

Landscape Design

A Guide to Good Practice

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This guide has been prepared to illustrate the approach to landscape design which the District Council advocates for new development in South Somerset, and to interpret the requirements of Planning Policy Guidance Note 1 “General Policies and Principle” and Circular 11/95 “The Use of Conditions in Planning Permissions”.

It responds to the advice in PPG1 which states that the appearance of a proposed development and its relationship to its surroundings are material considerations in determining an application. Landscape design, whether hard or soft, should be as much a subject for consideration as the design of the buildings and the overall aim should be for any development to result in a “benefit” in environmental and landscape terms. Circular 11/95 includes improved model landscape conditions. It emphasises the importance of the Council providing advance indication of the essential characteristics of an acceptable landscape scheme and also stresses the importance of the quality of work and materials in the final product.

The guide has also been prepared in support of the policies contained in the emerging South Somerset Local Plan, and having been the subject of consultation with a wide range of interest groups, carries the status of Supplementary Planning Guidance in the terms of Planning Policy Guidance Note 12.

The two guides, “Landscape Design – A Guide to Good Practice” and “Design of Residential Areas”, aim to raise awareness of what contributes to a well-designed development. They address both process and end-product, but are not pattern books. They deal with principles and their local application, leaving scope for individuality and creativity which will preserve and enhance the local distinctiveness of South Somerset.

INTRODUCTION

Landscape – What do we mean?

Surroundings make a significant contribution to our quality of life. The word “landscape” does not only mean attractive scenery, but represents a rich historical record of natural features, moulded by human activity over the centuries – it forms the context for our everyday lives and is reflected in our literature, music and painting.

Our definition of the word “landscape” in the context of this guide is, therefore, a broad one. It is not a matter of the plants used just to fill spaces left over after building, or the screening of a development which offends its surroundings. It is the setting for our daily lives and its design is as important and valuable as the buildings within it.

Landscape Architecture is the combination of the techniques of planning, design, horticulture, construction and ecology with aesthetic flair and an understanding of the natural environment. The art of Landscape Architecture will, therefore, involve considering the total environment of any new development and then shaping this, using such natural elements as landform, trees, shrubs and water, to form a pleasing harmony and enhance the local distinctiveness of the area.

Landscape Architecture in relation to development

We all enjoy the countryside and feel refreshed and relaxed when surrounded by the natural elements of our environment – the hills, rivers, woods and fields, down to the trees, shrubs and flowers in a small garden. Statistics show that most people would rather live in a new development, which even though in a town, may feel more rural by the presence of existing trees, new planting and small areas of houses integrated with open space – echoing the village green atmosphere. It is well known that an attractively planted garden can help sell a house. Yet all too often lack of forethought and financial restraints result in barren, neglected environments with merely a few trees in unintegrated areas of grass, which often then die through lack of maintenance or vandalism.

Time and money spent on the setting, overall design, detailing and planting of a development, do, in the long term pay back high dividends. Landscape Architecture can make a design statement which can turn an ordinary housing estate, a car park, or a supermarket into an attractive asset for the neighbourhood, rather than an eyesore. This can make a constructive contribution to the improvement rather than the destruction of our environment. After all, however much time and trouble is spent on the design of a building itself, it is always the external spaces and overall setting of a development which provides its initial attraction, and all too easily a finely detailed building can be let down by its poorly designed surroundings.

This guidance, therefore, advocates a design process which follows a logical progression from a site survey, through analysis, to the evolution of a landscape master plan and design details. A plan showing merely plant names with no overall design statement or relationship with its surroundings will not achieve a satisfactory result.

SURVEY, ANALYSIS AND MASTER PLAN

SURVEY AND ANALYSIS: The Site In Its Setting

Setting in the Landscape

The following considerations should be taken into account concerning the overall setting of any new development.

The site should not be considered in isolation, but should be seen in relation to the character of the surrounding landscape. Refer to South Somerset District Council's publication *The Landscape of South Somerset*.

Before any design work can begin the site must be fully surveyed, analysed and understood. Each site has its own opportunities and limitations and no design responsive to its setting will be possible without taking into account all these constraints.

Views of the Site

Many sites are visible from some distance away. The site should be viewed and photographed from all significant viewpoints. The impact and appearance of the development on the landscape should be considered first at this distance. From here, broad requirements for a landscape framework and the overall form and massing of the buildings can be decided upon.

A Landscape Framework

The form of the landscape design and planting plays a major part in the way the development relates to its setting and how it fits into the existing landscape. The principal theme should be decided upon at this early stage so that it can influence and inform the design as it evolves.

A Concept for the Built Form

Without a properly formulated concept for the shape of the built form, the way the buildings will fit into the landforms of the site, and their general shape and massing, the development is likely to end up visually confused; a sprawl of elements which do not relate to the site, its setting or existing development and it will become an intrusion into the wider landscape.

Colour

Colour plays a part in the appearance and degree of visual intrusion a new development may have. Consider colour in the context of the wider landscape. Compare colours of existing settlements when seen at a distance. Colour is a part of the quality of local distinctiveness. Regional character is partly the product of the character and colour of local building materials and must be acknowledged in the design of a new development.

Linking Back

Visual continuity, adding the new to the existing in a sensitive way helps its integration. Adding to the existing patterns in landscape or built forms rather than ignoring them will aid the new development to relate comfortably and naturally with its context. These patterns can help provide overall form for the development which will give it meaning in a local context.

SETTING IN THE LANDSCAPE

Analyse character of existing settlement -



Buildings on skyline too prominent



Buildings kept below skyline - planting used to integrate them to their setting



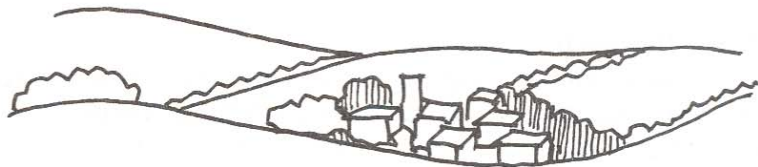
Trees as backdrop intrude less than buildings on skyline



- set on a ridge



- clustered around a focal point



- in a valley

LINKING BACK

Existing woodland



New buildings - lack of integration into the landscape



Existing settlement



Link to existing woodland



Planted backdrop



Planting to link with existing buildings



New structure/boundary planting

RELATE NEW DEVELOPMENT TO EXISTING BUILT FORM AND LANDSCAPE

All individual buildings or groups of buildings form elements in the landscape and contribute to its character and local distinctiveness through their siting, building style and materials. When new development is to be associated with an existing group of buildings, such as a village settlement, an analysis should be made of the existing built form and its setting, to note whether it is, for example:

- Set on a ridge.
- Clustered around a church tower which provides a landmark and distinctive skyline.
- Nestling in valley where the roofscape might be an important feature.

Within the settlement itself, note:

- The relationship of existing buildings to the overall landscape of the area.
- The overall form, scale and balance of buildings.
- The relationship and balance of the built environment with open space, trees.
- The scale of the buildings and the materials with which they are constructed.

If the new development is to contribute positively to the overall environment both from within the site and outside in distance panoramas, the design must ensure that these items have been taken into account.

View through the Site

Sometimes a view through the site is important to an existing settlement. Blocking a view will have significant impact which can be reduced by retaining a gap in the new development to preserve the view line. The view could also be used as a focal point in the design.

Skylines

Development on the skyline in rural surroundings should always be avoided because of the way groups of buildings interrupt the visual continuity of the landscape. Keep buildings below the skyline; they will fit more comfortably into their setting this way and the dominance of the landscape can be better maintained.

Boundaries

Consider carefully boundary constraints and adjoining land uses which may not be compatible with the new housing, and design in suitable measures to respond to requirements. Sound buffers and visual screening can be incorporated and used as elements in the landscape framework. Existing boundaries may be worthwhile features themselves, hedges or belts of trees which, if retained, can be beneficial to the development. Special steps may be needed early in the design stage of the layout to accommodate such features.

Contours

On sloping sites buildings arranged parallel and at right angles to the contours sit more comfortably in the landscape than a random arrangement where buildings appearing at many different angles and levels present a disordered appearance.

SURVEY AND ANALYSIS: The Development Site Itself

As well as assessing the site in relation to its overall setting, the characteristics of the site itself must be considered. This will include an assessment of its own character based on its shape, size, topography and existing natural features. Topics to be considered are listed in Survey Checklist 1 & 2, Drawing A & B.

THE LANDSCAPE MASTER PLAN

When the site survey and analysis is complete, the actual process of designing the new development can begin. The landscape of a new development is as important as the buildings in creating this new place, and from the earliest stage in the process its design should be given equal weight to that of the buildings. The architect and landscape architect should work together to create a development in which buildings and landscape complement one another and their surroundings. The objective must be to create new environments which are of high quality, well integrated into their surroundings and with positive, rather than detrimental, impact in the landscape.

Positive opportunities can be taken to:

- Enhance skylines and create focal points.
- Frame new vistas and create new landmarks.
- Create interesting roofscapes.
- Integrate trees, hedges and open space with the surrounding landscape pattern.
- Create new habitats and incorporate existing natural features to be enhanced by new planting of trees, shrubs and hedges.

DRAWINGS REQUIRED

At the appropriate stage in the planning process, the developer will be required to submit the following drawings:

- 1. SURVEY DRAWING WITH ANALYSIS**
(See Checklists 1 & 2, Drawings A, B and C)
- 2. LANDSCAPE MASTER PLAN**
 - (i) Preliminary Stage (Checklist 3, Drawing D)**
 - (ii) Detail Stage (Checklist 4, Drawing E)**

SURVEY AND ANALYSIS

CHECKLIST NO.1

Constraints

In order to guide the new developer in this approach, the following should be considered before submitting a planning application:

1. Reference to District Wide Local Plan.
2. Reference to the District Council's publication *The Landscape of South Somerset*.
3. Development Brief – if provided.
4. Site relationship to: (part of or adjoining)
 - Conservation Area/Listed buildings
 - Historic Parks and Gardens
 - Sites of Special Scientific Interest
 - Area of Outstanding Natural Beauty
 - Environmentally Sensitive Area
 - County Wildlife Site
 - Regionally Important Geological Site
 - Archaeological site/ancient monument
 - Special Landscape Area
 - Local Nature Reserves
 - Local wildlife habitats. Refer to the District Council's Leaflets *Badgers and Development* and *Bats and Planning*.
5. Tree Preservation Orders.
6. Height Restriction Zones.
7. Area liable to flooding.
8. Easements/restrictive covenants.
9. Wayleaves for services/underground and overhead lines.
10. Common Land.

SURVEY AND ANALYSIS

CHECKLIST NO.2 – (see drawing A)

All applications (where relevant) shall include, as a separate drawing, an accurate survey of the site as existing and its immediate surroundings at a scale not less than 1:500.

This survey shall show:

1. Scale, North Point and Location Plan.
2. Landforms, contours, gradient of slopes.
3. Levels relating to Ordnance Datum including inverts of ditches.
4. Existing vegetation and natural features to include:
 - (i) Accurate position, species, height, canopy spread, stem diameter and condition of all existing trees.

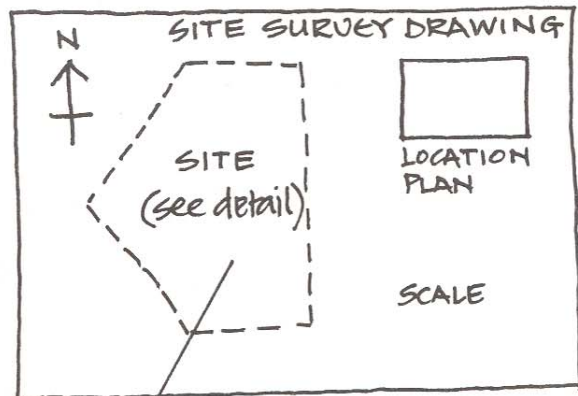
(Where the site contains mature trees, the tree survey should be carried out by a qualified arboriculturist).
 - (ii) Accurate position, height, centre line, spread and species of existing hedgerows and other significant vegetation (e.g. shrub groups).
5. Indication of nature of soil and sub-soils.
6. Climate and micro-climate (to include sunny areas, frost pockets, exposed areas, sheltered areas etc.)
7. drainage pattern to include rivers, streams, ditches and location of existing ponds and wet areas.
8. Ecological survey including wildlife habitats/Archaeological/Historical or other specialist survey of the site where appropriate (to be accompanied by a report if necessary).
9. Present land use of site and adjacent areas.
10. Existing footpaths, bridleways and public rights of way both on and adjoining the site.
11. Access possibilities for vehicle and pedestrian showing new links and desire lines.
12. Existing services – water, gas, electricity, telecommunications etc.
13. Boundary treatment – structures such as walls, fences and buildings, their type and condition.
14. Visual considerations including views in and out of the site.

A. SITE SURVEY

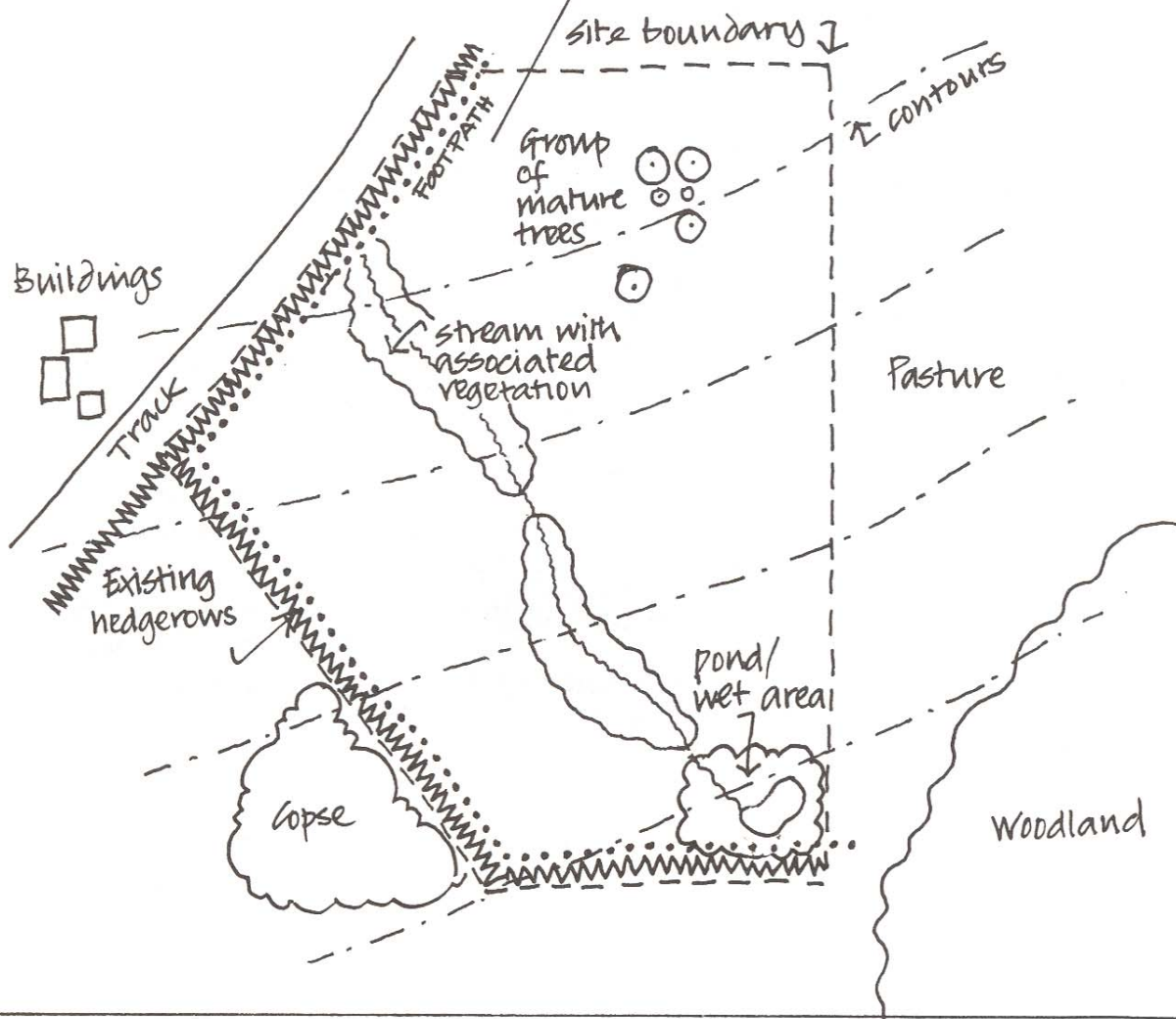
DRAWINGS REQUIRED - see checklist 1 and 2

REPORT:

Ecological survey
Tree survey
Badger surveys
(as required)



DETAIL 1:500

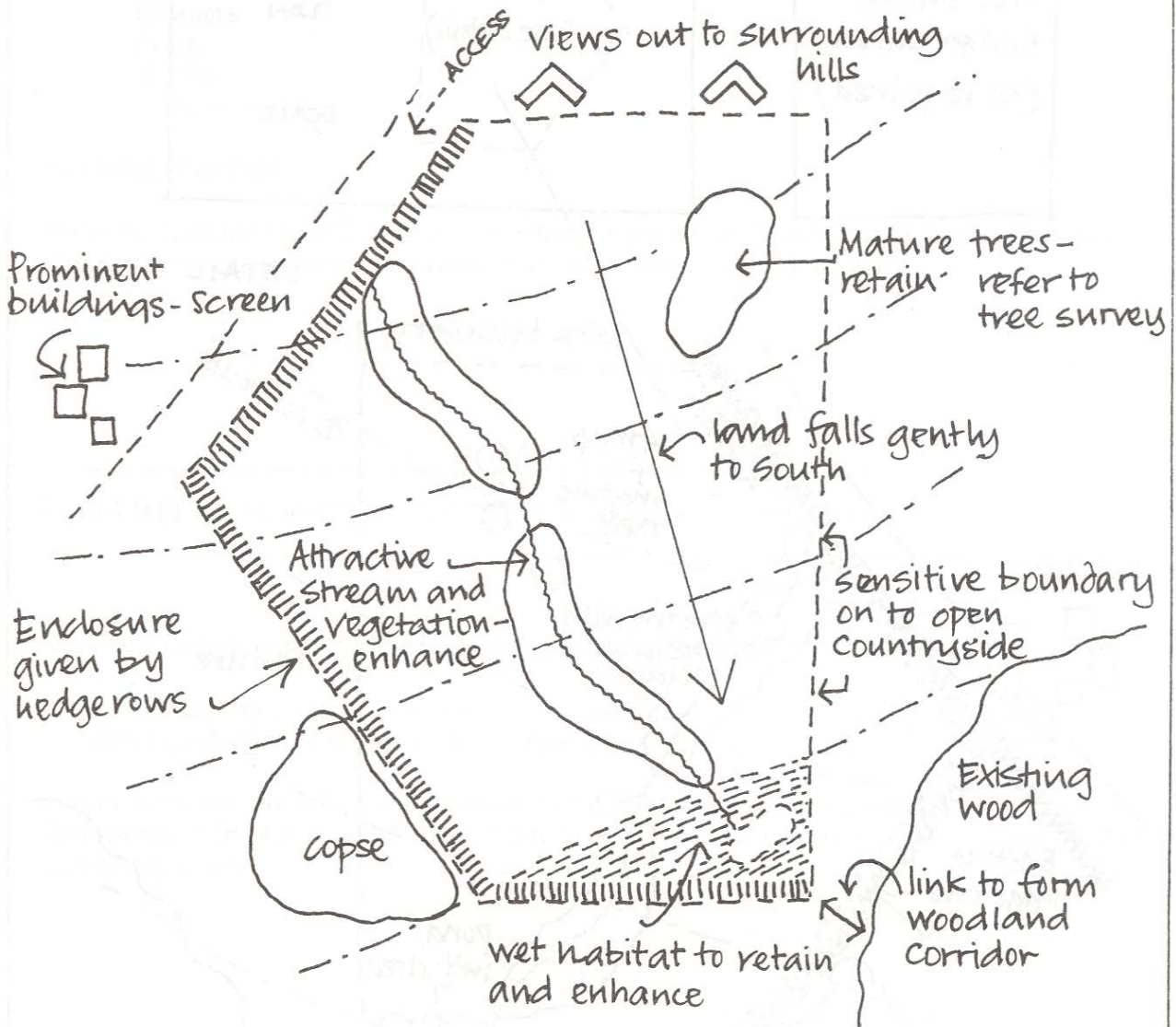


B. ANALYSIS



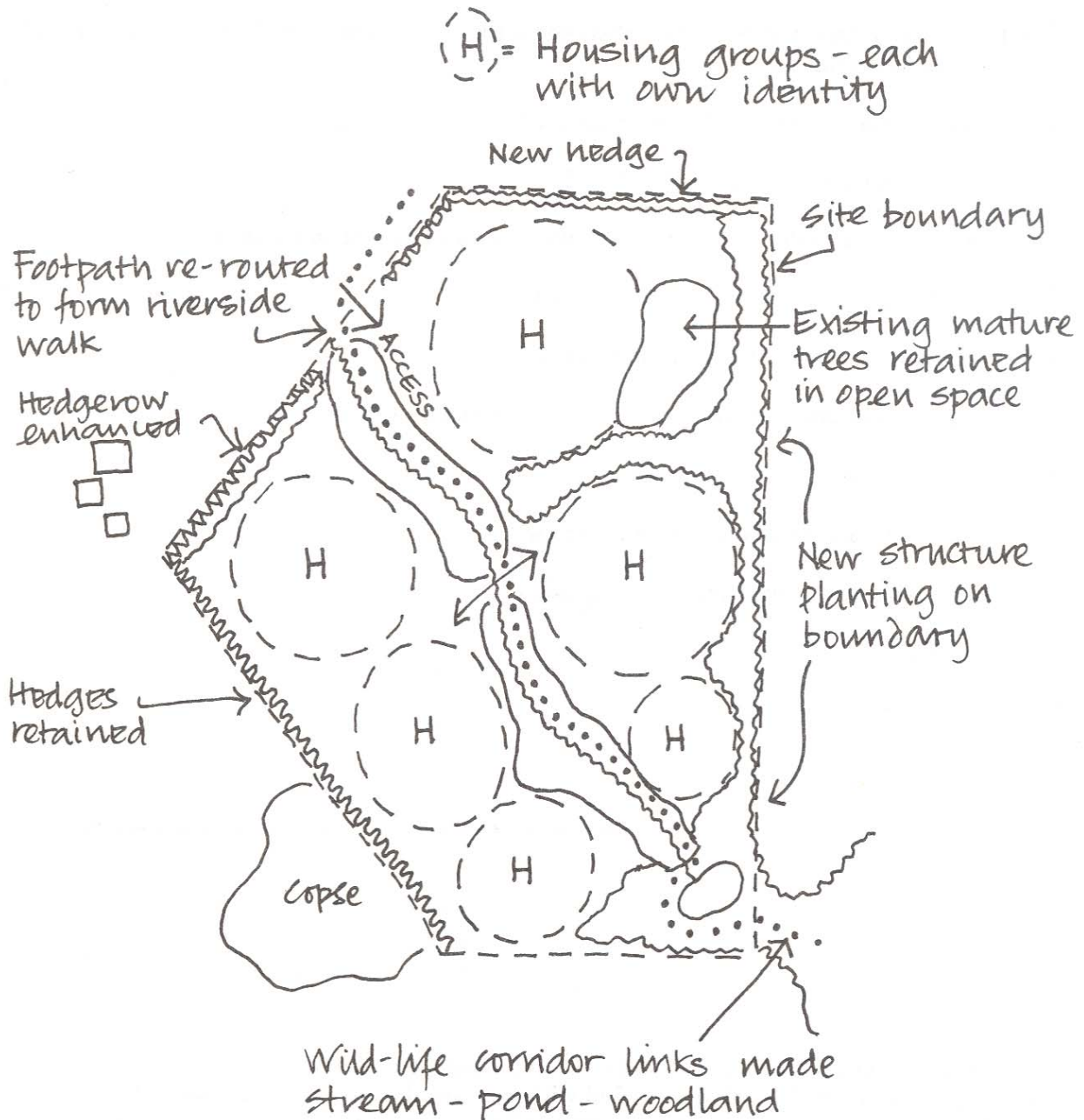
ANALYSIS OF EXISTING FEATURES

Accompanying statement setting out how the design has evolved and its objectives



C. PRELIMINARY DESIGN DECISIONS

Preliminary design decisions based on the landscape survey and analysis.



LANDSCAPE MASTER PLAN – Preliminary Stage

CHECKLIST NO.3 – (See drawing D)

The preliminary Landscape Master Plan should include a framework of sufficient detail to cover the following items:

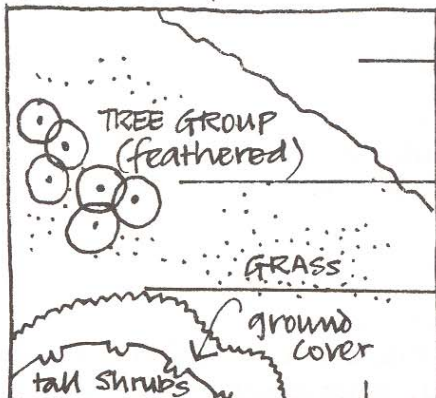
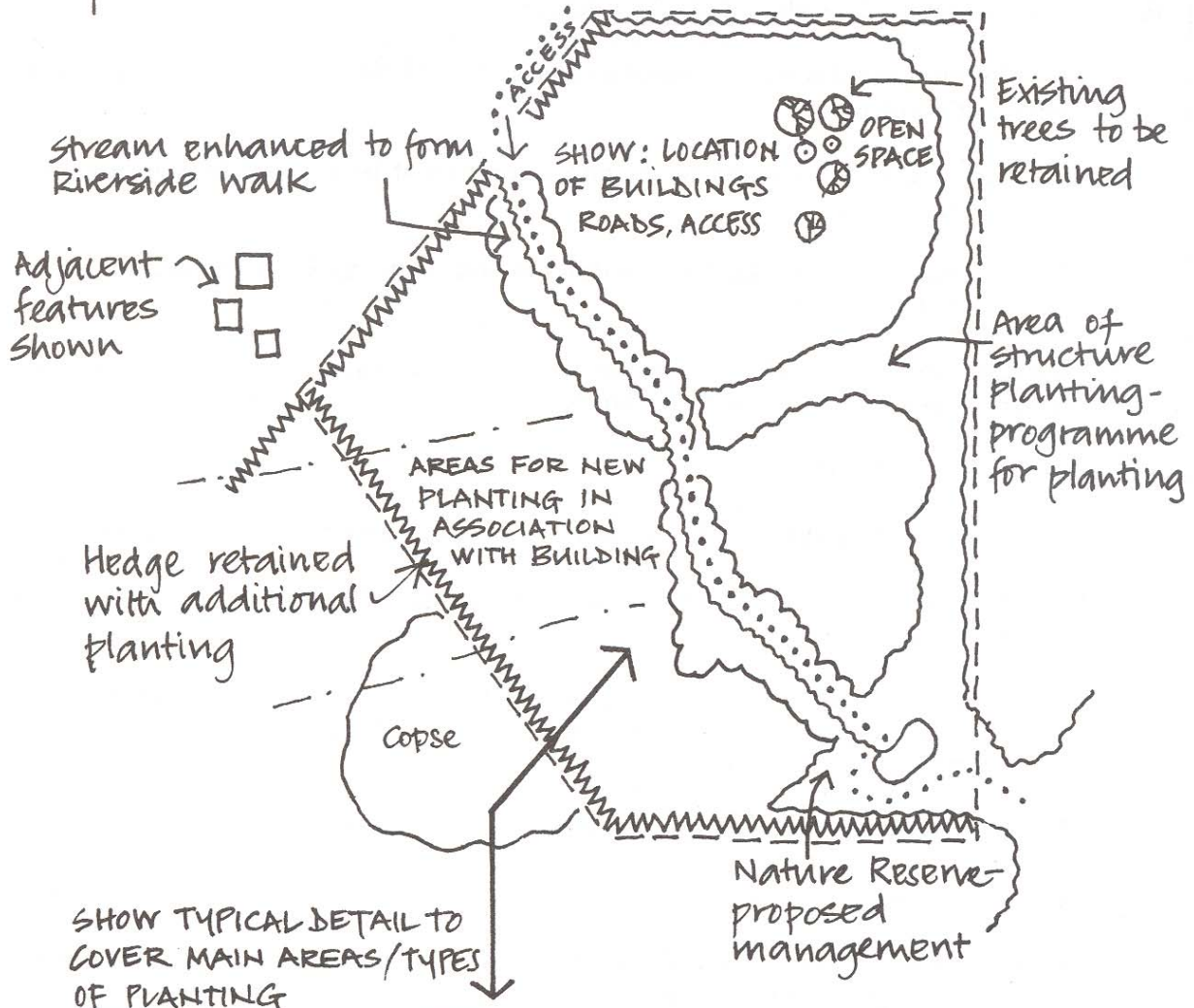
1. Landscape structure – to show main areas for planting:-
 - trees, shrubs, ground cover
 - native/ornamental
 - average densities and indication of size of plant material to be used
2. Existing trees to be removed/retained.
3. Location and orientation of buildings.
4. Roads, footpaths, cyclepaths – including links to adjoining land.
5. Open space.
6. Contours and levels (existing and new).
7. Water features (existing and proposed).
8. Services.
9. Phasing and programming.
10. Management concept.

The details of the landscape scheme at this stage will be made a reserved matter providing the District Council is satisfied with the overall concept. It should be noted that the information provided by applicants should be presented in a form to be understood by members of the public and Council Members to permit the consultative and decision making process to be effectively undertaken.

D. LANDSCAPE MASTER PLAN

PRELIMINARY STAGE:

DRAWINGS REQUIRED - see checklist 3



STRUCTURE PLANTING (indicate, species, size, density of plants)

MAIN TREE GROUPS - (size, spacing, species)

AREAS FOR SHRUB / GROUND COVER PLANTING - (density)

GRASS AREAS

LANDSCAPE MASTER PLAN – Detailed Stage

CHECKLIST NO.4 – (see drawing E)

In the case of full or detailed applications a detailed landscape scheme is to be submitted. The drawing submitted should be at a scale of not less than 1:500 (1:200 scale preferred for planting details). This should show in detail:

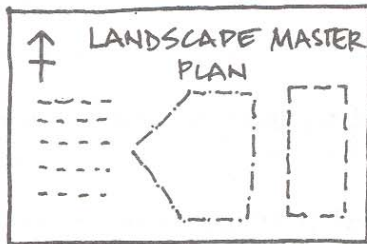
1. New buildings and services (including zones of restriction by statutory undertakers affecting planting).
2. Existing buildings adjacent to the site which might be affected by the proposals e.g. tree planting.
3. Clear indications of all surface treatments both soft and hard – to include steps, ramps, mowing margins etc.
4. Existing and new levels with cross-sections of any significant changes in level. Areas of new mounding to be shown with contours.
5. Details of all boundary treatments – walls, fences, gates, rails, barriers.
6. Play areas and equipment (details to be agreed with Parks and Greenspace Unit).
7. All existing trees, hedgerows or areas of vegetation to be removed or retained and aftercare e.g. surgery.
8. Where trees and hedgerows are to be retained details and siting of fencing for their protection during building works should be given. This should comply with BS 5837 “Trees in Relation to Construction”.
9. Existing ponds and watercourses and their means of protection.
10. Planting details to include:-

Location, species, numbers and spacing of trees, open ground or container grown, grass areas – seed/turf/protection.
11. Planting methods to include details of ground preparation.

Topsoil – depth and specification
Weed treatment, fertiliser use, watering, mulching.
Types and use of stakes, ties, guards, tree shelters etc.
12. Maintenance responsibility (public/private)
13. Instructions/programme for 5 years to include:
Management regime for grass, ornamental planting, structural planting (including timing for removal of stakes, shelters etc) and water areas.

When the proposed development is of significance due to its size or impact on the locality, the District Council will expect the developer to employ the services of a Landscape Architect.

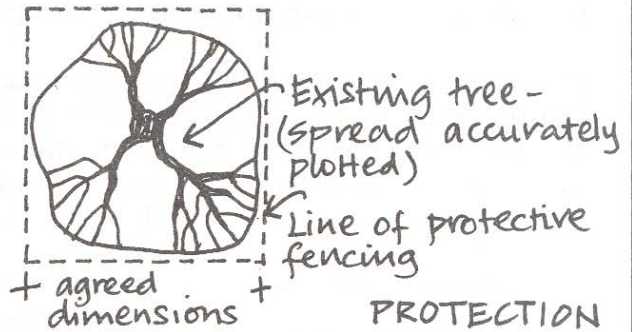
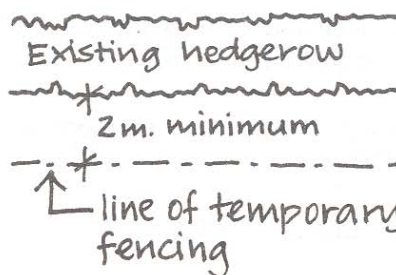
E. LANDSCAPE MASTER PLAN



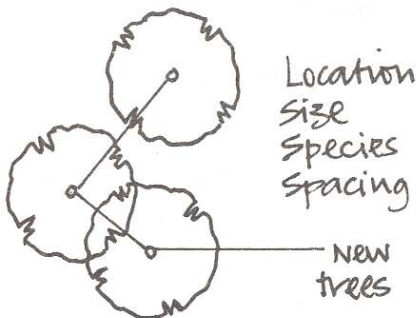
DETAIL STAGE

DRAWINGS REQUIRED - see checklist 4

EXAMPLES OF TYPES OF DETAIL REQUIRED



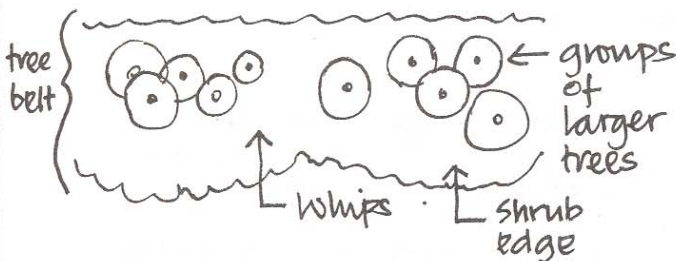
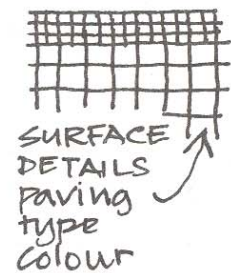
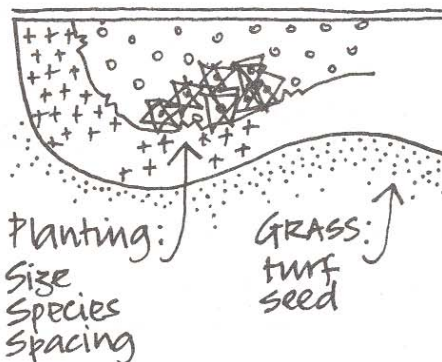
PROTECTION



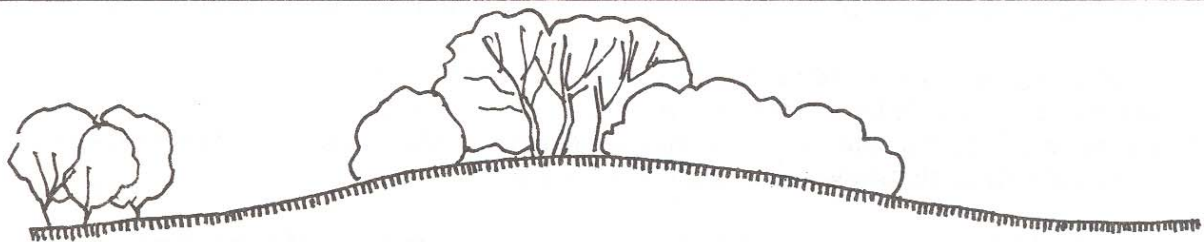
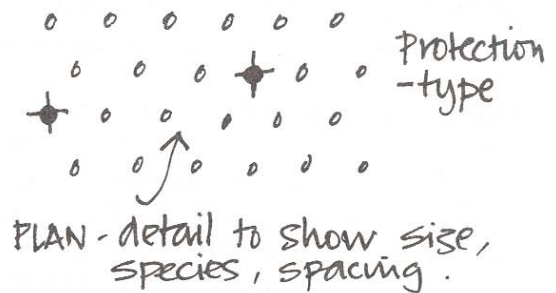
New tree planting

Boundary details:
wall / fence height, type

DETAILS
1:200



STRUCTURE PLANTING



SECTIONS - as necessary to show existing and new land forms

NATURE CONSERVATION – Principles

Nature Conservation aims to preserve wildlife habitats and maintain or increase the diversity of species which these habitats support.

It is the District Council's policy that in the design of new development, provision should be made for the retention, improvement or restoration of natural features. Opportunities for habitat creation should also be investigated where wildlife habitats do not exist.

At Site Survey Stage it is important to note not only the location of existing natural features such as ponds, woodlands, hedgerows and herb-rich grasslands, but also to be aware of their importance in providing different wildlife habitats. Different environments can provide habitats for insects, invertebrates, birds, bats and mammals and may contain species protected under the Wildlife and Countryside Act 1981;

For example:	bats	-	refer to the District Council's leaflet – <i>Bats and Planning</i> ;
	Barn owls	-	contact Barn Owl Trust (01364 653026)
	Badgers	-	refer to the District Council's leaflet – <i>Badgers and Development</i> .

Badger setts are protected under the Protection of Badgers Act 1992. Expert advice in the form of a written report will be required from the developer at Site Survey Stage.

NATURE CONSERVATION – Use of Native Species

In the majority of planting schemes associated with new development, it will be desirable to use species of trees and shrubs which are native to the area.

The aim of this type of planting is to encourage the successful establishment of British species in regions and on soils where they are indigenous. This is in order to maintain the character and composition of local and regional landscapes and their associated wildlife. These species provide natural habitats for wild creatures, insects and other organisms which perform a vital role in preserving the natural balance in the biological chain of life. For example, the native oaks support more insects than any other British tree and only the native buckthorns support the larvae of the brimstone butterfly.

When creating new woodland areas or substantial structure planting, it is best to plant the same native species that occur in nearby ancient and semi-natural woodland. It will usually be most appropriate to encourage common and already widespread species which are growing well in the area rather than rarer ones.

Ideally, all planting of native species should be restricted to stock of local origin.

LIST OF NATIVE TREES AND SHRUBS

TREES

Alder – *Alnus glutinosa*
Ash – *Fraxinus excelsior*
Aspen – *Populus tremula*
Beech – *Fagus sylvatica*
Birch *downy* – *Betula pubescens*
Birch *silver* – *Betula pendula*
Bird cherry – *Prunus padus*
Cherry (Gean) – *Prunus avium*
Grab apple – *Malus sylvestris*
Field maple – *Acer campestre*
Hornbeam – *Carpinus betulus*
Lime *small leaved* – *Tilia cordata*
Lime *large leaved* – *Tilia platyphyllos*
Mountain Ash (Rowan) – *Sorbus aucuparia*
Oak *common* – *Quercus robur*
Poplar *black* – *Populus nigra* var. *betulifolia*
Poplar *grey* – *Populus canescens*
Scots Pine – *Pinus sylvestris*
Service tree – *Sorbus torminalis*
Whitebeam – *Sorbus aria*
Willow *crack* – *Salix fragilis*
Willow *goat* – *Salix caprea*
Willow *white* – *Salix alba*
Yew – *Taxus baccata*

SMALL TREES/SHRUBS

Alder buckthorn – *Frangula alnus*
Blackthorn – *Prunus spinosa*
Box – *Buxus sempervirens*
Broom – *Cytisus scoparius*
Dogwood – *Cornus sanguinea*
Elder - *Sambucus nigra*
Field Maple – *Acer campestre*
Gorse – *Ulex europaeus*
Guelder rose – *Viburnum opulus*
Hawthorn – *Crataegus monogyna*
Hawthorn *Midland* – *Crataegus laevigata*
Hazel – *Corylus avellana*
Holly – *Ilex aquifolium*
Purging buckthorn – *Rhamnus catharticus*
Rose *dog* – *Rosa canina*
Rose *field* – *Rosa arvensis*
Spindle – *Euonymus europaeus*
Wayfaring tree – *Viburnum lantana*
Willow *goat* – *Salix caprea*
Willow *osier* – *Salix viminalis*
Willow *grey sallow* – *Salix cinerea*
Willow *purple* – *Salix purpurea*

NATURE CONSERVATION – Water Features

It is important to retain and enhance any existing water features which can provide special habitats for wildlife, as well as forming attractive elements within the new development.

These features can be in the form of rivers, streams, drainage ditches and ponds. Streams and ditches also form linear nature reserves, important not only in themselves, but by serving as vital links between habitats.

Slow moving streams, drainage ditches, ponds

These can become silted up and choked by vigorous shallow water plants such as common reed. Although it is important to keep some areas of these plants, it is better to introduce a variety of vegetation. This will be aided by having different depths of water, and areas of silt can be cleared carefully by hand or small machine, depending on the scale. This work should be carried out in winter when there is less disturbance to wildlife.

Areas which have little emergent vegetation can be enhanced by the creation of shallow water or marsh areas. This can be achieved by forming gently shelving banks in order to introduce a greater variety of plant life.

Access

Maximum value from the water feature will be gained if access to at least part of the bank can be provided. This could be with an informal path or an area of mown grass. However, it is preferable to deliberately restrict access to specific areas in order to leave the wildlife habitats undisturbed.

Ponds

Ponds, as well as being important landscape features, also contain half of Britain's rarest wetland plant species and many rare invertebrates. They also provide a habitat for all of Britain's amphibians, several varieties of water birds and many mammals.

Wildlife thrives at the edges of lakes and ponds and on badly drained land. All these wetland habitats are particularly vulnerable to the effects of drainage and alterations to the water table. It is just as easy to damage ponds by draining their surrounds as by deliberately filling them in. Water abstraction and agricultural drainage can drastically reduce the level of the water table which can then damage or destroy these features. Neglect and pollution also result in the loss of wetlands and ponds.

Since the late nineteenth century, three-quarters of Britain's ponds, totalling nearly one million, have been lost, resulting in serious damage to wetland wildlife and eroding the rural heritage.

Ponds are legally protected if they are:-

- On a site of Special Scientific Interest or National Nature Reserve.
- Known to support a protected species (such as the great crested newt or starfruit).
- Associated with an ancient monument.

It is important that their significance, both for nature conservation and amenity value in general is realised, and that the following points should be considered in order that they may be retained in the most appropriate way:-

- Importance as a landscape design feature.
- Value as wetland wildlife and plant habitat, which should be preserved and enhanced.
- Value for general amenity with the creation of access where required.
- Value as part of the local heritage, reminding us of past industrial farming practices (e.g. mill ponds, canal remains).

A landscape “buffer zone” around the pond to help integrate it into the overall design and in certain circumstances to help intercept agricultural or urban pollutants should be provided.

Protection during site operations

It is important that all existing watercourses, ponds or other aquatic features and their associated vegetation are protected by fencing from physical silting, chemical disturbance or any form of pollution during site operations.

It will be expected that all proposals for development will maintain existing ponds as a feature of the design.

Creation of new water features

Where appropriate the formation of well-designed new ponds will be encouraged. These can be of great benefit to wildlife and a valuable addition to the countryside, although the creation of new ponds cannot be seen as a simple substitute for the removal of existing ponds which already have a stock of plant and animal species accumulated over many years.

New water features can also be sensitively designed in association with their practical use for water attenuation purposes on new developments.

DESIGNING WITH PLANTS – General Principles

New planting schemes must be appropriate for their particular location.

The following should be taken into account when designing a scheme.

- Visual character region (see the District Council's publication *The Landscape of South Somerset*)
- Setting within the local landscape.
- Ecological context.
- Function of planting.

Although countryside locations and areas of new development which relate strongly to a countryside setting will require the use of native species for the major areas of planting, it will be acceptable for introduced and more ornamental species to be used where appropriate to the location and design effect required e.g. in more urban settings.

Planting should not be used as a cosmetic afterthought merely to make a new development look superficially attractive. It is not just an infill material for the oddly shaped spaces left between paths and buildings, or a screen for a building or development which should have been more appropriately sited or designed. Its real function, however, is of a positive tool in the creation of new and dynamic environments which have a sense of place and local distinctiveness. This can be achieved by recognising that planting is an architectural element with as much significance as a structure built from bricks or concrete.

The design functions planting can have are to:

- Form a structural framework to a new development.
- Give spatial enclosure by creating and linking new external spaces.
- Form focal points or frame views.
- Give shape, colour and texture to complement the built environment and to soften its hardness.
- Relate buildings to the site and to each other.

Planting also has practical functions (although these must be reconciled with its use within the overall design context).

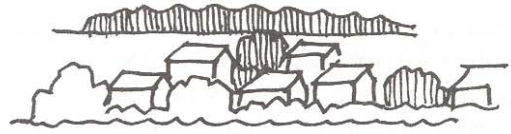
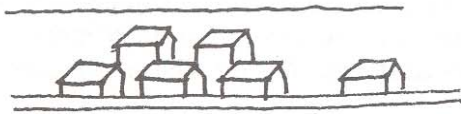
It can be used to:

- Form new habitats.
- Provide barriers, screens and create privacy.
- Define boundaries.
- Create shelter and shade.
- Help ameliorate nuisances e.g. suppress noise, screen headlights.
- Filter pollutants from the air.
- Deter crime.

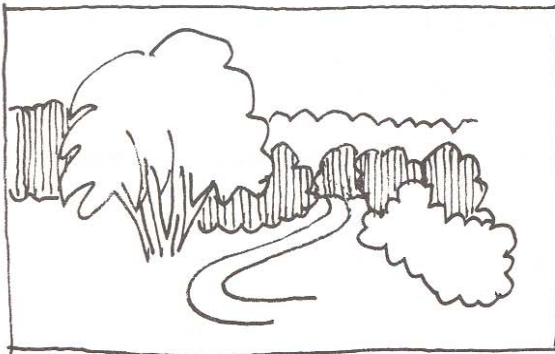
The elements which are used by a designer to create a planting scheme are trees, shrubs, ground cover (plants and grass) and climbing plants. These all have different design and practical functions which must be taken into consideration in order to reach an acceptable design solution.

DESIGNING WITH PLANTS

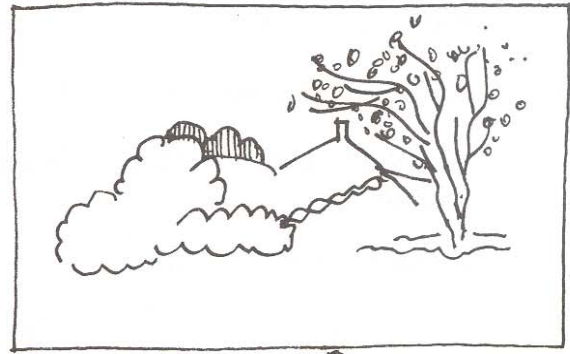
Planting can be used to:



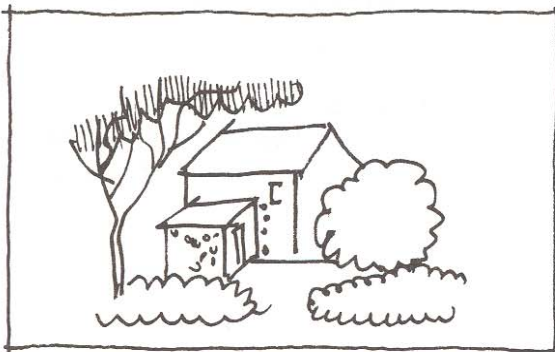
Give a structural framework to a new development.



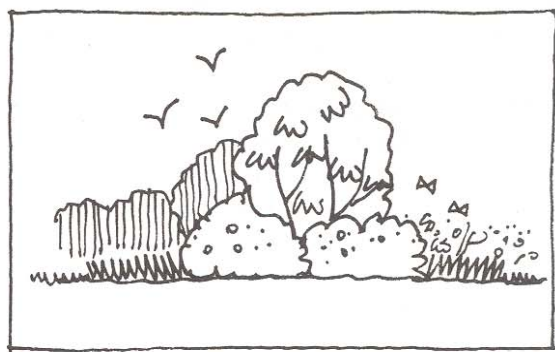
Give spatial enclosure



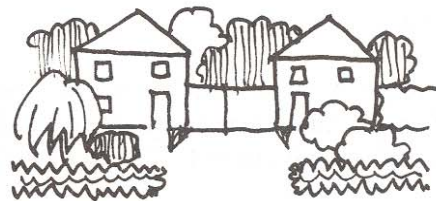
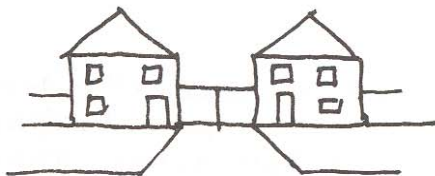
frame a view



Complement the built environment



form new habitats



Relate buildings to each other

DESIGNING WITH PLANTS – Structure Planting

This is a term used to describe significant areas of tree and shrub planting which will create a framework for a new development. It should not, however, be used merely to form a screen, but should provide a well designed and interesting visual feature to integrate the new development into its surroundings.

Uses of Structure Planting

- Extend features of the surrounding landscape into or through the new development, such as woodlands, copses and hedgerows.
- Enhance and strengthen existing natural features within the site e.g. hedgerows.
- Soften the junction between the built environment and the open countryside.
- Create an identity for a large featureless site by breaking it up into spaces of more human scale.
- Separate or define land uses or neighbourhoods within a development.
- Act as a wind barrier to give shelter and improve the micro-climate.

As a general guide the minimum width for new structure planting should be 10 metres. In a situation where the development is adjacent to open countryside a more substantial woodland buffer of 20 metres should be provided.

It should also be noted that tree planting with shrub under-storey can give protection down-wind for a distance of ten to twenty times its height and reduce wind speed by up to 50%. A mixture of deciduous and evergreen trees with smaller trees and shrubs on the windward side has most effect.

When to plant

This type of planting should, wherever possible, commence before the development, to give it an opportunity to establish and form a pleasant setting before the development is occupied. It will remain as a permanent woodland type feature to give the required screening, shelter and enclosure as well as a natural habitat to attract wildlife.

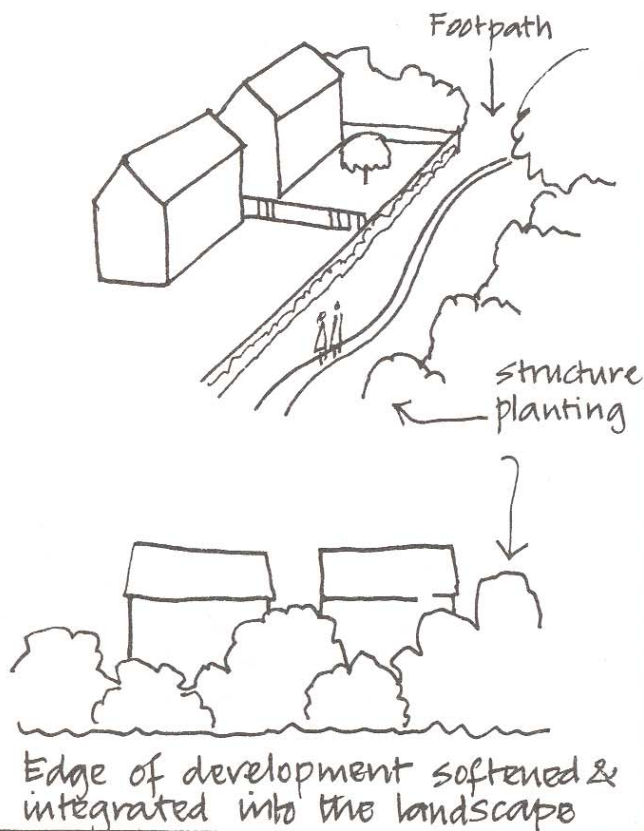
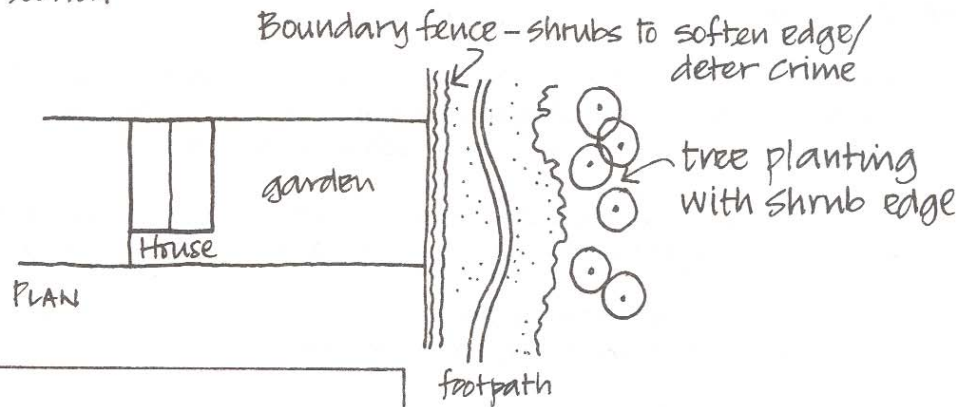
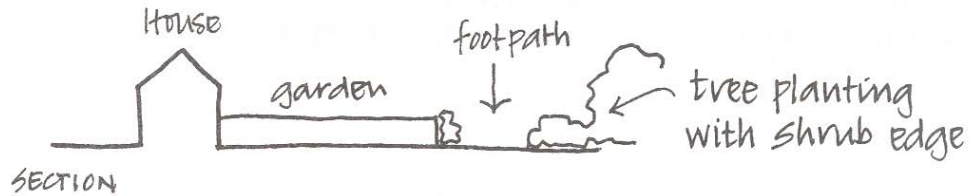
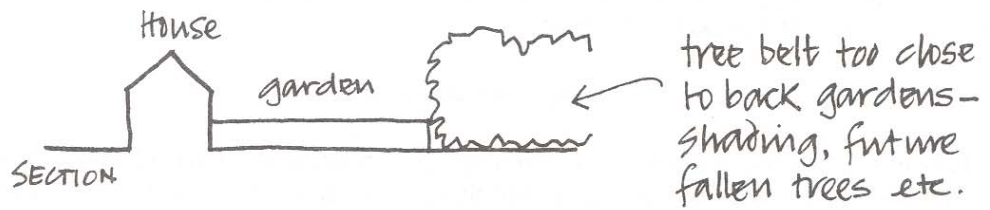
Type of plants

Traditionally, standard trees have been planted to produce an immediate effect, but the use of small native tree whips and shrubs planted at high density (approx. 1.5m spacing) will be more economical. These are cheaper, easier to handle and do not need stakes and ties.

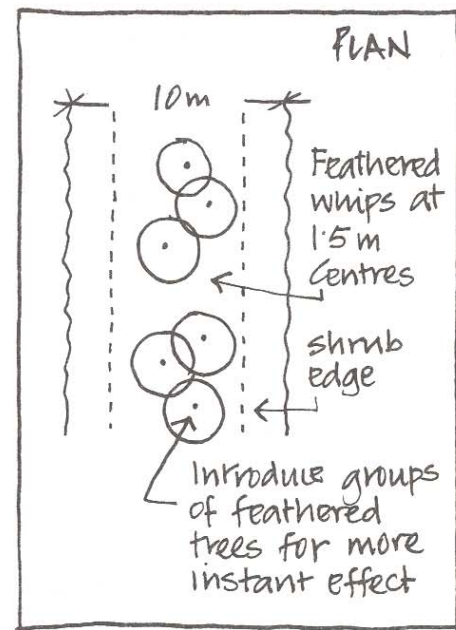
Within two to three years of planting, these smaller trees can overtake staked standards planted at the same time and can look more natural and become sturdier.

STRUCTURE PLANTING

Example of use in relation to site boundary -



PLANTING DETAIL



Other advantages are that:-

- A barrier is formed quickly and the surrounding vegetation is rapidly suppressed.
- Plants protect and force each other to grow taller than in less dense planting and a dense thicket is formed.
- More visually acceptable once established.

However, in smaller areas for prestige planting, a mixture of tree sizes can be used to include feathered and standard, which will give a more immediate effect by adding height and substance while the younger trees establish.

Visually this type of planting may be more acceptable particularly in close association with residential development.

Use of species

Tree and shrub species which are native to the area should be used. Some of the more vigorous “nurse” species may need to be removed or coppiced later to allow the naturally dominant species such as oak, ash and beech space to mature.

Species such as poplar, alder, willow and birch are fast growing and will establish well in difficult conditions. These can either be thinned later or coppiced to form bushy growth.

An under-storey shrub layer can be provided by using, for example, hawthorn, field maple, blackthorn, guelder rose, wayfaring tree, dog rose and elder.

Vigorous species are also suitable to form quick growing basic space formers, or short term structural planting, for example, a mix of poplar, sycamore and alder used as feathered trees, and golden willow and hawthorn as shrubs.

DESIGNING WITH PLANTS – Hedges

Hedges may be defined as linear communities of woody plants which form dense bushy growth and respond well to pruning to form effective barriers, screens and enclosures. They form one of the most distinctive visual features in the landscape and are an important element in its historical evolution over hundreds of years. They are also of considerable importance for wildlife habitats.

It is therefore important that whenever possible, existing hedgerows should be retained for the following reasons:

- Landscape element of historical significance.
- Give immediate character and structure to a site.
- Form good natural boundaries (will help new buildings integrate into the existing landscape).
- Give shelter.
- Value for nature conservation, particularly in the formation of wildlife corridors, where important connections between one hedge and another and to adjacent woodland are made.

New hedges should therefore be composed of native species (see list) and this will be a requirement when new hedge planting is indicated as part of an application.

In no circumstances will planting of species of quick growing evergreens (such as Lawson's cypress) be acceptable in the open countryside. However, for garden boundaries in an urban setting, suitable ornamental species may be permitted.

Species

Some well used species for hedge planting are hawthorn, blackthorn and hazel, but it is desirable to use a mixture of species to give a more interesting visual effect and add variety for wildlife. When deciding on suitable species for new hedge planting, it is advisable to use those which are already found in existing hedgerows in the area.

Native species suitable for use in new hedgerow planting

Ash – *Fraxinus excelsior*
Beech – *Fagus sylvatica*
Blackthorn – *Prunus spinosa*
Crab apple – *Malus sylvestris*
Dogwood – *Cornus sanguinea*
Dog rose – *Rosa canina*
Field maple – *Acer campestre*
Guelder rose – *Viburnum opulus*
Hawthorn – *Crataegus monogyna*
Hazel – *Corylus avellana*
Holly – *Ilex aquifolium*
Hornbeam – *Carpinus betulus*
Oak – *Quercus robur*
Privet (wild) – *Ligustrum vulgare*
Spindle – *Euonymus europaeus*
Wayfaring tree – *Viburnum lantana*

An example of a typical native hedge mix:

Hawthorn 50%
Blackthorn 15%
Hazel
Field maple
Guelder rose
Wild privet
Holly

A higher proportion of hawthorn and blackthorn should be used to form a stock-proof hedge.

Spacing: Plant in a double staggered tow with 300mm between the rows and the plants at 250mm centres. 9 plants per metre will make a stockproof hedge, 5 plants per metre for a visual barrier.

Plant Size: Plant two year transplants 450-600mm high.

Planting: The line of the hedge can be cultivated by ploughing or rotovating a strip 600mm wide by 300mm deep. Plant between November and March, ideally before December. Do not allow roots to dry out before planting.

New tree planting can be incorporated if required when the hedgerow is being planted.

Protection: If the hedge adjoins agricultural land grazed by stock, fencing must be provided far enough away to ensure that cattle do not browse the tops of the hedge plants. Fencing should also be provided against rabbits and hares.

Maintenance: The line of the new hedge must be kept weed free for 3-4 years to allow the plants to establish.

Trim and shape the hedge without cutting the leading shoots until the required length is reached (1.4m for stock-proof hedge, 1.8m for shelter hedge).

It must be decided at an early stage whether the hedge will be laid.

A well laid hedge is stock-proof and attractive and after 3-4 years forms a better habitat for birds than a trimmed hedge.

- If to be laid: The Plants will need to be sided up until the leaders have reached pleaching height (2.5-3.5m). Usually laid after 8-15 years.
- If not laid: All the shoots should be trimmed from the first year to produce dense bush growth.

Management of existing hedges

When existing hedges are to be incorporated into a scheme, notes must be made at the stage of the survey drawing describing their type, condition, species component, age and proposed future management. For example, a hedge may be on an embankment to mark an important boundary, over-mature and gappy, or have been well managed.

Suggested management measures

Remove poor hedging shrubs such as elder. Decide on timing and nature of management e.g. trimming to 'A' shape and laying. Tag suitable saplings or shoots to grow up to form trees if required.

Allow hedge to grow tall if required for screening effect.

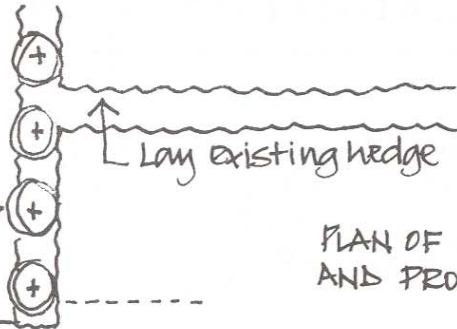
Alternate year trimming will help protect nesting sites and food sources for wildlife. Do not cut hedges in nesting season (April – July), late winter preferred.

Plant up gaps. Leave saplings to grow into hedgerow trees.

HEDGES

Include notes on : age
Condition
Species

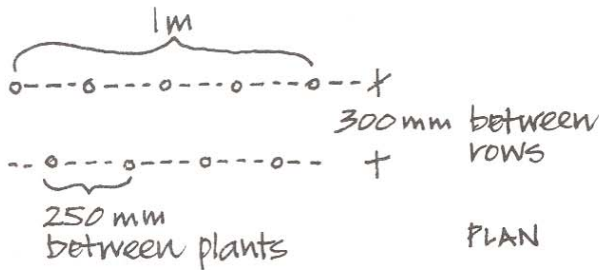
Allow saplings
to grow up



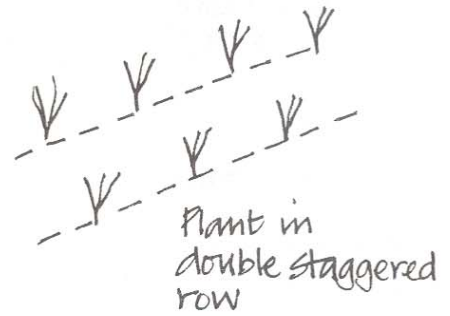
PLAN OF EXISTING
AND PROPOSED

↑ New hedge required on boundary

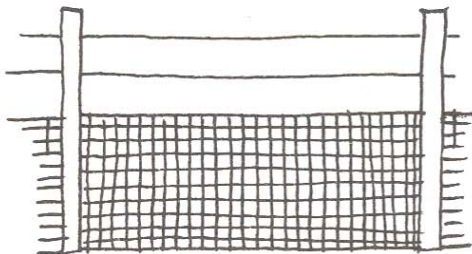
SURVEY



9 plants per metre give stockproof hedge
5 plants per metre for a visual barrier



PLANTING



Rabbit / stock proof fencing

600 mm high - rabbits
750 mm high - hares
1.2 m high - roe deer



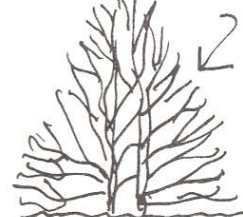
Individual shelters
may be used

PROTECTION

Hedge before laying



Hedge trimmed
to 'A' shape



MANAGEMENT

DESIGNING WITH PLANTS – Trees

Most tree planting schemes should consist of deciduous trees suitable for the location. Conifers may be used to provide a contrast in form, texture and colour, but should be used with discretion. Extensive coniferous planting can look out of place in the landscape. Screens composed of lines of conifers, for example, Lawsons' cypress, are more likely to draw attention to the building to be screened and form alien features in the landscape.

In a situation where it is known that screening will be required, land must be made available for a wide belt of tree and shrub planting to give adequate screening qualities, but in a more natural manner. In rural situations, this type of planting should be composed of native species. In submitted planting schemes, use of quick growing cypress species to form screens will not be permitted.

Choice of Species: design aspects

When trees are used as a design feature in relation to the built environment, the following aspects should be taken into consideration.

- **Height and Shape**

May be used to reflect or contrast with the architectural form of a building. When planting groups of trees, a mix of different heights and shapes will give more interest.

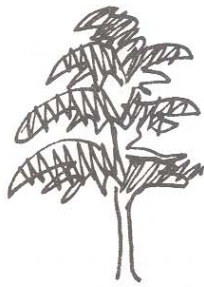
- **Foliage**

Foliage varies with its density, texture and colour. Dense leaf cover will be more suitable for screening purposes, whereas a more open textured type of tree could be used nearer buildings. Trees vary at the time they come into leaf, for example birch and cherry give leaf cover early in the year whereas oak and ash come into leaf later.

- **Colour**

Leaf colour is an important design feature with a range of greens to consider ranging from the highlight feature of the yellow leaved "false acacia" to the grey greens of the whitebeams. Seasonal tints are attractive features and a planting scheme should contain trees to give interest throughout the year. Bark, flowers and berries are added aspects of associated tree colour.

TREES



Pine



Weeping willow



Birch



Lime

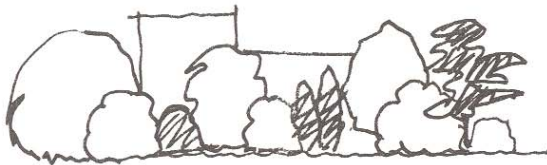


Holly

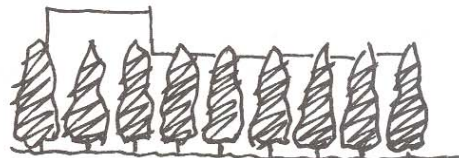


Rowan

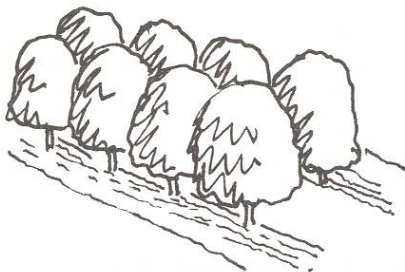
Examples of typical tree forms



Enhance buildings by softening harsh lines with a variety of trees



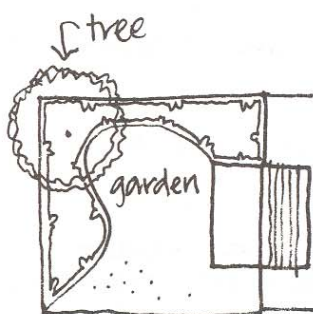
Avoid monotonous 'screens' of conifers



Use trees formally - street trees



Informal groups - open spaces



PLAN

small sapling



can become too large and close to building when mature



A single tree can enhance a small garden, but a suitable species for the site must be chosen

Choice of Species: practical aspects

The following practical aspects associated with new tree planting should also be taken into consideration when preparing a design. These restrictions however, should not result in a decision against planting trees, but rather lead to a careful choice of species, which will be suitable for the site where these limitations may apply.

- **Siting of trees in relation to buildings**
Consider type of tree in relation to its height and spread when mature and effect of various species on foundations (consult the District Council's Building Control Surveyor in the appropriate area team).
- **Location of Services**
Both underground and overhead.
- **Archaeological remains**
Proximity to.
- **Road Safety**
Visibility Splays, road signs
- **Nuisance**
Fruiting or berrying trees in wrong locations (e.g. horse chestnuts in car parks). Loss of light if planted too near windows. Dense shading by large trees in private gardens.

Street Trees

Distributor, transitional and collector roads often have poor or non-existent landscaping which contributes to a low level of satisfaction with the general appearance of many housing estates.

Allowance should be made for planting trees and shrubs along such roads to soften their appearance and give an immediate identity to the area.

There are however, requirements which must be taken into consideration in relation to such planting.

- Visibility requirements of and for drivers and pedestrians must not be impaired.
- Narrow strips of planting (1.5m minimum) should be avoided adjacent to carriageways or footways.
- Service strips and verges which are within visibility splays may be planted but usually with species which will not exceed 300mm in height.
- Section 141 of Highways Act 1980 should be adhered to. This states that no tree or shrub should be planted in a made-up carriageway or within 4.5m of the centre line of a made-up carriageway.

(Consult Design Guidance Notes – “Estate Roads in Somerset”, Somerset County Council).

DESIGNING WITH PLANTS – Ornamental Trees (example list)

In developments relating strongly to a countryside setting or adjoining open countryside, native tree species only should be used – see List of Native Trees and Shrubs.

Large Trees

(These trees in suitable conditions will reach on average over 10 metres in 20 years and are likely to continue growing).

Acer platanoides – Norway maple

Acer pseudoplatanus – sycamore (fast growing – acceptable as part of a native screen in certain situations)

Aesculus hippocastanum – horse chestnut (use non-fruiting variety in public places)

Ailanthus Altissima – Tree Of Heaven (fast growing)

Alnus varieties e.g. cordata – Italian alder

Castanea sativa – sweet chestnut (fast growing)

Juglans regia – walnut

Nothofagus – southern beech (fast growing)

Platanus acerifolia – London plane

Quercus rubra – red oak

Robinia pseudoacacia – false acacia

Tilia varieties e.g. euchlora – lime (does not produce “sticky” leaves)

Medium Trees

(Average ultimate height 7 metres. General use – housing, car parks etc).

Acer varieties e.g. snakebark maples

Betula varieties e.g. ermanii (white bark)

Fraxinus varieties e.g. ornus – manna ash

Robinia pseudoacacia ‘Frisia’ – golden acacia

Sorbus intermedia – Swedish whitebeam

Sorbus aucuparia varieties e.g. Cashmireana, Joseph Rock

Small Trees

(Average height up to 5 metres. Suitable for private gardens and confined spaces).

Amelanchier lamarckii – snowy Mesipilus

Crataegus varieties e.g. ‘Coccinea Plena’ – scarlet flowered hawthorn

Cercis siliquastrum – Judas tree

Prunus varieties e.g. Subhirtella autumnalis – autumn flowering cherry

Fruit trees (orchard planting or in private gardens)

Small Weeping Trees – 3 metres high

Cotoneaster hybridus ‘Pendulus’ – red berries in autumn

Pyrus salicifolia ‘Pendula’ – willow-leaved pear

Salix caprea ‘Pendula’ – Kilmarnock willow

DESIGNING WITH PLANTS – Shrubs

Shrub planting should be considered for its overall architectural significance rather than its horticultural interest, although a good planting scheme will be able to combine those qualities.

Shrubs are more effective than trees for screening ground level features and will not cause future problems by growing too tall for their situation as may happen with trees.

Their use should be considered in place of areas of grass under trees which are difficult to maintain. Shrubs should always be planted in groups or as a feature in relation to other shrubs rather than dotted in grass areas.

- **Choice of Plants:**
Plants should be chosen that will give all year round interest.
- **Consider whether the shrubs are:**
Evergreen or deciduous
- **Foliage:**
Over all effect for mass group planting, attractiveness as a specimen/feature.
Contrasts in leaf form, texture, colour, growth pattern.
Autumn colour/flowers/berries.
- **Shape and size:**
Architectural qualities

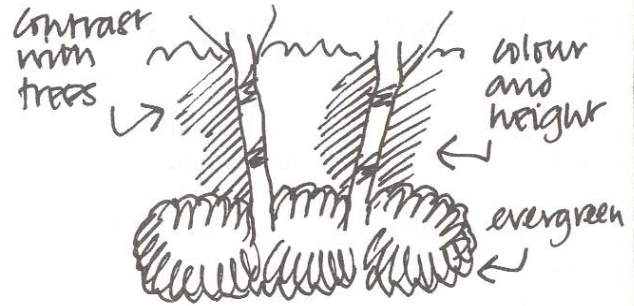
Plants should be chosen to suit the situation in relation to soil type, growth rate, ultimate size and maintenance requirements.

Practical uses of Shrubs Planting

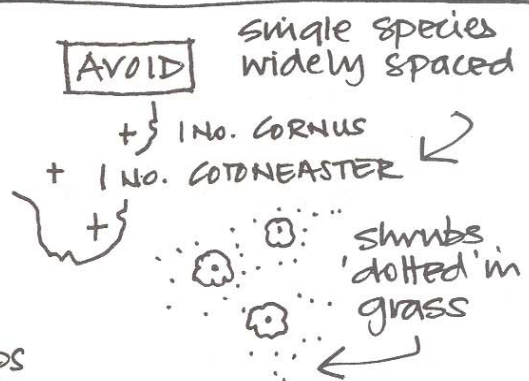
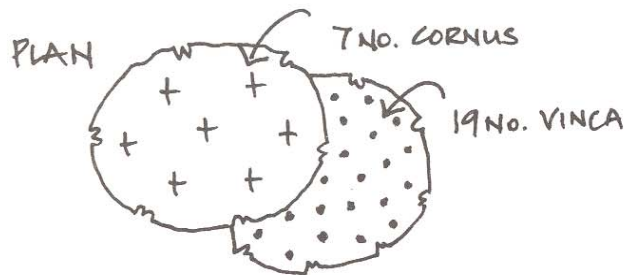
- Dense visual screening (above eye level) car parks, boundaries.
- Softening harsh building lines – fences, walls.
- Physical barrier to increase security and restrict access.
- Encourage wildlife.

The use of native species (see “Nature Conservation”) will have greater value for habitat creation, and in rural locations, this type of planting will be required. However, in association with buildings and in more urban environments, it will be acceptable to use a wider variety including ornamental and introduced species for their architectural and design qualities.

SHRUBS

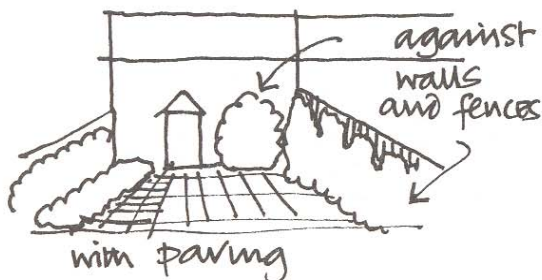
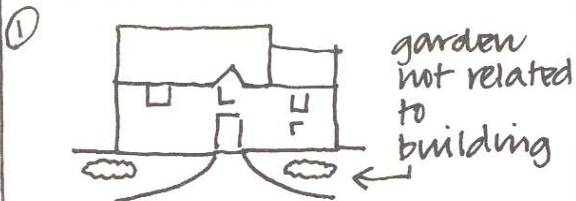


Design interesting shrub groups by contrasting shape, colour, height and texture

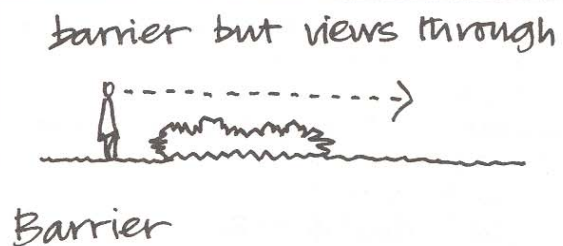
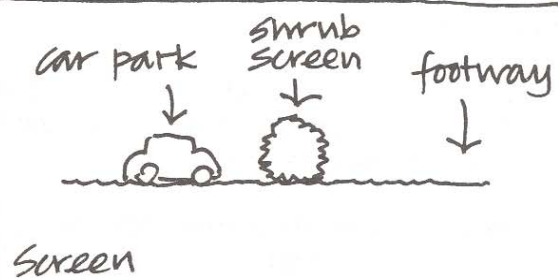
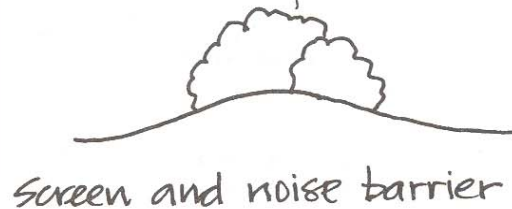


To achieve this plant in groups

Use shrubs to relate to the built environment



Practical uses of shrubs -



DESIGNING WITH PLANS – Ornamental Shrubs (example list)

Some examples of suitable species which have interesting foliage, flowers and fruit and are tolerant of most conditions.

Below eye level – up to 1.5m high

Plant in groups of three or more at 3/m² for best effect.

Berberis thunbergii
Chaenomeles japonica – quince
Cotoneaster conspicuous decorus
Cytisus praecox – broom
Hebe varieties – veronica
Hypericum ‘Hidcote’
Lonicera pileata
Mahonia aquifolium
Potentilla
Prunus laurocerasus ‘Otto Luyken’
Senecio ‘Sunshine’
Spirea bumalda
Rosa rugosa varieties

Above eye level – 2-3m high

Plant in groups at 2/m²

Amelanchier lamarckii
Aucuba japonica
Buddleia davidii
Cornus alba varieties – ornamental dogwoods
Cotoneaster e.g. lacteus, simonsii
Elaeagnus ebbingei
Escallonia
Hippophae rhamnoides – sea buckthorn
Prunus laurocerasus – laurel
Prunus lusitanica – Portugal laurel
Pyracantha
Rhus typhina
Rubus cockburnianus – white-stemmed bramble
Sambucus racemosa ‘Plumosa Aurea’ – golden elder
Viburnum rhytidophyllum

Species suitable for ornamental hedges in urban areas

(For countryside situations see “Hedges – Native Species”)

Berberis darwinii (forms impenetrable barrier)
Cotoneaster lacteus
Escallonia
Ligustrum ovalifolium ‘Aureum’ – privet
Prunus cistena
Prunus laurocerasus
Symphoricarpos ‘Magic Berry’

DESIGNING WITH PLANTS – Ground Cover

Grass

Grass is a hard-wearing ground cover which renews itself and is the only vegetation which can be continually walked on.

Its use should be considered as a positive addition to the design and not merely to fill in spaces which could be more suitably treated in a different way. Areas of grass for no specific purpose can produce featureless landscapes which are also expensive to maintain.

Areas of mown grass should be used to:

- Complement buildings.
- Provide amenity areas.
- Provide private gardens.

Areas of unmown grass can be used in rural or semi-rural situations depending on the function required. Areas of unmown grass supporting wildflowers give another design aspect to the use of grass and also save on maintenance costs.

In areas of high public use it is advisable to use turf rather than seed.

- Looks finished as soon as laid.
- Ready for use shortly after laying
- Work can be carried out any time of year.

Although seeding can be successful, the site preparation work must be carried out to a high standard, the area kept weedfree, a suitable seed mix used and the area fenced off until established.

Ground Cover Plants

In certain situations, the use of ground cover plants may be more suitable than grass. These form a low-growing carpet which will, when established, smother any other new growths. However, in public places, large areas of ground cover plants which are likely to be trodden over before establishment, should be avoided.

- **Design Use**

Use in a mass planting to form an attractive and distinctive feature.

Contrasts in colour and texture for groups of specimen shrubs and trees planted within it.

- **Practical Functions of Ground Cover Plants**

Shade tolerant

Fast growing, vigorous and spreads without help.

Shallow rooting, does not hinder growth of trees and shrubs when underplanted, unlike grass.

Can be controlled easily.

Good for establishing on banks rather than grass.

Maintenance free once established.

DESIGNING WITH PLANTS – Ground Cover Plants (examples list)

Examples of suitable species which will form a dense carpet of ground cover once established. Most will not grow taller than 500mm and are evergreen. Plant closely at 5/m² in large blocks of a single species for best effect.

Berberis candidula
 Ceanothus thrysiflorus repens – Creeping blue blossom
 Cotoneaster dammeri and horizontalis
 Calluna varieties – heathers
 Erica varieties – heathers
 Genista hispanica – Spanish gorse
 Hedera varieties – ivies e.g. canariensis, hibernica
 Hypericum calycinum – Rose of Sharon
 Juniperus horizontalis varieties – prostrate juniper
 Lavandula spica ‘Hidcote’ – lavender
 Lonicera pileata
 Rubus tricolor – ornamental bramble
 Stephanandra incisa ‘crispa’
 Vinca major and minor – periwinkle
 Rose varieties (prostrate roses forming mounds and thickets) e.g. nitida and nozomi

Herbaceous perennials suitable for ground cover (in more intimate areas)

Ajuga reptans ‘Atropurpurea’
 Bergenia cordifolia
 Festuca glauca
 Lamium galeobdolon

Climbing Plants

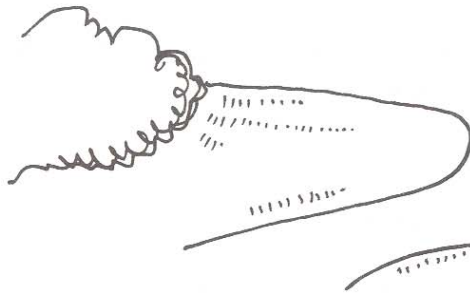
The use of climbing plants should be considered in relation to enhancing the appearance of boundaries, walls and fences. They can give considerable visual impact within a small space and at a low cost. Although they can protect and insulate sound modern masonry, use of a self-clinging species such as ivy should be avoided on older walls.

Examples of types available:

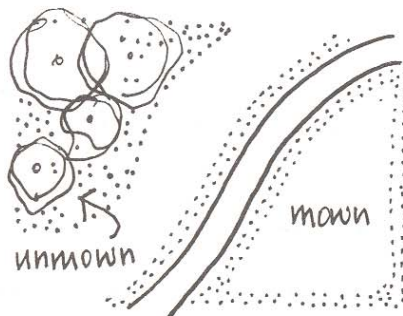
Self-clinging Will cling to walls and fences Plant 300mm away from the structure to avoid drying out of roots. Hedera helix varieties – ivies Hydrangea petiolaris – climbing hydrangea Parthenocissus varieties – Virginia Creeper Euonymus fortunei – (evergreen)	Twining Need support – trellis or wires Clematis varieties e.g. Montana Lonicera varieties – honeysuckle Polygonum baldschuanicum Rosa – climbing rose varieties Vitis cognetiae - vine
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GROUND COVER

1. Grass

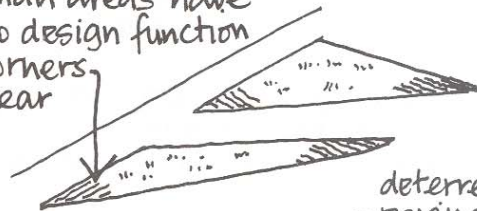


Use to form attractive well-designed amenity area

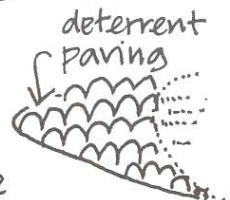


consider leaving areas of unmown grass

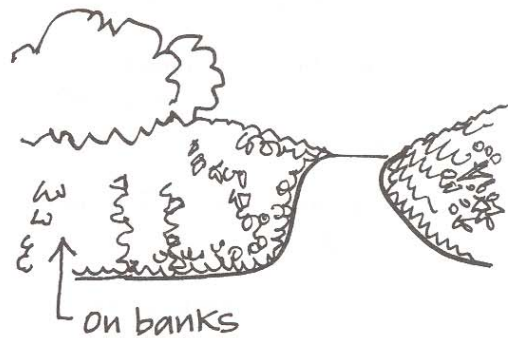
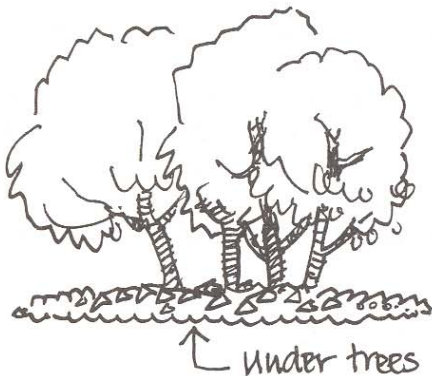
Small areas have
No design function
corners
wear



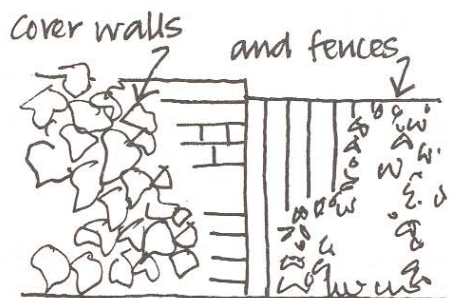
Avoid small angular
areas where paving
would be more suitable



2. Ground cover plants



CLIMBING PLANTS



DESIGNING TO DETER CRIME

An awareness of the need to take sensible measures to help reduce crime will be part of the overall philosophy in the design of new developments.

The following points should be considered in relation to this:

- Grouping buildings in small clusters around a central area.
- Use of boundaries – real or suggested. Planting or changes in material can help indicate a feeling of territory within a community unit.
- Central siting of public open space/play areas, in order for them to be overlooked by the surrounding houses.
- Provision of wide, well lit paths which are not isolated from other activities and do not provide unrestricted access to rear of premises. They should not be enclosed by walls or areas of dense high level shrub planting.
- Design rear gardens backing on to each other where possible.

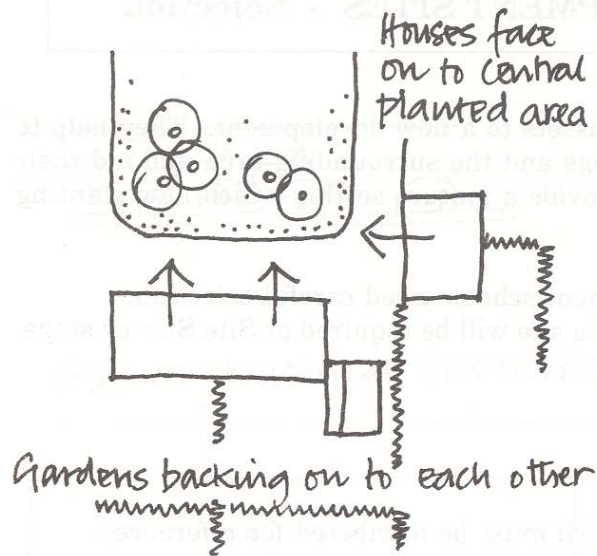
Planting should be used sensitively with this philosophy in mind. Its use as a deterrent to crime should be balanced with its appearance and amenity value. Often, both the landscape designer and public want well planted, enclosed naturalistic landscapes, whereas open environments with more visibility could be considered safer. However, these issues can be reconciled by the use of thoughtful detailing.

Some basic principles can be adhered to in relation to the choice of plant material:

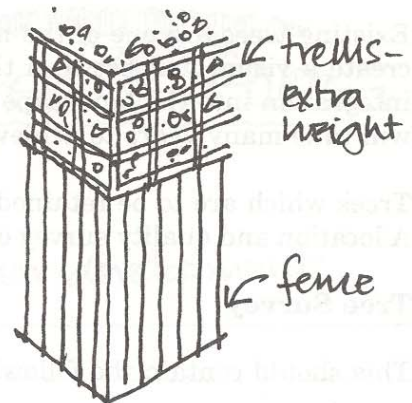
- Dense planting should not hinder opportunities for natural surveillance and must avoid the creation of potential hiding places especially adjacent to a footpath or dwelling.
- Use ground cover and below eye-level shrub planting in semi-public areas and open plan frontages.
- Use hedges which can form impenetrable boundaries.
- Avoid densely shrubbed areas which will eventually form thickets in areas of open space. Use, instead, areas of low planting with specimen trees or shrubs as focal points. Groups of trees, which can be seen through, can be used in open grass areas.
- Appreciate the function of the plant material itself. Dense prickly species such as *rosa rugosa* varieties, *berberis*, hawthorn and blackthorn have obvious deterrent features once established.

Although of course, good design alone cannot solve the problem of crime, when co-ordinated with other measures its contribution can be significant.

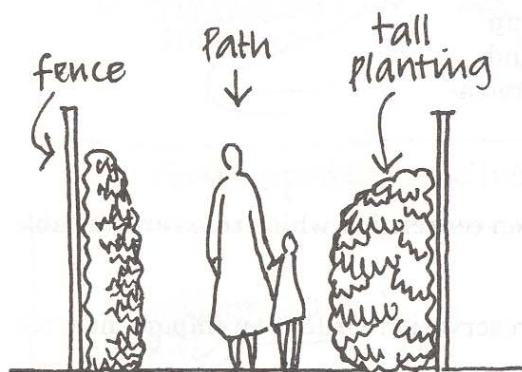
DESIGNING TO DETER CRIME



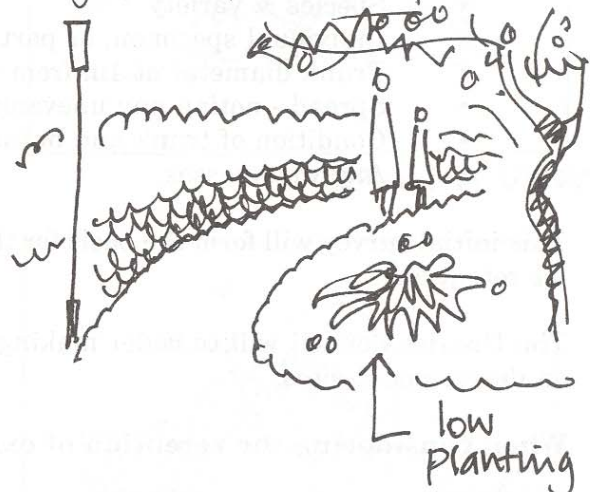
Fencing with trellis to provide secure boundary



Avoid - enclosed paths



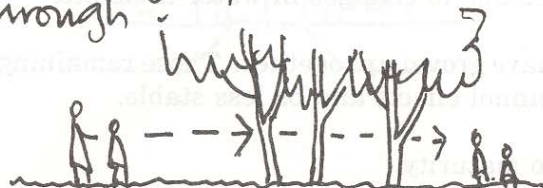
Design wide, well-lit paths



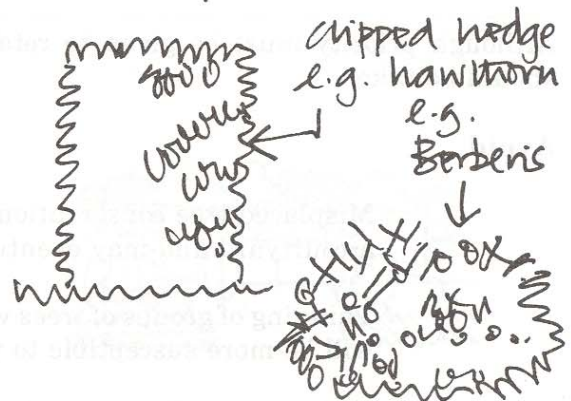
Avoid - "thicket-type" planting in open space



Trees in groups allow vision through



Hedges and spiny plants make impenetrable barriers



EXISTING TREES ON DEVELOPMENT SITES – Selection

Existing trees are one of the most valuable assets to a new development. They help to create a visual link between the new buildings and the surrounding area and aid their integration into the landscape. They also provide a mature setting which new planting will take many years to achieve.

Trees which are to be retained in a development scheme need careful selection. A location and quality survey of all trees on the site will be required at Site Survey stage.

Tree Survey

This should contain the following:

A plan showing the position of each tree (which must be numbered for reference).

An accompanying report noting the following:

- Species & variety
- Individual specimen, or part of a group
- Trunk diameter at 1m from the ground
- Spread – noting any unevenness in crown
- Condition of trunk and branches
- Any weaknesses

This initial survey will form the basis for the decision concerning which trees are suitable for retention.

The District Council will consider making Tree Preservation Orders on important trees on development sites.

When considering the retention of existing trees take account of:

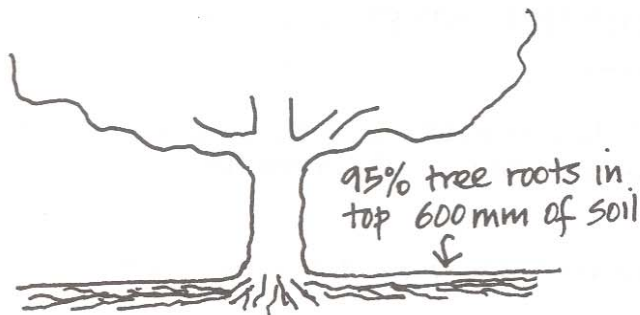
- Finished ground levels
- Routing of services and drains
- Proximity to buildings, roads and footpaths
- Changes in climatic conditions of the development

Although priority must be given to retaining good quality trees a balanced approach should be taken.

Avoid

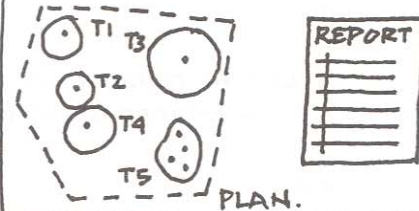
- Misplaced tree conservation when a large over-mature tree is “trapped” in a courtyard and may eventually die due to changes in water-table etc.
- Thinning of groups of trees which have grown up together. Those remaining will be more susceptible to wind tunnel effects and be less stable.
- Lack of space for tree to develop to maturity.

EXISTING TREES ON DEVELOPMENT SITES

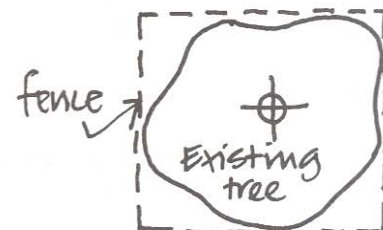
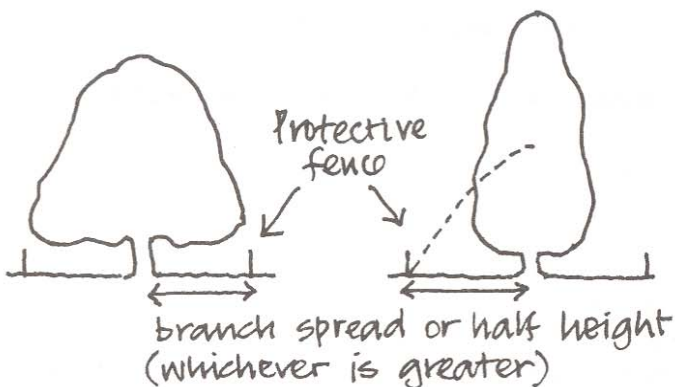


TREE SURVEY

Provide plan and report showing details of each existing tree plus recommendations



Agreed line of protective fencing to be shown on MASTER PLAN



In special circumstances fencing at least 2.4 m. high should be erected

see B.S. 5837 1991

PROTECTIVE FENCING

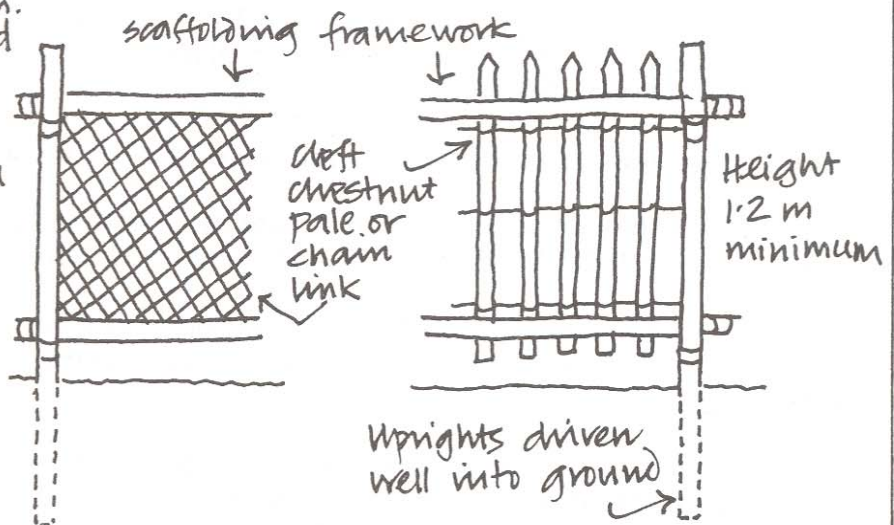
No operations within protected area

Exg. tree

No stacked materials

No fires (20m min.)

fence line
PLAN



TREES IN RELATION TO CONSTRUCTION



EXISTING TREES ON DEVELOPMENT SITES – Protection

All too often, time and trouble is taken with the choice of trees which are to remain, but little is done to protect them on site or consider building works in relation to damaging their roots etc.

Trees which are to remain on development sites must be suitably protected throughout the development period.

Remember that:

- 95% of tree roots are to be found in the surface 600mm of soil.
- The root spread of a tree often exceeds its crown spread by a considerable distance.

Root damage leading to the eventual death of a tree can easily occur.

Avoid:

- Compaction of the ground in the root area.
- Raising soil levels over the root area
- Direct toxicity through the soil by, for example, petrol spillage or lime from cement.
- Stripping of topsoil from the area of the tree roots
- Excavation work in rooting area even for driveways, paths and kerbs
- Damage by heat to the whole tree. Fires must not be lit in a position where the flames could extend to within 5m of foliage branches or trunk (general guide – no fires within 20m of tree).

Temporary fencing must be erected around all trees which are to remain.

Guidance on the minimum distance around the tree which should be left undisturbed is given in Table 1, BS 5837 1991 “Trees in Relation to Construction”.

However, a general guide is that fencing may be erected below the outermost limit of the branch spread, or at a distance equal to half the height of the tree (whichever is the greater).

Plans indicating the agreed lines of protective fencing around trees to be retained must be issued prior to commencement of work on site.

Fencing must be erected before any materials or machinery are brought onto the site.

Once erected, fences should not be removed or their positions altered. No work/storage of material etc should be carried out within the fenced area.

Type of fencing

Fencing should be at least 1.2m high comprising a vertical and horizontal framework of scaffolding supporting either cleft chestnut pale fencing (BS 1722 Part 4) or chain link fencing BS 1722 Part 1).

EXISTING TREES ON DEVELOPMENT SITES – Construction

Services

Ideally there should be no open trench work within the ground area under the branch spread of a tree. However, where this is unavoidable the following guides to good practice should be noted:

Keep services together where possible – avoiding placing them on more than one side of a tree.

No roots over 25mm in diameter should be severed.

If roots over 50mm diameter are likely to be encountered, particular care should be taken to avoid damage. Excavations should be undertaken by hand avoiding damage to the bark. The roots should then be surrounded with sharp sand before replacing soil or other material in the vicinity.

Consultation with statutory authorities are advised and detailed plans showing the routing of all services in the proximity of trees must be produced. These should also show the access space needed for excavating and laying the service.

Roads and driveways

It should be noted that the formation of the sub-grade for roads and driveways will destroy most of the tree's surface roots if located under its spread. Lowering the soil level will also sever roots and skimming the soil surface to establish new paving at the former ground level can also cause damage.

Excavation for kerbs, edgings and their associated foundations and haunchings can also damage roots.

Ideally these forms of construction should be kept away from the spread of a tree, or if it is unavoidable then new paving should be established above the former ground level using a granular fill and an alternative, less damaging form of construction considered for kerbs and edgings.

Walls or similar structures

(Detailed advice on foundations in relation to existing trees should be obtained from the Council's Building Control Surveyor for the appropriate area).

If it is necessary to build a wall or similar structure over a root greater than 50mm diameter, provision should be made for its future growth. The roots should be surrounded with uncompacted sharp sand and an adequately reinforced lintel or raft laid over the surface.

Hard surface treatments around existing trees

Paving slabs should be laid dry jointed on a sharp sand foundation to allow air and moisture to penetrate the roots. Bricks or blocks are suitable when laid in a similar way. Provision should be made for the growth of the base of the trunk by leaving an unpaved strip around its base. Washed gravel retains its porosity and is a useful surface to accommodate changes in level or any irregular shaped area around the base of the trunk. Avoid the use of gravels with a high fines content such as binding gravels or hoggin which become impermeable when consolidated.

SITE PREPARATION – Introduction

However much thought has gone into the production of a good design, money and time will have been wasted if the scheme is not successful on the ground.

All too often, trees and shrubs die, due not only to poor maintenance and aftercare, but also inadequate site preparation, such as planting areas not properly cleared of building debris and insufficient depths of, or poor quality, topsoil.

Often, the contract will include for existing topsoil to be stripped and stacked on site for re-use. This can be contaminated by rubbish and nutrients lost through stock-piling for too long.

It is expected that on all new development sites the following standards will apply for site preparation in order that the planting has the best chance for survival.

SITE PREPARATION – Topsoil

Topsoil is living material and requires circulation of air and water within it to retain its quality. It is generally dark in colour, containing humus and roots, mineral particles, bacteria and micro-organisms. It varies in depth between a few mm and .5m, 150mm-200mm is most common.

Stripping and storage of Topsoil

Before removing topsoil, its depth must be ascertained by digging holes as this can vary. Very stony soil or one full of roots may not be suitable for later re-use and should be taken off site.

When existing topsoil is suitable for re-use for landscape, works, care must be taken in its stripping and storage. It should be stripped evenly without digging into or disturbing the subsoil.

The topsoil may be stored in shallow mounds for later re-use, which should not be:

- More than 2 metres high to prevent lower soil from becoming sour
- Compacted (vehicles or machinery)
- Polluted with chemicals e.g. cement, oil and fuel
- Covered or sheeted for more than a few days
- Handled (only moved in dry weather if really necessary)
- Allowed to grow weed cover (cut and spray with approved herbicides as necessary).

Imported Topsoil

This should conform to BS 3882. As a general guide it should be clean, uncontaminated friable soil of medium texture with adequate humus content, obtained from previously cultivated land from an approved source with a neutral to slightly acid pH value. It should be free from unrotted vegetable material, brick and concrete or any material other than soil and have only a maximum 20% content (by dry weight) of stones not exceeding 50mm.

A soil sample should be requested and inspected before bulk deliveries are taken and any soil spread on site.

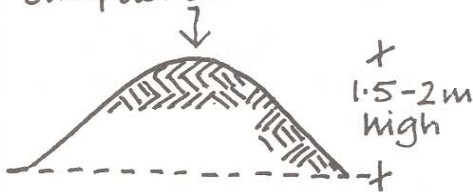
SITE PREPARATION

TOPSOIL

Existing soil profile

TOPSOIL 150-200mm deep } store for re-use
SUBSOIL

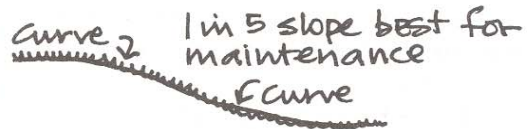
store in shallow mounds free from contamination and compaction



MOUNDING

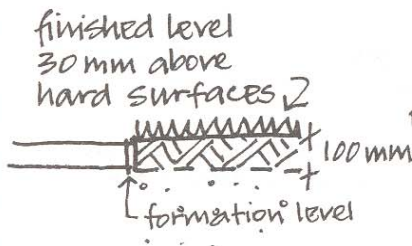


AVOID
unrelated banks

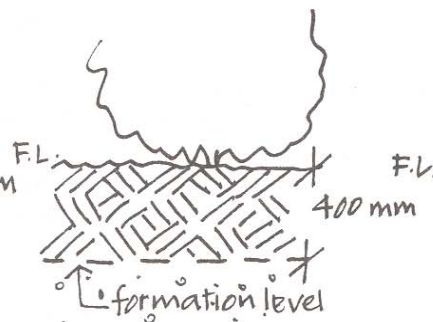


FORMATION LEVELS

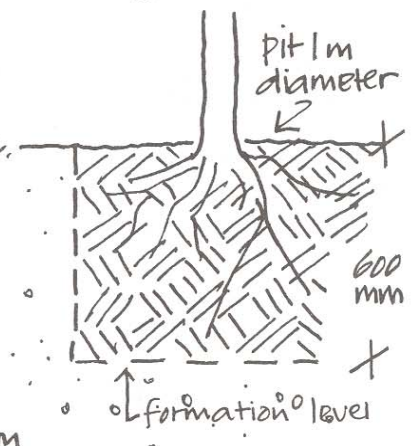
Grass areas



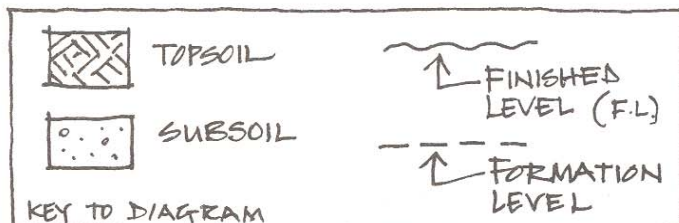
Shrub areas



Trees in made-up ground



- Subsoil must be cleared through for a depth of 300mm below formation level
 - remove all stone and rubble exceeding 75mm
 - relieve any compaction



FILLED AREAS

topsoil
subsoil (depths as required above)
fill

1m depth total soil cover over filled area

DIAGRAM SHOWING FORMATION LEVELS PLUS MINIMUM DEPTHS OF TOPSOIL FOR DIFFERENT TYPES OF PLANTING

SITE PREPARATION – Formation Levels

(Reference should be made to BS 4428 1989 Section 4 “Code of Practice for General Landscape Operations”)

Subsoil

This lies beneath the topsoil. It is generally free of roots and humus and is poor in its ability to support plant growth. If stripped it must be kept separate from topsoil.

Care must be taken not to over compact the subsoil or produce a “hard pan” which prevents water percolation up and down through its surface. If necessary, the surface must be broken up to assist drainage before the topsoil is placed over it.

Subsoil must be kept free from contamination by all chemicals, hardcore, stone and other rubbish.

Site preparation prior to planting

All areas to be planted will need to be reduced or filled ready to receive the specified depth of topsoil (see diagram for general guide).

Good clean subsoil will be required for a further depth of 300mm below the formation level, whether existing subsoil as found on site or imported.

Subsoil cultivation should take place to a depth of 300mm to relieve any compaction and all stone and rubble exceeding 75mm in any direction should be removed.

Areas for planting should be filled with topsoil, allowing for settlement, so that the finished level is just below kerb and paving levels for shrub areas, and level for grass areas, to assist maintenance.

Where planting beds are to be prepared in car parks, near to buildings etc., it is also important to take care that beds have:

- Free drainage
- Kerb haunching kept to a minimum
- Finished soil level not above DPC.
- No shallow services present.

SITE PREPARATION – Filling and Mounding

Filling

The opportunity should be taken at the beginning of major grading to dispose of unwanted inorganic material at the bottom of tipping areas after the topsoil has been removed. However, a clear distance of 1 metre must be made available on top of it after filling for a covering of subsoil and topsoil (see “Formation Levels”).

Exclude:

Materials that will leave cavities after rotting, such as grass, roots and timber.

- Metal containers should be flattened and large objects cut up.
- Stones, slabs, rocks and hardcore should be placed so that voids are not formed.
- (Specification for Highways: Department of Transport, 1986, describes unsuitable material for fill).

Sloping sides of cuttings and embankments

The stability of banks and slopes depends on many factors and should be fully investigated following the recommendations given in BS 5930 and BS 6031.

Artificial mounding

Although in certain circumstances suitable waste materials from site may be incorporated into mounding within the landscape scheme, this should not be to the detriment of good landscape practice and should form part of the overall design solution and not an un-related “bank”. Any proposed mounding must be shown on the Landscape Master Plan by contours and spot levels. Mounded areas will not be acceptable, particularly in rural situations, where they do not form part of an integrated landscape design which relates to the landscape as a whole.

If mounding can be used to form a positive design feature it must integrate into the overall landscape with gentle curves to facilitate mowing (see diagram).

Slopes

Maximum gradients for hand maintenance 1 in 1.5 (33°).

The top and toe of banks should be rounded. Slopes of 1 in 2, not suitable for grass, may be considered for planting. However, planting should not be used as a cheaper alternative to providing a proper retaining wall or other more suitable treatment. Wash down of soil should be considered where a steep slope abuts a hard-paved area. Although groundcover can provide suitable treatment for banks, difficulties of planting, establishment and maintenance should be taken into consideration.

PLANTING AND AFTERCARE

When the site has been suitably prepared, planting can take place.

BS 3936 covers best practice for the planting of trees, shrubs, hedging plants, climbers, herbaceous plants and bulbs and reference should be made to this.

Trees

See diagram – TREE PLANTING

Shrubs

Most deciduous shrubs grown in the open ground should only be moved in the dormant period (November to March).

Evergreen and herbaceous plants are best planted early autumn or late spring.

Container grown plants may be planted during the growing season, but they will need regular watering and maintenance. Planting in the dormant season is still to be preferred if possible.

Planting

Plants with bare roots should be heeled in on site if not planted immediately after delivery. At all times plants must be protected from wind and drying out. They should not be laid out on a site before planting.

Planting should not take place in frozen ground or waterlogged soil. In dry weather plants should be firmed and watered immediately after planting. After planting, the beds should be mulched to help retain moisture and inhibit some weed growth. Medium grade mulch or woodchip to a depth of 75mm can be used. This will also improve the appearance of the area when newly planted and provide an additional rotting wood habitat.

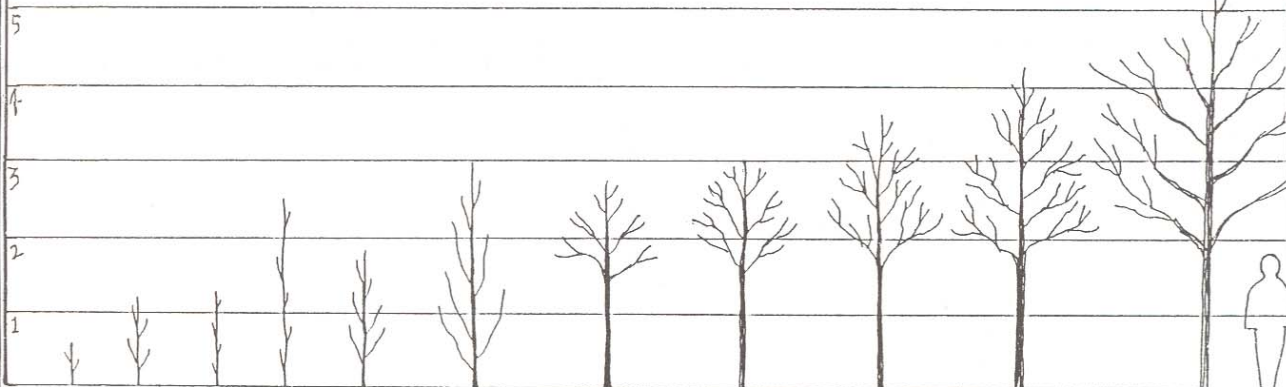
Aftercare

Regular maintenance during the first five years after planting is essential to help the survival of the plants and increase growth. This should include weed control, replacement of failures, pruning and attention to protection where required.

TREE PLANTING

SIZE

6 Height in metres



Transplants	Whips	Feathered	Light Standard	Standard	Selected Standard	Heavy Standard	Extra Heavy Standard
450mm-1.2m	1.2-2.5m	1.8-3m	2.5-2.75m	2.75-3m	3-3.5m	3.6-4.25m	4.25-6m

Circumference of stem measured 1m from ground	Light Standard	Standard	Selected Standard	Heavy Standard	Extra Heavy Standard
6-8 cm	8-10 cm	10-12 cm	12-14 cm	14-16 cm	
				16-18 cm	
				18-20 cm	

HOW TO PLANT

Trees below 1.5m (4'11") do not need stakes

Stake to project 1m above ground plus one tie

[A longer stake plus two ties may be used if added protection is required]

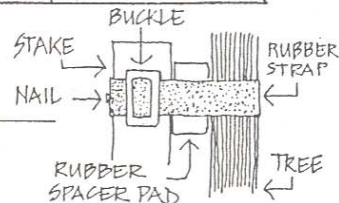
Plant tree at same level as in the nursery

Backfill with topsoil plus well rotted manure
Consolidate at 150 mm intervals
Finish with 500mm mulch or mulch mat

Stake driven 500mm min. into firm soil before tree planted

Break up bottom of hole

DETAIL OF TREE TIE



Dig hole as large as root spread plus 100mm all round

PROTECTION

A. PLASTIC SPIRAL GUARDS

Use to protect from:

Teeth (rabbits etc.)

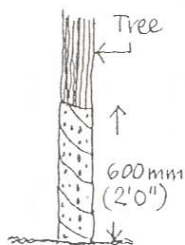
Tools (strimmers)



Split plastic guard



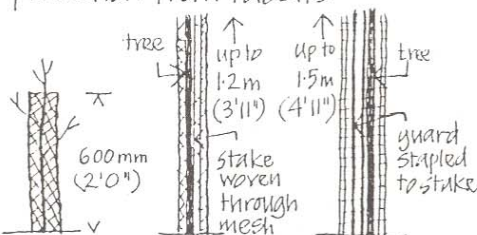
Spiral guard



Guard pushed into ground

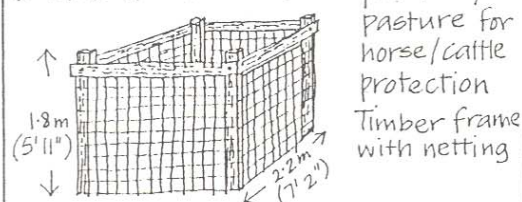
B. PLASTIC MESH GUARDS

More expensive but provide better protection from rabbits

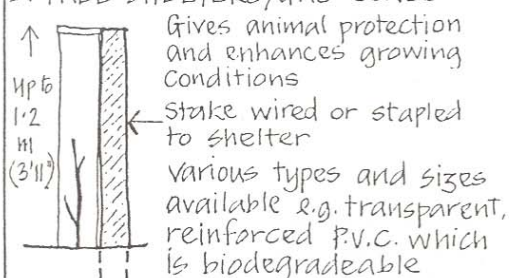


75mm diam. (3") 125mm diam. (5") 150mm diam. (6")

C. FIELD GUARDS - use in parkland/pasture for horse/cattle protection



D. TREE SHELTERS/GRO-CONES



Gives animal protection and enhances growing conditions

Stake wired or stapled to shelter

Various types and sizes available e.g. transparent, reinforced P.V.C. which is biodegradable

NURSERY TYPE & TIME TO PLANT

BARE ROOT - Plant from end of October to end of March
[November to February planting has best chance of survival]

ROOT-BALLED Hessian covering used usually for conifers or evergreens. Best planted between October and April

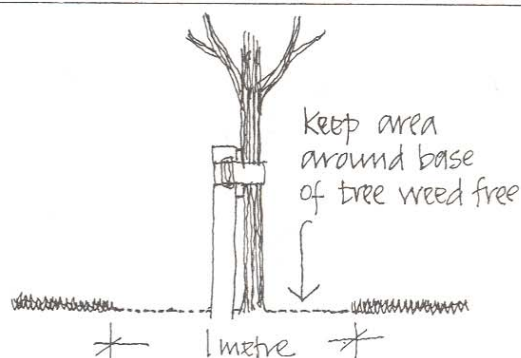
CONTAINER GROWN Plant all year, but need watering in dry periods

General - do not plant when soil is frozen or waterlogged - do not let roots dry out - protect from frost

SOIL PREPARATION

For good quality soil - dig hole as large as root spread plus 100mm all round
For poor quality soil - excavate pit approx 1m x 1m x 600mm deep (depending on tree size) Backfill with topsoil mix.

AFTER CARE



HARD LANDSCAPE DETAILS – Surfaces

Consideration should be given to materials for hard surfacing to ensure they are appropriate for their function and sympathetic with the overall external design.

Where roads are to be adopted details of materials and construction must be agreed with the Highway Authority.

Sites in Conservation Areas will require the use of traditional paving materials of local origin:

Stone setts – blue or white lias or forest marble.

Stone paving flags – blue lias or pennant stone.

These materials are expensive and in certain circumstances the use of cheaper surface materials will be permitted provided they reflect local tones and colours.

Paving materials – general use

- **Areas of intensive use in built environment.**

Tarmacadam - consider dressings of aggregates of complementary colour to the buildings.

Concrete - brushed to expose aggregate
bays may be broken up by lines of brick/concrete block paviors.

Concrete paving slabs.

Concrete block paving – various colours and shapes to reflect local characteristics. (It is important to consider the direction of jointing in relation to the shape of the space).

Specialist surfaces – play areas (consult with Parks and Greenspace Unit).

- **Less used areas/rural environments.**

Exposed aggregate concrete paving – (will weather).

Gravel – loose.

Gravel – self-binding when watered and rolled.

Rolled limestone.

Sleepers)

Timber decking)

Bark chippings)

Suitable for natural areas.

Deterrent paving

Raised setts.

Large pebbles set in concrete.

Edgings

Edging materials are as important as the surface choice and should be used sympathetically in association with the chosen paving material.

It is not acceptable for a pre-cast concrete edging strip to be used in Conservation Areas or rural settings.

Examples of more sensitive materials:

- Special paving unit edgings
- Timber (use in association with gravel)
- Sleepers
- Setts
- Bricks
- Natural stones

Mowing Margins

Mowing margins should be provided where grass abuts a building or wall. The edging should be composed of a hard surface such as concrete, brick or gravel.

HARD LANDSCAPE DETAILS – Street Furniture
--

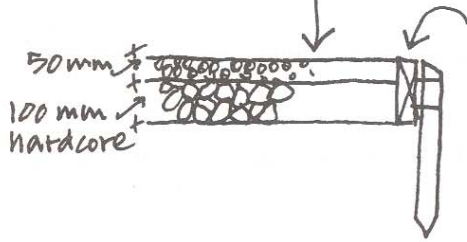
This can include seats, bollards, lighting columns, signage, litter bins and cycle racks.

Consideration should be given to the style and siting of street furniture in order to avoid conflicting period styles and clutter caused by too many elements with haphazard siting.

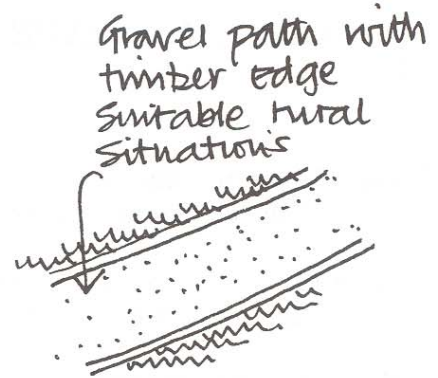
Street furniture must be considered as part of the landscape design at an early stage and incorporated in the detail Master Plan to avoid furniture conflicts, such as tree growth obscuring signs.

HARD LANDSCAPE DETAILS

self-binding or loose gravel

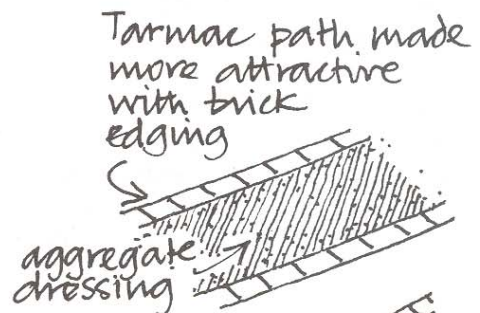
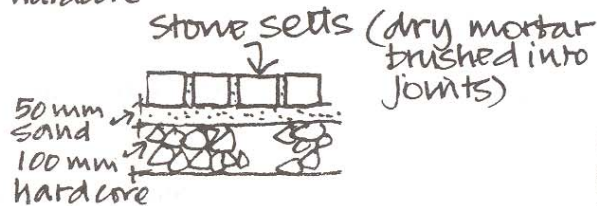
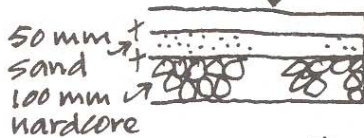


timber edge
150 x 30 mm
nailed to
wooden pegs

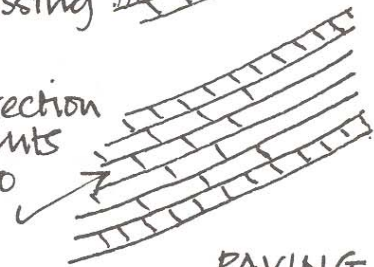


GRAVEL

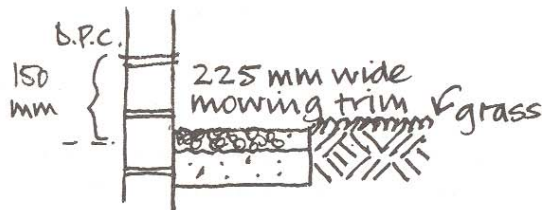
concrete paving slabs



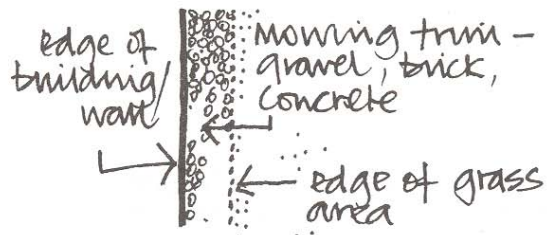
consider direction
of paving joints
in relation to
shape



PAVING

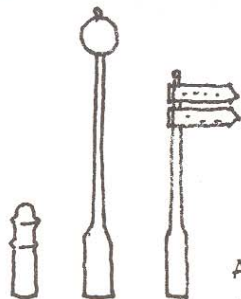


SECTION

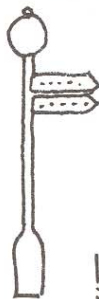


PLAN

MOWING MARGIN



Avoid clutter



Avoid over-use of bollards

Incorporate items



Avoid misplaced use of period styles

STREET FURNITURE

HARD LANDSCAPE DETAILS – Boundaries and Barriers

Boundaries and barriers must be sensitively designed to associate with the character of the new development and its surroundings.

Their function must also be considered. This can range from delineating land ownership and defining spaces to providing security and privacy.

Edge of development

The edge of a new development can form a significant intrusion into the landscape. Houses can be designed to look out of the site with rear gardens grouped together thus avoiding a perimeter fence line.

The use of structure planting can help soften and integrate the new development, but this should not be used as a screen for a poorly designed boundary which presents a back garden scene of sheds, rotary washing lines and other paraphernalia. A situation providing inadequate privacy should be avoided in order to prevent householders erecting their own screen fencing which will present a haphazard edge of unrelated shapes, designs and colours.

Therefore, where garden boundaries form a prominent feature within the development they must form part of the total design concept.

Walls can make interesting edging when panelled and recessed to provide suitable areas for planting. Walls should run with the slope of the land and not be stepped.

Close-board fencing gives privacy and if combined with trellis, extra security. Its appearance can be softened by the use of shrubs and climbing plants.

Post and wire fencing with hedging can, in certain situations, be suitable in rural areas.

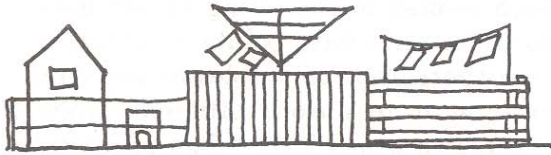
Front gardens

Front gardens should be delineated by low walls or hedges to give unity. In these situations it is desirable for the hedges to be covenanted to have common maintenance requirements in order for this unity to be retained.

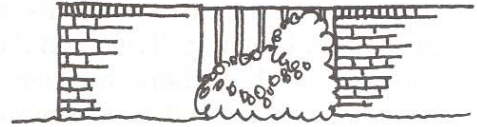
In more urban environments, particularly on street frontages a form of enclosure should be provided. This could be in the form of picket fences or walls and railings, depending on the style of the buildings.

BOUNDARIES AND BARRIERS

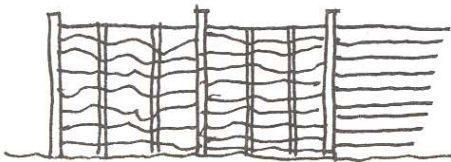
EDGE OF DEVELOPMENT



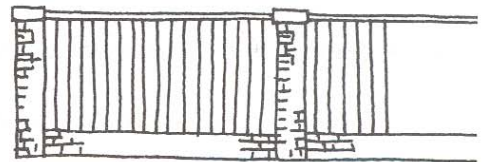
Avoid poor boundary detailing leading to exposure of back garden paraphernalia



Panels of walls and fencing give interest and enclosure

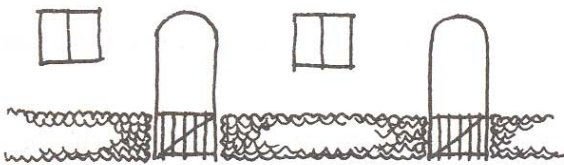


Avoid poorly erected and detailed fencing. No orange-toned stains - use dark or natural

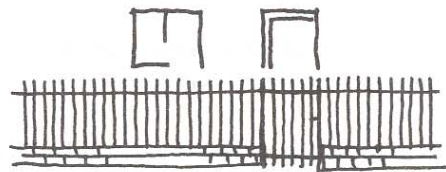


Brick piers and close board fence give unity and security

FRONT GARDENS

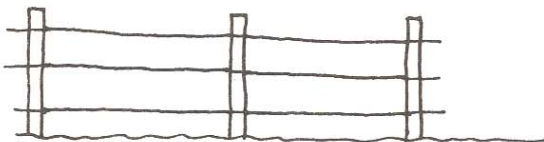


Hedges give unity

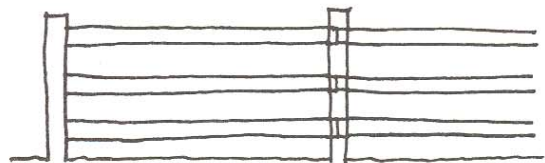


Wall and railings in more urban settings

BOUNDARIES IN RURAL SITUATIONS



Post and wire - use with hedges in suitable situations



Post and rail (not in open countryside - too obtrusive)

DEVELOPMENT IN THE COUNTRYSIDE – General Principles

We have an ideal vision of the countryside which relates to the siting of picturesque farmhouses and barns, built from local materials which form focal points in an intimate agricultural setting. Traditional farm buildings are, therefore, acceptable elements in the countryside, but there are now many pressures on it to absorb different types of development, as well as accommodate the many changes which have taken place in the farming industry. These new forms of development, if not sensitively sited and well designed, can have a considerable adverse impact on the landscape.

It is essential that an overall awareness is maintained of the importance of the countryside to everyone. A balance must be found between economic function and visual effect. With careful site selection, design, detailing and integration into the existing landscape, these functions can be synthesised into the best solution possible to meet all the required needs.

Some examples of development in the countryside are:

- Golf courses with associated buildings
- Stud farms
- Fish farms
- Sewage pumping stations
- Farm associated structures
- Farm workers dwellings
- Poultry houses
- Pig rearing units
- Large storage barns
- Silos and grain stores

The siting of any new structure should be preceded by a survey of the total area (see Survey and Analysis).

Although the following guidelines relate to the siting and design of farm related structures in the landscape, the basic principles will also apply to other forms of development in rural locations.

DEVELOPMENT IN THE COUNTRYSIDE – Farm Buildings

Site Selection

The new development must be considered in terms of its relationship with the overall landscape as well as the farm complex itself:

Identify viewpoints from which the development would be seen, e.g. approach roads, public footpaths and in distant views.

Consider not only the impact the building itself may have, but also the impact of associated features – driveways, hard-standings, fencing, fuel tanks etc.

Where the new building would be significantly out of character, a site location should be chosen which takes advantage of natural screening opportunities. However, the impact of a badly sited, out of scale building will not be ameliorated by the use of an artificial earth bund with planting.

Avoid

- sites on the skyline
- where a building will dominate the landscape
- where buildings will be prominent in a valley bottom

It is better to build with the contours, or into the slope of the land.

Buildings may step down a slope using “cut and fill”.

Relationship to existing buildings on site

The development should relate to the local pattern of farm buildings in the landscape by scale, style and materials.

It is better for new buildings:

- to relate to existing buildings rather than stand in isolation
- to relate to existing groups in alignment
(Right angle relationships work well but consider contours of site).
- not to form a series of parallel buildings

Scale

The large size of modern farm buildings can disrupt the accepted scale of the landscape. This is particularly obvious where new farm buildings are seen near older, more traditionally sized ones.

Aim to modify this effect by:

- Colour, materials and detailing
- Choice of form.
- Considering both actual and apparent size – a building may still fulfil its practical function and have less visual impact if constructed as two smaller units or an L-shape, rather than one large structure.

Colour

Traditional earth colours such as reds, browns and ochres as well as black and white fit well with the landscape.

As a general rule for rural buildings use darker colours. Light colours usually make objects appear larger and more conspicuous.

Suitable roof colours:

- Dark, blackish green
- Shades of grey – especially warm ones
- Khaki and olive greens

Blue greens and yellow greens should be avoided.

Materials

Try to preserve “Local distinctiveness” by assessing the character of the farm complex and locality.

By the use of sympathetic materials and well thought out detailing, buildings can be more successfully integrated into their setting.

The impact of a large structure can be reduced by dividing it into broad horizontal or vertical bands of colour or material.

- Plinth in brickwork or rendered blockwork.
- Spaceboarding above – stained or treated to a dark colour.
- Dark coloured roof.

Detailing should be used boldly by considering shadows, wide barge boards and the design of gutters and downpipes. Roofs can be broken up by stepping pitches and ridges.

Avoid:

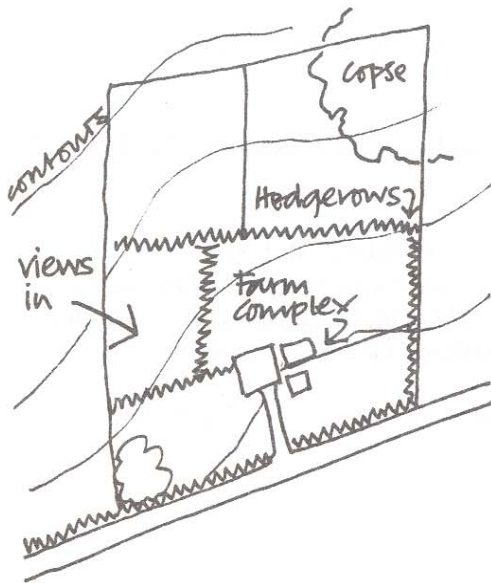
Light, reflective surfaces unless always seen against the sky.

Asbestos roofing is now available in a range of dark colours which can help reduce the impact on the environment.

Fibre cement profiled sheeting is also manufactured in a range of colours sympathetic to the landscape.

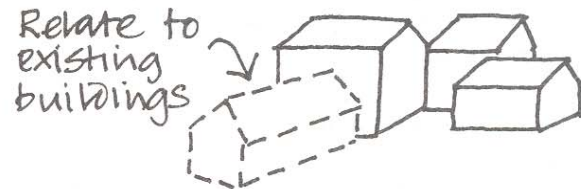
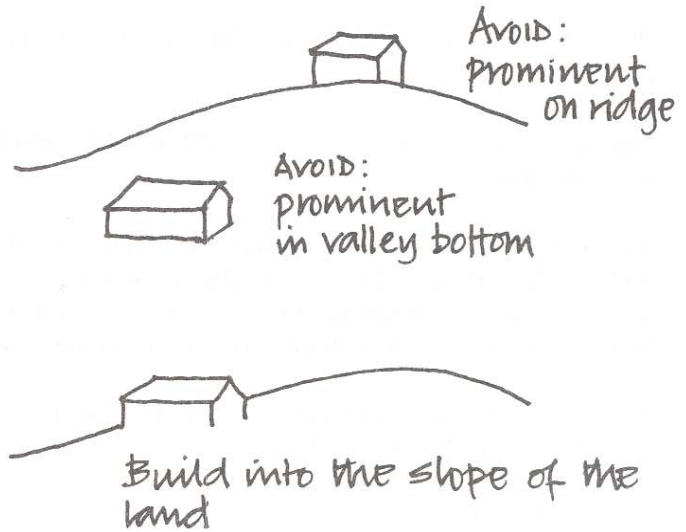
FARM BUILDINGS

SURVEY

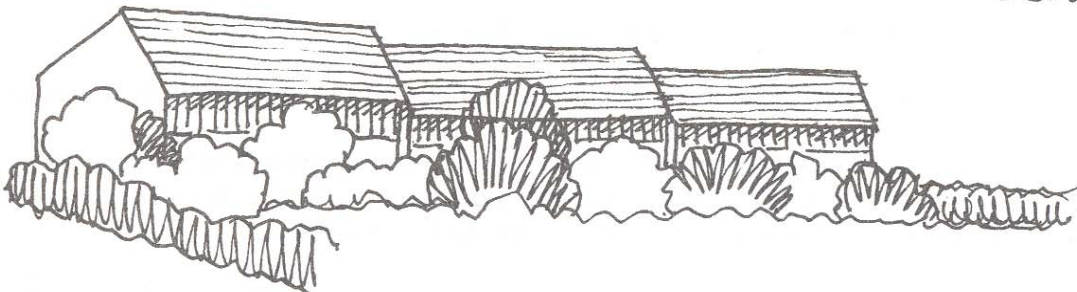


Survey of total farm complex. Analyse impact of new buildings on the landscape

SITE SELECTION

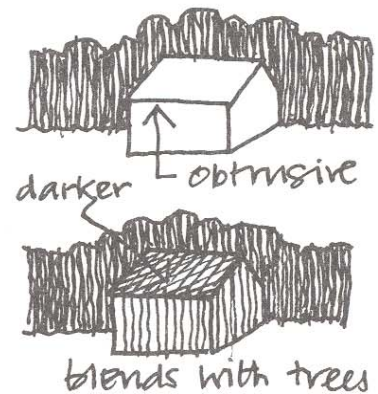


SCALE



Bulk of large building broken by stepped roof line, detailing and new planting

CLOUR



Use of Planting

A new building should contribute to the overall landscape and be enhanced by new planting.

Planting should not be seen as a means of screening a building which has been badly sited or designed.

The use of rows of trees which follow the perimeter of a building and are unconnected within the existing landscape should be avoided. This treatment is more likely to draw attention to the presence of the structure and alienate it from the landscape. Consider whether the trees will grow to be an effective screen within the life-time of the building.

Use trees to enhance the setting of the farm by relating both the farm buildings themselves and their setting to the wider landscape.

and for:

- their own intrinsic beauty
- shelter and shade
- habitats for wildlife

In relation to buildings use trees and planting to:

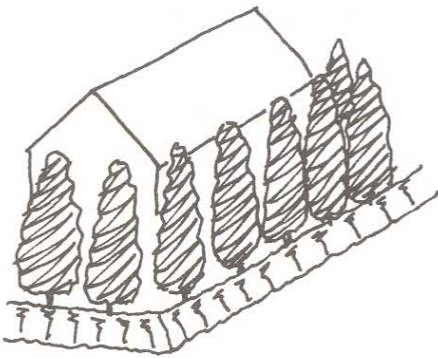
- link new building to the existing landscape – e.g. following the gable end of a building and joining with an existing copse or hedgerow.
- help offset the horizontal line of modern farm buildings.
- create a background to relate a building to the surrounding landscape.

Use native trees and shrubs (feathered and whips) in strong groups or belts (see *Structure Planting*) rather than single specimens. This type of planting has more effect and is also cheaper than using standard trees which often do not survive.

Protection should be provided by individual tree shelters or a stock-proof fence and rabbit guards (see *Tree Planting*).

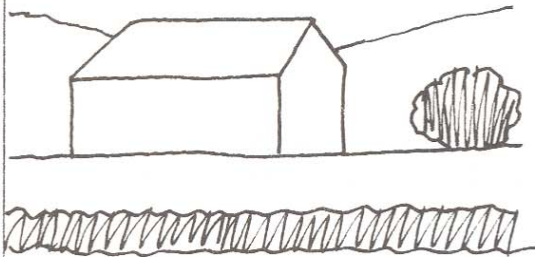
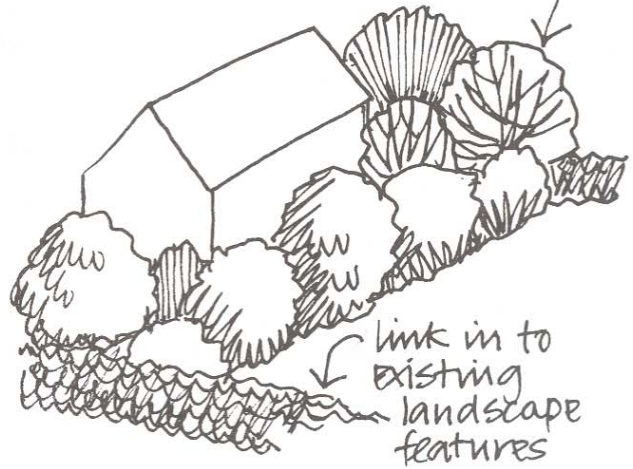
FARM BUILDINGS - USE OF PLANTING

Avoid - rows of trees particularly on banks

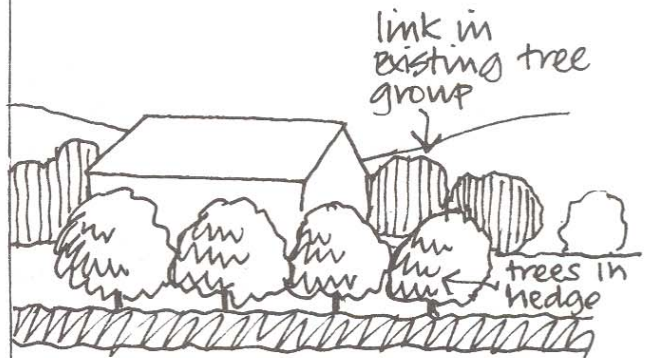


No cypress species to be used in rural areas

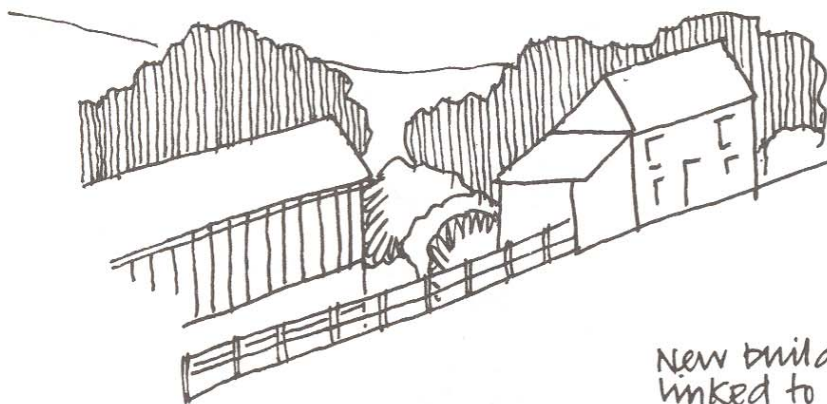
Plant in groups of trees and shrubs



New building - not related to existing landscape



Planting used to integrate and soften



New building visually linked to existing with planting and fence

References and Addresses

The Landscape of South Somerset (A Landscape Assessment)	South Somerset District Council 1993
Residential Design Guide	South Somerset District Council 1995
Badgers and Development	South Somerset District Council 1994
Bats and Planning	South Somerset District Council 1994
Guide to Tree Planting	South Somerset District Council 1993

Police Architectural Liaison Manual of Guidance	Home Office Crime Prevention Centre Police Headquarters, Cannock Road, Stafford ST1 7QC (01785 58217)
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British Standards

BS 3936 – Trees, Shrubs, Turf etc.
BS 3998 (1989) – Recommendations for Tree Works
BS 4428 (1989) – Code of Practice for General Landscape Operations
BS 5837 (1991) – Guide for Trees in Relation to Construction

National House-Building Council Standards – Ch.4.2 “Building near Trees” (Updated 1992)
Building Research Digest 298: The influence of trees on house foundations in clay soils

Arboricultural Association

Ampfield House
Ampfield
Nr Romsey
Hants SO51 9PA
(01794) 68717

British Association of Landscape Industries (BALI)

Landscape House
9 Henry Street
Keighley
West Yorkshire BD21 3DR
(01535) 606139

County Archaeologist

County Hall
The Crescent
Taunton
Somerset TA1 4DY
(01823) 333451

English Nature

Roughmoor
Bishops Hull
Taunton
Somerset TA1 5AA
(01823) 283211

The Landscape Institute

6/7 Barnard Mews
Clapham
London SW11 1QU
0171 738 9166

National Rivers Authority (SW Region)

(Provides design guidance on residential development
and water environment)
Planning Liaison Officer
South West Region
Rivers House
East Quay
Bridgwater
Somerset TA6 4YS
(01278) 457333

Somerset Environmental Records Centre

Pickney
Kingston St Mary
Taunton
Somerset
TA2 8AS
(01823) 451778

Somerset Wildlife Trust

Fyne Court
Broomfield
Bridgwater
Somerset TA5 2EQ
(01823) 451587