



Glenasmole -Bohernabreena Housing Clusters

South Dublin County Council Planning Department

DESIGN GUIDE

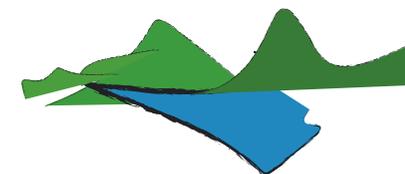
March 2005



**Design Guide -
Housing Clusters -
Glensmole / Bohernabreena**

South Dublin County Council
Planning Department

March 2005



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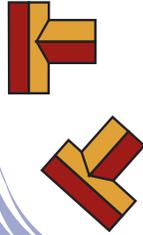
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Chapter 1





Purpose of Design Guidelines

The Dublin Mountains Area and its rural hinterland including the Glenasmole Valley is one of the principal natural assets of South Dublin County. It is a source of pride to those who live in the area and it is a valuable resource that is shared with the population of County Dublin and surrounding counties and with the many tourists who visit the area.

Guidance on criteria applied to housing in the Glenasmole Valley can be found in the 'Glenasmole/Bohernabreena Housing and Planning Study' published in November of 2002. Guidance is also to be found in the South Dublin County Development Plan 1998 and in the Development Plan 2004-2010.

The siting and design advice contained in these guidelines has been prepared by South Dublin County Council to give guidance on locating, siting and designing a cluster housing scheme in the Glenasmole/Bohernabreena area.

The guidelines are not meant to be prescriptive although they do draw from vernacular traditions. It is recognised that there are examples of modern designs throughout the area which have enriched the architectural variety of the locale.

The principal objective of the document is to encourage a sympathetic approach to the siting and design of housing clusters. The advice given should not be seen as a constraint on architects and designers wishing to pursue innovative and carefully considered contemporary solutions to the design and construction of new dwellings.

The principles outlined in this document should form the basis for design solutions.





Who should read the guidelines ?

This document is aimed at development bodies e.g. co-op or development groups, involved in the planning, design and building of clusters of housing within designated areas of the Glenasmole Valley. The aim is to inform and guide the public so that new homes in the Glenasmole Valley, and particularly proposed cluster areas, will be in keeping with good design principles.

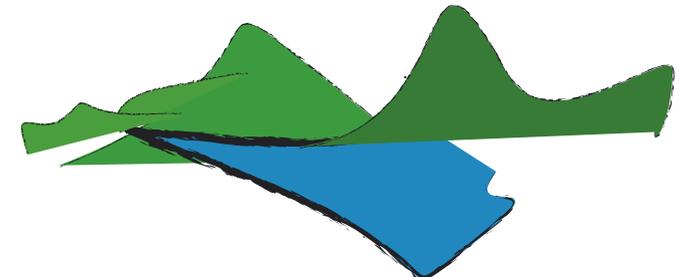
Contacts

Advice on the interpretation of the guidelines and on any matters related to the provision of housing cluster areas can be obtained from the Planning Department of South Dublin County Council.
Tel : (01) 4149000.

How to use the guidelines

The Design Guidelines are not intended to provide a blueprint for housing layout and design. They set out an approach which if followed should help to relate housing layout and design more sensitively to the landscape and adjoining properties.

The principles are set out and illustrated through the use of sketches, photographs and written advice.





Cluster Definition

A clustered housing development is an approach to housing design for rural areas which is characterised by the following factors.

- The houses are grouped in such a way as to maximise the landscape value of the area.
- It maximises privacy and amenity for its residents and blends sympathetically with its surroundings.
- It provides for the sharing of infrastructure wherever possible to minimise costs to both individuals and the community, while safeguarding environmental qualities of surface and ground waters.

The cluster is identifiable by a sense of place, normally expressed by natural boundaries such as water courses, trees, enclosing landform or man-made boundaries. Cluster size will vary depending on each individual site.

Developing and Managing the Cluster

The success of any potential cluster site is dependant on compliance with the criteria outlined in the Design Guidelines. This means that the scheme must be developed in a consistent manner ensuring that all aspects of the development, inclusive of services, open space and houses are developed in tandem with each other. The ad hoc development of a cluster would undermine the whole concept. Any planning application made under the provision of the Design Guidelines must be made by a legally established development company or co-op which undertakes full responsibility for the realisation of the scheme. This company should be comprised of named individuals who meet the housing need criteria as set out in the Glenasmole/Bohernabreena Housing and Planning Study 2002.

The company will be required to submit a phasing programme for the proposed scheme and will be responsible for the provision of services, roads, infrastructure and open spaces. Responsibility for maintenance and management of the scheme, inclusive of any wastewater treatment plants and landscaping/planting, will also lie with the company.

In the first instance the Council will promote the development of housing clusters in association with the Bohernabreena/Glenasmole Cluster Co-Op Ltd.





Characteristics of Cluster Development

- **Setting**

Dwellings are set within the landscape so that the contours appear to embrace the buildings.

The landscape must dominate the buildings. The design approach must ensure that the visual quality of the landscape is maintained and that the entire development looks well established.

- **Grouping.**

Groups of buildings and landscaping techniques are used to develop enclosure and privacy while maintaining the rural character of the cluster.

Setting buildings within a backdrop of trees is one of the most successful means by which a cluster can be absorbed into the landscape.



Example of high quality entrances and boundaries



Cluster with a backdrop of trees



- **Screening**

Natural screening elements are used within the Cluster e.g. trees, earth banking and hedge planting. This approach facilitates the harmonisation of buildings in the landscape and provides shelter from cold winds and driving rain. It also significantly reduces costs and ensures that the cluster is sustainable.

- **Boundaries**

Boundaries around and within the cluster are consistent with regard to design, height and materials used.

The area between the boundary and the road is treated in the same way throughout. This helps to unify the appearance of the group. There is often a variation in the set back of buildings from site or boundaries.



Variety of building form and setbacks



Examples of high quality screening and boundary treatment



- **Access and Parking**

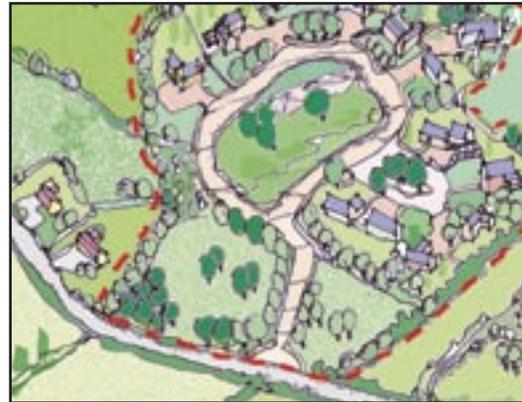
The access road follows the line of contours, curved rather than straight. Parking is grouped and surface finishes are generally informal. Gravel surfaces are visually preferable to black tarmacadam.

- **Identity**

There is a sharing of features common to adjacent houses e.g. entrances, driveways and garage facilities. This creates consistency and engenders a sense of identity in the cluster.

In order to foster a sense of identity, communal elements of the cluster such as property boundaries, tree planting and roads must be developed on a phased basis as agreed with the Planning Authority

The cluster concept can facilitate and is intended to encourage contemporary and individualistic design approaches. The need for a common theme and sense of identity should not compromise these principles if the design team has a clear overall vision



Road follows line of contour



Sharing of common features entrances, driveways, etc.





- **Wildlife, Biodiversity**

Natural hedgerows and trees are conserved on the boundaries of and within the cluster.

Traditional boundaries such as indigenous hedgerows, stone walls or earth/stone banks are often more attractive and less obtrusive than new fences or walls. Hedgerows are repaired where necessary, maintaining the natural habitats of certain animal, bird and plant species.

- **Play areas**

Safe play areas and open space which are overlooked from living rooms are a feature. The provision of safe, supervised play areas is of paramount importance to any cluster.



Examples of Use of Natural Features and ecological corridors



Safe and supervised play areas are essential



Choosing a site : selection process : area suitability

Step 1: Development Plan

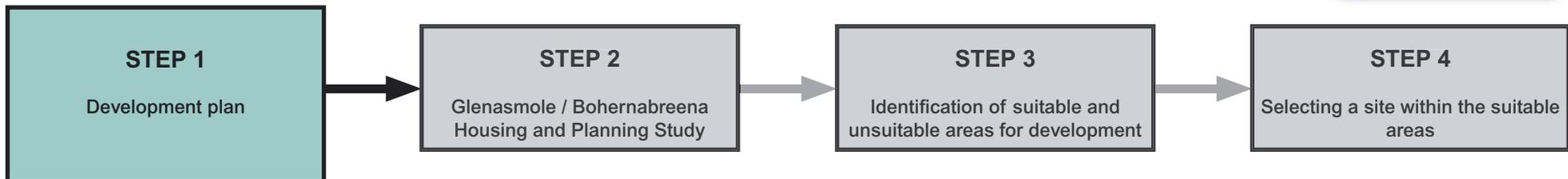
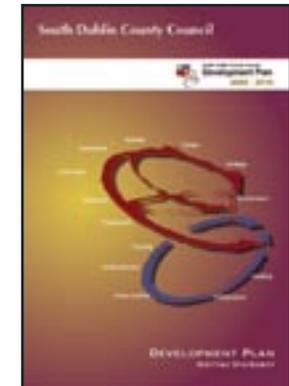
Check the South Dublin County Development Plan and any other relevant plans and or policy documents in particular for:

- Policies restricting or permitting development in certain areas e.g. High Amenity Areas, water sources etc.
- Heritage Areas -Natural Heritage Areas (NHA's), Special Protection Areas (SPA) and proposed Special Areas of Conservation (SAC).
- Any Landscape Character Restrictions
- Archaeological Policies, Sites and Monuments Record, the Record of Protected Structures and conservation policies.

The County Development Plan also contains policies limiting housing in Rural / Mountain and High Amenity Areas of the county.

Where existing buildings or structures, whether ruinous or not, are located within the site, consideration should be given to their use, re use or restoration

Local objective No. 81 of the South Dublin County Development Plan 1998 required that a study be carried out to examine how the needs of local families for additional housing might be accommodated in the Bohernabreena / Glenasmole Area.



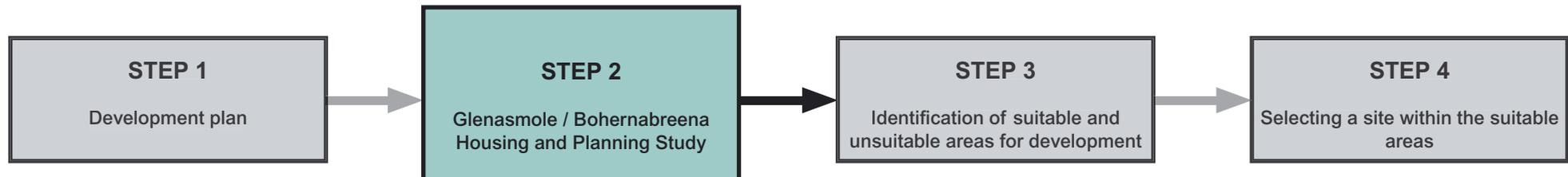
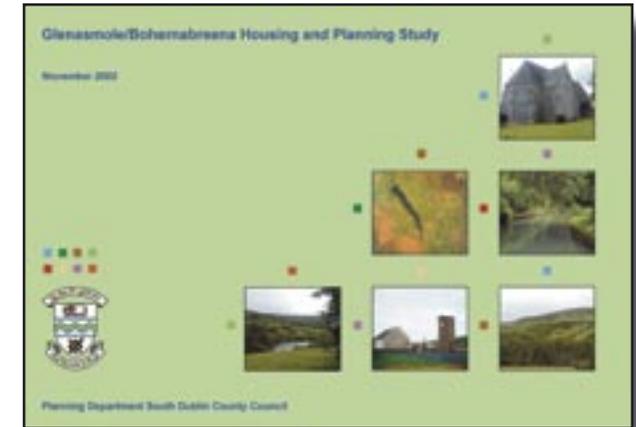


Step 2: Glenasmole/Bohernabreena housing and planning study

The Glenasmole/Bohernabreena Housing and Planning Study was completed in November 2002. It set out criteria for development within the Glenasmole/Bohernabreena area and identified locations where development might be considered. It also identified areas where development is restricted based on the provisions of the Development Plan and other detailed assessments. The assessment in the report was based on :

- the sensitive location of the study area within a high amenity area
- the location within the study area of reservoirs which contribute to Dublin's water supply
- the mountainous topography of the area and the location within the study area of proposed Special Areas of Conservation.

This study also included provision for the consideration of proposals for housing clusters in the Glenasmole / Bohernabreena area. These schemes to be actioned by co-op groups or development companies comprising of persons meeting the criteria for housing need as set out in the study.



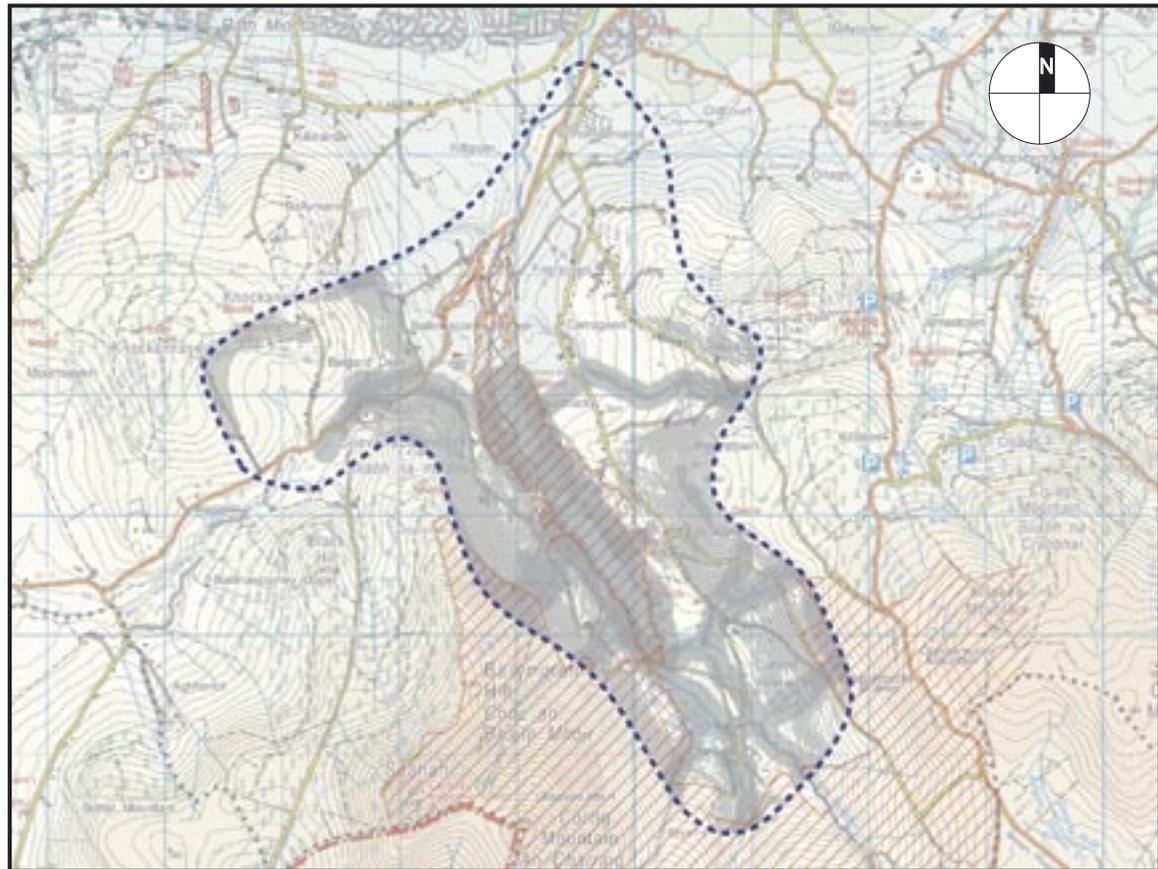


Step 3: Restrictions within the area

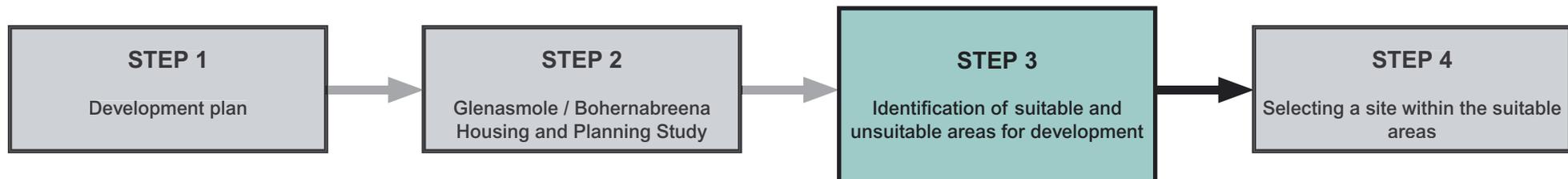
Within the study area, no development is permitted in the following locations;

- Within 100 metres of existing streams
- 200 metres around the reservoir.
- Lands above the 350 metre contour line.
- Areas with slopes greater than 20%.
- Lands affected by proposed Special Conservation Areas.

Restricted Areas are indicated in grey and hatched red on adjoining Map 1. For further details of these restrictions refer to the Glenasmole/Bohernabreena Housing and Planning Study.



Map 1 - Areas marked grey are generally not suitable for housing development





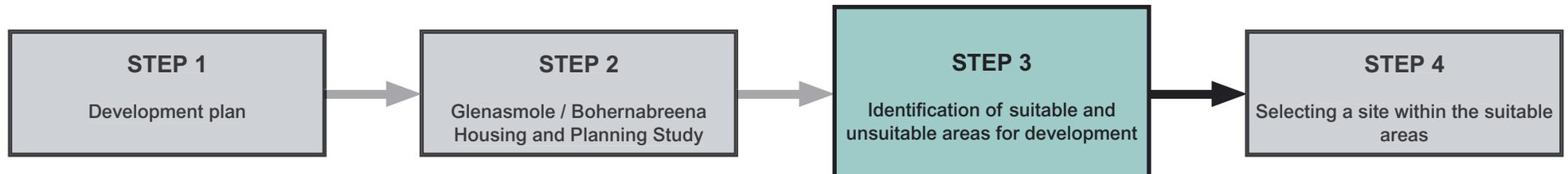
Identifying suitable areas:

Suitable cluster locations must meet all the following requirements :

- be situated on lower, flatter and more sheltered areas
- be sheltered by hills and higher ground
- be in areas where there is a backdrop of trees and hills
- be set back from reservoirs and their tributary streams
- be outside Special Areas of Conservation and high amenity areas
- be below the 350m contour line



Map 2 - Aerial photograph of the reservoir area





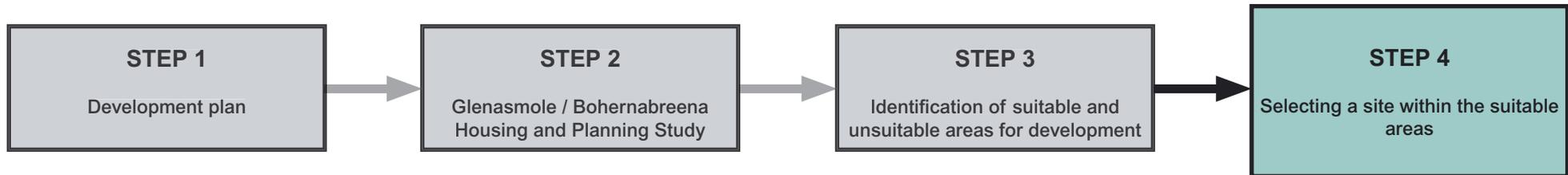
Step 4: Site identification within suitable areas

The areas most suitable for the development of housing clusters will be those where all relevant criteria are met. These criteria are addressed in the following section.

Designated Sites

The Bohernabreena/Glenasmole Housing and Planning Study has identified a number of possible cluster sites. In exceptional circumstances alternative sites may be considered where it is demonstrated that the identified sites are not available for development due to acquisition problems or otherwise.

Alternative sites must be in suitable areas meeting appropriate criteria. Alternative sites must be agreed with the Council, and can only be developed to accommodate local people in accordance with the terms of the 2002 Study.





Criteria:

Utilities

Servicing the site

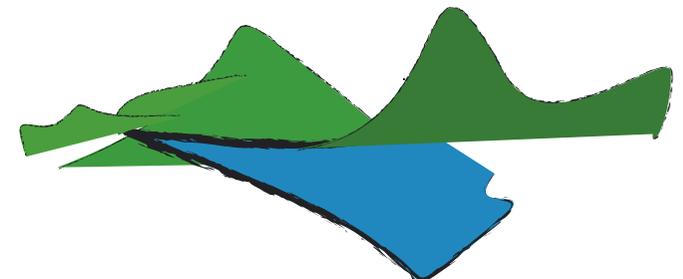
Any potential cluster development must be located in an area where the road network is adequate to support additional traffic volumes and additional traffic turning movements.

Accessing the site

Access to the site must be of such a standard that it is safe for pedestrians / cyclists and drivers to enter and exit the site. The access drive must follow the contour line. The Planning Authority requires that no unnecessary removal of existing hedgerows should occur. While safety issues are paramount, the removal of long established mature hedgerows and trees is highly undesirable. Where the removal of extensive lengths of hedgerow are required to create a safe entrance, the site will generally be considered unsuitable.

Water supply and effluent treatment

The cluster site must be located in an area which can be serviced by an adequate drinking water supply. Adequate provision for disposal of domestic effluent must be made. Technical advice can be given on a case by case basis.





Sheltered locations

It is vital to choose areas where buildings can be set into the landscape. In order to do this, natural resources can be used to good advantage.

- It is considered important that cluster sites should be located in areas where there is a gentle slope or a naturally occurring shelf, indentation or a fold where natural shelter is provided.
- Isolated hilltop locations or ridgeline sites are to be avoided. The location should also provide shelter from prevailing winds.
- Much can be learnt from traditional methods of site selection and layout, which make the development appear more integrated with the surrounding landscape.
- Where possible the natural backdrop of trees, hills and shelter belts should be utilised.
- The contours of the original site can be used to soften the setting of the houses. Newer dwellings which observe traditional methods on siting are more appropriate in sensitive areas.
- Well sited dwellings retain more heat and are energy efficient, saving on costs. Existing planting and hedgerows should be reinforced with additional planting.



Choosing a Site Criteria

Use topography to good advantage. Shelter from wind and avoid hilltops. Integrate with the landscape, use trees and hedging. Combine energy efficiency with good siting.



Minimising the visual impact

When assessing the potential of individual sites, consideration should be given to the impact of clustered housing from different viewpoints in the landscape.

- Appropriate sites are typified by topography which provides a landscape setting for the houses.
- Sites should be selected on the basis of minimising the visual impact of the cluster.

Natural landscaped sites/ existing boundaries/ trees

The ideal location for a cluster site is one where natural features minimise the visual impact of buildings in the landscape. Ideally the cluster site should be one which has a backdrop of a wooded area or has a mature boundary tree growth.

- Always choose an area where existing natural boundaries can be retained.
- The chosen location should be one where the removal of hedgerows and existing roadside ditches is not required.
- In addition to reducing the visual impact of the new development the retention of trees can reduce the extent of new planting and landscaping which may be required and also thereby reduce the cost of development.
- A landscaping plan for the cluster as a whole should be submitted as part of any planning application.



Minimising visual Impact

Select sites based on minimising visual impact. Retain natural boundaries within the design of the scheme. Avoid sites where excessive hedge removal along roads is necessary. Retaining suitable trees on site will reduce planting costs.



Orientation / sunlight:

The site should have an aspect that maximises the sunlight provision. The site's exposure to the natural elements particularly to the sun and to the prevailing winds should be identified. By identifying these, dwellings can be orientated to reduce exposure to the wind and take advantage of natural sources of light and heat.

The dwellings should be orientated within the site to reduce its exposure to wind and rain but also to avail of the sun's energy and light.



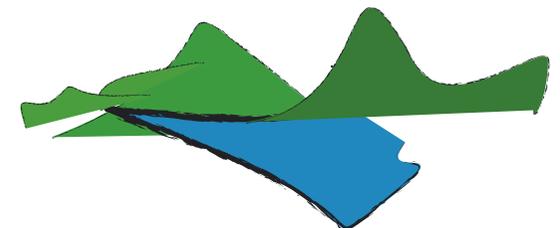
Sunlight and landscape

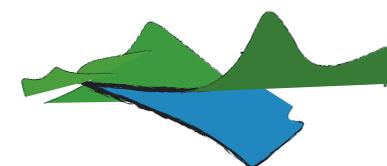
Reduce exposure to wind and maximise south facing orientation. Use the landscape to ensure sensitivity for and appreciation of the farming traditions and unique qualities of the area.





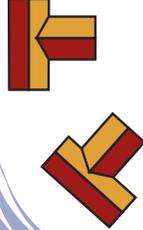
| Checklist: site selection | ✓ |
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| Is the site serviceable? (water, sewer, electricity) | |
| Is the site served by an adequate road network, which allows safe access without extensive removal of roadside boundaries? | |
| Are the access and exit points safe for both drivers and pedestrians? | |
| Is the site in the optimum location in terms of minimising the visual impact on the landscape? | |
| Have existing natural boundaries been retained? | |
| Will natural features, such as trees, minimise the visual impact of the buildings in the landscape? | |
| Can the existing roadside ditches be left intact? | |
| Does the site provide shelter from prevailing winds? | |
| Have steep slopes and exposed areas been avoided? | |
| Does the site receive the maximum sunlight possible? | |







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Glenasmole -Bohernabreena Housing Clusters

South Dublin County Council Planning Department

Chapter 2



Introduction: layout and siting

Assessing the site

As demonstrated in the Site Selection Chapter, if new housing is to be absorbed successfully into a particular landscape, it is important that the site is selected on the basis of respecting the local landform, field patterns and the existing tree and hedgerow cover. In addition by observing the way in which traditional buildings have been set in some landscapes, a great deal can be learned about how new buildings can contribute to maintaining a sense of place and identity.

Following the Site Selection procedures outlined in the previous chapter will greatly simplify the task of Site Layout. If the site is specifically chosen to meet the criteria as set out in this document, the layout will follow naturally.

Visual assessment

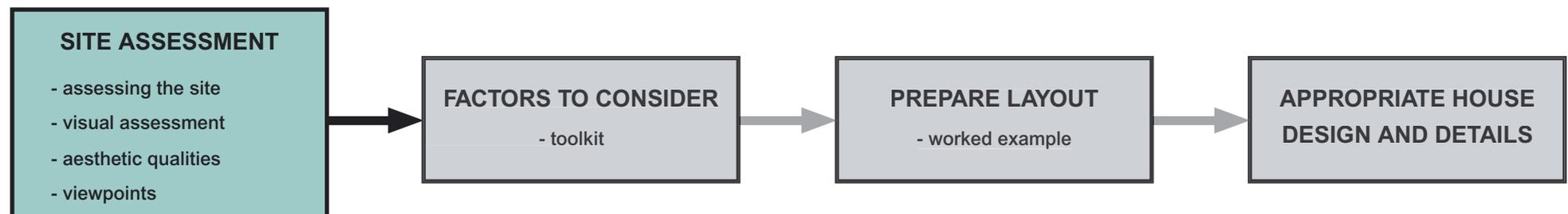
A visual assessment should seek to identify the dominant characteristics in the various parts of the site. Therefore places that enjoy natural enclosure or which are recognisable as natural corridors can be incorporated into a layout. This process can inform the preparation of a Layout Plan. The visual assessment should be supported by use of photographs from different approaches to the site and different strategic points on the site or outside of it. In addition protected views as designated in the County Development Plan should be taken into account. Aerial photographs could also be utilised.

Aesthetic qualities

The area may be characterised by a number of recurring dominant elements such as landscape form, tree line, colours and textures. A series of photographs will often give a good representation of these qualities.

Viewpoints

Landscape is seen from a limited set of viewpoints along a route travelled by an observer. Lines of sight are critical. Careful analysis to determine views from and to a cluster site requires great consideration.

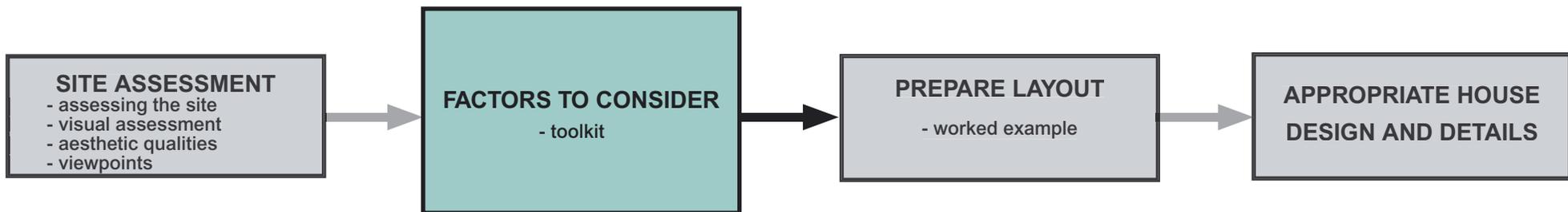




Best practice toolkit:

In the following pages the reader is presented with a practical toolkit which will aid in the production of a successful layout. It provides the equipment to produce an acceptable cluster form in a rural setting. The toolkit consists of the following items with detailed descriptions as to their importance and use.

1. Sunlight
2. Shelter
3. Boundaries
4. Dealing with Contours
5. Prominence
6. Privacy
7. Entrances
8. Refuse
9. Public Lighting
10. Parking
11. Gardens
12. Outbuildings/garages
13. Safety
14. Open Space
15. Drainage
16. Defining good neighbours





Sunlight
 The cluster should be designed to allow each house full exposure to sunlight, avoiding overshadowing.

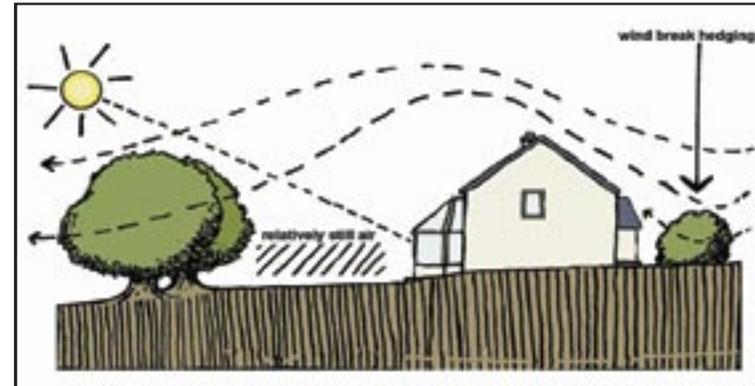
Sunlight

- At different times of the year the sun will appear in the sky at varying heights. The layout of the cluster should recognise this variation and be designed to take advantage of the sun's annual cycle. This will help to avoid overshadowing of adjacent houses and open space.

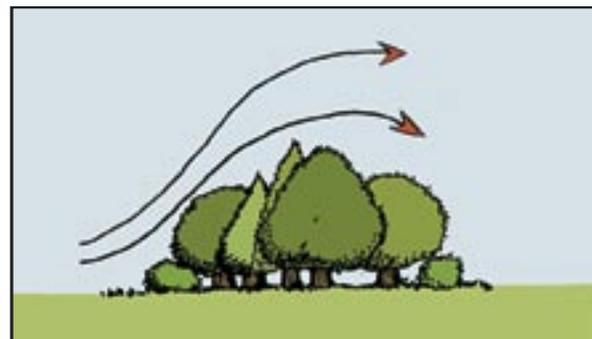
Shelter
 Locate dwellings in the landscape to exploit the natural shelter of hills, ridges and vegetation.

Shelter

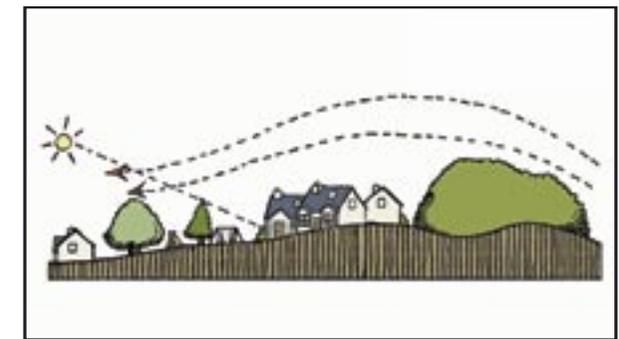
- While keeping the impact of sunlight in mind, it is important that each dwelling is sheltered from the elements. The most effective means of doing this is by setting the dwellings into the landscape and using natural features as a means of sheltering and screening each individual plot.



Building openings and position of conservatories located to benefit from orientation. Deciduous summer screen reduces excess solar gain.



Well planned shelters can provide protection from prevailing winds.



Buildings positioned to shelter from prevailing winds



Boundaries

Use local types of stone and/or hedge plant in boundaries. Use existing trees and hedges to 'fit' a house next to another.

Boundaries

- The boundaries associated with the dwellings should be considered as an integral part of the cluster and not as an afterthought. Boundary treatments, driveways, fences and hedges should be considered at a very early stage in the process. The consideration of these issues will result in a more consistent and unified development. The use of local stone and indigenous plant species are necessary for a successful scheme.
- Setting a building against a backdrop of trees and hedgerows is one of the most successful ways of ensuring that new development is absorbed into the landscape. Where possible existing trees should be retained both within the site and on its boundaries. This reduces the visual impact of the cluster and significantly reduces costs by limiting the amount of new planting and landscaping which may be required.
- Existing field boundaries should be retained wherever possible especially on the perimeter of the cluster site. Wherever possible the layout of the development should respect pre-existing field boundaries.
- Landscaping should be used to reduce the visual impact of development and to enhance its setting in the landscape.



A mixture of mature trees, stone walls and houses can enhance the rural setting



Buildings accommodated amongst trees and sheltered from the elements



Planting for shelter

Adequately plan and develop appropriate shelterbelts. Use local plant varieties.

The advantages of shelter planting

Hedges, groups of trees, shrubs and shelter belts whether existing or planted have the following advantages;

- They shelter buildings from cold winds and driving rain.
- They reduce fuel consumption of buildings by up to 20%.
- They improve the appearance of the area making it a more desirable place to live.
- They encourage wildlife.
- They soften the outlines and reduce the dominant appearance of buildings.
- They provide an additional point of interest in the countryside, with varying forms, colours and textures throughout the year.
- They help to frame the best views from each house and improve privacy.

For best results:

Use mixtures rather than single species when planting for shelter, and plant in groups rather than rows. Use local species.

Plant selection guidelines can be found in the Appendix.



Mature trees can frame views



Dealing with Contours

Address the contours of a site. Consider different options depending on site conditions. Avoid terracing and excavation.

Dealing with contours

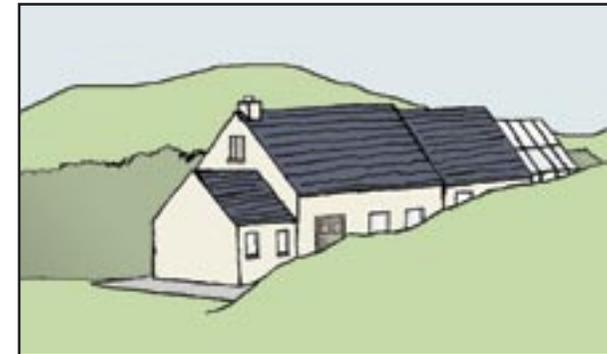
- In order to ensure that the layout is sympathetic to landform, buildings should be parallel with the contours so that the houses fit into the landform naturally. Where the site is sloping the use of split levels can help reduce the impact of the buildings.
- Excessive building up or digging into the landscape is not acceptable. Such interventions are normally required where the site is sloping, resulting in the creation of a flat building platform. In extreme cases the resultant distortion of the landform can be visually obtrusive especially if retaining walls are required on the downhill side of the excavations. A similar problem occurs when extensive under building is required to create an artificial platform for the house.

This problem is often accentuated by the use of contrasting colours or materials. If the selection criteria as set out in section one are adhered to, this problem should not arise.

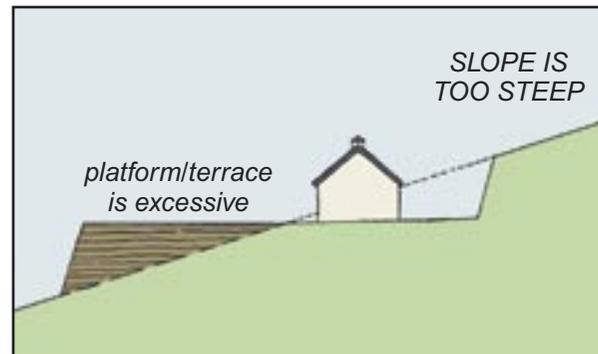
- The placing of dwellings across contours is not acceptable.



Contemporary Approach to dealing with contours



Breaking the form of a house can overcome a slightly sloping site



Excessive cutting and filling to produce a large platform (terrace) is not acceptable



Prominence

Avoid higher and prominent areas of a site. Build on lower land and level sites.

Prominence

- Development should be avoided on the higher, more prominent parts of the site. Dwellings set in such prominent areas create a sense of being 'dropped onto' the particular site, instead of the more favourable approach of being 'built into' the landscape.

Privacy

Use the existing landscape to secure privacy. Additional planting may be necessary to create private space.

Privacy

- Maximum use should be made of the existing landscape in order to ensure that the individual dwellings, while being part of a group, have their own private space. In some instances where natural features do not exist then extra planting should be carried out.



House that sits into the landscape



Well designed house "dropped onto" the landscape is inappropriate



Entrances

Design safety into the cluster entrance.

Entrances

- The entrance is a very important element in the overall design and layout of the individual dwelling and of the overall cluster. Entrances should be obvious to ensure safety and should be designed in a manner that utilises the assets of the area, such as natural planting and any indigenous stone. Traditional features are favoured rather than the more modern high iron gates.
- Every effort should be made to retain the existing boundary of the site. Where an existing boundary feature must be removed, it can be replaced with an earth or sod and stone boundary.
- Internal access roads should follow the contours of the site. Shared informal surface areas are recommended.

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|---|--|--|
| | | |
| <p><i>Standard Splay From Road</i></p> | <p><i>Provides Space for Incoming/ Outgoing Vehicles</i></p> | <p><i>Stone Wall and Field Entrance</i></p> |
| | | |
| <p><i>Inverted Bell Curve From Road</i></p> | <p><i>Provides Curved Entrance</i></p> | <p><i>Traditional Farm Entrance</i></p> |
| | | |
| <p><i>Bell Curve From Road</i></p> | <p><i>Curved Entrance Wall</i></p> | <p><i>Entrance to House Showing Good Natural Shelter</i></p> |



Refuse

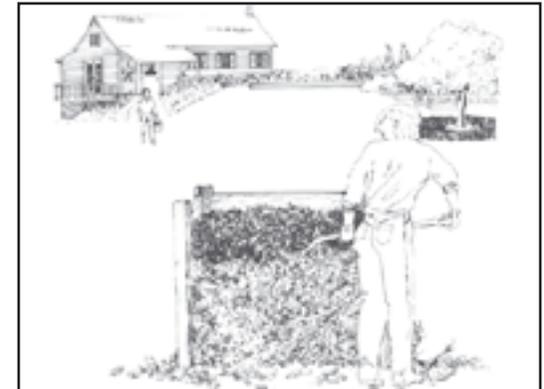
Central storage of refuse bins must be considered. Recycling is important, locate a central facility on site. Ensure all houses within the cluster have space for composters.

Refuse

- A central storage and collection point should be developed and utilised by all of the dwellings within the development.
- A central bring bank for recycling refuse should be provided within the cluster.
- Composting is an effective and environmentally friendly means of disposing of waste. A large part of household waste consists of valuable organic materials that can be made into compost. Composting can be performed by individual households or in centralised units.



Centrally located bin store - shown blue



Composting, an effective means of disposing of appropriate household waste



Public Lighting

Give consideration to the location of public and private lighting within the cluster.

Public lighting

- Public lighting should provide a sense of security to the cluster
- Give consideration to pedestrians, cyclists and car uses
- The design team should have regard to safety and security when designing the public lighting system.

Low level lighting can be quite discreet and blend into the background



Lamp standards need not be boring. This example provides lighting for people not cars

Parking

Allow for car parking in and around the cluster, but also design visitor car parking.

Parking

- Off street parking should be provided to accommodate the residents of the cluster. Each dwelling should have its own parking spaces and extra visitor parking facilities.



Good planting can shelter car parking

Car parking can be arranged around a courtyard





Gardens

Avoid large areas of lawn, consider tree and shrub planting instead. Consider the garden as a productive element of rural living, grow vegetables.

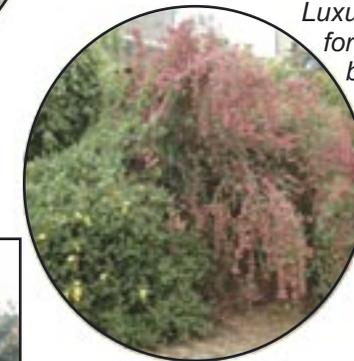
Gardens

- A central theme throughout these guidelines is the importance of linking the dwelling with its surrounding landscape. An effective rural garden layout and design will ensure that the dwellings and natural features compliment each other. Rural gardens should make the most of the natural features. Suburban layouts should always be avoided. e.g. hard kerbing. Good planting helps to link the house to the location. Large areas of lawn should also be avoided as they are high maintenance and tend to look out of place and 'artificial' in many rural areas.

Avoid excessive tarmac driveways around the house - encourage planting instead



Colourful flowering varieties attract wildlife



Luxuriant shrubs form attractive borders



Use species suited to the location

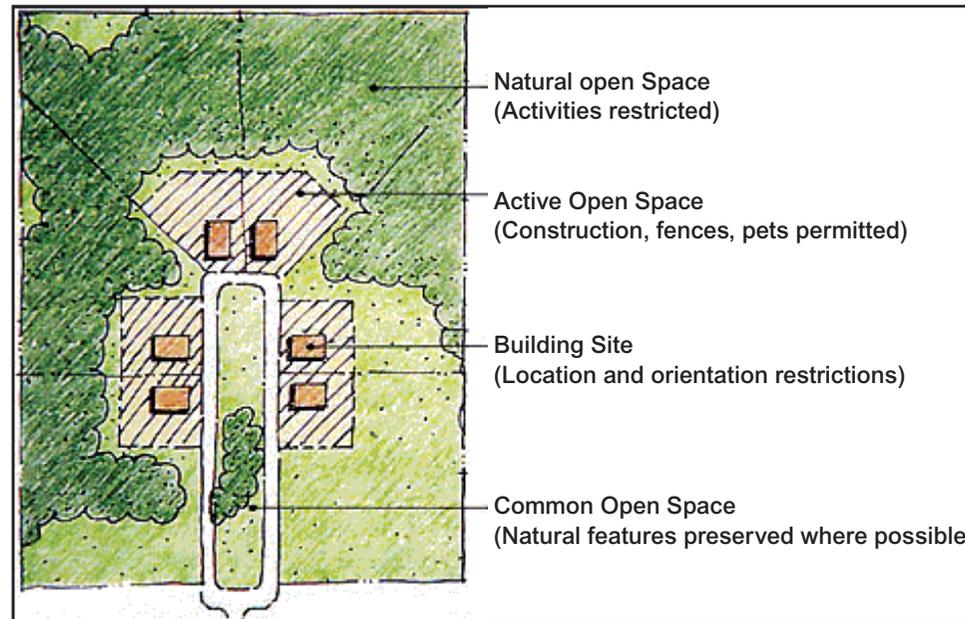


Outbuildings and Garages

Design outbuildings and garages to compliment the houses in the cluster. Outbuildings and garages should be part of the scheme rather than afterthoughts.

Outbuildings / garages and ancillary uses

- When considering the layout of a cluster it is important to consider the location and appearance of outbuildings such as garages, gas and oil storage tanks. The position of these structures should be considered at the outset of the process. They should be used to create a sense of enclosure and to help define spaces.



Building activity should ideally take place around the houses



Domestic sheds can accommodate garden equipment and fit into landscape



Safety

Avoid long straight stretches of road. “Design in” safety and play.

Safety

- The road design in cluster developments should consider safety first, as in many cases children use these roads as play areas. Therefore, wide straight stretches of road must be avoided at all times, as this encourages speeding. The roads could vary in width. It is preferable that no formal footpaths or verges be developed on these roads. Adequate road drainage must be considered as part of the overall cluster.
- It is important that traffic calming measures should be incorporated into the design of any scheme

Open Space

Take advantage of existing landscape. Allow for more passive use of open spaces.

Open space

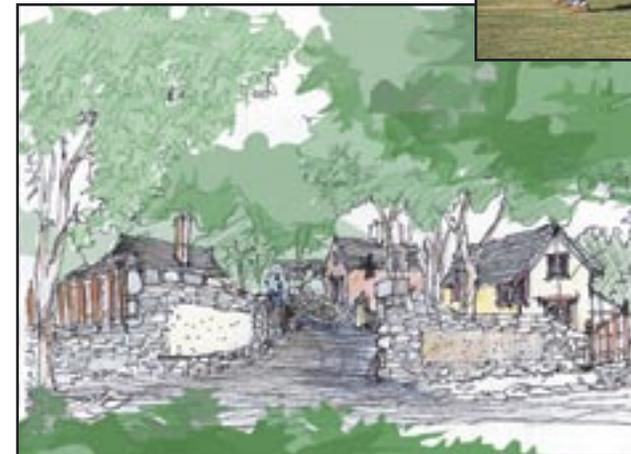
- These should be integrated into the overall layout. The spaces should take advantage of the natural landscape. The recreational needs of the residents must also be taken into consideration. These should incorporate playgrounds for children and sheltered and landscaped areas for more relaxed recreational pursuits.



Children should be able to explore outside of the garden



Informal playgrounds may be considered



Access roads should not be dominated by the car. Allow children to play



Drainage and Services

Ensure high quality water treatment at all times. Quality of design and maintenance of effluent treatment systems must be in accordance with South Dublin County Council guidance.

Drainage and services

The effective treatment of sewage is vital in order to maintain environmental quality and a good personal standard of living. There are a number of options available for the treatment of wastewater from a cluster site. These include the provision of septic tanks or individual wastewater treatment units, depending on site conditions. In all cases the proposed system must comply with relevant standards. The system chosen will depend on site characteristics and sensitivity. In all cases the individual Co-op/ Development Company must provide guarantees in relation to the long term maintenance of such systems. The responsibility will lie with the Co-op or body which manages the cluster and/ or its members.

Whatever method of wastewater disposal is chosen it must achieve the following:

- Treat the wastewater
- Comply with public health standards
- Avoid unpleasant odours
- Protection of groundwater and streams
- Ensure that restrictions in relation to the reservoir area and feeder streams are adhered to.
- Comply with all relevant legal requirements for the treatment and disposal of wastewater, including the disposal of sludge.
- Comply with the requirements of the Water Framework Directive.

It may be possible to plant trees and shrubs in an area adjacent to percolation areas, in order to aid the screening of such areas. These can also act as a screening device for the cluster development, while providing the cluster with more shelter and increased privacy.

Site Size

The size of individual house sites will vary depending on the design concept of each individual scheme. In many cases the size of the site will be determined by the method of effluent disposal for example cluster sites connected to public sewers will not have the same site size requirements as those served by septic tanks or wastewater treatment plants.



Treatment system 'hidden' into the surrounding landscape

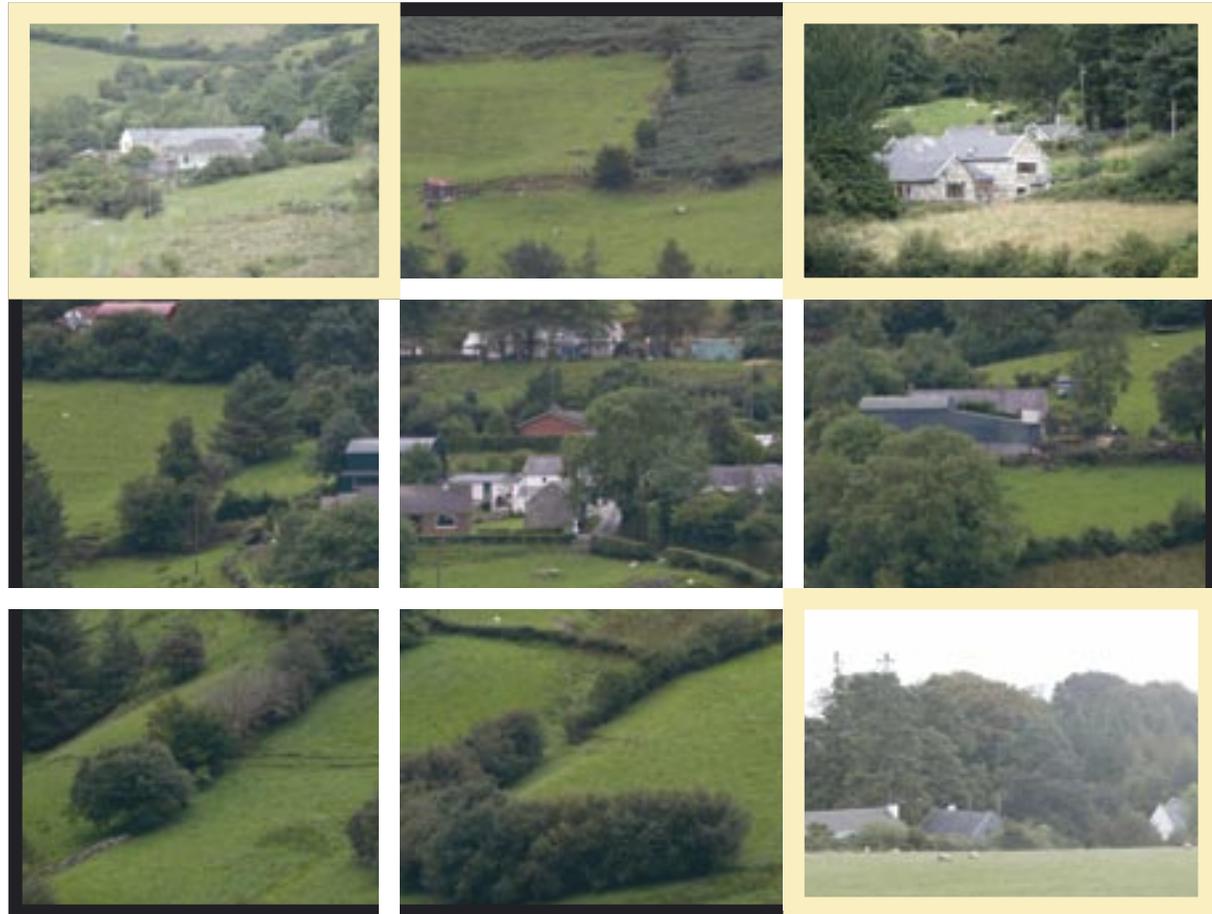


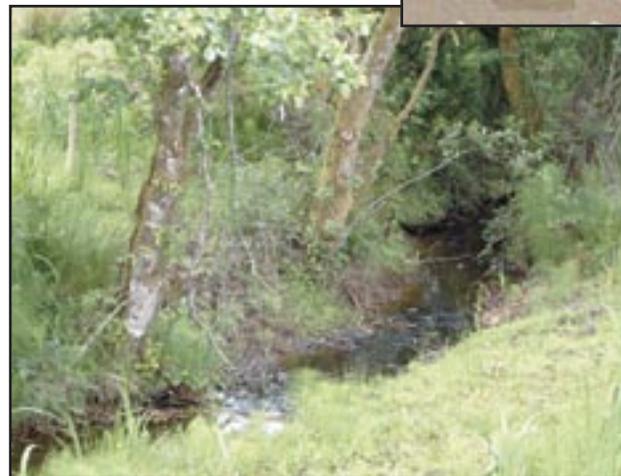
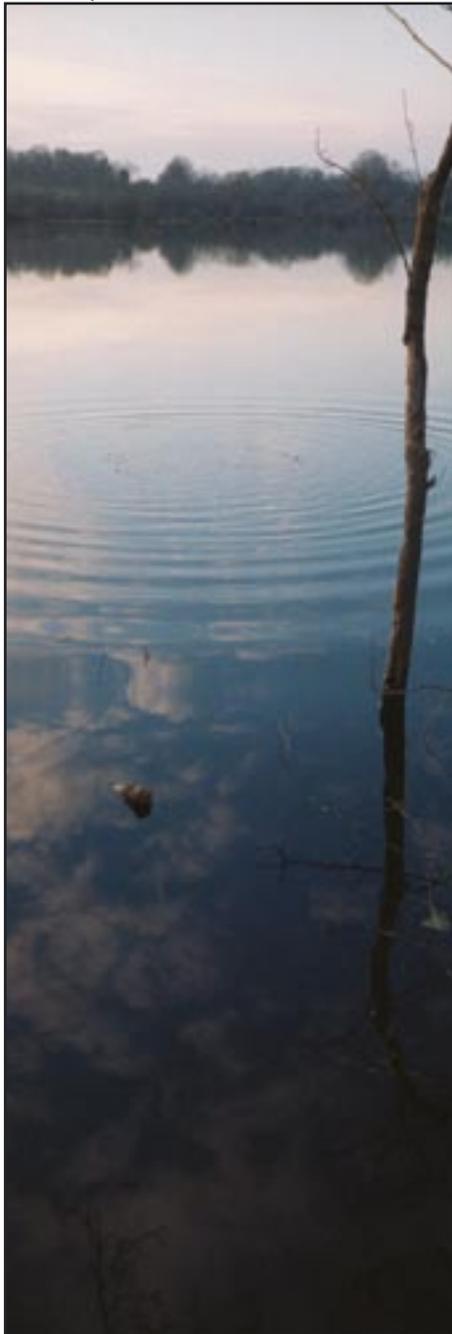
Defining the cluster - Good Neighbour

House design should be sympathetic to neighbouring properties. Do not impinge on the privacy of neighbouring property.

Defining the cluster (the good neighbour)

- In addition to respecting its location in the countryside, a new building should be a good neighbour to existing buildings. Firstly, its siting should take account of and be sympathetic to the existing layout of other buildings in the cluster. Secondly, no buildings should detract from the setting, aspect or privacy of existing buildings.
- The above can be facilitated through the use of a variety of building types, which are designed to complement each other. It is also facilitated through the use of common materials in the buildings and through the use of common boundary treatments creating a theme within the cluster.
- Protected views to and from the cluster must be safeguarded. Good screening design can allow views from houses within the cluster without damaging existing amenities.







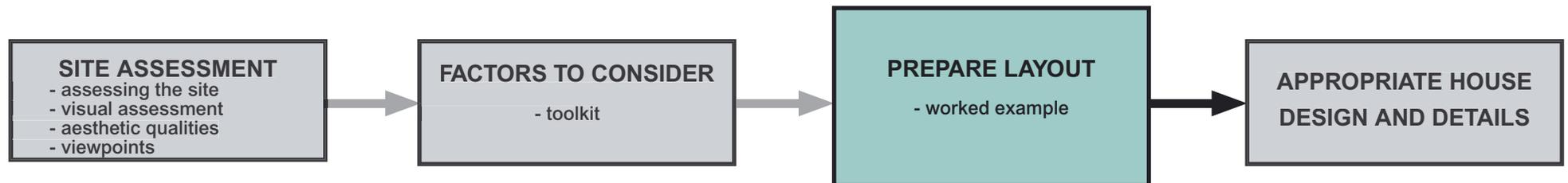
Worked example:

Introduction

When developing the cluster, it is imperative that the layout of the site represents the most appropriate and sustainable form. To do this there are a number of factors that need to be considered. Common rules regarding boundaries, materials, colours, surfaces and landscape must be adhered to in order to ensure consistency, without undermining the individuality and uniqueness of each dwelling within the cluster. Most importantly, it is vital that the existing landscape/environment is respected and utilised in a manner that will benefit both the natural landscape and those wishing to build their own homes.

The rural landscape, such as the one in Glenasmole/Bohernabreena, does not favour developments where the houses are arranged in straight lines, encouraging ribbon development. Instead, it is more appropriate to have an informal layout, where the houses are stepped in and out and set at different angles to each other and arranged around short cul-de-sac roads.

In preparing any scheme a detailed Design Statement must be submitted – this must incorporate a comprehensive analysis of the site and proposed development





Three possible cluster design solutions

- The three sketch diagrams show how different approaches to cluster design accommodate the needs of the Community.

1. Cluster around a courtyard

- This group shares a communal formal courtyard to which all the houses directly relate and to which they all have access.
- The central area can also provide for play space and individual or shared percolation.
- It is envisaged that the external planting belts will give privacy, shelter and wind reduction to the cluster.
- Boundaries to the communal green and plot boundary walls will all use the same local materials, such as stone, to give a sense of community as seen from inside and outside the cluster.
- Similar materials are used in the houses, garages, sheds and screening of private areas.

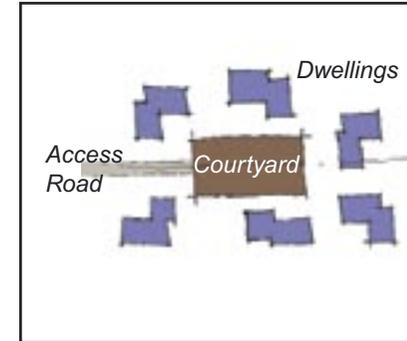
2. Informal cluster

- In this cluster some of the houses front directly onto the central green, while others front onto shared access drives. The central area can be irregular in shape and adapted to the features of the site. Again it can serve as an overlooked play area or as a percolation area. Seen from outside the cluster, the houses will blend to give the impression of being part of an extended range of farm buildings.

3. Cluster following natural contours

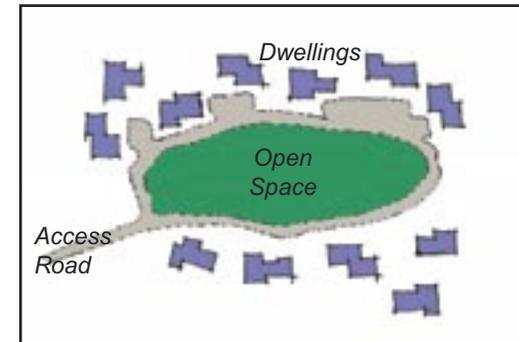
- The houses follow the line of existing contours and front onto an open space, which can contain the children's play area or a percolation area. All the houses enjoy a similar aspect, yet are close enough to give a sense of community. In the example shown, the crescent formed along the contour allows the houses to enjoy mutual supervision.

1.



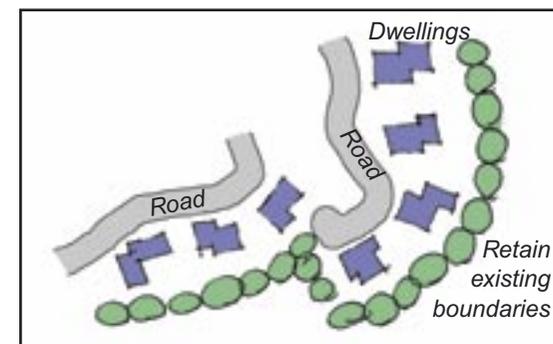
Courtyard

2.



Informal Cluster

3.



Natural Contours



Worked examples Layouts:

Finding the best solution for individual sites.

This section sets out how all the various considerations may be pieced together to produce a favourable outcome for the site in question. This is a step-by-step guide to how the best solution might be arrived at for the layout of a cluster site.

The purpose is to demonstrate how different solutions will be required on different sites. The exercise will also demonstrate how the basic principles often lead to a logical solution.

In the preparation of a design solution for the site, the developer should be cognisant of both the design guidance produced in this document and the standard guidelines to be found in the County Development Plan. Particular attention should be given to issues such as avoiding undue overlooking, maintaining privacy and ensuring good individual house design in line with accepted standards.

Examples are for illustrative purposes only, and bear no resemblance to any locations in South Dublin County.



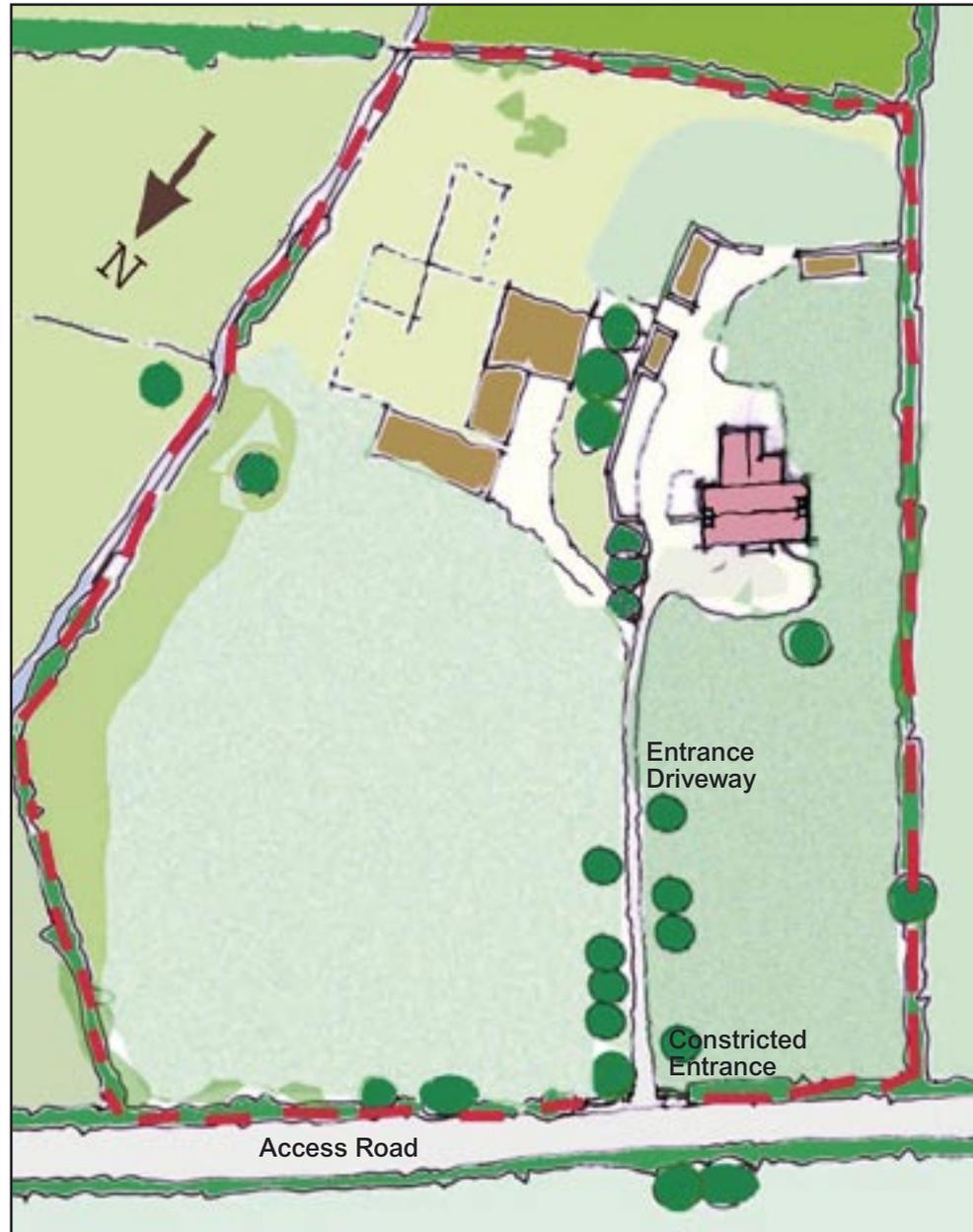
| Site Description | | |
|---------------------------|---|--|
| Factors | Site 1 | Site 2 |
| Location | Both sites are located in an area of high amenity. It is an area where some limited development in the form of well designed clusters of development might be considered. | |
| Site Description | The site area is approximately 1.5 hectares (3.5 acres). It is an irregular shaped site composed of a large field with c. 75m road frontage. The area is largely grassland and an established farm exists on the site with buildings and outhouses. | The site area is approximately 2.2 hectares (5.5 acres). It is an irregular shaped site composed of a number of fields with c. 100m road frontage. The area is largely grassland, existing properties are in the vicinity. |
| Topography | There is a 2 metre rise in ground levels running north to south across the site. | There is a 3.5 metre rise in ground levels running south east north west across the site. |
| Boundaries | The boundaries of the site are identified by well defined mature rural hedgerows and trees. | The boundaries of the site are defined by mature hedgerows and trees. There are two existing dwellings located west of the cluster site. These dwellings front directly onto the public road. A farmhouse and outbuildings, associated with adjoining farmland, are located to the south of the site. |
| Field Boundaries | The site is defined by a large field with intact mature boundaries. | The site consists of 3 fields bounded by prominent and mature hedgerows and trees. |
| Habitats/Landscape | As the site is located in the foothills of the Dublin Mountains it is rich in natural features and habitats. Most notably the site is characterised by mature and valuable hedgerows and trees. | |

**Design Considerations*****Site Specific Design
and Layout***

- The development must be aligned to the natural contours of the land without the use of excessive engineering works.
- The layout must take cognisance of natural enclosure and natural corridors, including stone walls.
- The development must retain, where possible, existing hedgerows located on site boundaries and within the site, both for reasons of visual amenity and protection of existing habitats.
- The amenities of the existing residential properties must be protected through the use of additional screen planting where the scheme adjoins existing houses. Fencing in conjunction with planting may also be required in order to secure these properties.
- Existing boundaries and hedgerows to be reinforced through the use of additional planting.
- The layout must be 'walking, cycling friendly' while providing adequate access to all users.
- The layout must include for significant, safe and usable open space.
- The layout must provide shelter from prevailing winds.
- All play areas must be adequately supervised.
- The layout must create a safe and secure environment with adequate supervision of all public areas.
- The access way within the cluster should be of an informal cul-de-sac design and should be as unobtrusive as possible, following the contours of the site, curving to avoid monotony, taking advantage of existing features of the site, reducing vehicle speeds and penetrating only as far as necessary leaving areas to be served by narrower private driveways. The road should have a joint use pedestrian/vehicle surface.
- Shared private driveways may serve up to 4 dwellings.
- Access for service vehicles will be permitted but limited.



SITE 1
UNDEVELOPED -
Analysis of overall
study site



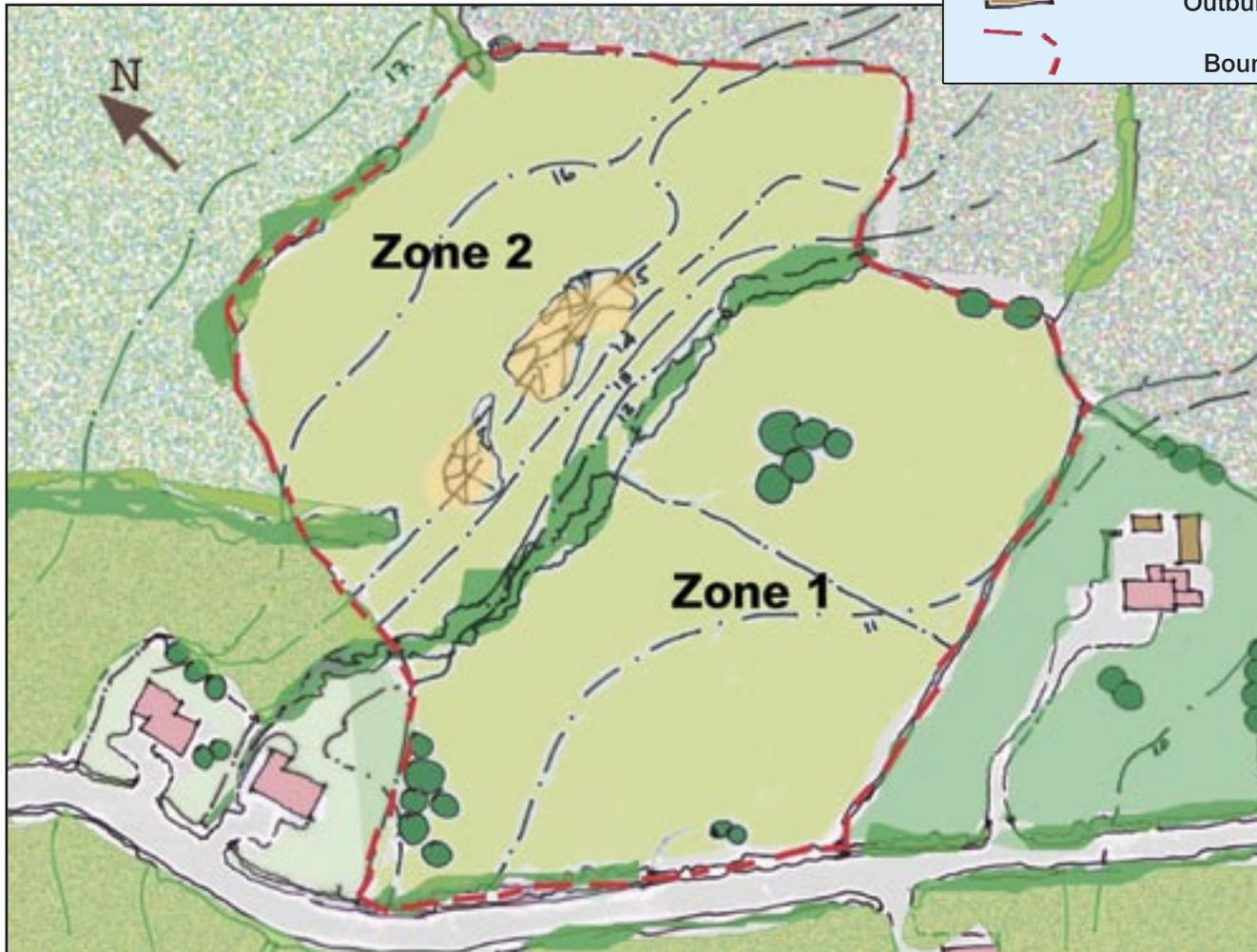
| Legend | |
|--------|----------------|
| | Existing House |
| | Existing Tree |
| | Existing Hedge |
| | Outbuilding |
| | Boundary |

- Building zone identified as:
- Sheltered
 - Reinforcing existing building group
 - Capable of being screened
 - Taking advantage of orientation and existing planting
 - Allowing natural foreground to be preserved and used as reserve area
 - Increasing privacy
 - Field open to road with minimal shelter



SITE 2
UNDEVELOPED -
Analysis of
overall study site

| Legend | |
|---|----------------|
|  | Rock Outcrop |
|  | Existing House |
|  | Existing Tree |
|  | Existing Hedge |
|  | Outbuilding |
|  | Boundary |



Zone 1

- Building zone identified as:
- Discreet
 - Having optimum shelter
 - Possible to screen
 - Having existing planting and features
 - Possible to maximise orientation
 - Allowing natural foreground and maximum privacy
 - Allowing a phased acquisition and building programme

Zone 2

- Building zone identified as:
- Discreet
 - Having optimum shelter
 - Possible to screen
 - Having existing planting and features
 - Possible to maximise orientation
 - Allowing natural foreground and maximum privacy
 - Allowing a phased acquisition and building programme
 - Rock and gorse outcrop acts as natural focus and identity for site



Applying the toolkit

| Factors | ☺ | × | Site 1 | Site 2 |
|------------------------------|---|---|---|---|
| <i>Sunlight</i> | ✓ | | The living spaces of each dwelling have been arranged to take full advantage of the site's orientation in relation to the sun. | The living spaces of each dwelling have been arranged to take full advantage of the site's orientation in relation to the sun and exploit passive solar gain. |
| <i>Shelter</i> | ✓ | | The existing boundaries have been strengthened and new planting will create greater protection from the prevailing wind, particularly to the south. | |
| <i>Boundaries</i> | ✓ | | These have been retained and strengthened in order to allow the development to create a good 'fit' in to the landscape. | |
| <i>Dealing with contours</i> | ✓ | | The site is relatively level, the houses have capitalised on this aspect, minimal excavating work has been necessary. | The site slopes upward from the road. The houses have been placed to follow the natural lie of the land without too much removal of material |
| <i>Prominence</i> | ✓ | | The site was selected to avoid creating prominent locations for houses, shelter and privacy have been the key considerations. | The houses have been located to avoid prominent high spots, sometimes reducing the total number of units that could have been constructed using less sympathetic design principles. |
| <i>Privacy</i> | ✓ | | Each house has been located to protect the privacy of proposed houses and the existing farmhouse. | Protecting the privacy of proposed and existing houses in the vicinity is important, note that each site is much larger than standard housing layouts. |
| <i>Entrances</i> | ✓ | | In all cases private entrances have been designed to access from the single distribution road, creating a safe quiet cul de sac. | In most cases private entrances have been designed to access from the minor distribution road, creating miniature, quiet and safe cul de sacs. |
| <i>Access</i> | ✓ | | The cluster entrance has been located off the existing farm lane, planting has been retained and strengthened; safety has been maintained. | The entrance to the cluster has been located at a safe location on the public road and existing planting has been retained and strengthened. |
| <i>Refuse</i> | ✓ | | Central bin stores should be located within the site. | |



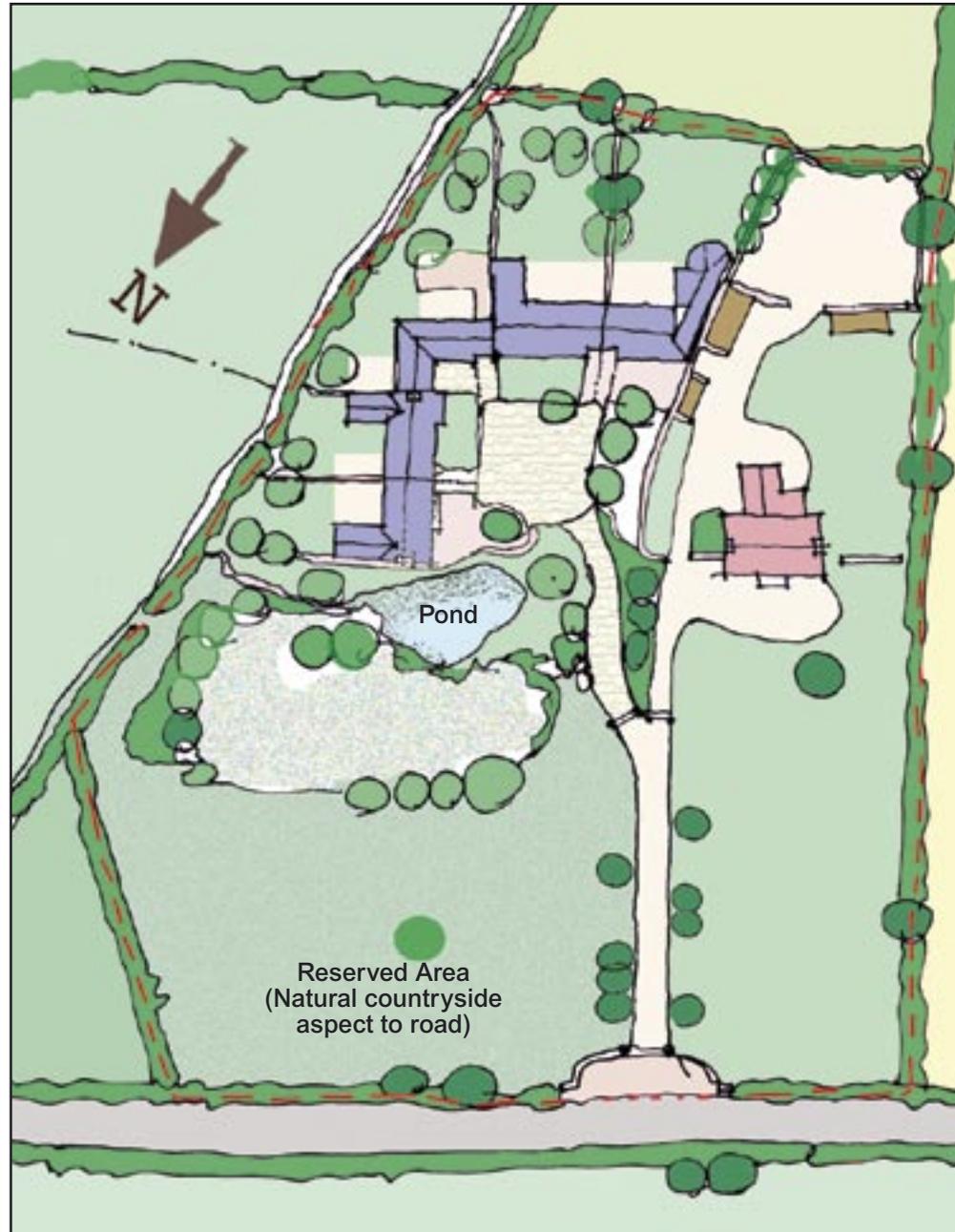
| Factors | 😊 | × | Site 1 | Site 2 |
|--|---|---|---|--|
| <i>Parking</i> | ✓ | | Parking can be easily accommodated within the curtilage of each house. | Parking can be easily accommodated within the curtilage of each house and at various locations throughout the cluster. |
| <i>Safety</i> | ✓ | | The access road has been designed to slow traffic by reducing width and using a differently coloured and textured top layer. Therefore, providing a relatively safe environment for children to play and explore. | |
| <i>Open Space</i> | ✓ | | Generous amounts of open space compliment the private gardens of each house and encourage people to feel good about their surroundings. | |
| <i>Gardens</i> | ✓ | | Each site has been designed to offer a garden that can both be a pleasure to enjoy and a resource to provide for the household. | |
| <i>Outbuildings/garages and auxiliary uses</i> | ✓ | | Sites are large and individuals have sufficient room to expand or provide extra accommodation, such as garden sheds or domestic garages. | |
| <i>Drainage and services</i> | ✓ | | Each house site is large enough to accommodate individual proprietary effluent treatment systems; such systems will require good maintenance | |



**SITE 1
OPTION A
SITE PLAN**

**5 HOUSES IN FORMAL
COURTYARD**

- Existing house retained, with haggard and outbuildings, as independent residential entity.
- Reinforced planting to boundaries to provide shelter within the development
- Pond for storm water and visual amenity
- Reserved area to retain natural countryside aspect to road
- Existing stone walls retained and extended
- Driveway upgraded - planted passing bays to be considered



Legend

- Proposed House
- Existing House
- Proposed Tree
- Existing Tree
- Existing Hedge
- Outbuilding
- Shared Surface
- Boundary



SITE 1
OPTION A
OBLIQUE VIEW

| Legend | |
|--------|----------------|
| | Proposed House |
| | Existing House |
| | Proposed Tree |
| | Existing Tree |
| | Existing Hedge |
| | Outbuilding |
| | Shared Surface |



5 HOUSES IN FORMAL COURTYARD



SITE 1
OPTION B
SITE PLAN

INFORMAL HOUSE LAYOUT
AROUND COURTYARD

Individual houses grouped around courtyard unified by:

- Boundary wall treatment
- Similar materials
- Similar architectural treatment

Courtyard:

- Semi-circular courtyard wall to house entrances

Land to frontage reserved for agricultural use to preserve natural vistas from house and road

Trees provide shelter and screening



| Legend | |
|--------|----------------|
| | Proposed House |
| | Existing House |
| | Proposed Tree |
| | Existing Tree |
| | Existing Hedge |
| | Outbuilding |
| | Shared Surface |
| | Boundary |



SITE 1
OPTION B
OBLIQUE VIEW

| Legend | |
|--------|----------------|
| | Proposed House |
| | Existing House |
| | Proposed Tree |
| | Existing Tree |
| | Existing Hedge |
| | Outbuilding |
| | Shared Surface |



**INFORMAL HOUSE LAYOUT
 AROUND COURTYARD**

- Consistent architectural treatment of individual house designs
- Wall as existing for shelter and visual screening
- Visually strong wall treatment to courtyard, similar to existing walls
- Existing house retained as independent dwelling with own rear garden and outbuildings.



SITE 2
PROPOSED
SITE PLAN
- PHASE 1



| Legend | |
|--------|----------------|
| | Rock Outcrop |
| | Proposed House |
| | Existing House |
| | Proposed Tree |
| | Existing Tree |
| | Existing Hedge |
| | Shared Surface |
| | Boundary |

INFORMAL HOUSE LAYOUT
AROUND COURTYARD

Individual houses grouped around courtyard unified by:

- Boundary wall treatment
- Similar materials
- Similar architectural treatment

Courtyard:

- Semi-circular courtyard wall to house entrances

Land to frontage reserved for agricultural use to preserve natural vistas from house and road

Trees provide shelter and screening



SITE 2
OBLIQUE VIEW
- PHASE 1



Legend

| | |
|--|----------------|
| | Proposed House |
| | Existing House |
| | Proposed Tree |
| | Existing Tree |
| | Existing Hedge |
| | Shared Surface |
| | Boundary |

**INFORMAL HOUSE LAYOUT
 AROUND COURTYARD**

- Initial area of overall site should be self sustaining to ensure independence if acquisition or other problems occur with the higher portion of the site
- Boundaries reinforced with planting
- Existing trees retained
- Trees provide screening from road and prevailing winds



SITE 2

**PROPOSED
SITE PLAN
- PHASE 2**

**INFORMAL HOUSE LAYOUT
AROUND COURTYARD**





SITE 2

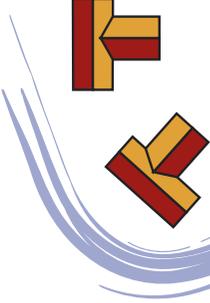
OBLIQUE VIEW

- PHASE 2

**INFORMAL HOUSE LAYOUT
AROUND COURTYARD**

- Consistent architectural treatment to individual houses to create overall unity
- Shared courtyard maximises 'safe' play area and shared facilities
- Consistent strong boundary walls throughout to provide visual unity
- Road required to be reduced in width in certain areas to minimise visual impact by use of passing bays
- Tree screens to shelter for prevailing wind
- Boundary planting reinforced





Glenasmole -Bohernabreena Housing Clusters

South Dublin County Council Planning Department

March 2005



Chapter 3



Introduction

This chapter addresses the design and detail elements of houses in clusters.

The skills and innovation of the architectural and design professions are vital in achieving quality development. It is important that applicants or co-ops employ trained professionals when designing housing for clusters. Professional advice will usually result in housing that is more economical to run and which meets clients needs better than a house design borrowed from a book of standard plans. Furthermore, the innovative layouts illustrated in this guide demand a high degree of design with regard to maintaining privacy, reducing overlooking and the use of modern house types incorporating traditional techniques.

The previous chapter dealt with the most appropriate site layout and the general characteristics that make a good layout. This chapter will deal more specifically with the house design.

A high standard of design should be maintained throughout the development. It is important that the individual dwellings compliment the overall design and that there is uniformity throughout the ideas and concepts utilised in the entire scheme.

Traditionally rural houses have tended to follow the simple formula of a narrow plan adapted to the site and using local materials. For a variety of reasons this has been successful, not least as it demonstrates the human scale of buildings. A good designer will be capable of executing contemporary styles utilising local design cues for specific sites.



Guiding principles

- Simplicity
- Scale
- Proportion
- Height





Simplicity

- Simple forms are generally the most effective and the least intrusive on the surrounding landscape. Forms can be adapted to contemporary designs, materials and details to ensure that the dwellings are aesthetically pleasing, functional and modern.

Scale

- Factors such as proportion and height will have an effect on the scale of the dwelling within the cluster. Scale can refer to the following elements:
 - It relates to the size of the house in relation to the site.
 - It refers to the size of the house in relation to other existing houses in the area and within the cluster.
 - It relates to the size of the different parts of the house in relation to other parts.
 - Large, out of scale houses that are built close to smaller houses will undoubtedly lead to problems of over looking and over shadowing.



Location is important, here tall trees can inspire design



Ensure there is variety in a scheme



Use trees and walls to allow interrelationship between home and setting



Simple forms joined together make for good living areas



Proportion

A balance of proportions between the windows and doors throughout and between dwellings should be maintained.



Small headed dormer windows do not overpower the overall design



Note how buildings can relate to each other in terms of proportion

Height

It is essential to ensure that all the dwellings are of similar height and that no one dwelling towers above the other.



Houses of similar height



Complimentary building heights can produce an harmonious effect



Detail

Guiding Principles

- Generally rural houses are simple buildings. They have been constructed in such a manner that allows them to fit into their surrounding landscape. With the use of appropriate building designs combined with appropriate detail and use of materials modern buildings can also fit into the landscape.
- Roofs and walls are the basic elements of any building, but materials and details of design are also critically important in creating harmony between buildings and the landscape.
- This section identifies the most appropriate methods/design/materials that should be used in modern house construction within a cluster in a countryside area such as Glensmole.
- Getting the basics right in house design is important as it establishes general standards, as well as helping to ensure that the building will perform well as a home in the future.

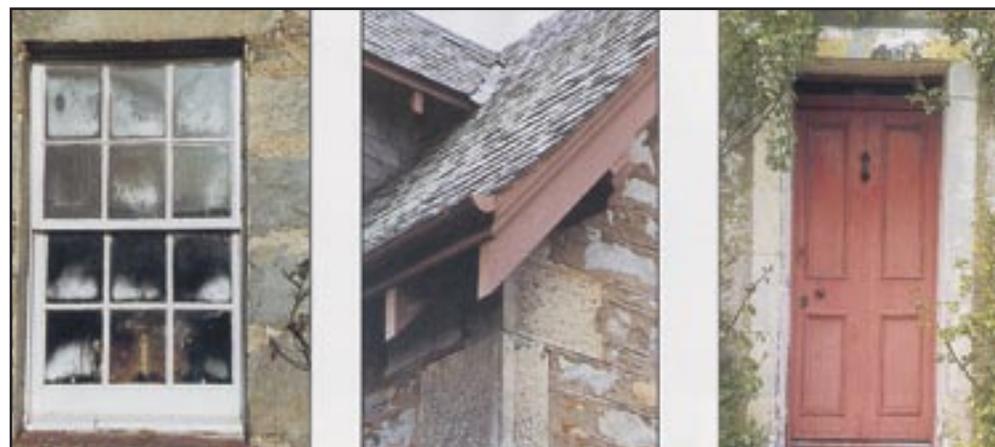
This section includes recommendations in relationship to:

- Materials
- Roof profiles
- Roof Finishes
- Chimneys
- Gables
- Walls
- Boundary walls
- Windows
- Dormer windows
- Porches
- Pipework
- Extensions



Materials can play a part in creating striking buildings within the cluster

Houses can easily become part of the landscape



Traditional features can translate into modern interpretations



Materials

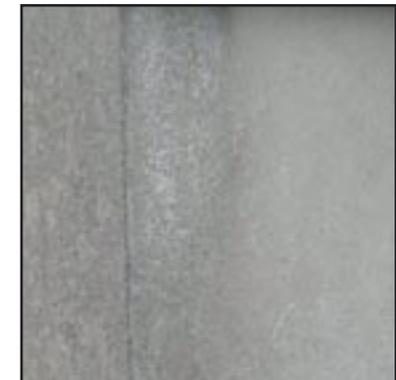
- Choice and use of materials must be consistent throughout both the individual dwellings and the cluster scheme.
- Use of uPVC on windows/doors should be avoided throughout the cluster. The use of natural materials for windows and doors, such as hard wearing timber, is recommended
- Try to use traditional building materials.
- Source materials locally, reducing transport costs
- If possible use recycled materials.
- Carefully select materials for windows, gutters and doors, natural materials often perform well over the long term.



Note mix of appropriate materials



Natural stone and lime mortar



A simple cement render, circa 1950



Roof Profiles

- Simple roof forms perform better and are aesthetically pleasing.
- Be aware of traditional local styles of roof and keep pitched roofs between 35 and 45 degrees.
- Avoid over complicated or large roofscapes.



Roof detail adds interest to house designs



Pitch of roofs is important as it provides interest to a design



Curved roof profiles can be appropriate in the right location

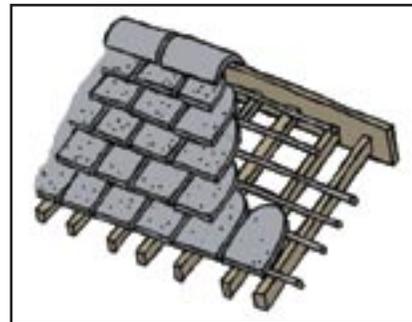


Roofing details are important at the interface of rising walls

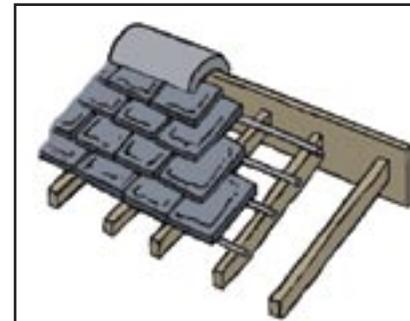


Roof Finishes

- Roof materials must be consistent throughout the cluster. Use of traditional materials e.g. slate, is recommended.
- Roof colour must be blue/black, consistent with the Glenasmole area.
- Minimise large expanses of roof by breaking up the massing and form of the houses.
- Ridge tiles must match roof material in colour and texture both on individual houses and within the scheme as a whole.
- Avoid highly decorated or ornate ridge members.



Stone flagged roof with stone ridge



Slate roof with tile-fired clay ridge



New slate and repainted stonework



Lead lined valley to a slate roof

Laced valley of slate

Swept valley of slate



Roof areas tying in



Chimneys

- Chimneys should have a robust form and shape throughout the cluster.
- Chimney terminations should be composed of deep capping and sturdy pots
- Incorporate central heating flues into the design of the house.



This wall and chimney functions as a strong architectural detail



Modern roof profile with strong chimney detail



This image shows strength in chimney detail



In this design chimneys are an important element of the home



Gables

- End walls or gables should be predominantly solid, without too many openings.
- Limit door and window openings to maintain strong appearance.
- Avoid gable fronted designs.
- Be aware that roof pitch has an impact on the appearance of gables.



Good strong gable wall, good enclosure of courtyard space



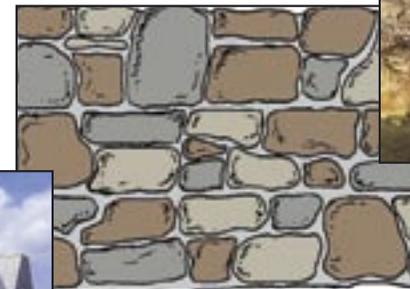
Note how good gable ends produce good private space

External Walls

- External walls should be plastered or lime rendered in white or other appropriate colour and consistent throughout the cluster.
- Other materials can be utilised provided they are appropriate and used consistently.
- Brick is to be avoided in all cases. Brick detailing around window openings and doors can be considered if in line with the overall design aesthetic
- Openings should be simple and restrained.
- If the design demands it, select local natural stone and use a good mason to lay walls to courses.



Generally external walls should be rendered, however where appropriate other materials may be considered



Random rubble built to courses



Timber cladding may also be considered



Boundary Walls/Public Realm

- High quality materials, uniform in detail must be used throughout the scheme. For example local traditional dry stone/lime mortared walls or low bank and hedging.
- Concrete block walls, stud rail fencing and brick walls are not acceptable.

Extensions

- Find out first, if extensions require planning permission.
- Extensions should match / complement the existing house.
- Ensure that extensions do not adversely affect neighbouring properties.

Dormer Windows

- Dormer style must be consistent in each dwelling and throughout the cluster.
- Avoid over detailing the dormer with inappropriate materials and finishes.
- Where dormers are necessary they should be in proportion with the roof and not dominate the overall design.



Tying in an extension is important

Dormers often rise from the external wall

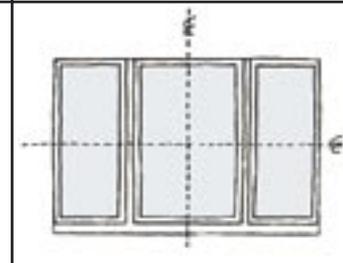


Random rubble not coursed

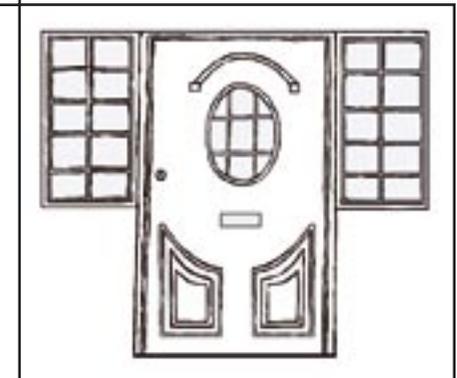


Windows & Doors

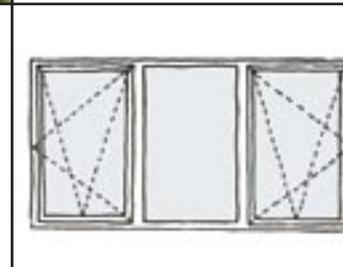
- The style of the windows and doors must be consistent throughout the cluster scheme.
- Windows and doors should not dominate walls.
- Openings should be simple.
- Larger windows should be subdivided vertically.
- Use of natural materials e.g. Hard wearing timber is recommended.
- Avoid multi sized and shaped panes of glass on windows.
- In passive solar designs windows are important, carefully consider their position and orientation.
- Doors should be of simple design.
- Painted finishes are preferred and colours should compliment the overall design of the house and the overall scheme.



Note how window, balcony, roof and wall finish all add to a complete design



Avoid this type of door detail





Porches

- Porch detail should be consistent with the design of the house.
- Avoid fussy and over ornamental pseudo classical porches.



Contemporary porch



Traditional Porch

Pipework

- As far as possible locate pipework internally, maintaining a clutter free external facade.
- Rainwater goods should be utilitarian in appearance and constructed of durable robust materials.



Robust gutters



Rainwater goods used as a feature



Wider environmental concerns and designing houses for living

Internal layout design

It is important that the internal layout of the house allows for a rural lifestyle and respects the biodiversity of the site. Too often houses are built in the countryside based on standard pattern designs. Standard designs do not take account the individual needs of the home owner or the characteristics of the specific site and often require considerable remodelling.

Therefore, it is preferable to design houses for a particular use and site. It is important to consider some of the following; allowing sufficient hallway circulation space, the provision of adequate drying facilities for wet clothes and dirty footwear and provision of adequate storage areas.

If a rural home is to be used by the whole family it is important to provide workspaces and separate children's play areas in order to accommodate modern trends such as working from home.

Designing with environment in mind

Design decisions can be used to minimise the negative environmental impacts a new house may have, some include:

- Select materials of lower embodied energy. Where possible, use timber in place of plasterboard, brick, concrete, metal and plastic. Also use paper, glass fibre and mineral wool insulation in place of oil-based expanded foams.
- Recycle energy-intensive materials. Use brick and concrete rubble as hardcore instead of fresh aggregates.
- Using locally produced materials. Timber from home grown managed forestry should be significantly less energy intensive and more sustainable than masonry or steel.
- Minimise the quantities of materials used.
- Maximise the life of the building, both structurally and in terms of component replacement frequency, such as selecting timber windows instead of uPVC.

Building sustainable buildings

The dwellings should:

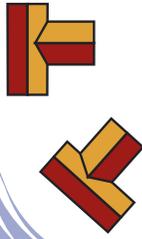
- connect with and work with their own ecosystem
- not cause a problem for the people/buildings around them
- adopt technologies appropriate to local conditions
- express the culture and ecology of the local people
- should minimise negative impacts





Eco Design Suggestions

| |
|---|
| Ventilation |
| Consideration should be given to (hot air) ventilation in summer months. Wet areas, such as kitchen, utility room and bathroom, should be well ventilated to avoid condensation build up. |
| Insulating Materials and Building Methods |
| Fabric insulation which is significantly better than the minimum required by regulation is recommended. |
| Preventing Cold Bridges |
| Potential cold bridges should be eliminated, through good design methods and appropriate materials. |
| Draughtproofing and Windows |
| Window frames should be selected that optimise energy efficiency. |
| Using Thermal Mass |
| Buildings with a high thermal mass levels out the peaks and troughs of temperature change. Conservatories should not be centrally heated as this negates their environmental benefits |
| Improved central heating |
| Environmental considerations should be a priority when deciding on choice of fuel. Heated areas within the house should be insulated from non-heated spaces. The hot water distribution system should be adequately insulated. The heating system should be geared towards the thermal efficiency of the building and use by occupants. |
| Solar Energy |
| Provision of deciduous trees and shrubs will offer summer shade whilst allowing penetration by winter sun. The internal layout should place rooms on appropriate sides of the building either to benefit from solar gain or to avoid its effects. Areas of non beneficial glass should be minimised. The main facade of the building should face south (plus or minus 30°) Glazed areas such as conservatories or other buffer spaces can be used to heat incoming ventilation air. |
| Thermal solar energy systems |
| Internal surfaces should maximise solar heat absorption. Glazing should be equivalent to triple glazed through the use of low emissivity (Low E) glass. As a general rule it is advisable to maximise south facing windows and minimise north facing windows. Photovoltaics, flat plate collectors and thermally efficient glazing are high tech. examples of solar energy systems effective in this country. |
| Windows |
| In positioning of windows the effect of solar gain must be considered in conjunction with daylight design. Do not underestimate the effect of heat gain on window frames and glazing bars. |
| Low energy lighting |
| Combined with a well designed home that takes advantage of natural light, low energy lighting can substantially reduce electricity bills |
| Rainwater collection |
| Collected rainwater can be used for irrigating the garden, to flush toilets, in clothes washing machines and washing the car, provided any impurities are removed. |
| Greywater systems |
| Greywater can be also be used to flush toilets and irrigate the garden, but only after filtration and treatment. |



Glenasmole -Bohernabreena Housing Clusters

South Dublin County Council Planning Department

March 2005



Appendix



Glenasmole Clusters – Plant Selection Guidelines

The landscape setting is the interface between the natural or rural surroundings and the built aspects of settlement. The landscape treatment that is proposed for a cluster settlement or village will be determined by its landscape setting. In the case of a cluster it should be regarded as an integral part of the landscape.

The selection of trees and shrubs for planting in and around a cluster settlement will be influenced by

- the shape and form of the surrounding landscape
- the range of existing vegetation including both natural and exotic
- soil types and depth
- the function of the planting and
- the degree of exposure or shelter.

The trees and shrubs growing naturally in the area will provide a good indication of what will thrive in the locality.

The objective of planting is to protect and enhance the existing natural beauty of the area by helping to integrate new development with the existing landscape. This can be achieved by using a combination of native and indigenous type plants to create an informal, naturalistic scene. The following is a listing of suggested trees and shrubs for various planting situations:



| Planting Areas | Planting Guidance | Species of Plant | |
|--|---|---|--|
| Mixed Shelterbelt / Screen Planting | For screen planting, use minimum 2-year old (1+1) forestry transplants or whips of 90-120cm in height. These do not need staking and tend to establish more efficiently than larger trees. Feathered trees of 150-200cm high may also be used and will usually require staking. | Ash Pedunculate Oak Sessile Oak Rowan Wild Cherry Downy Birch Silver Birch Field Maple Common Alder Norway Maple | Fraxinus excelsior Quercus robur Quercus petraea Sorbus aucuparia Prunus avium Betula pubescens Betula pendula Acer campestre Alnus glutinosa (especially suitable on wet sites) Acer platanoides |
| Shrub / Edge Planting | | Guelder Rose Spindle Hazel Holly Gorse Elder | Viburnum opulus Euonymus europaeus Corylus avellana Ilex aquifolium Ulex europaeus var. flore pleno Sambucus nigra |
| Hedgerows & Hedges | Hawthorn should be used as the dominant species with other suitable species selected from the following list to encourage biodiversity. Plant density should ideally be 4-6 plants per metre run. | Hawthorn Blackthorn Holly Beech Hazel Spindle Dog Rose Honeysuckle | Crataegus monogyna Prunus spinosa Ilex aquifolium Fagus sylvatica Corylus avellana Euonymus europaeus Rosa canina Lonicera periclymenum |
| Large Specimen Trees for Shared Use Open Space Areas | Specimen trees should be of minimum girth 14-16cms. | Pedunculate Oak Sessile Oak Evergreen Oak Lime Chestnut Spanish Chestnut Bird Cherry | Quercus robur Quercus petraea Quercus ilex Tilia europea Aesculus hippocastanum Castanea sativa Prunus padus |
| Planting along Internal Access Roads | Trees for planting in the margins of access roads should be of minimum girth 14-16cms and with clear stems free of branches for 2 metres. | Ash Rowan Turkish Hazel Field Maple Lime | Fraxinus excelsior "Westhof Glory" Sorbus aucuparia and cultivars Corylus colurna Acer campestre "Elsrijk" Tilia cordata "Green Spire" |

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