas over 1 hectare or 25 units (which ever is less) make a contribution to the stock of local retail, leisure and / or open space facilities, locating any facilities so as to allow convenient access from surrounding areas.
- The size and nature of any such facilities will depend on the scale and location of the development, and will be stipulated by the authority on the basis of accessibility standards derived from "Sustainable Settlements", and an assessment of local viability.
- The normal accessibility standards for local shops, pubs, primary schools, small parks are 600 metres (actual walking distance); and 400 metres for playgrounds and allotments.
- The location of such facilities should be such as to encourage use by people in the wider neighbourhood. For retail, health education and social facilities this normally means a position at a pedestrian nodal point, and visible to passing traffic.

*Small shops integrated into residential areas.*

Further information :
Sustainable Settlements pp109-120.



*The conversion of industrial buildings to the Heritage Centre shows how existing buildings can be successfully adapted to new uses.*

## Q5 Work

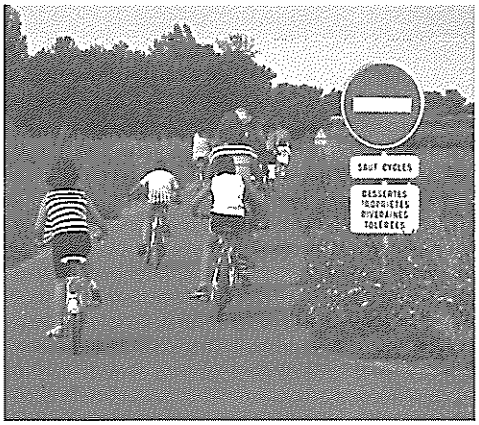
**To what extent does the development encourage locally-based work and home-working?**

The journey to work is a main cause of congestion, accidents, daily frustration and environmental pollution. Local jobs increase the options open to residents, particularly part-time workers, carers and those with restricted mobility. In addition home-working is increasingly common where workers are linked by telecommunications to the outside world.

### Criteria

- Every development of 6+ units and where access from the surrounding area by foot is good should include dwellings that are designed to facilitate future change of use to, for example, hairdresser, office, surgery. Typically this would mean a three storey dwelling with street frontage in an accessible position, with a main ground floor space of 30-50 $m^2$.
- For every development over 1 hectare or 25 units (whichever is the less) the authority wishes to see the incorporation of small-scale work-spaces. These could take the form of workshops (max size normally 500 $m^2$), small offices (<250 $m^2$) as well as local shops etc.
- The authority would also welcome applications including workshop-homes, office-homes or telecottages.

## Q6 Movement and Security




**How far does the pattern of movement into and across the site, and to local facilities, provide a convenient, safe and attractive pedestrian and cycling environment?**

A higher proportion of trips by foot and pedal makes for a better quality of life, less pollution, and a safer environment. Research shows that people walk / cycle more and further when their routes are convenient, safe and attractive. The viability of local retail and public transport services is dependent on people choosing to walk rather than get in their car. More people on the street makes for improved safety and sense of community. New development should be designed to take account of people's behaviour and give priority to their safety and feeling of security reducing opportunities for crime and anti-social behaviour.

### Criteria

- At the level of design strategy the authority needs to satisfy itself that there are direct and attractive pedestrian routes through and out of the site leading towards bus-stops, local facilities and the town centre, avoiding steep slopes or dangerous crossings.
- Any possible movements across the site are fully catered for and give structure to the internal layout, creating a good route network, with choice of routes for users. Particular attention should be given to children's safe routes' to school and playground.
- The focus of the network is the main concentration of local activity on or adjacent to the site (e.g. shops, workshops, school, bus-stop, surgery).
- The pedestrians / cyclists have priority, with motorized traffic "calmed" to 20 mph on residential roads.

- Traffic calming has been achieved by carriageway design rather than by humps which make for noisier and more polluting driving conditions
- Pedestrian routes avoid narrow / obscure alleys that help the criminal rather than the resident, but instead are well overviewed by homes, increasing the sense of informal surveillance and friendliness.

Note that the plan must be able to show pedestrian and cycling networks clearly. The local authority may on occasion require an extra circulation plan, showing the site in its context.

Further information:
Gloucestershire County Council Practice Guide on Sustainable Transport and New Development, and Sustainable Settlements pp 121-129.

## Q7 Energy Strategy

**Is the development designed with energy conservation as a key objective?**

Recent Governments commitments to reduce $CO_2$ emissions by 20% by 2011 point to the need to adopt extra measures to increase energy efficiency. Personal transport and housing energy use each account for about half of the energy budget of a family. The transport energy use varies widely (by up to 100%) between town / urban households and commuter households because the former have shorter average trip lengths and less dependence on the car. Housing energy use tends to be higher in low density / rural settings because of greater exposure and a high proportion of detached dwellings. In addition dispersed, low density development uses more "embodied" energy in construction and materials than equivalent dwellings in more compact settlements. It is for these energy reasons as well to protect open countryside that Government is strongly discouraging further dispersed rural development (See PPG13).

*Incorporation of solar panels in a traditional building.*

The nature of Forest of Dean is such, however, that a relatively dispersed pattern of development is inevitable. The District Council therefore has decided that in order to be accord with the principle of sustainable development, new rural / exurban housing which is innately more energy-intensive should compensate by achieving higher levels of building energy-efficiency.

This policy is initially advisory (as building Regulations are set by Government) but the Council will seek to (i) reach voluntary agreement with local builders, as has happened elsewhere (e.g. in Milton Keynes); (ii) persuade the DoE regional office that the policy is an appropriate, trail-blazing response to Government guidance.

### Criteria

- The development should use as high a proportion of locally-sourced, especially re-used materials, as local availability allows.
- **Every development of 6+ dwellings** should spell out its *energy strategy*, specify NHER performance and likely range of energy consumption.

- The strategy statement must be explicit about the level of solar design, super-insulation etc. and any energy compromises thought necessary for aesthetic reasons, or to take account of specific site conditions.
- **Every development of 20+ dwellings** should be considered for possible mini-CHP (combined Heat and Power) or use of grouped solar / wind / water. The results of that consideration should be reported in the energy strategy.
- **All new housing in village and suburban locations** should achieve a specified NHER rating: C sites-level 8: D and E sites - level 9; F sites - level 10.
- Equivalently they should achieve a good level of solar orientation and aspect: C and D sites - 50%+; E sites and F sites - 75%.

Further information:
Sustainable Settlements
130-137, 160-162, 180-184;
Forest of Dean Energy Team

## Q8 Water

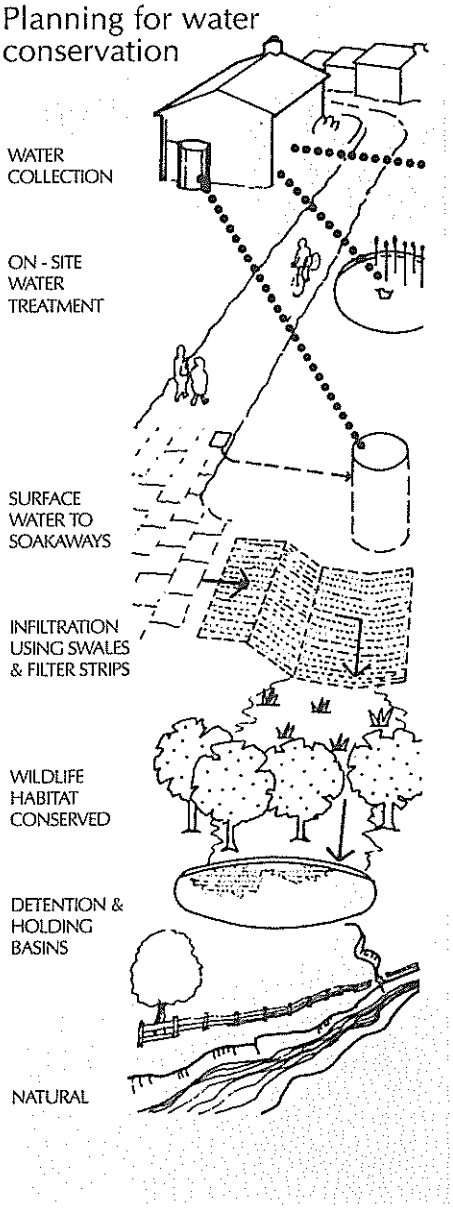
**Is the development designed so as to safeguard the availability and quality of water supplies, avoid problems of flooding, and, where appropriate, create water-related habitats?**

The availability and quality of water supply has become a key sustainability issue over the last few years, raised to high profile by the issue of Water privatisation and annual summer shortages. The Government agency responsible - the Environment Agency - is taking an increasingly tough line with developers and development plans. Long term sustainability is now seen to depend on reducing extraction rates from rivers and ground water, allowing used water after on-site purification to replenish ground water supplies, and avoiding technological 'solutions', such as canalisation, which cause flooding downstream and destroy habitats.

In the Forest there is also the particular problem of inefficient septic tanks causing pollution and damaging aquatic eco-systems. Alternatives are now available, often cheaper than connection to mains sewerage systems, which enhance the natural environment.

### Criteria

- Has the water company / Environment Agency been approached to assess water supply, drainage patterns infiltration rates, sewerage disposal on site and the implications for the design?
- Where water supply is not immediately available has the alternative of onsite collection been evaluated?
- Has the potential for on site infiltration of surface water - using porous surfaces, soakaways and swales, and (for larger developments) holding ponds - been maximised?
- Where connection to the centralised sewerage system would mean extra investment, or where there is no centralised system, have the options of reedbed schemes or sewage wetlands been evaluated?
- Have existing streams and their immediate environs been protected from pollution and excess run-off, and preserved in a near-natural state?



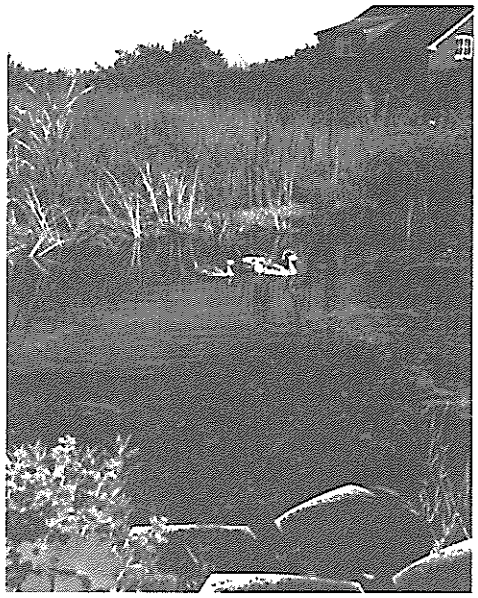
# Q9 Open Space and Wildlife

**Does the development contribute to local open space provision and enhance wildlife potential?**

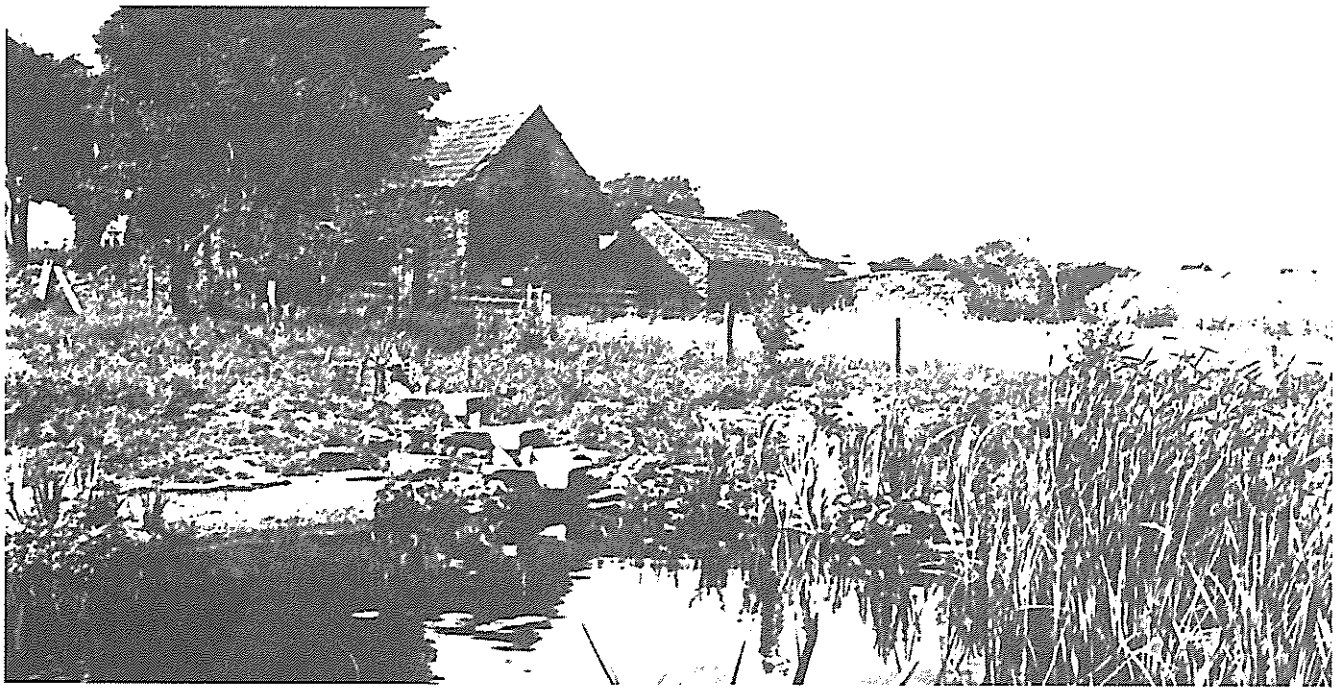
Open space provision in the past has been seen as a question of providing a separate space for each separate need, such as playground, public park, playing fields, allotments and so on. But this disaggregated pattern missed out on the opportunity of providing for a general improvement in human and natural environment. An *open space network* in and around settlements is valuable in several interrelated ways: recreational footpath and cycling links; managing water; controlling pollution (especially through planting trees); enhancing wildlife potential and reducing wind speed (thus saving energy in buildings). Every new development should therefore make an appropriate contribution to local greenspace.

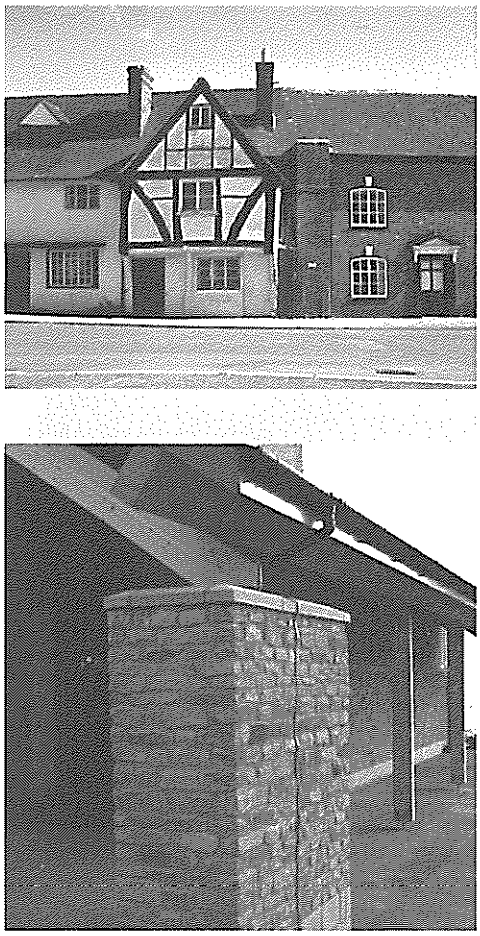
## Criteria

- Have the natural features of the site - in terms of landscape, soils, mature trees and hedgerows, and distinctive / valuable wildlife habitats - been surveyed and evaluated?
- Are valuable natural history sites avoided?
- Does the proposed development incorporate public open space (where required by the local authority) so as to
  - (i) give good footpath connections to surrounding areas?
  - (ii) give easy access from varied points in the new housing?
  - (iii) preserve valued natural features, especially water courses, wooded slopes, mature trees and hedgerows?
  - (iv) enhance wildlife potential, especially by preserving / creating wildlife corridors?
  - (v) increase tree cover for aesthetic, wildlife, and windbreak reasons?
  - (vi) provide convenient local allotments for households without large gardens?



*Water purification can create wildlife havens and an attractive recreational environment.*





*Modern detailing using traditional materials*

## Q10 Aesthetic Quality

**Will the development enhance the local scene through its innate quality, sympathy for its surroundings and appropriate choice of materials?**

A scheme that is in sympathy with its surroundings is likely to work towards sustainability. Surroundings means geology, landscape, wildlife and human community as well as the nearby buildings. Being in tune with the landscape implies, for example, selecting sheltered sites where the new dwellings fit in more naturally and have lower chill factor than exposed sites. It also means using materials, where they are available, that are locally derived - both to blend in with the landscape and reduce transport energy costs.

Being in sympathy does not necessarily mean the same as , especially where some recent development is both ugly and out-of-context. The authority is, rather, looking for a new vernacular style of building, creating homely streets and places where people can meet, play, or go about their business in safety, taking pleasure in their surroundings.

### Criteria

- Has the distinctive character of the area been clearly identified in the context map and site appraisal (especially the *style* of the settlement and the existence of traditional buildings, walls, etc)?
- Is there evidence from the plans of an appropriate design concept reflecting an understanding of the distinctive local character and the need to create a pleasant place to be?

These criteria are elaborated in subsequent chapters.

## Introduction

The commitment by the Forest of Dean District Council to the twin aims of promoting residential environments which achieve

(a) local distinctiveness

(b) development which is sustainable

means that developers and their designers will be required to demonstrate that these aims have been incorporated into the layout and design of their schemes.

This section outlines an approach to site planning which incorporates the above aims. Diagrams a and b on page 36 contrast the results of design approaches which are unacceptable and acceptable. The following diagrams illustrate the importance of analysis of the setting and site of the proposed development. The diagram on page 39 demonstrates how the concept or objectives of the layout of the development should stem from the analysis of diagrams on page 37 and 38.

The layout details indicate approaches to the design of elements of typical residential development:- the sequence from street frontage to entry point, traffic calmed street layouts, nodal points and yards etc. In short, in order to achieve the twin aims of this guide it is important to create a TOWNSCAPE which reflects the locally distinctive aspects of surrounding developments and which is derived from the lie of the land.

The final part of this section deals with plot sizes related to a range of locations and suggested house types likely to be appropriate for the layout approaches advocated in this Guide.

It will be noted that in creating satisfactory townscapes and in achieving other objectives in this Guide it will be necessary to generate **simple rectangular house types** which have their long axis parallel to the street and which can be linked and turned to create corners or view-terminating features.

Similarly **garages**.should be designed as forms which can link elements in the street scene and create privacy between gardens.

The advice to place the house normally within 2-3 metres of the street boundary should result in **gardens** averaging 100m² per family dwelling on the private side of the house to the rear of the plot.

Any extra expense incurred in meeting the broad requirements of this guide should be offset against the possibility of enhanced yield resulting from the average increase in the number of units per development required by this guide and in the reduced land-take for higher specification roads.

The general criteria which the Authority will use to assess the scheme will include:

Has the **setting** of the development been considered? see diagram on page 37.

Have the **site** characteristics influenced the design and layout? see diagram on page 38.

***Local Distinctiveness*** *is defined in this document as being the tangible expression of all those features which contribute to a place being rooted to its regional setting.*

*Those features include:*

*The relationship between geology and the materials, siting and function of traditional buildings*

*The relationship between topography and the townscape of a place.*

*The nature of the street surfaces and street furniture derived from local sources of materials and craftsmanship.*

*The activities and patterns of land use related to local needs.*

*Place names related to local ownership patterns and topography.*

*The landscape and its patterns of husbandry*

*Local culture and traditions.*

***Townscape*** *results from the integrated design of buildings, boundaries and the spaces between them to create a related series of streets, squares, greens and yards etc which have different senses of enclosure and scale (whether formal or informal, higher density or dispersed, etc), appropriate to their setting. Townscape can be created at the level of 2 or 3 buildings, streets, villages or towns.*

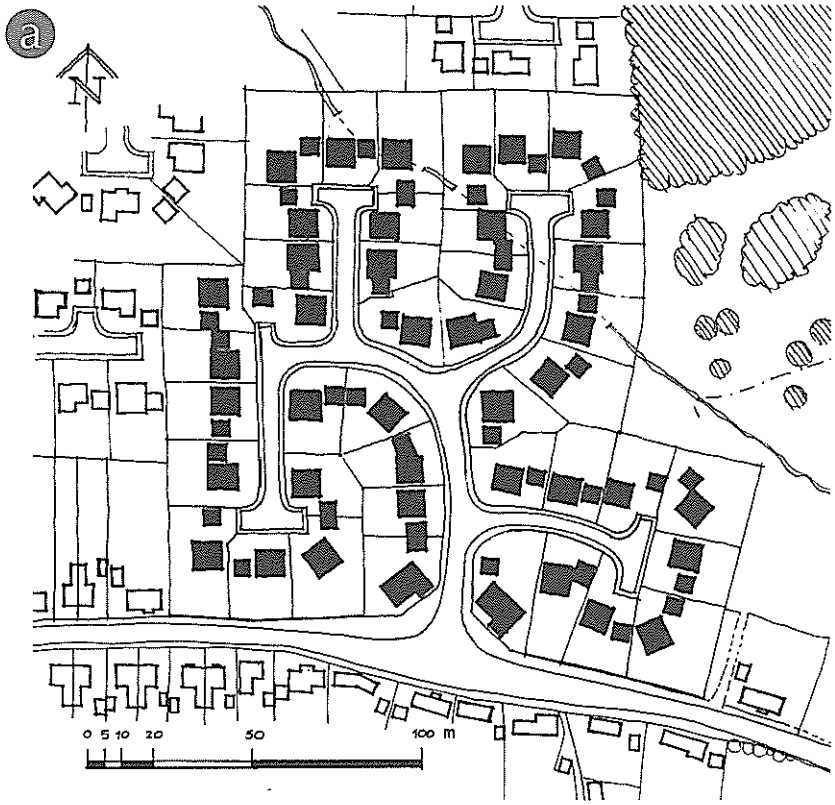
***Vernacular Architecture*** *is the architecture of everyday buildings, houses, farm buildings and small scale industrial buildings, designed and built by builders, and their users, rather than by architects and engineers.*

*These buildings have usually been constructed from local materials and therefore reflect local geology. They also reflect local economic and social activity as they are built to fulfil basic local requirements. Their siting reflects their relationship to local geographic and climatic conditions. In these ways vernacular buildings are critical indicators of* ***local distinctiveness****. This mainly rural or small town vernacular gradually disappeared with the widespread availability of mass produced building components. Vernacular revivals have occurred in the late 19th century and early 20th century and have re-emerged since the 1970's in order to establish a sense of regional identity.*

# Examples of Layout

## Unacceptable approach

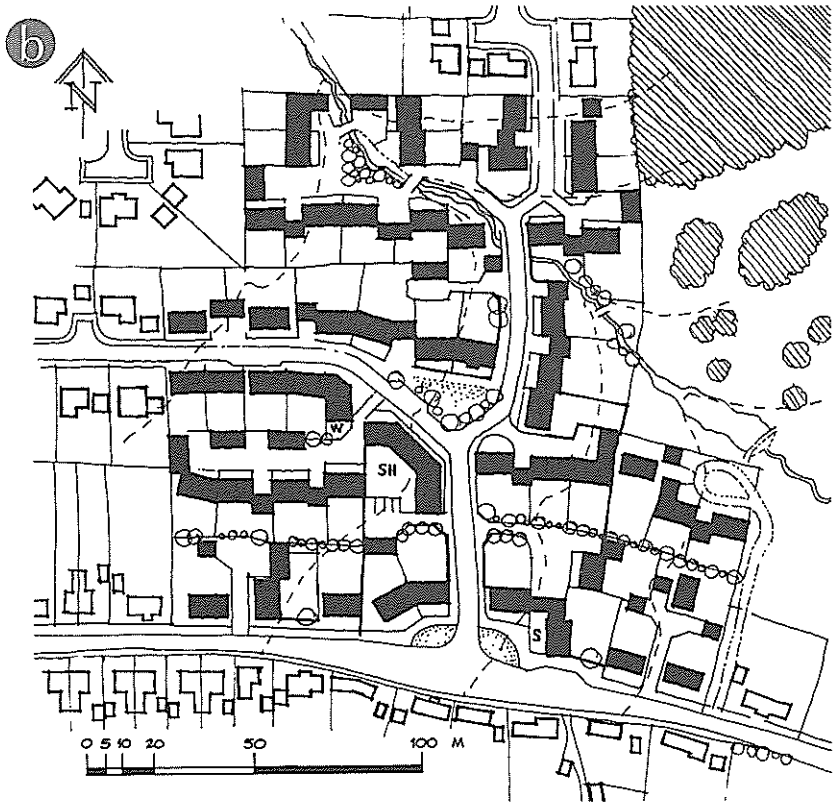
- Suburban character, regardless of its location, re density and standard spacing of houses.
- Monotonous appearance: no gradation of buildings and spaces.
- Road dominated scheme: generous dimensions and gentle bends encourage speeding.
- Square, detached house types do not permit grouping and make it difficult to turn corners.
- Inward looking scheme produces blank walls on street frontage and does not permit links with other developments or facilities.
- Site features ignored - trees boundary walls and structures. Stream culverted.
- Orientation is not well considered and layout assumes a flat site.




42 standard housing units of which : south facing gardens 9, west facing gardens 11, east facing gardens 8, north facing gardens 14

## Acceptable Approach

- Attempt to create a coherent **townscape** e.g. houses grouped to form a structured set of spaces - entrance area, streets, yards and central space.
- House types are designed to allow the above effects.
- Frontages face street boundary to complement street scene.
- Road layout calms traffic by frequent changes of direction.
- Route network designed to link with routes and facilities adjacent to site, if appropriate.
- Most gardens face south or west. Those that face north or east are designed to catch some sun.
- Potential for mixed use: workspace (W), shops (S) or sheltered housing (SH) could be incorporated.
- Concept incorporates and enhances existing site features. e.g. contours, stream, trees, boundary walls and farm building.
- Tree planting to create shelterbelts and wildlife corridors.
- All yards directly overlooked by housing: can be used as playspace
- All rear gardens over 100m².

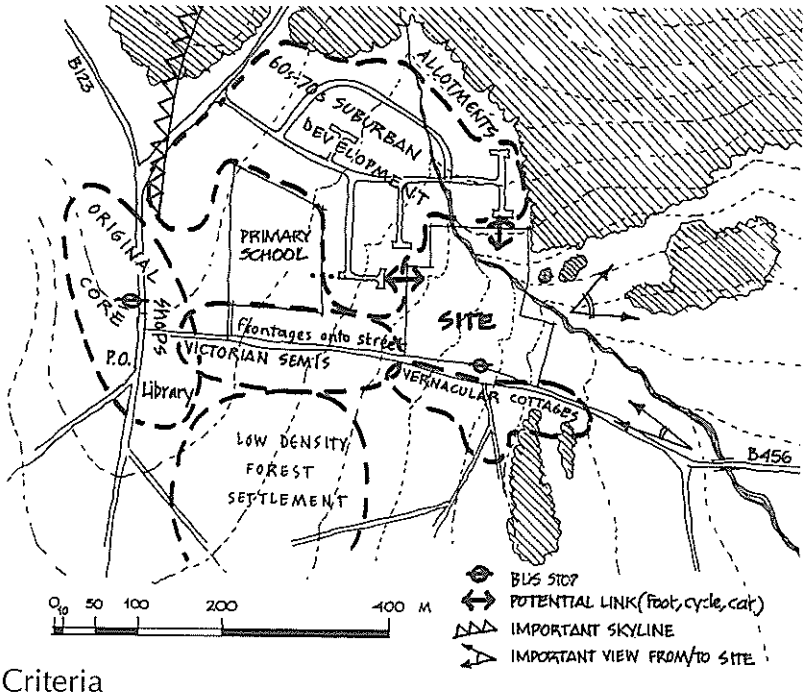



49 standard housing units of which : south facing gardens 25, west facing gardens 3, east facing gardens 8, north facing gardens 13

# Q1 Setting

**Is the setting of the site taken into account in the design of the scheme?**

If the scheme is to reflect local distinctiveness and be as sustainable as possible it must respond to local landforms, drainage patterns, microclimate, built form, materials, and routes to local facilities.




## Criteria

- In which sub-area of the District is the site located? See Section 2.
- In which type of settlement is the site located? See Section 2.
- In what part of the settlement is the site located? e.g. the core, or periphery? (The site may of course sit astride 2 or more of these situations in which case it should address each of these where appropriate).
- Uses and built form adjacent to the site should be noted e.g. sources of nuisance, loss of privacy, building heights, footprint, boundary, condition etc.
- How visible is the site from other parts of the settlement? Which parts could be seen and from what points? Would the development break the skyline?
- Have public transport and pedestrian routes been incorporated in the layout wherever possible? In particular are there safe and convenient routes to schools and shops ?
- Are there any potential pedestrian and / or vehicular routes which should be carried through the site?
- Consider the road serving the site (approx.. 500m either side of the proposed entry point). This will influence discussions with the highway authority on appropriate junction design, access to frontages onto the road etc.

  Estimate maximum and minimum road widths.

  Consider if potential hazards exist (e.g. dangerous bends, poor visibility, vehicular conflict etc).

  Plot the incidence of vehicular access points to main road. (This can influence number of frontages which have access to road)

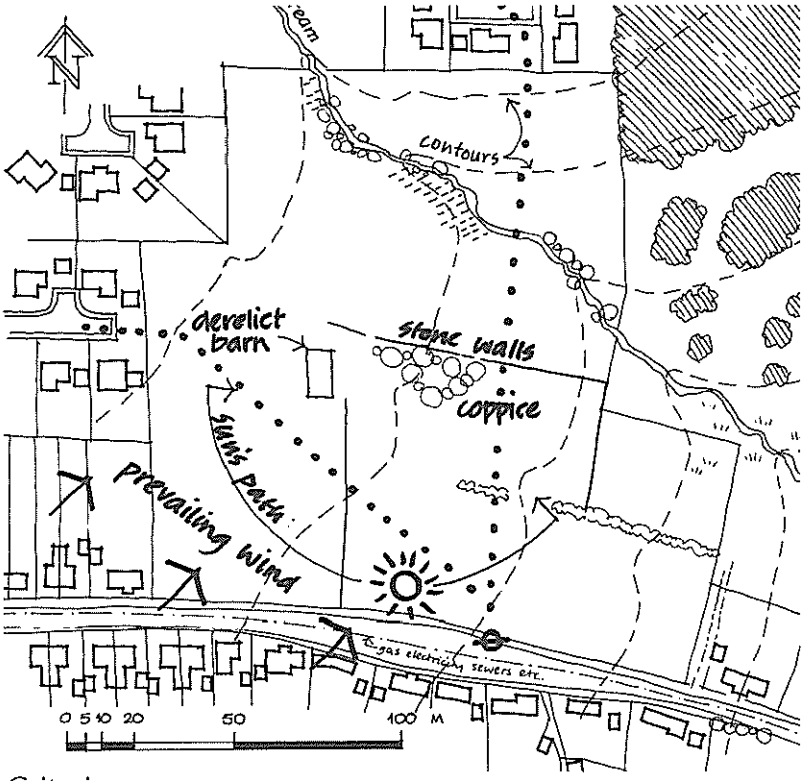
  Identify nearest bus stops. This may influence pedestrian routes.

*The answers to the first three criteria help to establish the broad CHARACTER of the proposed development, in terms of its form, materials and layout.*

## Q2 Site Characteristics

**Have the opportunities, constraints and characteristics of the site been taken into account in the design of the scheme?**

Each site has its own characteristics which helps to create a unique sense of place. The slope of the site, existing mature trees, old buildings and walling all have the potential to enhance the new development. There will also be attractive views from the site which as well as important views towards the site may require special design consideration.




### Criteria

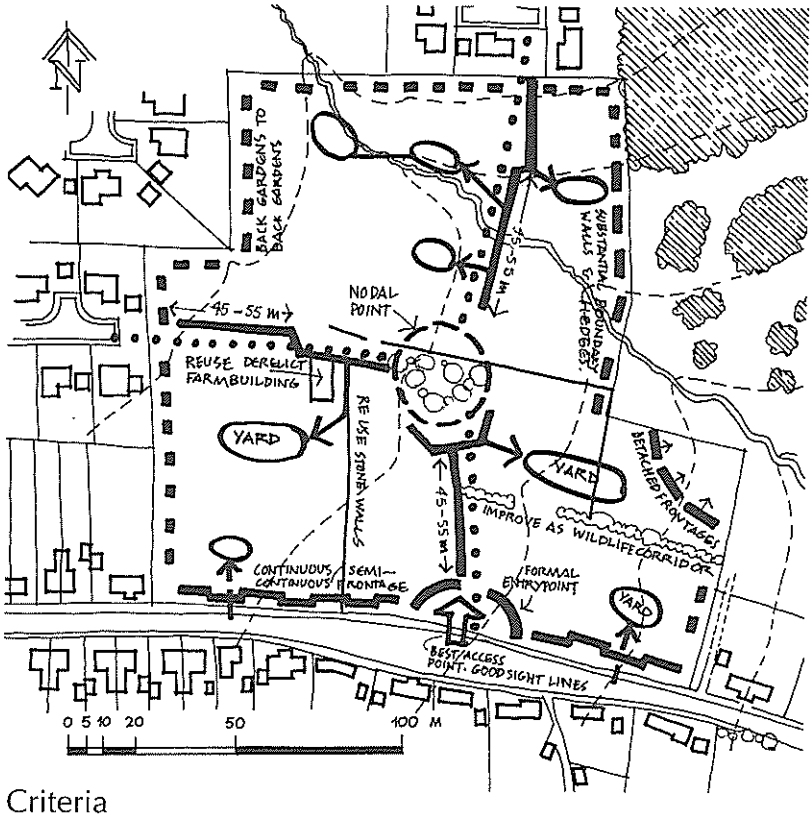
*The answers to these questions will have a considerable influence on the site layout and design and will be used to assess the appropriateness of the proposed development.*

- Site Boundaries : note type, condition and appropriateness. Boundaries of local stone, brick, cast iron, or hedge will be required to be retained and repaired. Any openings in these boundaries will be expected to be kept to a minimum and the materials saved and reused elsewhere on the site.
- Identify all trees, internal boundaries, ponds / watercourses, structures and other features on the site. Loss of any of these features will be resisted unless absolute necessity is demonstrated.
- Site Contours. Establish areas likely to produce areas of extensive shade or which are likely to require innovative or stepped built form (say 1 in 6 or over). Establish sunny slopes (SE, S,SW,W) in order to orientate majority of gardens and / or main elevations.
- Entry Point(s) will need to be easily identified and should have good sight lines dependant on design speed and setting.
- Establish positive views out of the site which should influence site layout.
- Establish areas which may need protection from exposure to wind, noise or intrusive views.
- Establish position of drains, sewers, ducts, utilities, wayleaves, overhead telecom and power cables, rights of way, mine workings; also ownerships, statutory designations e.g. conservation areas, etc.

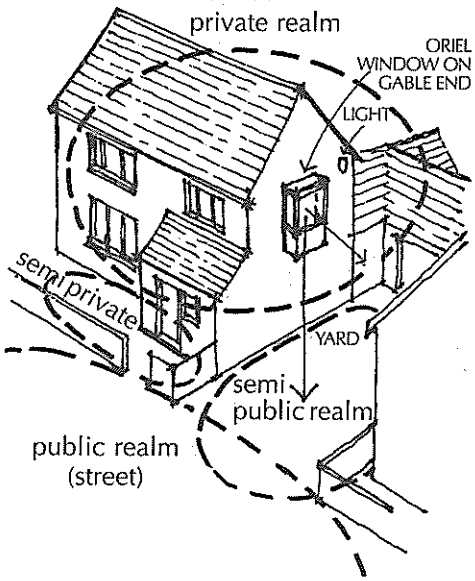
# Q3 Concept

**Is there an Urban Design Concept which is clearly reflected in the layout?**

Prior to detailed site design this part of the design process establishes the overall Design Concept which incorporates and responds to the SETTING and SITE Appraisals.




## Designing for Safety

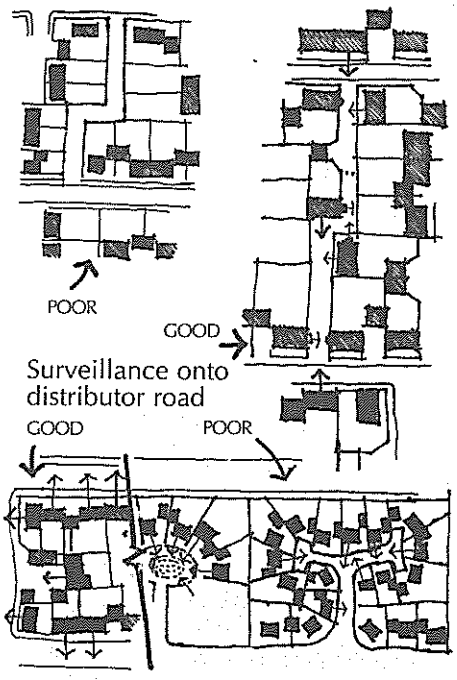



## Criteria

- Create TOWNSCAPE i.e. design the layout where buildings are grouped to create spaces of different character; streets, entry points, central nodal points, focal points, informal semi private yards. Symmetrical, highly formal layouts will be appropriate in exceptional cases only.
- Edges: establish location of frontages to adjacent roads, and whether these should be continuous, interrupted or dispersed. Will frontages be Urban (back edge of footpath), back gardens or sporadic fronts - mainly to forest / farmland or to adjacent back gardens.
- Hierarchy: establish a gradation of built form coverage of the site from compact to more open, and reflect this in a range of plot sizes.
- Open spaces should be designed and located appropriately to their specific function e.g. toddlers play, older childrens' activity areas, sitting out areas, amenity etc.
- Will mixed uses be appropriate? Consider provision for small workspaces both in association with some house types and grouped in courts in neighbourly locations. Shops and services will need to be visible from routes within the public realm beyond the proposed development, if they are to be viable.
- Establish a hierarchy of routes, vehicular and pedestrian, which are safe and direct for pedestrians and which keep vehicles to 20mph or less by frequent junctions or change in direction every 45-55 metres.
- Opportunities for crime should be identified and design solutions incorporated which reduce the opportunity for anti social behaviour.

## Footpaths

Should be as direct as possible, overlooked by frontages and well lit.

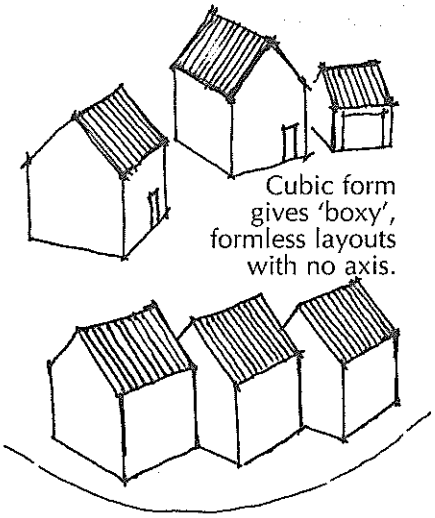


## Q4 Frontages

**Are the house forms and street frontages appropriate to the context and character of the locality?**

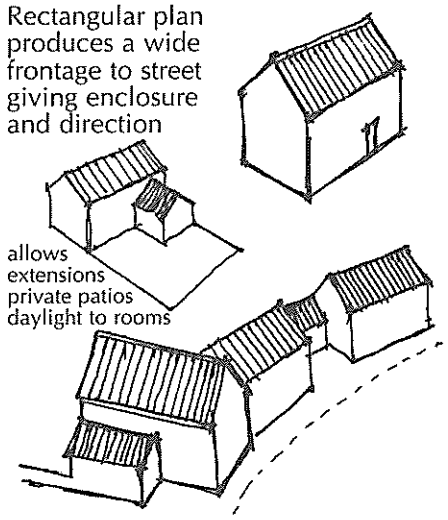
The conventional volume house types and relationship to the street scene are ineffective in producing good townscapes, in that corners, terminating views and enclosure are not easily achieved. The 'boxy', vertically emphasised detached house type stands in awkward contrast to the lower, wider frontages of the Forest vernacular.

### Unacceptable form

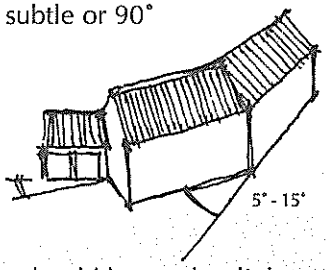



Staggered corner produces awkward sawtooth roof and building line

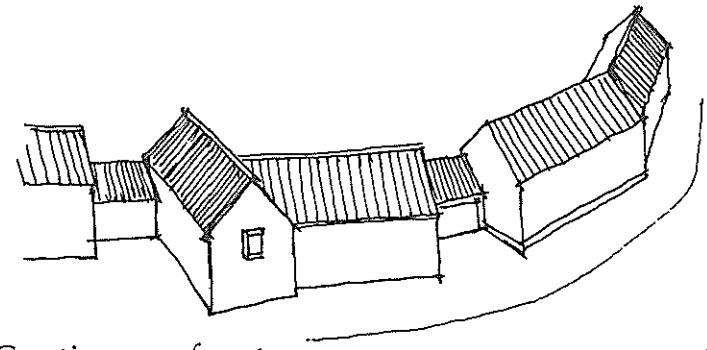
### Acceptable form



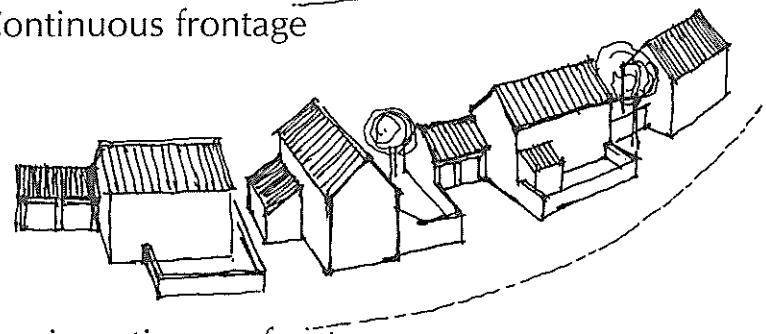

Changes in direction can be subtle or 90°



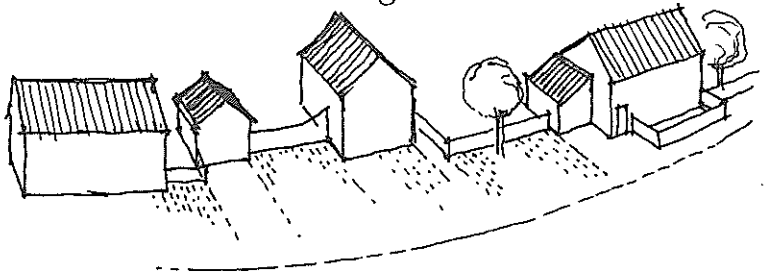

Garages should be used to link houses and create privacy. Avoid building them as detached structures in streetscape.



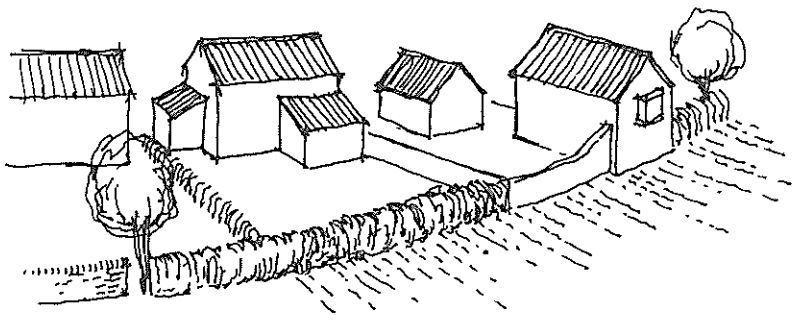
Continuous frontage



Semi-continuous frontage



Low density frontage



Green edge frontage

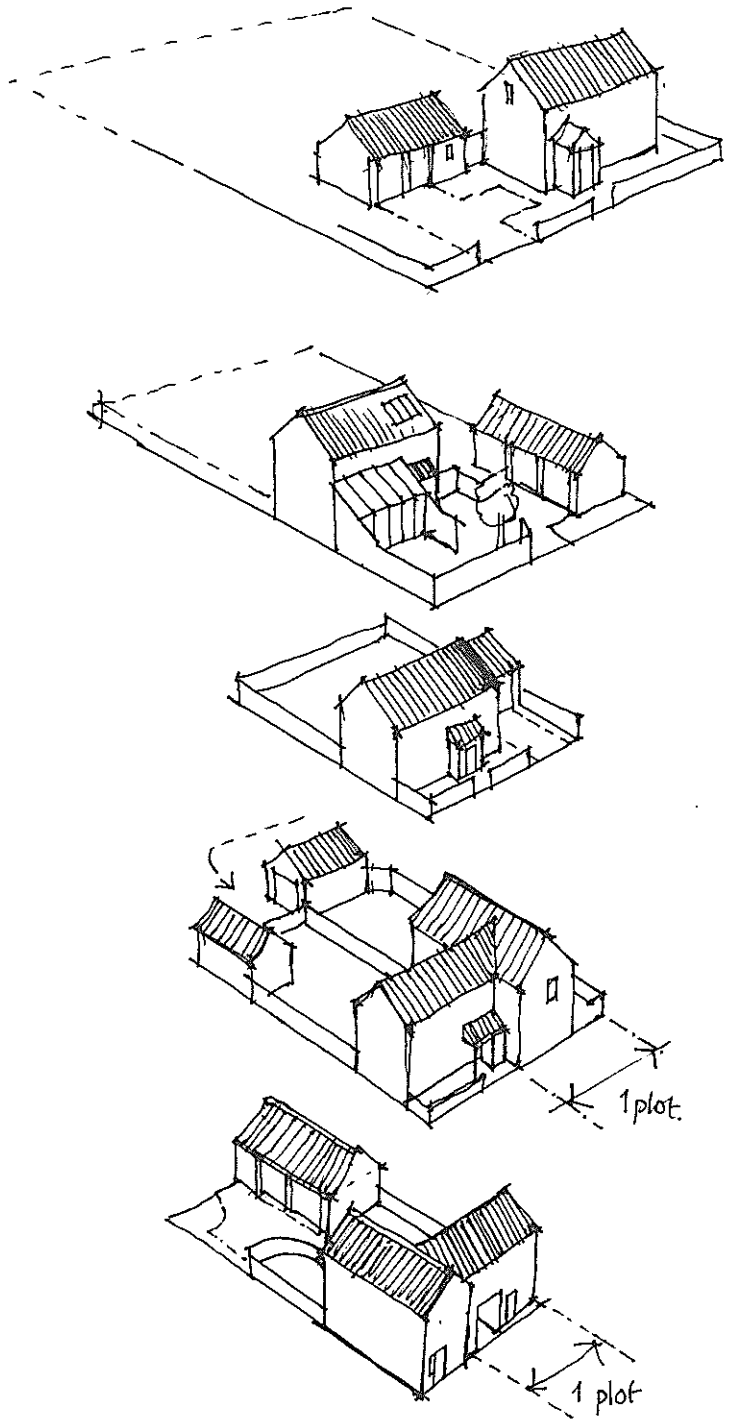
# Q5 Plot Shape and Size

**Do individual plots and building footprints relate to the local context?**

Plot sizes generally influence the character and compactness or looseness of a development.

The settlement type will give a general indication of appropriate plot size, but it may also be appropriate to vary the plot sizes within a development to give, say, compactness at its core or at its edge and a more open pattern in other parts of the development.

The areas shown are indicative only.




## Criteria

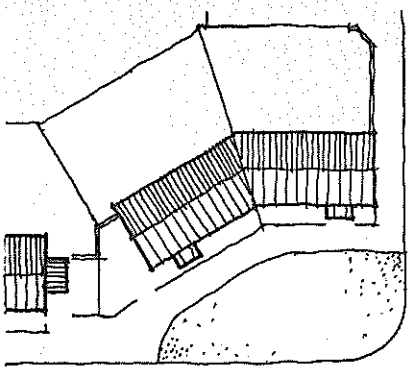
**Large plot** (approx. 0.1 ha)
Detached house and garage
Car to exit site in forward gear
Usually in forest fringe/sporadic settlement locations.

**Large suburban plot**
North side of EW roads (S facing Frontage). Garage stands forward to enclose street and create privacy (garage access to side or rear) for private sunny front garden.
Plot approx. 1500m super 2 +
Car to exit site in forward gear.

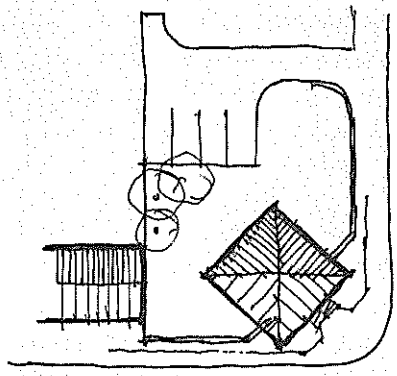
**Street or smaller suburban plot .**
Houses approx. 2m from back edge of footpath. Garage (generally double) set 5m back.
Plot size approx. 230m².

**Double plots (2)**
Arrangement to address corners and focal points in townscape.
Plot size approx. 380m².
2 car spaces max. per house.

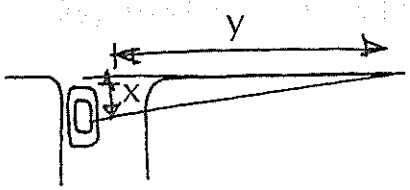
**Urban Infill Plots (2)**
Buildings on back edge of pavements. Parking @ 75% car per house, max. Patio / Court must be designed for privacy
Plot size approx. 175m².



Two other options...



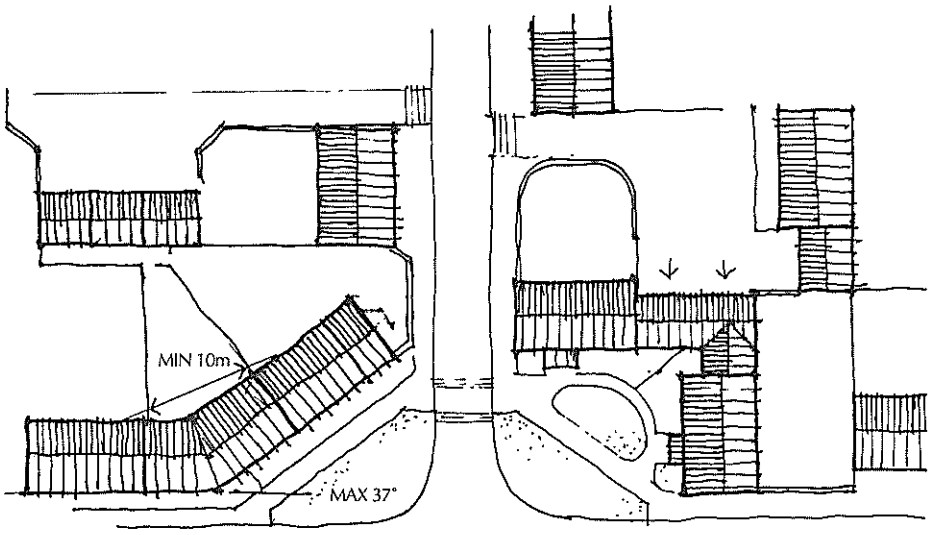
A 'Tight' Entrance to Site:
Consider a pivotal pyramidal partition (max 3 storey flats?) or 'Toll House, 1.5 storey




## Q6 Site Entrance

**Is the entrance to the site distinctive and in character with the surroundings?**

The entrance to the site should be easily 'identifiable', establish the character of the development and should be a natural continuation of the streetscape. These objectives are normally met by buildings which enclose or contain the entrance rather than which stand back from it.




Entrance to site showing alternative layouts

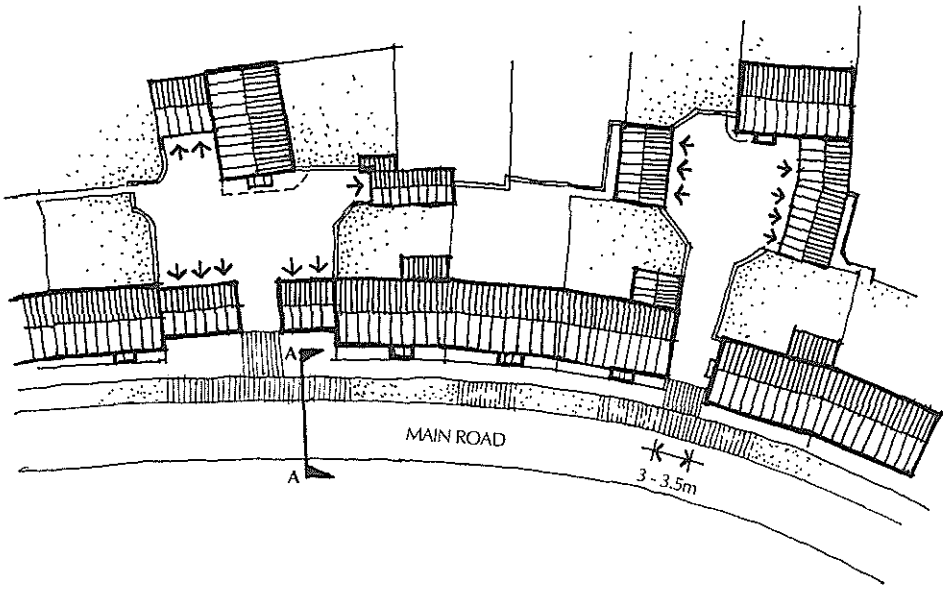
### Criteria

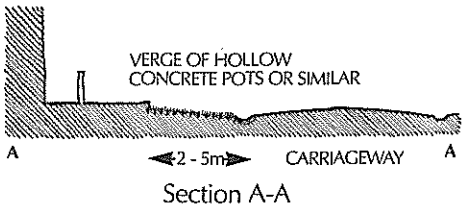
- The new buildings should be grouped around the entrance to make a strong visual statement that people and vehicles will be entering and leaving at that point.
- The form and scale of the entrance layout should reflect the character of the surrounding development.
- Consider built forms which are linked and which turn corners by 'splayed' layouts or by creating corners.
- In locations where the buildings create a highly visible entrance the Highway Authority may consider reducing the vehicular sight line requirements. Sight line requirements for different types of road are explained in Gloucestershire 'Highway Requirements for Development' (see Useful References section). An 'x' distance of 2.4m is acceptable in areas with low traffic flows. In exceptional circumstances this may be reduced.
- Safe provision should be made at the entrance for pedestrians, cyclists and wheelchairs.

# Q7 Vehicular Access

**Can the existing road accommodate frontages with direct vehicular access to groups of houses?**

In many parts of the District buildings front directly onto the street. This forms part of the character of the settlement and creates an attractive and lively street. Where appropriate, wide frontage houses should follow the line of the main road.




Section A-A

Yards serving up to 5 dwellings. Space should be adequate for visitor / additional parking. Cars shall be able to exit in forward gear. Parking areas should be overlooked by houses.

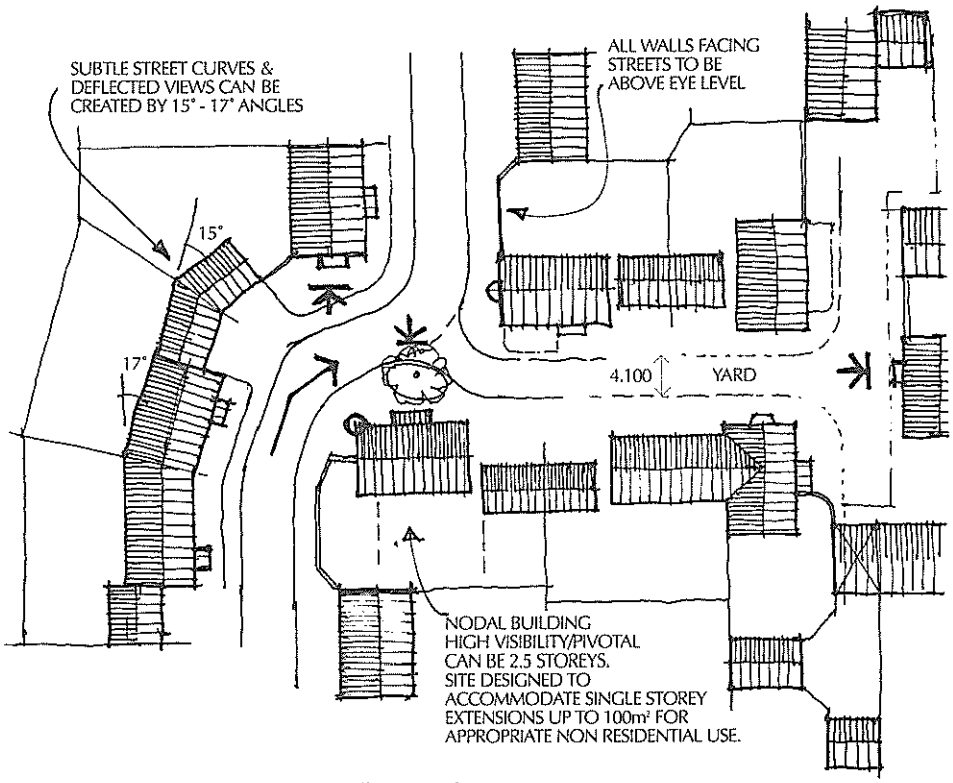
## Criteria

- In cases where it is unsafe to provide individual garages leading directly onto the main road, access ways may be provided to the rear to small parking yards. Each yard should be directly accessible by foot from the property it serves.
- The Highway Authority will normally accept an access pattern which broadly reflects the existing situation in the vicinity (say within 500m of the site) - providing that the existing pattern has not had significant road safety problems.
- By setting buildings back from the main road, the Highway Authority's visibility requirements can be met. Space in front of the building may be used for short-term loading and unloading in safe locations.
- The cross section illustrates how the space between the road and the building (verge) could be designed.
- At least one house should face directly onto the yard and have windows which overlook the space for security purposes.

## Q8 Traffic Speed

**Are Internal Access Roads designed to reduce the speed of traffic?**

Roads become safer as the speed of traffic reduces. Current thinking recommends a maximum speed of 20 mph within residential areas. Low design speeds will be encouraged. The space for the vehicle should be subservient to the creation of a place for human activity.




Deflected Street

### Criteria

- The layout of roads within the development should be designed to create a safe and pleasant environment for all occupants.
- Consideration should be given to the movement patterns of pedestrians and cyclists throughout the scheme. The road layout should acknowledge the crossing points used by pedestrians and cyclists by reducing the speed of vehicular traffic to a safe level.
- The speed of vehicles should be reduced by changes in horizontal alignment. This can be achieved by reducing the width of the road and/or introducing bends and curves. Vehicle trackways should be indicated on drawings where variable carriageway widths are used. It is recommended that the maximum length of straight road within any development should be 55 metres. The Gloucestershire County Council Highway Requirements for Development provides details of acceptable widths and traffic calming measures.
- Adequate hard standing areas should be provided to facilitate the turning of emergency and delivery vehicles.
- The procedure for designating 20mph zones should be discussed with the Local Authority at an early stage.

# Q9 Focal Point

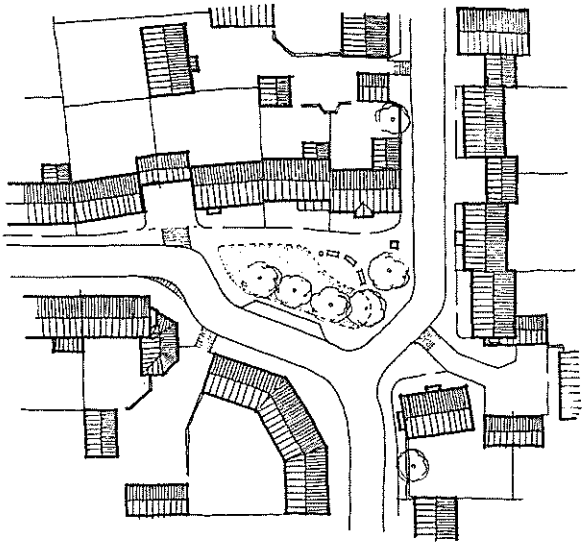
**Is there a safe place that acts as a Focal Point to the Scheme?**

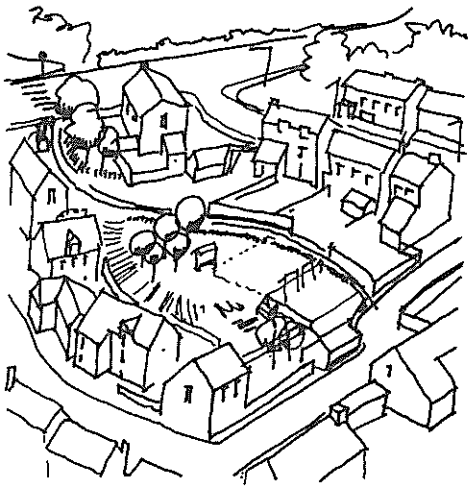
Each development of more than 25 houses should incorporate a space that acts as a focal meeting point for residents. A suitable nodal point is normally formed where 2 or more foot or vehicular routes intersect. The best ones are those with higher density and where mixed uses exist.

**Are communal open spaces designed for flexible use and low-energy maintenance?**

Landscaping of communal play & sitting areas should be robust, and protected from misuse through proximity to well-trafficked routes. - security by passive surveillance.

Linear spaces (following water-courses and hedgerows, for example) may also function as wildlife corridors, and pedestrian pathways.





Shared External Space Indicative Layout

Meeting area for adults and young children at centre (well overlooked). Meeting area for older children adjacent to main road (above).

## Criteria

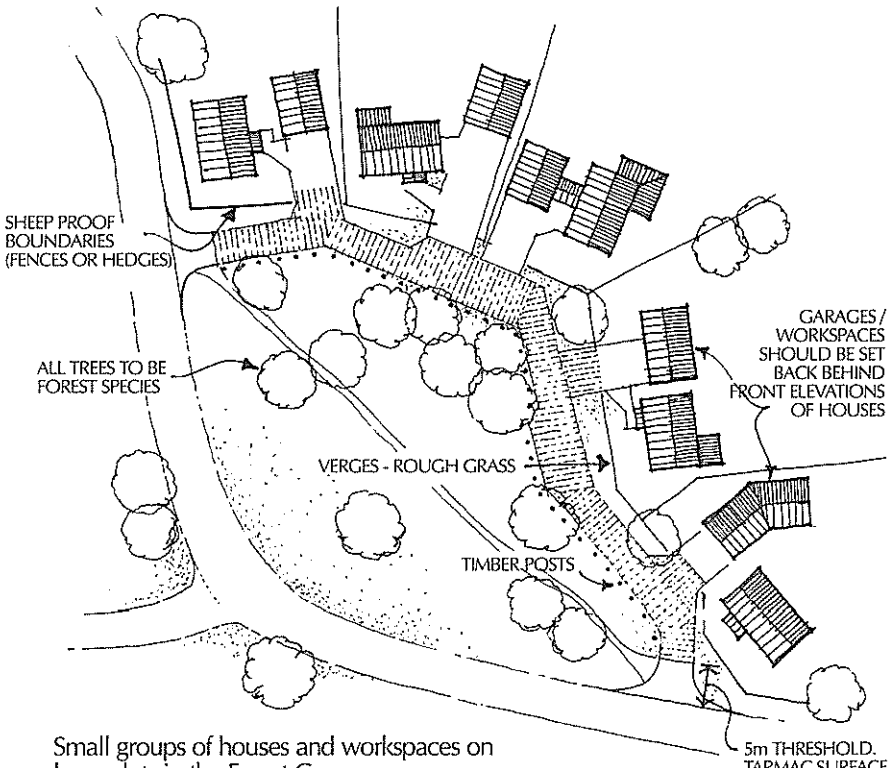
- Nodal points should be sunny (preferably between 11am and 5pm April to September).
- Minor nodal points should normally be equipped with:- seat(s), phone box, waste bin, dog waste bin, lighting
- More significant nodal points should have the above points plus:- notice board, play area & equipment plus appropriate surface, layby parking space / s, green area (minimum 50m²), trees of street scale
- The non parking areas should be detailed to prevent incursion by cars.
- Each approach to the central space should have a terminating view to reinforce the predominance of buildings and pedestrians over vehicular movement.
- Houses fronting the space should have substantial boundaries and stand at least 3m back from the boundary.
- The nodal point and the routes to and from it should be designed to promote personal safety and security. The central space and the routes leading to it must be overlooked by the houses enclosing the space in order to discourage unsocial / criminal acts.
- Effective management and financing of communal space should be clearly defined and legally binding.
- Space for young children in particular should be fully enclosed, but overlooked and protected from fouling by pets, and misuse. Neighbours should not be subjected to excessive noise and nuisance.
- Spaces where youths might gather should be located where noise will not cause undue nuisance.

For further information on community safety in residential development contact the Community Safety Officer, Forest of Dean Council.

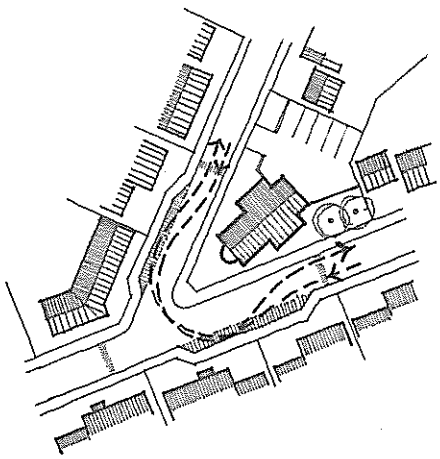
# Q10 Sympathetic Road design

**Are Access Roads in the Forest Core sympathetic to their surroundings?**

The distinctive road & access pattern in the Forest Core forms an integral part of the character of the area. This pattern consists of informal trackways and junctions that take their form from the hilly nature of this part of the District. The District is keen to encourage new roads that are in character with the traditional highway pattern.




Small groups of houses and workspaces on large plots in the Forest Core.
Informal access lane with passing places and parking.
Construction: porous surface eg. concrete hollow pot.



## Criteria

- **Informal, low density access in Forest Core Area.**
- Attention should be paid to the width/detailing and materials of nearby roads and parking places.
- Access 2.5m with parking places. 'Grasscrete' or similar surface. Car repair only on grasscrete bays. No kerbs. Gully edge detail.

- **Urban or low density settlements in the Forest Core.**
- Some characteristic acute angled junctions will be permitted on lightly trafficked minor roads if

  sight lines are adequate at the acute angle;

  the carriageway incorporates a suitable swept path or oversailing bay for larger vehicles;

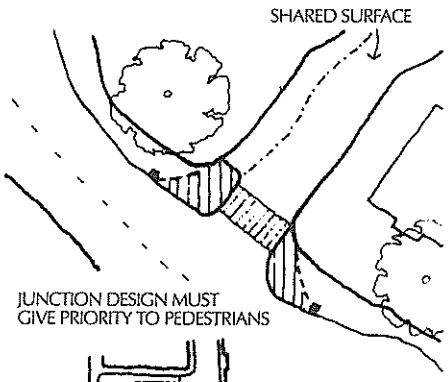
  the carriageway incorporates suitable warning devices (e.g. rumble strip) at an agreed distance from the junction;

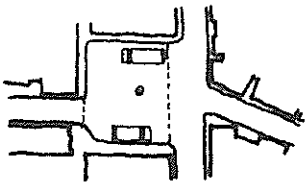
  safe crossing provision for pedestrians is incorporated.

# Q11 Landscape

**Does the detailed design of public areas give priority to the needs of pedestrians, and the users of public transport?**

As indicated in previous chapters (Section 3, Q6), accessibility and permeability should influence layout and specification. The roadway must not dominate, at the expense of people who are not in a car, or for the convenience of occasional deliveries or collections by large vehicles. Nevertheless, it must be accepted that access for emergency vehicles remains a priority.



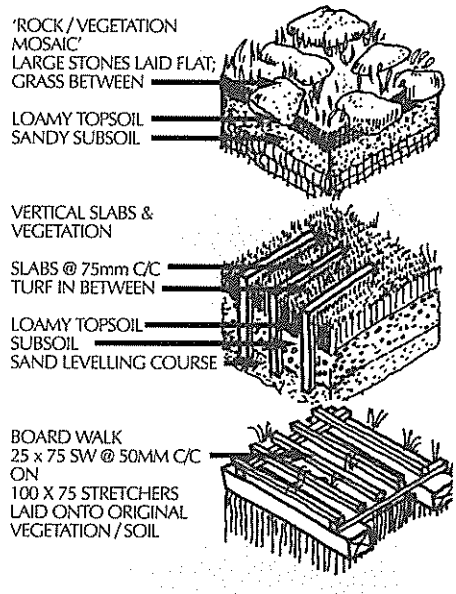
BUS STOPS CAN BE INCORPORATED INTO A PUBLIC SQUARE

## Criteria

- Demarcation between carriageway and footpaths within the site should be minimal, provided the former is clearly a shared surface. Access for wheelchairs and childrens' prams should be considered, avoiding unnecessary steps and steep ramps. Sheep or cattle grids should incorporate a conveniently operated by-pass gate.
- Visibility splays at site entrances, and the road layout to suit, should not make road crossing unduly long or hazardous.
- Bus stops should be incorporated into public spaces without recourse to lay-by provision. Widened carriageways as in for example a public square is a preferred option.
- Carriageways do not need to have a consistent width; nor do footpaths. The back edge of footpaths should not always be parallel with the carriageway.
- Streetlighting should be designed to avoid light pollution of the night sky. The illumination of pedestrian areas should be a higher priority than that of the vehicular areas. The design should consider pedestrians' need for visibility and a sense of safety. Illumination should not exceed the minimum required, using low-level energy efficient down-lighters at close centres (rather than fewer, brighter high-level lamps) e.g. high pressure sodium lamps.
- Paving materials should be well-supported by durable sub-structure, but have surface treatment appropriate to the rural context. Thus compacted hoggin for footpaths, reinforced grass verges for ancillary car parking and alternatives to tarmac on roadways may be considered.
- Block paving should be used sparingly- usually for delineation and crossovers in urban infill situations. The 'herring bone' laying pattern is only necessary in more heavily trafficked areas. Clay paviours are preferred.
- At the junctions with main access roads, it will be necessary to provide a transitional surface that indicates the change from conventional road design to a shared surface, and to avoid the risk that loose material and water may intrude on the highway.
- Cycling is facilitated by the provision of smooth, well-drained surfaces, free from obstacles such as gulley gratings. Tarmac specifications may be appropriate for through routes intended for cyclists. Adequate, unobtrusive lighting should provide safe routes during the hours of darkness.

## Reinforcement of Grassy Areas

(after Coppin & Richards, 1970)



## Q12 Drainage

**Does the proposed drainage design conserve water resources?**

Rainwater is a valuable resource. Rather than planning for immediate rainwater run off into the main drainage system, it is recommended that surface water is retained within the site, either for re-use or absorption into the ground.

### Criteria

- Maximise infiltration, using swales, filter strips, and soakaways.
- Extend the period of absorption, by using holding tanks & basins.
- Co-ordinate the drainage scheme with the larger natural drainage system, possibly using detention ponds and balancing lakes.
- Include for collection of roof water in suitable butts and storage tanks.
- Consider the creation of water features, bridges, paths along water-courses, to enhance the sense of place, and the amenity of public areas.
- Specify drought-resistant indigenous species for landscaping.

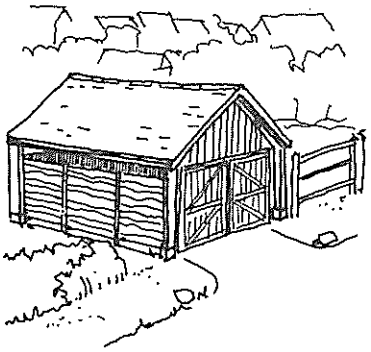
## Q13 Boundaries

**Are ancillary structures and boundaries designed to blend with landscape and/or to maintain the street frontage?**

Whereas house designs may be constrained by the need for long-term durability and cleanliness, other structures may use natural unprocessed materials appropriate to the rural or semi-rural location.

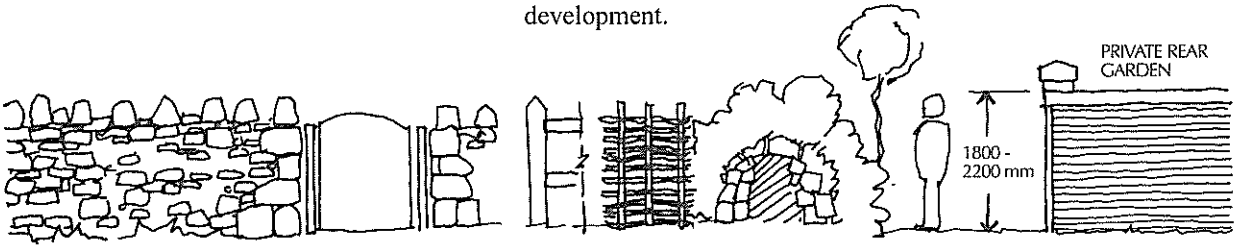
Boundary walls between public space and private rear or side gardens should be of sufficient height to maintain privacy and continue the line of the street.

Ancillary structures, such as garages, constructed from indigenous materials.



### Criteria

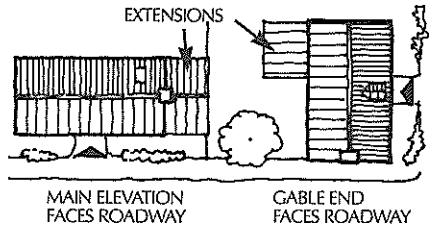
- Garages, sub-station screens, bin enclosures and other ancillary structures should be constructed in simple robust materials to complement the landscaping. It may be appropriate in certain locations to emulate agricultural outbuildings. Generally, it is not acceptable to use flimsy 'DIY-store' products for boundaries.
- The material of boundary structures should correspond to the dominant vernacular, as described in Section 6. Front gardens should be clearly demarcated from the public space of the street, using durable and maintenance-free structures.
- The height of walls between street and private (not the front) garden will be between 1800-2200mm, with variety in different parts of the development.




Boundary Structures - made from local materials

This chapter sets out some of the principles of house design, to comply with the intentions of site layout described above.

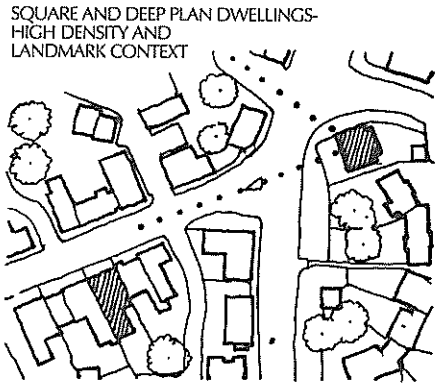
The creation of good townscape demands considerable flexibility and imagination in the design of house types. To enhance the distinctive visual character of the settlement, and facilitate sustainable living (in both private and public realms), designs must depart from normal standards of national house-building. Local building traditions are indicative of satisfactory practical solutions, but off the shelf design in a vernacular style would be missing the point: there is no substitute for mature design skill based on firm principles.



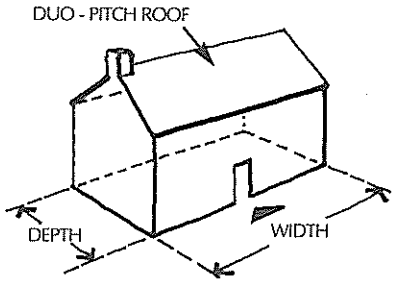

## Q1 House Types

**What is the relationship between frontage and plan depth?**

Frontage dimensions are a key determinant of overall form. Shallow plan, wide frontage designs may echo traditional architecture, at the same time having distinct advantages for sustainability



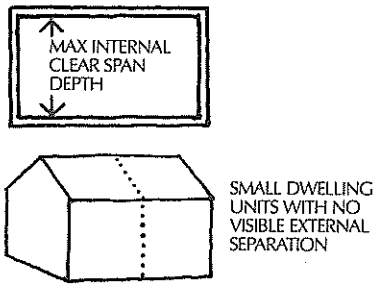

Traditional Forest of Dean House




### Criteria

- Square or deep plan single household dwellings should be the exception rather than the rule. Their use may be justified only for 'landmark' buildings, 3-storey buildings, and in the context of high density development in town centre locations.
- The shape and proportions of new 2-2.5 storey houses should generally reflect those of the traditional Forest of Dean houses (described in Section 2) - in which the plan depth is usually less than 5m, and the frontage long. Extension at either end typically accentuates the difference between the depth and overall length. A house may also be side-on, presenting a gable end to the road.
- The actual internal depth of new 2-storey houses should be reduced as far as possible, especially at gable ends. The clear span dimension across the main body (discounting rear or side additions) should not exceed those set out in the table below. In the case of small dwelling units joined together (that is, with no visible external separation so that they appear as one house), the given dimension allows for increased flexibility of plan layout owing to the space constraints.

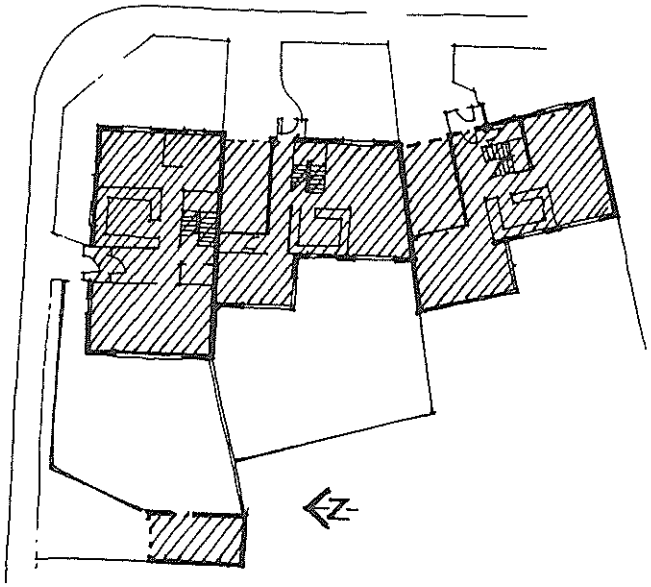
| Size of house, net area ($m^2$) | Maximum internal depth | Ratio, depth/width, with 300mm ext.walls |
|---|---|---|
| 'Standard', over $90m^2$ ($960ft^2$) | 5.8m (19ft) | 1: 1.3 minimum |
| *example: $110m^2$* | *5.8m* | *1: 1.6* |
| 'Luxury', over $150m^2$ ($1615ft^2$) | 7m (23ft) | 1: 1.5 |
| 'Small', under $90m^2$ | 5.5m (18ft) | varies |
| 'Small', say $70m^2$, minimum $50m^2$ ($540ft^2$) | 5.8m (19ft) | overall 1:2 (for $70m^2$) or 1:1.5 (for $50m^2$) |



## Wide Frontage House

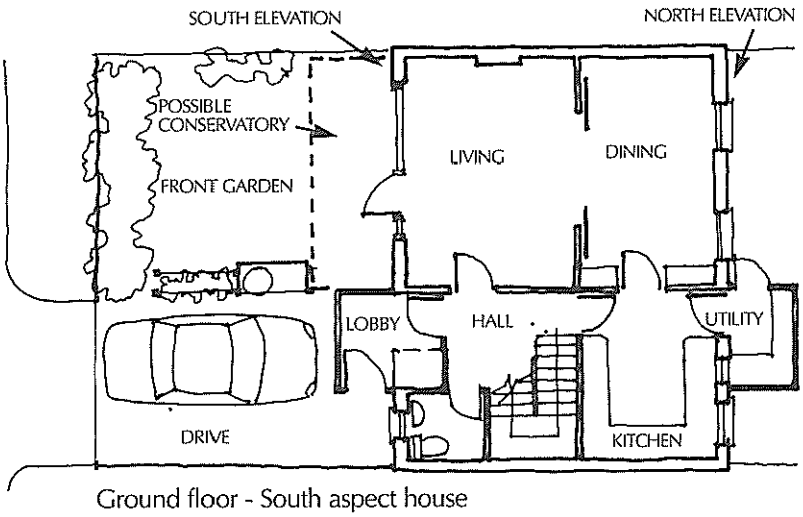
- can be modified & extended without undue loss of light
- range of living spaces
- privacy to rear
- reasonable thermal insulation through terracing
- defines and addresses street, with variety of appearance
- can be cranked and curved
- can follow contours
- passive solar design
- permits use of water butts

Wide frontage design facilitate imaginative streetscape, as is the example below which shows a cranked cornered terrace turning a corner. To suit passive solar layouts different plans are developed for north and south aspects and (see plans).

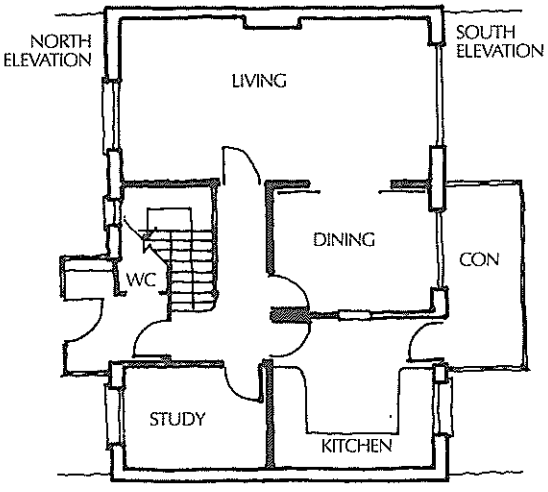


Left: Ground Floor Plan of south aspect wide frontage house.Front elevation faces south, for passive solar gain; north elevation is super-insulated.

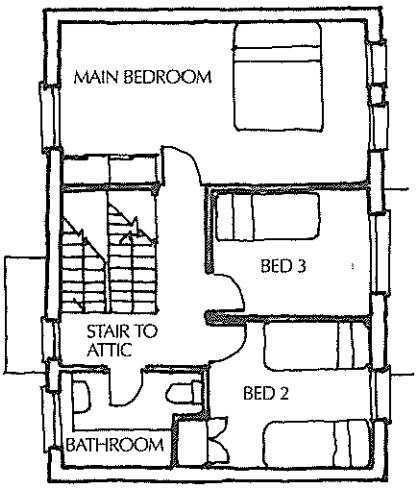
Below : (left to right) Ground, First & Attic floor of North aspect. Wide Frontage House- rear elevation designed for passive gain.



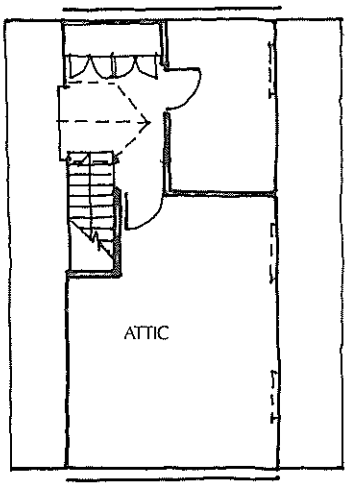

Ground floor - South aspect house




Ground floor - North aspect house




First floor




Attic after conversion

# Q2 Linking of Houses

**Are houses joined together in various ways?**

It is necessary to consider a variety of house types that may be joined together, without recourse to repetitive designs or standard terraces. They can be regarded as variations on a theme, complementing rather than competing with the landscape or townscape.

The preservation and enhancement of the natural assets of a site, such as watercourses or hedgerows, can be a basis for developing attractive designs that provide a high level of amenity, and make functional use of the potential resources.

Thus wide frontage houses, for example, can be arranged to follow the contours of the ground, to facilitate solar access and views, and to enclose green public spaces suitable for play and relaxation.

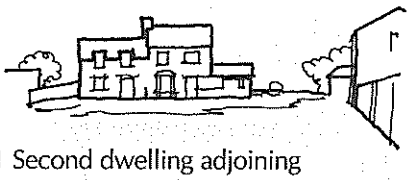
The sustainable benefits of terracing are widely appreciated, for its optimum thermal insulation, amelioration of microclimate, reduced land-take, accessibility, low embodied energy, and so on. However, it is necessary to overcome preconceptions about low status, and lack of individuality. It may be helpful to think in terms of an informal grouping of buildings rather than terracing per se.

## Criteria

Semi-detached houses need not be symmetrical (1).

- Arrangements, both formal and informal, can be reminiscent of farmsteads, especially with the unifying effect of substantial boundary walls (2).
- Reflected pairs may be arranged to suit changes of level and landscaping (3).
- Formal open spaces can be created by using house types of different sizes, with different setbacks (4).
- Continuous rows with varying ridge lines may be created using a combination of different floor to ceiling heights, eaves heights, and roof pitches
- Streets may also include gable roofing (over bay windows, for example) and houses which have a main elevation at right angles to the roadway (6).
- Curved and cranked frontages provide interest even where houses are essentially the same.
- Small units may be joined together to present a unified facade that has greater 'prestige' than a series of small separate dwellings.
- Rear access can be provided by covered ways within the facade. It is not necessary to plan a minimum 1m open route between dwelling and side boundary, if alternative arrangements can be made, such as using the garage as a through route (9).

Designs that can be carried across site contours may also be considered. (Refer to Q5).



1 Second dwelling adjoining

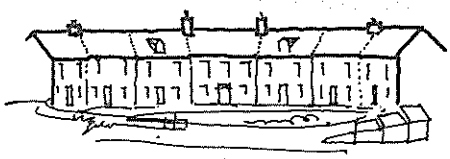
2 Adjoining dwelling at 90° (Gable end on)

3 Terraced row in reflected pars

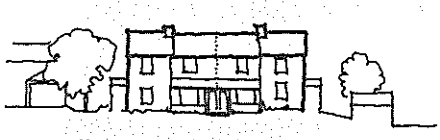
4 Terraced row symmetrical

5 Non - terraced row

6 Non - terraced row with gables

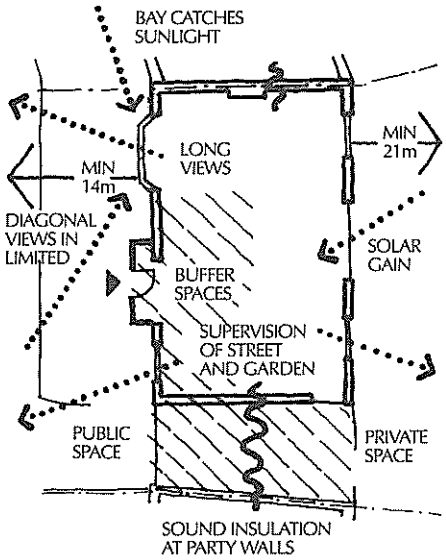


7 Curved / Crescent / Clusters

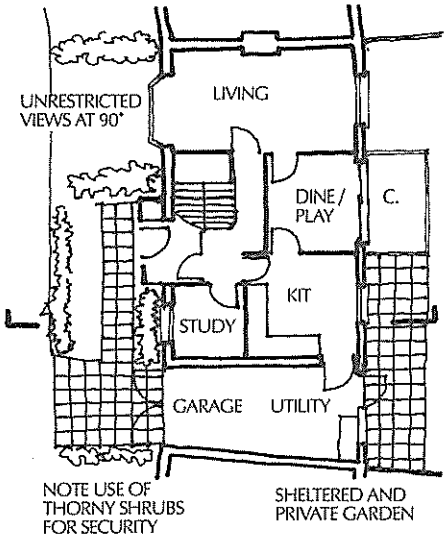


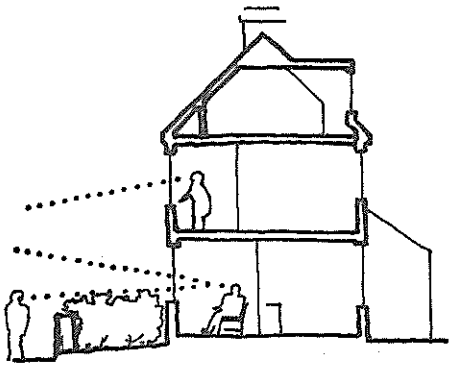
8 Small units with unified facade

9 Rear access through terrace




A hierarchy of public / private spaces using landscaped zones



PRIVACY AND INFORMAL SUPERVISION. LOW WALLS AND SELECTED PLANTING PROVIDE PRIVACY BUT NO HIDING PLACES

# Q3 Privacy and Security

**Does the design facilitate views, security, and privacy?**

Localised high density development and increased permeability of layout have advantages in terms of sustainability, but a careful balance needs to be struck between views out of and in to the home.

As the public realm becomes a place to enjoy, rather than just a place to drive the car, there is a need to provide for informal security arrangements. Where overlooking of the space is considered for this purpose, privacy between houses can be compromised - especially if coupled with 'passive solar' fenestration.

Similarly, noise needs to be contained, to maintain the privacy of the dwelling.

## Criteria

- Internal planning to create 'buffer spaces', to protect the more private areas of the home.
- Sound insulation between adjoining houses must be effective.
- Long views from the home.
- Informal supervision of external space, especially from work rooms (such as study and kitchen, shown on the diagrams)
- Privacy against overlooking, especially between living spaces. On the public or street side of the house, the 21m distance between dwellings specified in the Local Plan (p128) does not apply, so it will normally be possible to arrange houses face to face at, say, 14m distance apart if the interior and window design is designed carefully.
- The development should incorporate the principles of 'Secured by Design'.
- Landscaping and boundaries to demarcate external space into a hierarchy of public / private spaces, with areas of defensible space established.
- Building-lines that provide for a narrow front garden area behind any public footpath, with planting.
- Set-backs or side access, and projecting structures on the street elevation (such as porches and bay windows), to shield adjacent windows from longitudinal or diagonal views.
- Orientation to allow good solar access, particularly to main living areas. Devices such as bay and oriel windows may be used to catch available sunlight on elevations which have limited solar access.
- Sheltered and private garden space attached to the individual dwelling.

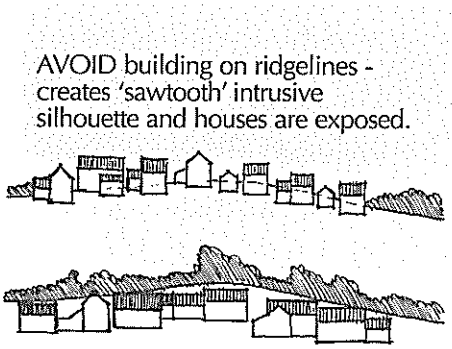
# Q4 Sloping Ground

**How does the design make use of sloping ground?**

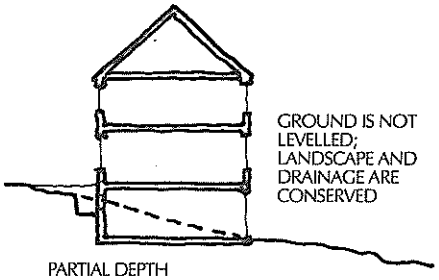
The Forest of Dean is characterised by the close relationship between landscape and building. The practice of levelling a development site in order to avoid complexity of construction is often damaging to natural resources such as drainage, soils, and habitat; it is also a lost opportunity. Making use of changes of level, rather than obliterating them, offers valuable ancillary space and enhanced sense of place.

## Criteria

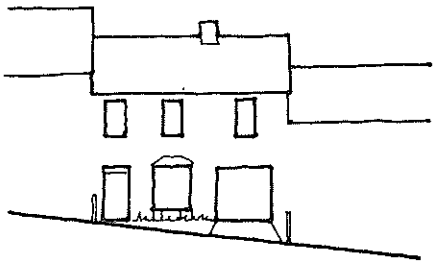
- 'Cut and fill' should be minimised. Soils and habitat should be conserved.
- Lower ground floor accommodation, or 'partial depth basement' areas can be created on steep slopes, or where the building is orientated across the contours of a moderate slope. It may be constructed as a shell, suitable for car parking or storage; it then allows for future conversion into a workshop, office or living space as the need arises. Mixed uses and home working are a feature of the District (as indicated by Section 3).
- Narrow frontage houses may be acceptable where a terrace is stepped down a slope.
- Access to houses on a slope should take account of people who have limited mobility - including pregnant women, very young children, senior citizens, and those with disabilities (as indicated by Section 3,Q2). For example, the front door should be located opposite the highest point on the boundary, to provide a level path outside the house. The needs of pedestrian movement is a priority over those of vehicular movement.
- Proposed footpaths and cycle paths should be checked for gradient, surface drainage, and directness. It is important not to repeat past mistakes by which it has been assumed that pedestrian movement can be accommodated around rather than within the vehicular network.
- In view of the higher risks of ground movement on sloping sites, for the sake of long-term durability, the detailed design of houses should allow for minor settlement. Thus the construction should be able to move without the emergence of defects, such as cracking render or brickwork.
- Slope stabilisation with 'green' materials and planting should be considered as an alternative to the use of masonry retaining walls for external works.

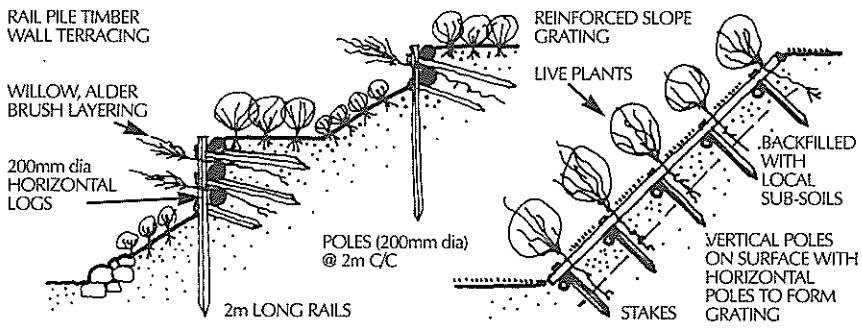


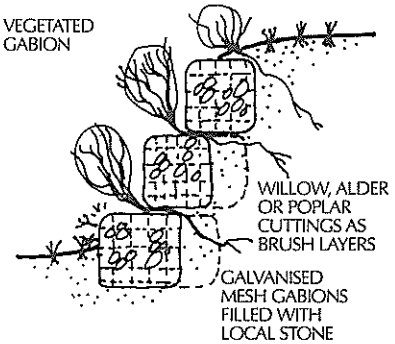

Building below the ridgeline retains the forest silhouette and creates shelter.

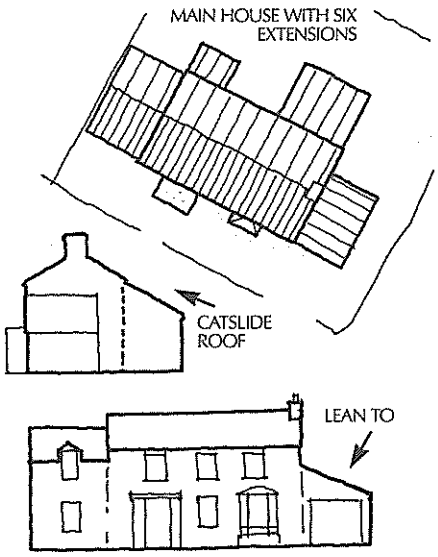



Advantages for sustainability:
- SMALLER PLOTS
- GOOD THERMAL AND SOUND INSULATION
- FLEXIBLE AND MIXED USE
- DURABILITY AND SPACE FOR SERVICES

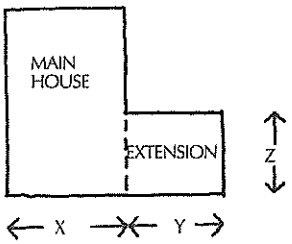


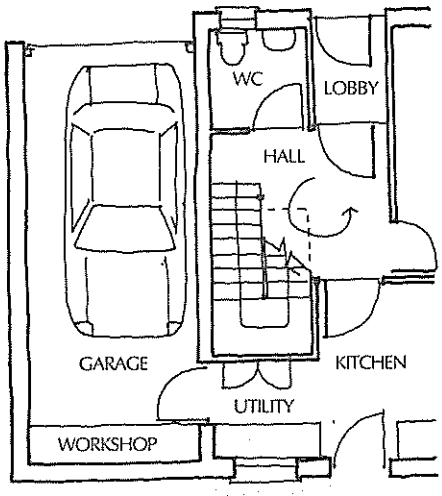






Extensions are to be subservient to the main body of the house




Example of extension dimensions constrained by the size of the main body of house: Y < X, Z < (Y - 1m)
(Herrington Hospital site brief, Dorset)




Adequate circulation and utility spaces should be provided - and possible extension into garage and to rear, considered at design stage.

# Q5 Extension

**Can the main body of the house accommodate adaptation and extension?**

The traditional Forest of Dean house, as described in Chapter 2, has a very simple form, but much character is acquired in the course of time by extensions. Crucially, these do not normally overwhelm or compromise the integrity of the basic form. The lesson for new designs is that they should be robust in the sense of being durable and adaptable to suit changing needs.

The culture and economics of the area has always involved a variety of activities taking place at home, now termed 'home-working' and DIY, which are an aspect of sustainability via self-sufficiency. A new house may therefore be seen as less a finished product, more the basis for an evolving home and work space. The 'working' or 'farm' kitchen is a feature of many homes in the area, as is the custom of using the back door as the normal entrance (front doors and hallways being used for visitors).

It is likely that new houses will incorporate 'additions' at the time of construction, in which case the same principles apply, with regard to the primacy of the main body of the house. Additions should not dwarf, nor appear larger than, the main house.

## Criteria

- The bulk of a rear addition should be subservient to the main body of the house. The diagram suggests that the length of the addition should be less than the overall depth of the house, and the width at least one metre narrower than the length.
- In areas of low to medium density, the internal layout and fenestration should facilitate extension, so that the main rooms retain a reasonable level of natural lighting and ventilation. Again, it can be seen that wide frontage designs with shallow plans lend themselves to change.
- There should normally be sufficient circulation space to accommodate storage for essential items such as boots, coats, prams and even bicycles. With some loss of such space, it should also be possible to gain access to a future extension or converted garage space.
- There should normally be sufficient utility space associated with the kitchen, or within the kitchen itself, to maintain the social culture, and facilitate activities which relate to self-sufficiency. Utility area should include enough space for a large freezer unit, storage for food and other goods, and workspace.
- A WC should normally be located on the ground floor, of a size that could be used conveniently by an elderly or sick person.
- Draught-lobbies should be included, for energy efficiency and comfort (but ensure that accessibility standards are maintained).
- Rear and side elevations of the main house may be constructed in an economical manner, provided they are not prominent within the public realm. If extensions are planned to be built against them refer to Q9.

# Q6 Conversion

**Has the layout the potential to incorporate additional private facilities?**

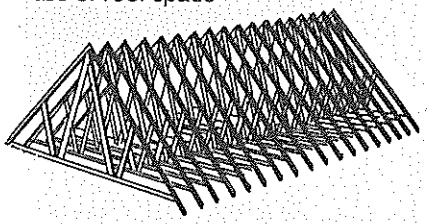
It is anticipated that future residents will wish to extend their homes. Rather than having to move house when additional space is required, they can remain within a community of different sorts of household (refer to Section 3, Q3).

The house can be designed to make conversion of roof space or garage more viable, to increase habitable space with a minimum amount of expenditure and resources. If the potential for such conversion does not exist then there will be a need to build extensions (normally at ground level), at higher financial and environmental cost. If it is accepted that a certain amount of extra space *must* be accommodated on the plot (or aggregated across the site), provision at the outset for conversion may facilitate higher density - ie more dwellings on the site.

There will also be a desire by residents to build lightweight, glazed structures, such as conservatories and porches. To avoid loss of appearance, certain restrictions may apply.

Free-standing ancillary structures like sheds and workshops are also to be considered, especially with regard to access and potential use.

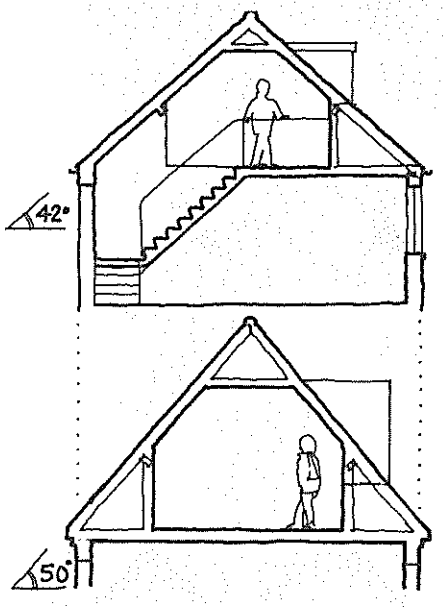
Trussed rafters inhibit the use of roof space



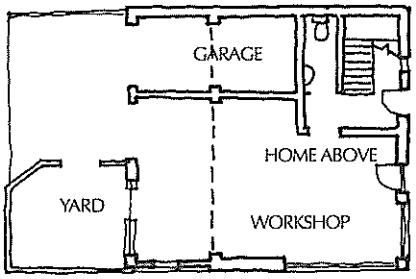
## Criteria

- Roof structure should be designed with potential conversion of the attic in mind (yielding up to 30% extra floor area in the average house). The chosen roof pitch affects headroom within the roof space. The long-term value of trussed rafters should be questioned; purlin and rafter construction can provide an unobstructed area within the highest part of the roof space. The strength of ceiling joists should be considered in terms of floor loading. The layout of the staircase within the house should also be considered, to allow for access from the upper hallway.
- An integral garage with a connection to the hallway adjacent has greater potential than a separate structure. Again, there may be a possibility of building above an attached single-storey garage, given there are foundations and walls of adequate strength. See diagram in Q5.
- Partial depth basements are an option (described in Q4).
- The bulk of an extension should be subservient to the main body of the house, without resorting to flat roof designs (refer to the diagram in Q5).
- Sheds should be constructed in local materials (stone, brick, timber and tin), rather than mass-produced items, and where appropriate may reflect the style of agricultural outbuildings.
- Conservatories and porches have significant impact on the appearance of a development, and permitted development rights may be limited to ensure that each case is considered on its own merits.

Potential attic space for two pitches




CLEAR SPAN DEPTH IS THE SAME IN EACH CASE (5800mm)


**Has the layout the potential to incorporate additional communal or non-residential facilities?**

It is intended that residents will have access to community facilities within and around the development. These are important to achieve a degree of autonomy (greater than any single household would find viable) as well as meeting basic human need to have contact with other people, and reducing the need to travel.

While it may be desirable for certain kinds of built space to be shared (eg. creche, workshop, studio, storage), it is assumed that the most common form of communal facilities are external. Refer to 6.5 below.

However, one or more houses (the number dependent on the size of scheme) may be designed as mixed use units, combining uses such as home / shop / workshop. See Section 3 question 5.

### Criteria

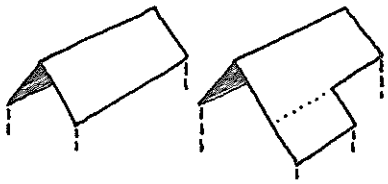
- Access and servicing
- Noise and nuisance
- Local employment

## Q7 Roofscape

**Does the scheme create a varied and interesting roofscape?**

Ridge lines can be varied in height, for a combination of functional and aesthetic reasons, so that in conjunction with suitable design of chimney, dormers, and gables, they can reduce the visual impact of a development.

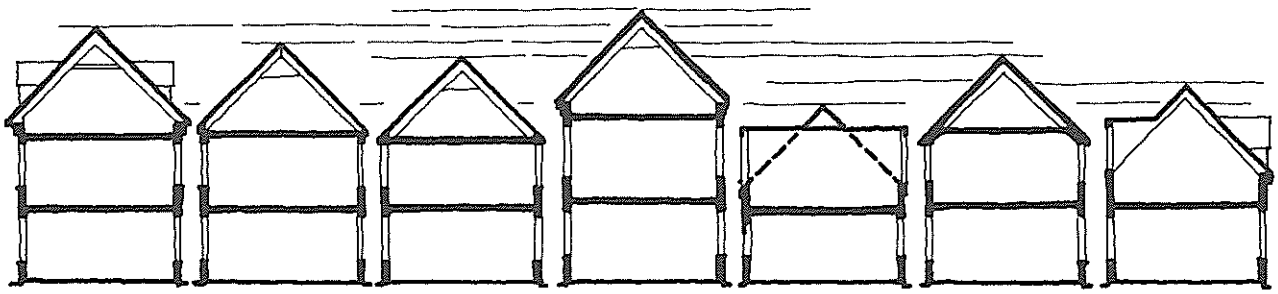
Designs for new houses are expected to follow the tradition of having duo-pitched roofs, which are long and low, but with relatively steep pitches. Gables are a distinctive feature; hipped roofing is out of place. Asymmetry only occurs in a situation where the roof is carried down over an extension to the rear of the main house, as shown in the diagram.



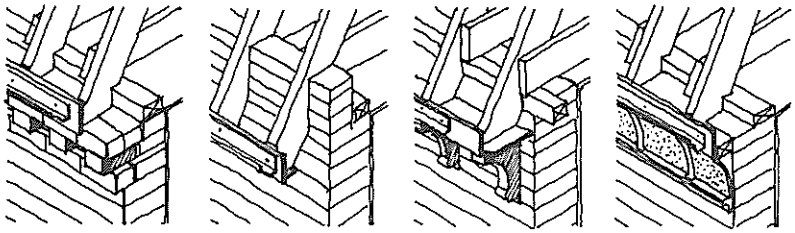
This is generally a sustainable arrangement, for the prevention of water penetration, durability (there being few junctions prone to failure), resistance to wind, potential for solar power, and use of the space within.

### Criteria

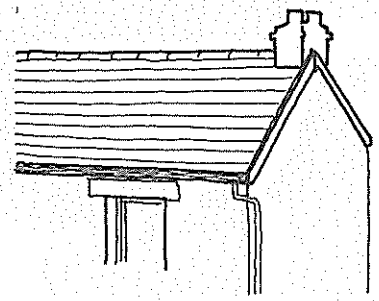
- Roof pitches should be generally at 40-45°.
- The level of the eaves - at the junction of main elevation and roof - may be adjusted to reflect the variants set out below:



- Traditional eaves details may inform modern construction, taking into account the location and predominant wall material (refer to Section 2).

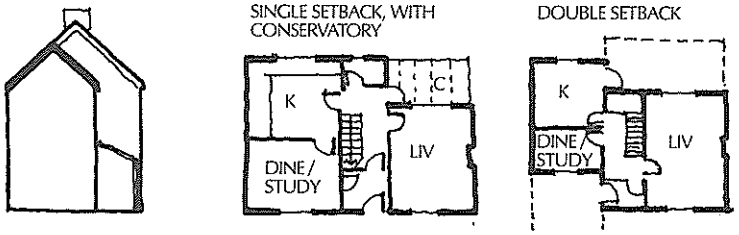


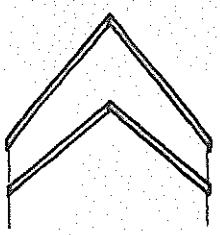
N & E AREAS (BRICKWORK): PROJECTING EAVES, 1. BRICK CORBELS AND DENTILS. 2. EXPOSED (OR APPLIED) RAFTERS. 3. TIMBER BRACKETS. 4. BOXED CORNICE (RENDER).



S & W AREAS (STONEWORK): EAVES - PLAIN & FLUSH FASCIA BOARDING

- Ridge lines may also be varied by the use of different plan depths, including set-backs.



DIFFERENT PITCHES GIVE DIFFERENT RIDGELINES

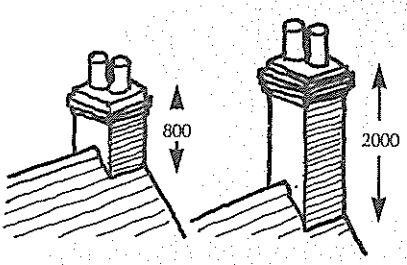
## Q8 Chimneys

**Does each unit have a chimney stack?**

Stacks offer flexibility in the choice of fuel in the future. Coal-burning fires have long been a distinctive feature of the area; mains gas has not been available everywhere. Wood-burning stoves, using (renewable) fuel from local sources, have potential as a sustainable alternative. Internally, the lower sections of flue can be used for heat exchange; the upper sections have traditionally served to provide additional lateral bracing of the roof structure. 120 row Stacks can be used to facilitate 'passive stack ventilation' systems, reducing condensation within the house, without dependence on powered fans.

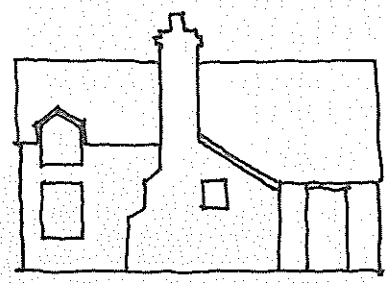
The stack is not only an evocative symbol of 'home' it can function to avoid clutter on the face of the building. Note that plain surfaces and absence of extraneous detail are features of the traditional architecture.

STACKS ARE SQUAT IN THE SOUTH / WEST, TALL IN THE NORTH / EAST

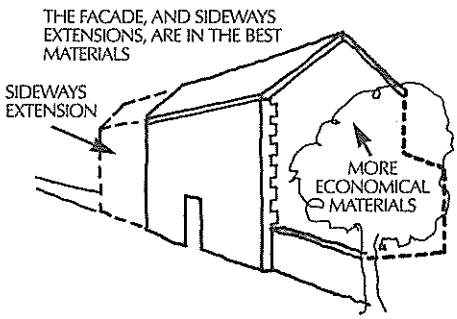


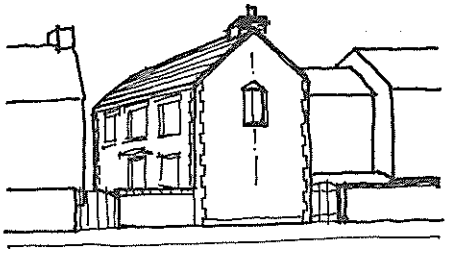

### Criteria

- Wherever possible, each dwelling should have a chimney stack, preferably with two clay chimney pots.
- The construction and detailing should be varied, for visual interest and to suit the layout. However the material should be of brickwork (even if the materials of the walls is stonework); the minimum dimensions should be 665mm square, discounting any oversailing courses.
- Designs should reflect the styles of the area, chimney stacks being generally squat in the south and west, tall in the north and east. (Note that in the Severn Vale, there are precedents for making the stack a dominant feature of the main facade).

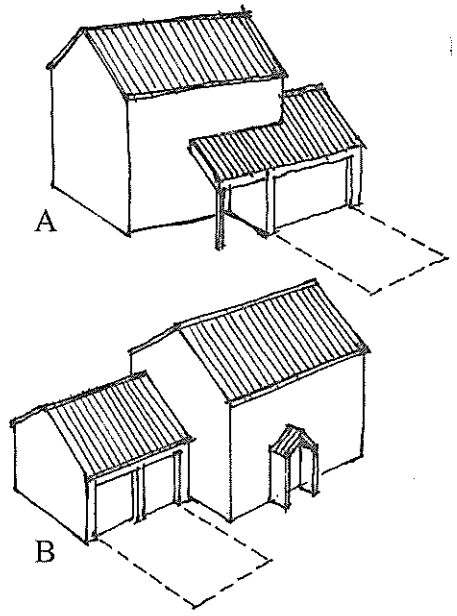


THE STACK AS A DOMINANT FEATURE



GABLE WALLS MAY BE PART OF THE FACADE




GARAGES, when adjacent to houses, if situated forward of the street facade, as in 'A' can be too dominant and with the hardstanding can set the house too far back into the plot, reducing the size of the private rear garden.

If the garage is set back behind the street facade as in 'B' the house can be placed closer to the front boundary - usually more appropriate in the street scene. It gives proper emphasis to the front door and allows for larger rear gardens. Paired doors create a smaller scale.

# Q9 Elevations

**On the public side(s) of houses, does the elevational design reflect the conventions of traditional Forest of Dean houses?**

The immediate appeal of a house may be determined by the front elevation, but the tradition in the Forest of Dean is one of dignified restraint. Certainly the intention of the domestic facade has always been to give a good impression, however mean or lowly the actual accommodation, by conformity to a set of conventions. Yet the distinctive style grew out of trying to follow these conventions with basic materials and limited finances. The vernacular is honest and unpretentious.

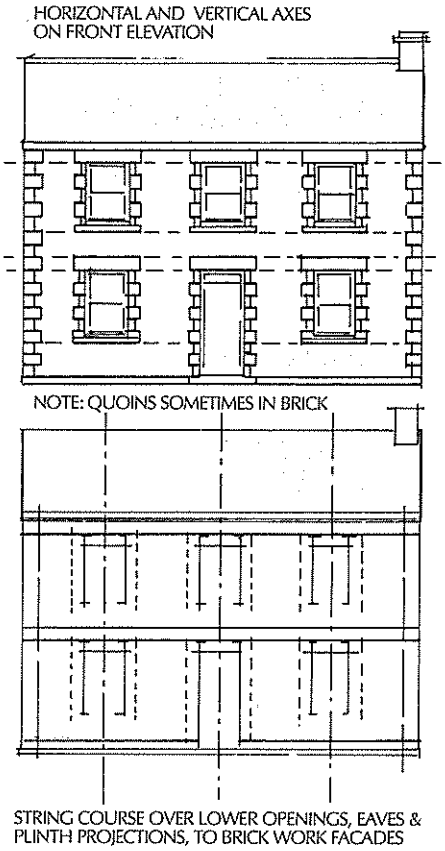
It is hoped that new houses will reflect the 'parsimonious integrity' of the past. Their impact will be more in keeping with what exists already, and their sustainability is likely to be enhanced by parsimony, which is about being careful with limited resources.

The facade typically echoes the predominant materials of main boundary structures, being made of locally available masonry, but detailed to keep the weather out, and without clutter. Other external walls of a house are built to a lower standard.

## Criteria

- The most energy and cost will normally be invested in the front facade, while the rear - walls out of sight of the public - can be more utilitarian. Thus a house may have a natural stone front, topped with a slate roof, but render (over blockwork) to the side and rear; roofing to an addition could be in very economical materials, provided these have reasonable life-expectancy.
- However, where gable walls are effectively part of the facade, it may be necessary to build them to the higher standard set by the front, to avoid giving the impression that the face is merely a 'veneer'. Gable walls are a distinctive feature of the District. They are generally blind, but may include some fenestration, perhaps providing useful overlooking of public space (to enhance security). An oriel window, for example, positioned on the centreline of the wall, in line with the ridge, may enliven an otherwise plain surface. Verge-boards are typically plain and flush; decorative barge-boards are uncommon, except in the extreme west.
- If boundary walls made from local materials are a feature of the site or neighbourhood, normally it will be appropriate to face the buildings in the same material. Visual continuity, and linking the buildings to the land, reduce the environmental impact, while the use of *local* heavy and bulk building materials tends to be a sustainable approach. In the past, such masonry may have been the by-product of local industry.
- The facade should be ordered and generally symmetrical, carefully balancing horizontal and vertical lines. These are described further below.
- Wide-frontage facades have a horizontal emphasis, in that the width exceeds the height. The proportions are accentuated by having pronounced lintels or arches that line up across the facade (and including the head of the doorway). Brickwork facades, being of one material throughout, follow the same pattern, but as the arches are less noticeable, a continuous projecting string-course (215mm in height) may be added. Traditionally they are located just above the ground floor arches. The eaves may also be decorated and projecting; a plinth at the base of the wall similarly has a 'horizontal' effect.

- The masonry is generally laid with an emphasis on horizontal joints. Random coursed stonework with large perpend joints, as in 'reconstructed stonework', is particularly inappropriate. However, in brickwork, the use of vertically aligned bonding, using headers, is traditional.
- Vertical emphasis, as a counterpoint to the above, is derived from articulation of the masonry into bays in which openings are strictly located one above the other, and the masonry panels are taller than they are wide. Openings are relatively narrow; glazing patterns are symmetrical around the vertical axis. Corners and reveals are formed with quoins (see also Q11).
- Cluttering the facade, by the fitting of service pipes, brackets and external shutters, etc, is undesirable everywhere, but is particularly inappropriate in the context of Forest of Dean tradition. Every effort is made at the time of construction to present the facade as a clean uninterrupted surface. Thus, for example, rainwater pipes are typically carried round on a swan-neck onto the side elevation, or shared where this is impractical. Meter boxes should always be recessed and concealed.



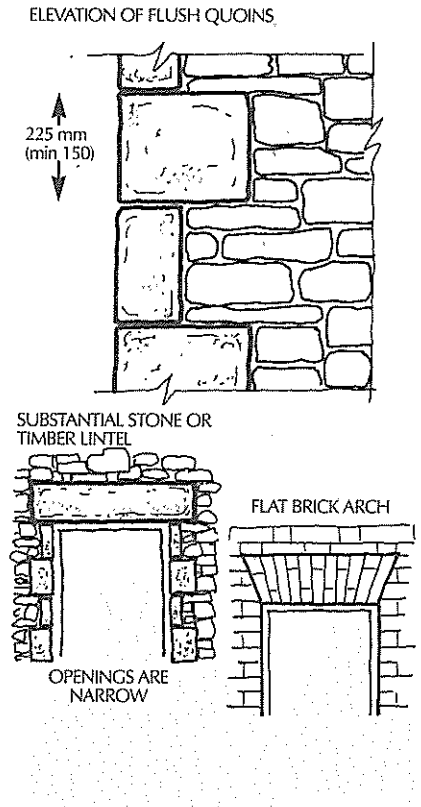

## Q10 Walls

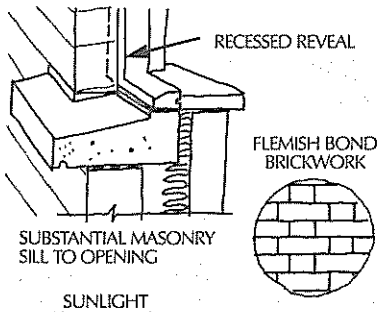
**Do the walls, in particular the facade, have a massive quality?**

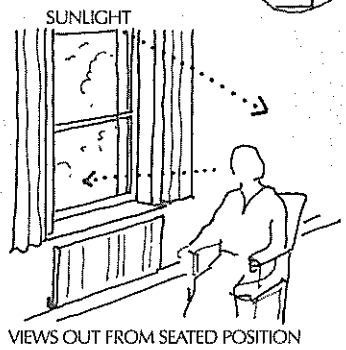
Masonry walls should appear *thick* and *heavy*. These distinctive characteristics are derived from the extensive use of rubble and other irregular materials in the past, but modern buildings may also be designed to benefit from heavyweight construction. For example high thermal capacity provides a passive environmental control that retains warmth in winter and cools in summer. Even if houses use relatively lightweight construction, the details associated with the traditional house can be applied, because they have been developed to suit the climatic conditions and exposure, as described below. Conversely certain 'modern' details - such as fitting windows flush with the facade, without a masonry sill, and with a concealed lintel behind a bland masonry skin, are entirely inappropriate.

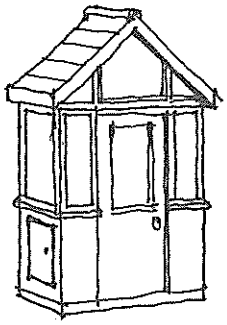
### Criteria

- Where the main masonry material on the face of the building is stone or render, outer and salient corners should normally be formed with flush quoins (or a feature of equivalent weight), as shown in the diagram. The prevalence of this detail is derived from the necessity to strengthen rough masonry where it is most vulnerable, and to provide true corners, both plumb and square. The detail can still be justified today for the sake of durability and robustness, as well as satisfactory appearance.
- Lintels or arches should be deep, minimum 215mm exposed on the face of the building over the opening. Spans should also be short, thereby creating relatively narrow openings.
- Window and door openings should be recessed within masonry reveals. For durability, resistance to water penetration and draughts, and to maintain the appearance of traditional frames, frames should be recessed behind the masonry nibs that form such reveals (see diagram).

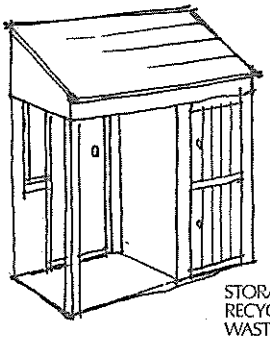




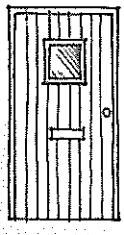



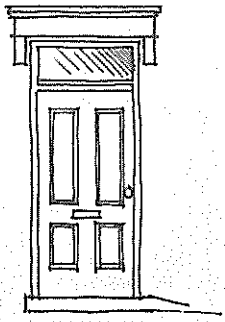



Porches reduce heat loss on northern facades. they can also incorporate meter boxes or bin stores on sides.




Doors





RURAL / FOREST OR SUBURBAN TYPE. BOARDED

URBAN TYPE PANELED WITH FANLIGHT

- Sills to openings should be substantial, project into the masonry either side, and protrude beyond the face of the wall with a drip recess to the underside.
- Brickwork bonding associated with solid wall construction, such as Flemish bond, is recommended; modern stretcher bond may be functional but the appearance is less appropriate. Similarly, rendered finishes are preferably smooth-faced with blocking lines (the traditional superficial scoring of the surface in imitation of stonework).

## Q11 Windows

**How do the windows relate to internal spaces and orientation?**

Old buildings in the District tend to have quite small windows with the advantage of reduced heat losses, and low cost (glass being expensive). Areas of modern fenestration are also constrained by the need for energy efficiency. The challenge is to ensure that there is adequate natural lighting, ventilation, and views out, bearing in mind the obstructions to light on cloudy days, in deep valleys, and between the trees and buildings.

### Criteria

- A low sill height, of say 600mm, allows views out from a seated position. Not only can views be appreciated in comfort, but the external environment has informal supervision, for security.
- A high head height, preferably facilitated by a floor to ceiling height over 2.4m, to allow unobstructed light from the sky into the back of the room.
- Deep reveals, to avoid unwelcome diagonal views into the room
- Overall size and orientation to maximise *useful* solar gains, and minimise heat losses.

## Q12 Entrances

**Are entrances designed for ease of access, privacy, shelter and security?**

The entrance of the traditional house is austere and functional. Modern designs tend to be excessively fussy and/or undignified.

### Criteria

- Doors should be solid-panelled, in timber, with a fanlight over, in more formal, urban settings. In a more rural, informal context, vertically boarded doors are more appropriate.
- Restrained design is exemplified by a low threshold of a single natural stone step, and a flat (masonry) bracketed porch over.
- Front and rear doors should have 5-lever mortice locks and 150 / 225mm bolts (Windows on grand floor level should have integral locks).
- Door Widths should be adequate for wheelchair access ( min. 900mm). Consider wheelchair access in design of threshold and general approach to the entrance. Part 'M' of the Building Regulations is likely to be extended to include access to housing in the near future. Further information from the Centre for Accessible Environments.

## Q13 Materials and Energy

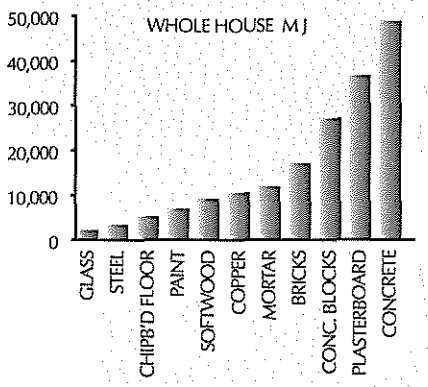
**How has the embodied energy of the bulk materials used in the construction been minimised?**

The selection of materials for long-term performance should take account of life-cycle costs and environmental impact of manufacture. A sustainable feature of past construction has been to obtain heavy, bulky materials from local sources, thereby minimising energy use and pollution through transportation. The practice of using waste products and by-products from industry was advantageous: stone and sand from mining activity, timber thinnings from forestry, ash and metalwork from the foundries. Today, such resources are less available, but the need for them may encourage these industries to be revived, providing local employment.

### Criteria

- In conservation areas, and localities where the local vernacular is evident, the front or visible facades of new houses are required to be faced in brick or stone (as appropriate to the area). Side or rear elevations may be finished in render or pebbledash. Reconstructed stone is acceptable as a walling material only as an element of detail(eg. quoin, lintel, sill).
- In areas where the local tradition is absent, it will normally be sufficient to use low-energy materials such as self-colour render and selected pebbledash for the main walling of the facade. But note that details and architectural features should conform with the conventions described earlier in this section.
- Recycled materials are acceptable, provided their origins can be established - for it is essential that materials are not stripped from neglected structures that are themselves a vital part of the distinctive character of the District (or adjacent districts).
- Since timber from local sources is a particularly sustainable material (assuming that extraction accords with good practice), buildings which are wholly or substantially constructed using the locally grown product, will be acceptable as an alternative to the masonry described above.
- Bulky materials for external works, such as aggregates, hardcore, soils and turf, should be extracted from the local area.

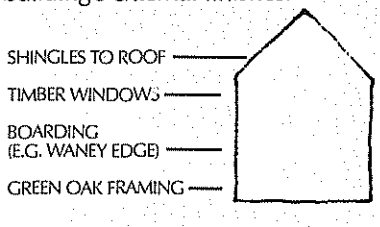
Embodied Energy of materials and construction for a single house




Energy for Manufacture/Production

| | | |
|---|---|---|
| Imported Softwood | 1450 KWh/ton | 7540 KWh/m3 |
| Local air dried timber | 200 | 100 |
| Local green oak | 200 | 220 |
| Lightweight blocks | 500 | 600 |

Above: Embodied energy of timber.
Below: Timber may be used for a building's external finishes.




## Q14 Structural Movement

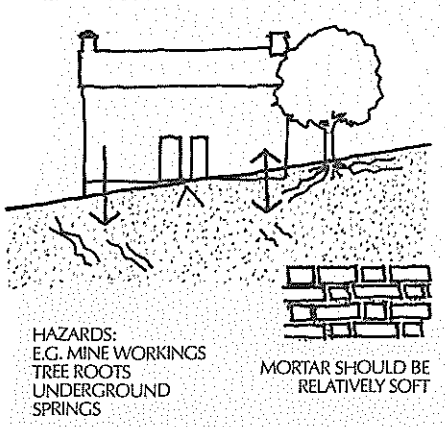
**Does building design and construction permit slight structural movement?**

Much of the District is affected by past mining activity, and brownfield sites on which new developments are preferably located, are often prone to settlement. To reduce the energy and resources invested in foundations, the choice of built form should be influenced by ground conditions. Detailed specification of the structures should then take account of long-term vulnerability to defects.

### Criteria

- Sites should be properly investigated to identify ground conditions, before the design has progressed too far to change it.

Ground conditions in the district are often poor. Designs should take account of this.



- Orientation of building along rather than across contours is advisable.
- Movement joints between buildings and at intervals along elevations, with 'soft' mortars and renders that can accommodate the stresses of minor movement, and the robust detailing of junctions, are recommended.
- Foundations should be reinforced to counter the effect of trees, clay soils, and chaotic underground drainage. Trees should be retained wherever possible.

## Q15 Toxic Materials

**Are the materials used on the building envelope non-toxic and repairable?**

Many modern products are unsympathetic in appearance, harmful to the environment, and cannot be repaired. To preserve and enhance the character of the District, and the safety of the environment, designers are required to select materials responsibly.

### Criteria

- Timber framing, fascia boards, cladding and doors are preferable to those made from uPVC (to minimise embodied energy and blend in with the traditional architecture of the area). Swept-head windows are unsuitable.
- Timber on the facade of a house should always be finished with paint, rather than stained, so as to reflect the traditional appearance of buildings in the area (an exception is made for oak, which may be stained). The paints are preferably non-toxic.
- In view of the increasing necessity of collecting rainwater from roofing, alternatives should be found for leadwork flashings in that location. Rainwater goods are preferably metal, especially adjacent to public areas.

## Q16 Colour and Texture

**Are the textures and colours of materials suited to the locality?**

The District is characterised by muted colours and plain surfaces.

### Criteria

- Rendered walls are preferably unpainted ie self coloured.
- Brickwork, where applicable should be red, or red/brown, and generally of uniform variegation, without contrasting banding.

The process of considering and determining the application will be assisted if information is provided in a clear and helpful way.

The applicant may demonstrate the logic of the design by providing the following information:

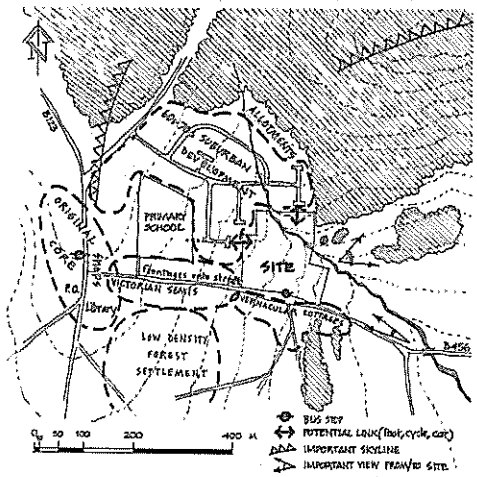
## Accompanying letter

- State the potential type/groups of residents which you are providing for.
- Highlight any special principles which you have adopted in relation to mixed use, work, movement, energy, water, wildlife or overall form.
- State the design speed for vehicles using new roads.

## Location Map

To cover an area of at least 500 metres radius from the centre of the site:

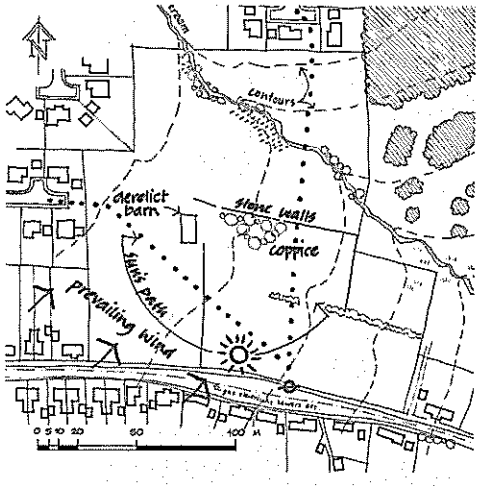
- Show the location of nearby shops, schools, public open spaces and bus stops.
- Identify the main potential pedestrian and cycling routes from the site to local facilities such as those above and the town centre (if appropriate) and indicate the walking distances in metres from these facilities to the site boundary.
- Mark older buildings in the area which have helped you identify the local character in the terms of built form and materials.
- Highlight nearby wildlife features (e.g. streams, woods, railway cuttings).




## Site Appraisal Map

To cover the area of the development site and its immediate neighbours:

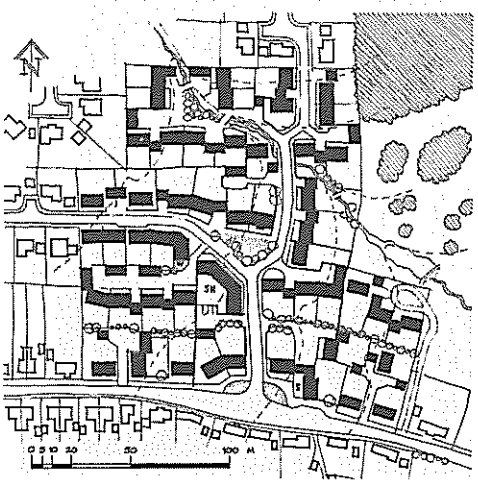
- Show all adjacent development
- Show potential pedestrian access points (related to the routes shown on the location map) and diagrammatically indicate any likely pedestrian / cycling movements across the site.
- Show water courses and any particular ground water conditions.
- Illustrate slopes (perhaps using a cross section) and hatch any areas of the site with N-facing slopes (NW-NE) over 1:10
- Mark potential utility connection.
- Mark woods, mature trees and hedgerows and any other specific wildlife habitats.
- Identify all existing boundaries (materials, height and condition), structures, buildings (in use, vacant or derelict).




## Site Layout

To cover the same area as the site appraisal:

- Identify the different tenures, house types and sizes clearly.
- Show plot sizes.
- Identify all non-housing uses (proposed building and reservations) clearly, including small scale work-places.
- Highlight the (main) pedestrian routes and any 'nodes' or concentrations of pedestrian activity.



- Identify any specific cycling facilities (e.g. short cuts). You should **not** identify cycle routes where these are simply the normal access roads.
- Distinguish buildings which will be orientated and designed to maximise passive solar gain and show any shelter belts proposed.
- Show areas set aside for grey or black water treatment.
- Demonstrate what structures you intend to retain and where appropriate, reuse or demolish.
- Specify the general treatment of open space and footpath connections.

## Detailed Plans, Elevations, Sections

- These should be at an appropriate scale to clearly illustrate the design features of individual buildings.
- Show the materials of each building and of hard surfaces.
- Specify surface treatment and drainage arrangements.
- Identify security measures.
- Illustrate the materials and height of boundary walls/fences.
- Where new buildings abut or extend existing ones, the relevant part of the adjacent existing building should be shown.

## Application Form

Specify the precise numbers of different types and sizes of dwelling.

- Specify all the non-housing uses.
- Give the gross site area and the net area devoted to housing.
- Calculate the net and gross densities in dpha and (estimate) people pha.
- Specify the likely source of building materials.
- List the NHER levels achieved.

## Information provided to the applicant by the District Council.

Requirements for the provision of 'local needs', affordable or social housing on the site (applies only to developments of 25 units and over).

Requirements for the provision of local retail, leisure and open space on the site (applies only to sites over 1 hectare or over 25 units).

# ADDITIONAL INFORMATION

## Useful References


R.W. Brunskill, ILLUSTRATED HANDBOOK OF VERNACULAR ARCHITECTURE, 3rd ed., Faber, 1987.

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The TAS Partnership Limited, FOREST OF DEAN TRANSPORT CO-ORDINATION STUDY: FINAL REPORT, The TAS Partnership Limited, March 1997.

University of the West of England, Bristol and the Local Government Management Board, SUSTAINABLE SETTLEMENTS - A GUIDE FOR PLANNERS, DESIGNERS AND DEVELOPERS, the University of the West of England, Bristol and The Local Government Management Board, April 1995.

Vision 21, SUSTAINABLE GLOUCESTERSHIRE - the Vision 21 HANDBOOK FOR CREATING A BRIGHTER FUTURE, Vision 21, 1996.

World Commission on Environment and Development: OUR COMMON FUTURE, Oxford University Press, 1987.

# Building Materials found in the Forest of Dean

Quarry sites with planning history recorded by Gloucestershire County Council. Sites marked * are Regionally Important Geological Sites. Sites marked † are considered active by Gloucestershire County Council.

| | | SITE NAME | | SITE ADDRESS | GRID REF. | OPERATOR |
|---|---|---|---|---|---|---|
| LIMESTONE | 1 | Stowfield | † | Scowles Pitch, Coleford | SO 555-111 | Tarmac Telephone 0121 550 4797 |
| | 2 | Stowe Hill | † | Stowe | SO 556-065 | Clearwell & Stowe Hill Quarries Telephone 0159 453 0208 |
| | 3 | Clearwell | † | Stowe | SO 565-070 | ditto |
| | 4 | Rogers | † | Scowles Pitch | SO 559-112 | Tarmac Telephone 0121 550 4797 |
| | 5 | Dayhouse | † | Tidenham | ST 554-958 | T.S.Thomas & Sons Telephone 0159 484 2333/4 |
| | 6 | Bream | | Bream | SO 595-057 | ditto |
| | 7 | Tintern | | Tidenham chase | ST 546-980 | ditto |
| | 8 | Drybrook | † | Drybrook | SO 640-180 | ARC Southern Telephone 0137 345 3333 |
| | 9 | Shakemantle | * | Ruspidge | SO 653-114 | Mr&Mrs J.Walker, Lindsey Farm, Whitney, OX8 6UN |
| SANDSTONE | 10 | Meezy Hurst | †? | Staple Edge Wood | SO 641-089 | Forest Stone Company Ltd. Telephone 0159 456 2304 |
| | 11 | Bixhead | †* | Barn Hill, Coleford | SO 597-109 | Forest of Dean Stone Firms Ltd Telephone 0159 456 2304 |
| | 12 | Wilderness | † | Mitcheldean | SO 672-184 | G.M.Read (Haulage) Ltd Telephone 0145 283 0395 |
| | 13 | Nailbridge | | Drybrook | SO 644-161 | ditto |
| | 14 | Great Berry | †? | Brierley | SO 616-151 | Richard Read (Trans) Ltd |
| | 15 | Birch Hill | † | Sling | SO 598-086 | Taylor and Martin, Sling Telephone 0159 483 3284 |
| | 16 | Perserverance | | Ruspidge | SO 651-112 | Forestry Enterprise, Coleford |
| | 17 | Puddlebrook | | Drybrook | SO 646-182 | ditto |
| | 18 | Wimberry | | Mile End | SO 594-121 | ditto |
| BRICK & TILE | 19 | Hawkwell Green | | Cinderford | SO 645-153 | Coleford Brick & Tile Co. Ltd Telephone 0159 482 2160 |
| | 20 | Broadmoor | | Cinderford | SO 647-149 | Broadmoor Brickworks Ltd Telephone 0159 482 2255 |
| SOLID SAND | 21 | Bromsberrow Sandpit | | Bromsberrow Heath | SO 739-331 | Bromsberrow Sand & Gravel Co. Ltd. Herefordshire |
| | 22 | Bromsberrow Heath Sandpit | | Bromsberrow | SO 738-328 | Western Aggregates Ltd, Warley, W Midlands Telephone 0121 552 6699 |

The Forest has a tradition of iron smelting. However there are no operational foundries today, but important works were located until fairly recently at Cinderford and Soudley.

There is only one source of 'sustainable' timber products in the Forest at Camphill Village Trust.