



## Larger housing developments

- extending existing settlements
- forming standalone settlements



# Introduction

New development in Argyll and Bute will play an important part in its future success as a sustainable, economically viable and high quality place to live and work. The aim of this design guidance is to ensure that any proposed development is appropriate for its context and is sustainable into the future; that it does not simply meet the applicants immediate needs.

Planning Advice Note (PAN) 68 published by the Scottish Executive in August 2003 sets out the role that Design Statements can play in ensuring appropriate, sustainable developments. It outlines their value as a tool for applicants and planning officers to examine design decisions made in development proposals. It also stresses their importance as a basis for constructive discussion between applicants, designers and planning officers. It recommends that Local Authorities should provide design guidance for specific topics and areas, as well as encouraging the wider provision of design statements in the development application process. All of this is to ensure that in the future the community benefits from better, more sustainable buildings and successful public places.

Following the PAN 68 recommendations, this guidance intends to provide insight into the specific issues applicants and designers should consider in preparing development proposals. It outlines some potentially appropriate solutions and illustrates good practice elsewhere. Whilst the guidance does illustrate why certain proposals are inappropriate, it is not intended to restrict applicants' options for developing innovative and specific design solutions for sites in Argyll and Bute. This guidance aims to encourage individual, high quality design solutions for the very special sites and places within the Planning Authority's area.

This guidance aims to improve the dialogues between applicants and planning officers to reach a better understanding of the key issues a development must address. It is hoped that it will provide applicants with a context within which to develop their proposals, and outline those elements they should demonstrate their approach in applications and supporting design statements.

The design guidance is the start of an ongoing reference document that will be added to as appropriate case studies become available. It is intended that applicants demonstrating best practice in design statements and completed developments will contribute to them.

This first stage of the Design Guidance covers several topics which are considered important in contributing to the quality of the environment in Argyll and Bute. Each topic is published as standalone guidance in order to best meet the needs of applicants and the authority in considering specific developments.

**Topic 1 Small scale Housing Development** - individual new houses and developments up to 5 homes in the countryside.

**Topic 2 Larger Housing Developments** - that extend existing settlements or as standalone developments.

**Topic 3 Working with Argyll and Bute's built heritage** - urban infill developments; extending and re-using existing buildings.

**Topic 4 Illustrating Opportunities** - case studies sourced from throughout Scotland, as well as the Argyll and Bute area.

**Whilst this guidance aims to illustrate why certain designs will not work well in particular situations, it is not intended to restrict applicants' options for developing innovative and individual design solutions for sites in Argyll and Bute. Instead, this guidance aims to encourage individual, high quality design solutions for the very special sites and places within the Planning Authority's area.**

# Sustainable Development

## What is sustainable development?

**“development that meets the needs of the present, without compromising the ability of future generations to meet their own needs”.**

[Meeting the Needs - Scottish Executive Environment Group]

Both the new Local Plan and this Design Guidance are intended to encourage high quality **sustainable development** that reflects the technology and aesthetics of the 21st century.

More than half the resources consumed globally are used in construction, and 45 per cent of energy generated across the world is used to heat, light and ventilate buildings, with a further 5 per cent arising from constructing them. A sustainable approach to development aims to minimise any adverse impact on the environment by reducing the resources that buildings use, both in terms of energy and materials. The Scottish Executive's Climate Change Programme seeks to highlight the important contribution that energy efficiency can make to good design through the correct siting and orientation of buildings, and the right choice of materials.

The overall aim of the Design Guidance is therefore to include advice about sustainable choices for materials and renewable technologies.

Argyll and Bute has such a diverse range of landscape and settlements that sustainable solutions suitable for one location may not be appropriate for another. The aim of this Guidance, therefore, is to explain the broad principles which underlie sustainable design, rather than to recommend specific products, suppliers, manufacturers or systems. This Guidance therefore highlights:-

- **Making the best use of available resources** - by reducing energy loss, using less energy in construction and using renewable energy sources
- **Minimising environmental damage** - by minimising pollution and designing healthy spaces and places
- **Minimising the effect of climate change** - by considering the impact of higher rainfall, stronger winds and the increased risk of flooding

More information about sustainability and sustainable development is available from the Scottish Executive Web Site - [www.scotland.gov.uk](http://www.scotland.gov.uk).

## Consultation

As part of the ongoing local plan review process, Argyll and Bute Council (in partnership with SNH), have worked with Anderson Bell Christie to provide a practical Design Guide intended as a catalyst for good sustainable design.

An initial Consultation Document was posted on the Argyll and Bute Council Website and a series of Workshops were held which were attended by stakeholders, building professionals and members of the public in order to maximise opportunities for consultation.

Contributions and suggestions of good and bad design from attendees have been incorporated into this document; locations and buildings suggested at the workshops are used as examples and Case Studies in the Design Guidance.

## Key Aims

A series of Community Consultation Exercises were carried out while formulating this design guidance. Members of the public and key stakeholders identified critical aims when building larger developments. In response to this, our Design Guidance therefore considers:-

- **Developing a Design Framework which has the support of the community**, rather than “piecemeal” redevelopment considered on a site by site basis.
- **Maintaining local character** - the diversity of Argyll and Bute’s towns and villages contributes to the area’s unique character and should not be eroded. It was felt that new development should be appropriate and suitable for its context; it should form part of a natural progression between tradition and innovation.
- **Relating to the local landscape character** - in order for rural towns within Argyll and Bute to develop further, new buildings and infrastructure will need to relate well to their landscape setting.
- **Public spaces are both a tourist and a local resource** - creating attractive and vibrant urban spaces means that the design of spaces in between buildings needs to be as carefully considered as the buildings themselves. Many urban and civic spaces act as a focus of local activity - the “community realm”- and should have strong connections to peripheral areas.
- **Arrival and entry** – these were seen as important opportunities to express an area’s distinct character. It was felt that signage and the design of new developments fronting onto approaches to settlements should demonstrate identity and design quality.

# Larger Housing Developments

Larger housing developments can have a key role to play in the support of existing services and facilities such as schools, local shops, village halls etc and can help make more economically viable, attractive and sustainable communities. It is the responsibility of those carrying out such developments to ensure that they provide new homes in an environmentally responsible manner and that they enhance, not detract from, the quality of the environment in Argyll and Bute. These developments may be extensions of existing settlements, or they may be stand-alone new communities in undeveloped areas or open landscape; the Rural Opportunity Areas identified by the Local Plan. In both circumstances new developments should be sensitively and well connected to existing infrastructure; e.g. roads, paths, public transport, services and shops. They should be designed to create a sense of place; e.g. a neighbourhood or community of quality and character.

When applying for Planning Consent, applicants or their agents will be required to demonstrate that they have considered the key issues associated with their proposed development and that they have arrived at an appropriate design solution. In the case of developments of this size, in an area as sensitive as Argyll and Bute it is considered highly important that applicants engage the services of a suitably qualified and skilled designer.

It is key to the design process that proposals are based on a detailed understanding of a Detailed Site Appraisal that sensitively establishes the nature and opportunities of the site and the Client's Development Brief. Applicants will be asked to demonstrate that a thorough site appraisal has been carried out and that their proposals have been developed from this information.

A skilled and informed applicant will reach their own interpretation of their synthesis of brief and site appraisal and therefore it is not intended that this process becomes prescriptive. However as guidance the following issues should always be considered:

## Key Issues

### The Site Appraisal

This should not be confined to the immediate boundary of the site but should consider the wider area within which the proposal sits. It should be an analysis of the following: -

<b>Site Character</b>	Topography, orientation, exposure, adjacent development pattern, planting, boundaries, prominence
<b>Site Function</b>	Existing and proposed roads, pedestrian routes, access, overlooking, blight
<b>Site Opportunities</b>	Views, connection to facilities and transport, retention of features, sources of material, ability of site to be a landmark, potential of site to stimulate or consolidate other development
<b>Site Specific Issues</b>	Historic, architectural; cultural, economic

### The Brief

<b>Size and type of dwellings</b>	In larger developments it is generally best to provide a mix of house types and sizes
<b>Gardens</b>	Their size, boundaries and disposition private to public
<b>Car Parking</b>	Extent and type of car parking for visitors and residents
<b>Non Housing Facilities</b>	Larger housing developments which create new neighbourhoods and communities need facilities
<b>Public Space</b>	Extent and type, nature and character
<b>Brief Specific Issues</b>	Other issues which are specific to building user's requirements



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# Action Checklists larger housing developments

- 1 **Establish a 'PATTERN FOR THE DEVELOPMENT'** - The site layout for the development should be based on a considered response to development pattern of settlements and buildings in the immediate area.  
ADOPT A SETTLEMENT PATTERN SUITABLE FOR ITS LOCATION - AVOID the worst features of some new developments such as linear ribbon development (road frontage sites) or suburban cul-de-sacs. DO NOT ALLOW THE CAR and ROAD DESIGN TO DOMINATE and DETERMINE THE DEVELOPMENT LAYOUT. Design a layout which gives the development its own specific character – AVOID AN ANONYMOUS 'COULD BE ANYWHERE' DESIGN. Consider the prominence and visibility of the development.
- 2 **Consider the LANDSCAPE AND BUILT SETTING** - New development must be carefully considered in the context of its setting. The natural landscape and features of Argyll and Bute will often be the most dominant visual feature. New housing needs to be well integrated into the landscape. Retain as much as possible of the existing landscape and boundaries within a site or consider renewing or replacing existing planting with appropriate species. Consider the prominence of a proposed development; either- MINIMISE IMPACT ON LANDSCAPE SETTING by integrating sensitive, low-key, cohesive development within its surroundings or INTRODUCE HIGH QUALITY through the design of exemplar contemporary new housing
- 3 **Design for LONG TERM SUSTAINABILITY** - take account of the need for shelter (natural and built features and wind direction) and utilise solar gain and natural ventilation. Site buildings to allow for future extensions such as garages or outbuildings. Plan buildings and design layouts taking account of security. Housing types and size should be appropriate for their plot. Design-out opportunities for overlooking by good planning - not simply by setting buildings apart from each other.
- 4 **Design for ACCESSIBILITY** - think about access issues at the earliest possible stage of site development. Refer to relevant publications to ensure that layouts are suitable for all (eg. Lifetime Homes; Joseph Rowntree Foundation, Housing for Varying Needs Guidelines; Communities Scotland; RIBA Guidance Notes for the Disability Discrimination Act)
- 5 **Consider a SUSTAINABLE DESIGN FOR INFRASTRUCTURE, ACCESS, PARKING AND SERVICING**  
Consider access and linkage to existing settlements and facilities from the perspective of the pedestrian, cyclist and public transport. Take account of flood risk and provide a Sustainable Urban Drainage System (SUDS). Consider Lighting with a view to minimising light pollution and providing a design with suitable rural character.  
Ensure adequate parking can be provided without dominating the proposals.  
Provide a suitably screened location for storage of fuel and waste; provide facilities for recycling. Consider the use of a sustainable sewerage treatment system and recycling rainwater. Consider the use of renewable energy systems such as wood fuel, solar energy, wind and water power
- 6 **DESIGN THE LAYOUT TO TAKE ACCOUNT OF SECURITY** and differentiate between private and public spaces.  
Provide **SAFE PEDESTRIAN ROUTES** by providing 'active' overlooked street frontages
- 7 **Design to CREATE CHARACTER** – use the site's location and examples of local successful buildings to determine the character of the new houses. Group the houses to create pleasant public spaces not just gardens and roads. Design out opportunities for overlooking by good planning - not simply by setting buildings apart from each other. Where appropriate provide varying housing types and size. Ensure houses are appropriate for their plot size.
- 8 **Consider the MASSING, PROPORTION AND SCALE of houses within the development** - Simple, well proportioned building forms are often most appropriate. Minimise the extent of unused and undesigned underbuilding. **Consider MATERIALS and CONSTRUCTION DETAILS** - take account of the development's location when choosing materials; many materials and details are less appropriate for exposed locations. Consider the use of locally appropriate, traditional colours. Avoid 'artificial' decorative features which are not related to the context and locally appropriate tradition.



# Action Checklists

**9 Carefully design WINDOWS AND OPENINGS** Provide the right balance between wall and windows. Larger openings work well if they are modelled on those used in traditional buildings. It is often appropriate to emphasise the 'solidity' or mass of walls as generally existing buildings in Argyll and Bute have a larger proportion of wall to window. Generally maintain vertical proportions of windows and openings, using other proportions to create features. Dormer windows should be designed very carefully taking account of their construction and materials. They are most often successful as a continuation of the wall, or as smaller 'light and elegant' features within the roof. Avoid dormers with clumsy, heavy detailing and proprietary verges. Use windows of a material appropriate to the design of the house, e.g. some uPVC windows have section sizes which are larger than metal or timber ones and this has an impact on the character of the building.

**10 Consider the use of PORCHES AND SUNSPACES** - design porches and conservatories appropriately. Avoid proprietary porch designs which look incongruous. Sunspaces/conservatories should be located and designed taking account of their visual impact as well as their thermal performance. Where possible incorporate draught lobbies at exposed entrances to houses. Where appropriate locate building entrances in the most sheltered area or design the plan to give them shelter.

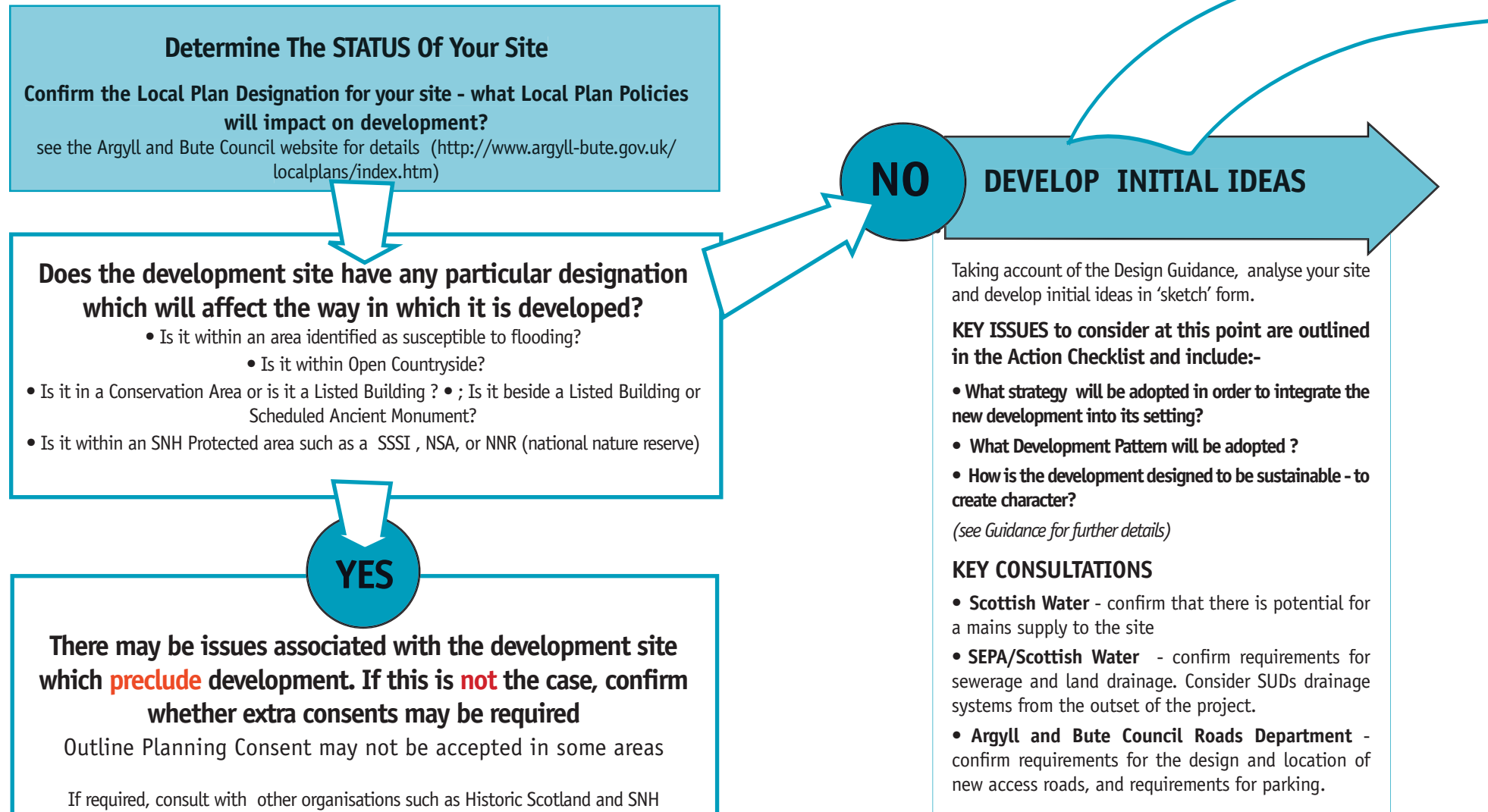
**11 GARDENS AND PLANTING** Use landscape to integrate houses within the development. Where required use planting to break down the development into different areas.  
**BOUNDARY TREATMENTS** Where necessary use natural planting and hedges to buffer houses from roads.

## Sustainable Design Summary

DESIGN FOR MINIMAL ENERGY USE	PAGE
Orientate buildings and site layouts for shelter (wind direction) and solar gain (sun path)	20, 21, 52
Provide an integrated package of energy efficiency measures (these can include for example,extra insulation and low energy glazing)	52, 57
Consider main source of heat and power (use renewables if possible)	21, 29, 30, 57
For larger developments consider deriving 10% of power from renewables	30
DESIGN FOR MINIMAL ENVIRONMENTAL IMPACT	
Use materials with low embodied energy - <b>renewable materials, local skills and materials, recycled and reclaimed materials</b>	<b>46, 47, 58</b>
<b>Minimise water use, design drainage and sewerage to avoid flooding and pollution</b>	<b>47, 54, 56, 59, 61</b>
<b>Recycle waste. Provide a suitably screened location for storage of fuel and waste; provide facilities for recycling.</b>	<b>54</b>
DESIGN FOR CLIMATE CHANGE	
<b>Design for higher rainfall</b>	<b>61</b>
<b>Design for flood risk</b>	<b>61</b>

# Developing Proposals

This flow chart is an illustration of the ways in which both developers and their professional consultants can make the most of any dialogue with Development Control, during the Design Development Process.



## DESIGN STATEMENTS

Developers should compile a Design Statement\* which explains how proposals are designed to integrate with their context and how proposals are viewed from key viewpoints. This does not need to be a lengthy document and should not duplicate the content of the Planning Application.

Illustrations should relate clearly to the text and can include photographs, sketches, diagrams, photomontages, concept diagrams and artists' impressions. The information included in the Design Statement should inform proposals from the earliest stage in the design process.

\*refer to Scottish Executive PAN 68

## INITIAL 'PRE-APPLICATION' MEETING

### "an Exploratory Dialogue "

It is useful to send the Development Officer an indication of proposals and of the site's context in advance of the meeting. The following information would be important;

- **A drawing clearly identifying the site location and boundaries**

Clearly identify all known constraints for development such as roads, paths, field boundaries, rivers or streams, adjacent buildings and any other features.

- **Site photographs and sketches to illustrate the context**

Photographs of the site's setting and sections showing topography will be useful to consider proposals in the wider landscape and built context.

- **Sketch proposals**

Provide initial sketches which clearly illustrate proposals and their setting.

**All of the material above will assist the Planning Officer to form a view about the site, it will facilitate discussion and agreement on a broad approach to the development.**

**Note that Outline Applications are generally discouraged in the following areas:-**

- **Conservation Areas**
- **Setting of Listed Buildings**
- **National Scenic Areas (NSA's)**
- **Enabling Development**
- **Developments of 3 or more houses in the open countryside**

## DEVELOP YOUR PROPOSALS

If Development Control considers that proposals are broadly acceptable, the Pre-application Meeting should allow developers and their agents to take forward proposals to a full Planning Application (or in some cases Outline Consent)

If there are issues which still need to be resolved, developers should now be in a good position to see where proposals might be re-thought, revised and developed.

In the latter case developers should arrange a further meeting to discuss the revised proposals.

## PLANNING APPLICATION

Once a broad approach for proposals has been agreed, developers and their agents should expand their proposals and go forward to make a Full Planning Application, or an Outline Application.

The guidance for Planning Applications states the minimum information which should be provided as part of an Application, but to ensure that proposals are clearly understood, developers are advised to provide additional information to illustrate the key issues about the development.

Suggested Additional Illustrative Material of Proposals should clearly identify the **KEY DESIGN ISSUES**, providing additional information about the development that the 'prescribed' drawings do not show. Where appropriate this might include:-

- **Photographs which illustrate the context** ie. the surrounding buildings and/or surrounding landscape and how proposals relate to their location
- **Site sections** showing how the development addresses the sites' contours
- **Details of the site boundaries** and how it will be seen from main road and important views



## Creating a Place

- 1.1 Overview
- 1.2 Settlement Patterns
- 1.3 Good siting
- 1.4 Integration with landscape setting
- 1.5 Adapting a settlement pattern suited to location
- 1.6 Sustainable access and linkage
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- 1.10 Renewable energy
- 1.11 "Using buildings to shape urban spaces"
- 1.12 Neighbourhoods - key components of a sustainable development
- 1.13 Routes and linkage
- 1.14 Parking
- 1.15 Attractive, characterful external spaces

# 1.1 Overview

**This section of the Guidance looks at the factors which make one town or village different to another - and how these should influence proposed larger developments at the edge of towns, and stand-alone developments.**

**It gives advice on how to ensure a new development will successfully relate to its landscape setting and to adjacent settlements**

Argyll and Bute consists of an intricate relationship of different landscape and settlement types that give the area its distinctive character, and it is important that this not be lost as development is introduced.

New developments within the rural landscape need to be handled very sensitively. Often **the wrong kind of development can have a disproportionate effect on its surroundings.** Even small developments can have a significant impact on their landscaped setting. Sometimes new developments can look completely out of place even though they have used similar building materials and details to the older settlements around them.

**New developments should be integrated into the landscape, using appropriate, carefully chosen modern materials, construction methods, and an aesthetic which reflects the 21st century.**

**Settlement;** Tarbert



**Settlement;** Campbeltown



**Settlement;** Dunoon





# 1.1 Overview

**Heritage;** Inveraray



**Settlement;** Rothesay



**Waterside;** Seil Island



**Waterside;** Oban



**Hillside;** Oban



**Settlement;** Lochgilphead





# 1.2 Settlement patterns

Argyll and Bute is characterised by many different kinds of settlements. Communities have evolved in different ways and each has developed a strong local identity with its own traditions and heritage.

Every successful settlement also has its own distinct identity. This is determined in part by the architectural style of individual buildings, but an equally significant factor is the relationship of these buildings to each other

The aim of this design guidance is to ensure that Argyll and Bute's own distinctive identity is maintained and that future development is in sympathy with its surroundings. In order to achieve this there is **a need to consider local patterns of development that have determined the layout and development of current settlements.**

Because Argyll and Bute is such a diverse place, there can be no standard approach to the creation of spaces and places. For each development site, it is necessary to understand how the site fits into its wider setting and how it will work once a new development is complete.

In some cases the existing settlement pattern will provide a strong and sound basis to create new developments of character, with a sense of place. In others the site's surroundings might lack cohesion and identity. In these cases proposals, based on successful precedents, can help mitigate and mend the built environment.

**When considering design proposals, anonymous suburban and "anywhere" building forms will be strongly resisted**



1



2



3

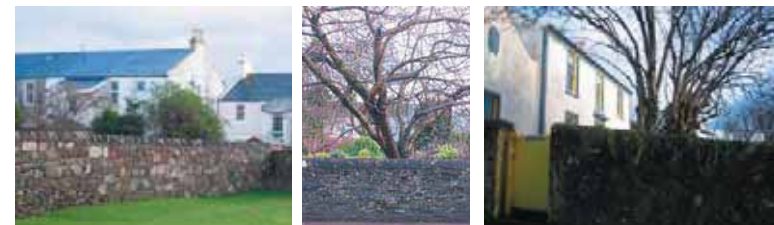


4

**Settlement Pattern - Dunoon.** Dunoon is made up of a number of different areas with their own distinct character which includes;-

- 1 **Higher Density;** public buildings and shops
- 2 **Grid of streets** with a variety of houses unified by landscape, hedges and boundary walls
- 3 **Area of transition** between high density more urban area (1) and edge of town (4) - a mix of tenemental flats, two storey housing and commercial/ light industrial units
- 4 **A linear pattern** of houses fronting onto sea

**Stone boundary walls and landscaping** are used throughout Dunoon to tie together a wide range of disparate building types





As you walk along the seafront, buildings with a coherent and aesthetically pleasing architectural style are replaced by piecemeal redevelopment.





# 1.3 Good siting

When designing a new development consider either;-

- **incorporating the successful aspects of existing adjacent development (settlement) patterns of towns and villages in the area into new designs**

these are very diverse so will need to be based on an analysis of existing settlement and landscape features for specific locations

or;-

- **creating new developments of the highest architectural quality**  
- which means that proposals are carefully considered and are designed to incorporate the best characteristics of other successful settlements.

**Successful towns and villages generally are sited to ensure that they;-**

- 1 are integrated with their landscape setting
- 2 adopt a settlement pattern suited to their location
- 3 are easy to understand and navigate around
- 4 make it clear where people can and cannot go
- 5 are safe and secure

Garelohead as it is today.....



.....and as it might look, if insensitively developed!!



These houses are too prominent, are built to a much bigger scale than those around them and are laid out in a very structured "urban" fashion which is not sympathetic to its location

# 1.4 Integration with landscape setting

## New developments should be integrated with their landscape setting

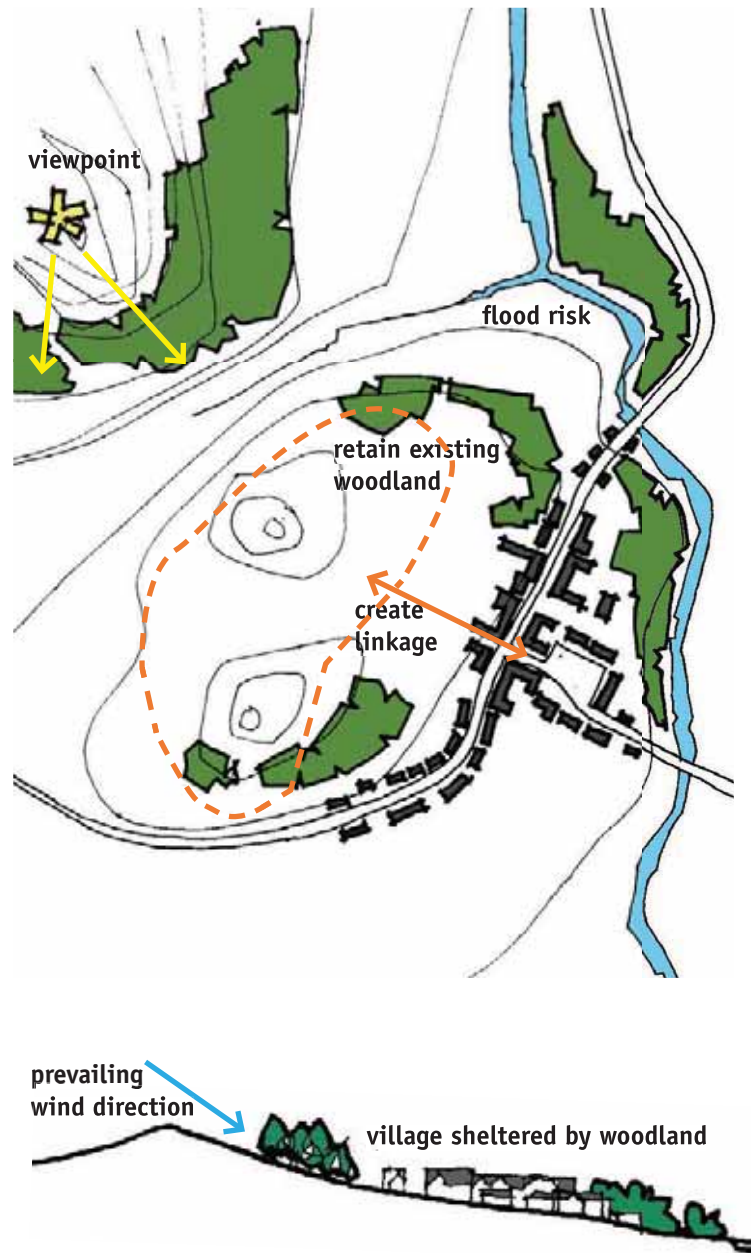
Every site has its own specific characteristics, some of which make a positive contribution to the quality of the site and some of which do not. Some sites have many positive qualities and will benefit from minimal intervention. For other sites, development proposals are an opportunity to create places which contribute to a less than perfect context in a positive way.

**Consider key landscape characteristics** when developing a site - some of these are noted on the right of this page. These aspects are familiar to designers, so the list is not intended to be prescriptive; instead, consider focusing analysis on areas most likely to influence design proposals.

Remember that a development and its landscape setting is usually most visible from a number of specific viewpoints such as a road between settlements or vantage points along a coastline and from specific locations within an existing settlement.

**Masterplans and Landscaping Framework** - In some cases it can be difficult to integrate a larger development and in this case a landscaping framework or master plan should be developed. Major, low density housing developments are much improved if they are set within a strong, clearly designed landscape framework. Where appropriate, developments can be buffered from car-dominated access roads by using new native planting, by leaving existing hedges and trees intact where possible, or by supplementing with new ones. Even so, it is important to remember that new planting will take time to achieve maturity, and can never be a substitute for the sensitive siting of new buildings and infrastructure.

Information on this and the following pages is summarised from "PAN 44; Fitting New Housing Development into the Landscape; A Design Manual" which provides a much more detailed consideration of issues related to site analysis, settlement patterns, landscape setting, master plans and landscaping frameworks.



## **CAPITAL;** positive qualities of a site to be enhanced and retained

- **Landmarks** - clear views to landmarks will help with orientation in larger developments and reinforce a sense of place
- **Views** - consider how the development will affect views from the surrounding areas into the site
- **Vistas** - views out of a development are important and influence its attractiveness and value.
- **Landscape setting** - use new landscaping to complement the existing landscape setting and maintain its historic character
- **Biodiversity** - a sustainable development will protect wildlife habitats and areas of ecological value

## **CONSTRAINTS;** to be considered at an early stage

- **Topography;** sustainable site layouts minimise earth movement
- **Climate;** consider wind direction, exposure; shading and sunlight
- **Risk of flooding;** balance siting to minimise the risk of flooding against the effect that this may have on views into the site
- **Proximity of ancient monuments;** Existing guidelines and requirements will limit development and affect design choice
- **SSSI's;** the location of protected habitats or species will limit development
- **Infrastructure;** a sustainable development should create links to existing settlements
- **Archaeology;** early consultation with West Of Scotland Archaeology is recommended.

# 1.5 Adopting a settlement pattern suited to location

## Successful towns and villages generally;-

- **adopt a scale suited to their location** Although a small village can comfortably accommodate a smaller scale development it can easily be overwhelmed by larger edge of settlement additions. Although the Local Plan identifies development sites and gives an indication of capacity, the impact of every new development on an existing settlement needs to be carefully considered on an individual basis.

- **minimise uniform densities** Many modern developments are characterless because they consist of the same kind of building type (such as two storey houses) repeated over and over again. In order to avoid this, and create more interesting and varied neighbourhoods, larger new developments should include a range of housing types and sizes - so that scale and density varies throughout a development. A mix of dwellings means it is more likely that homes will be occupied throughout the day giving increased opportunity for natural surveillance, community interaction and environmental control.

Mixed developments help ensure a balanced and more sustainable community in the long term, however the need for a mix of types in a development should be considered within its specific context.

## Massing

Using higher density terraced, flatted or semi-detached houses can mean that less materials are used, energy efficiency is increased and space is freed up for other community uses.

Where a consistently dense layout is inappropriate- for example at the edge of a settlement - it is worth considering varying density to give coherent groupings ('hamlets') of relatively dense housing separated by larger areas of open space. These could be retained landscape features such as linear woodlands.

## Sunpath and Shelter

Beneficial exposure to the sun's heat and light (solar gain) reduces heating bills and improves energy efficiency. Consider using sunspaces and maximising glazing on the southerly aspect of buildings, and minimising exposure to prevailing winds by making any openings on the northern side of buildings as small as possible.

- **Orientate housing layouts within 30 degrees of due south wherever possible.**
- **Site layouts should reduce buildings' unnecessary exposure to the elements.** Locating developments so that they are not exposed to driving wind and rain (for example sitting in a hollow rather than on the ridge of a hill) reduces energy use, increases durability and the lifespan of buildings, and makes gardens and external spaces habitable for a greater proportion of the year. Shelter belts of planting can be incorporated into site layouts

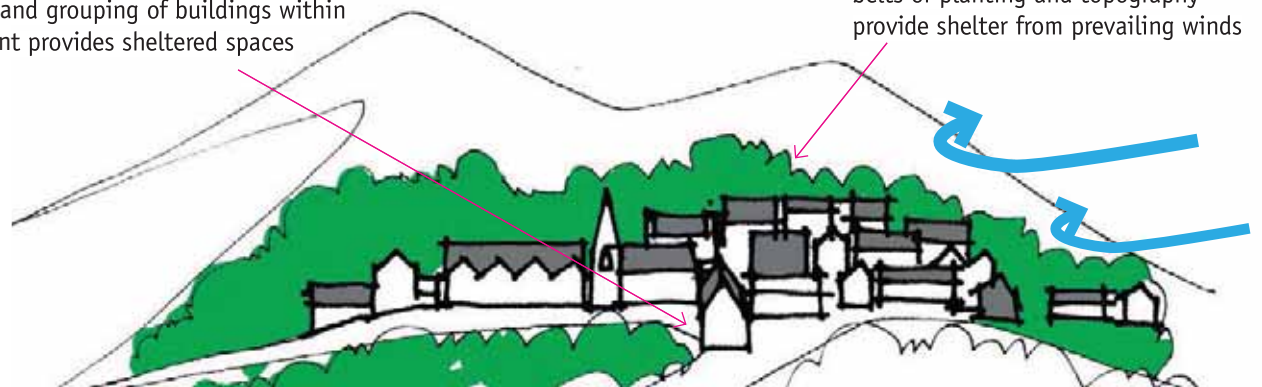
## Locating for shelter

### Traditional builders knew their local landscape and its weather.

The concept of shelter was the most important consideration; the tops of hills were cold and unfriendly places to build and settlements normally nestled in sheltered positions using the landscape and planting (such as a shelter belt of trees) as protection.

massing and grouping of buildings within settlement provides sheltered spaces

belts of planting and topography provide shelter from prevailing winds





# 1.5 Adopting a settlement pattern suited to location

## Prominence and visibility

### Some areas are much more prominent than others because

- they can be seen from a particularly important approach e.g. the main road, or a ferry route
- their topography and location in the landscape means that they are highlighted e.g. property on the coast
- they are adjacent to popular routes and paths

### Other areas are less visible because

- they are not seen from paths and routes
- they are located in a dip or hollow
- they are screened by planting or trees

High quality landmark development "A'Chrannag" Rothsey



**Very prominent sites** Some areas are so sensitive that any development at these locations would have a major impact on Argyll and Bute's landscape, and these are not generally seen as suitable for **any** development.

**A more prominent (landmark) development** should have either;-

- a high level of design quality and control which is appropriate for the importance of the site

**or**

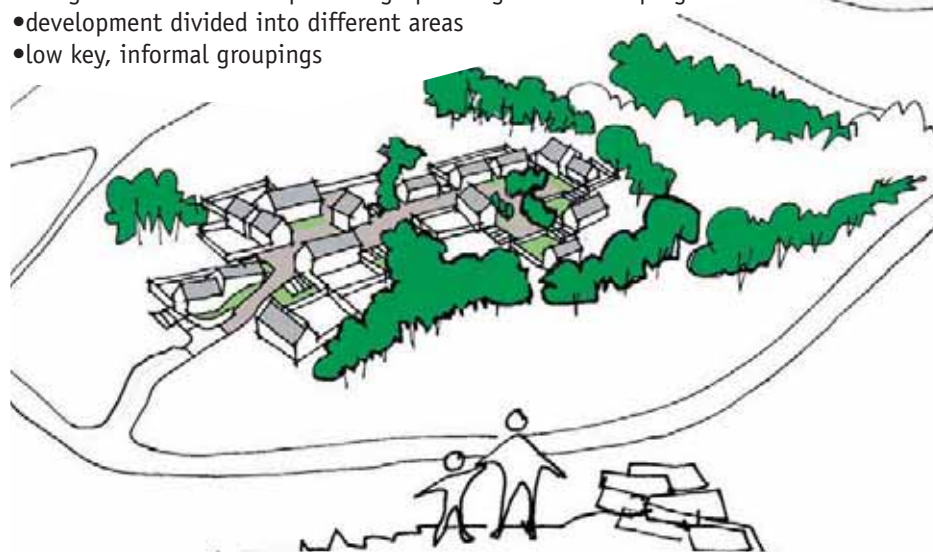
- be a cohesive, 'low-key' development which integrates sensitively into its surroundings.

**Sites which are least visible** are good candidates for more adventurous and individual design because they are less likely to have significant visual impact on their surroundings.

## Achieving cohesive low key development

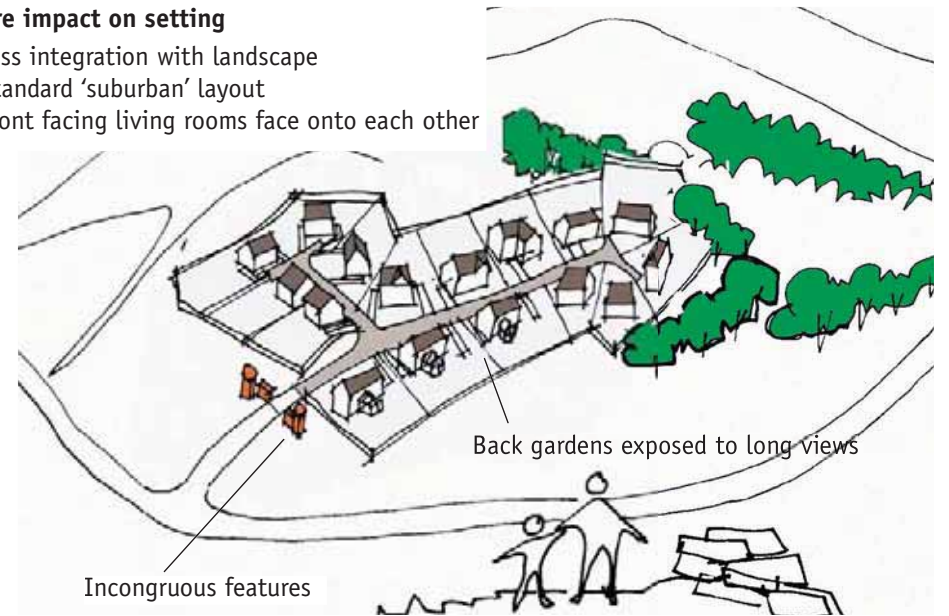
### Minimising impact on landscape setting

- integration with landscape through planting and landscaping
- development divided into different areas
- low key, informal groupings



### More impact on setting

- less integration with landscape
- standard 'suburban' layout
- front facing living rooms face onto each other





## 1.6 Sustainable access and linkage

New developments should be easy to understand and navigate around.

The character at the approach and edge of settlements communicates a great deal about a specific area – it is an indicator of the quality of a town or place.

**“Entry points”** signal the character of a town or village. They are an indication of its distinctiveness which is much more effective and attractive than ‘signage’. They are a first taste of the area for visitors; a transition between town and countryside. Because of this it is important that new development at these locations;-

- reinforces the character of the particular route or entry point within which it is located
- is of high architectural quality, providing a natural progression between tradition and innovation

Some larger new housing developments are difficult to navigate around. It is easy to get lost because all roads and houses seem the same. In contrast, older traditional settlements have a street pattern with “landmarks” and diverse spaces which can easily be remembered.

- **New larger developments should have entry points, neighbourhoods and access with their own distinct character.** Uniformity should be avoided.
- **“Focal points”** such as landscape features or “landmark” buildings will help people to orientate themselves
- **There should be a “spatial hierarchy”;** roads and streets should form sequences of public spaces, as well as providing for movement.

### Moving towards and through Helensburgh - a street pattern with “landmarks” and diverse spaces which can easily be remembered.

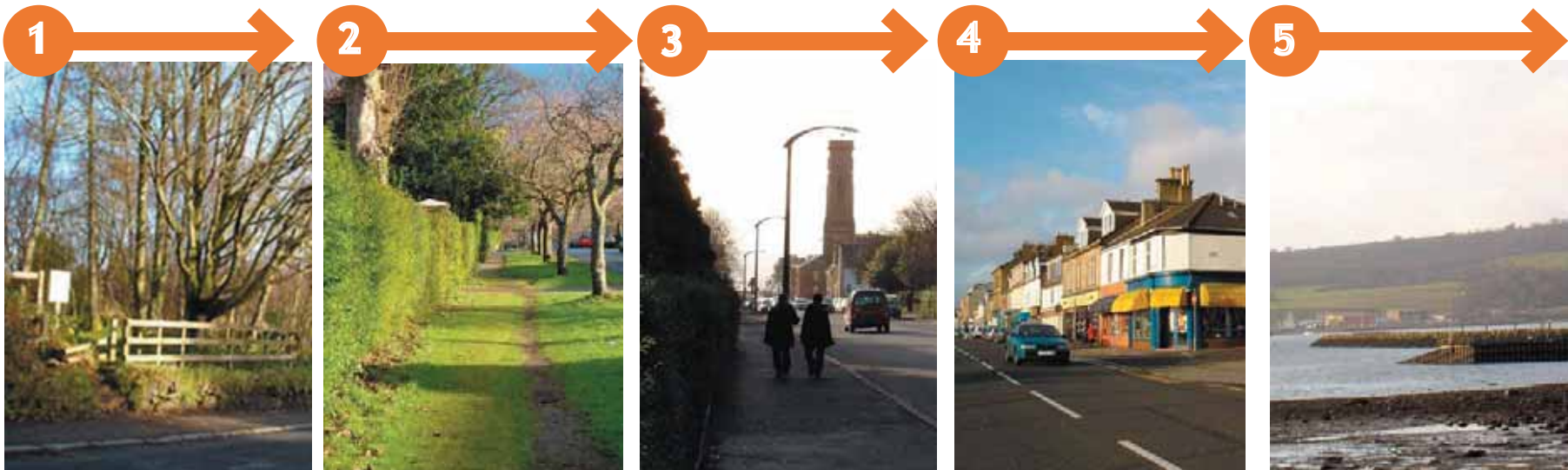
The countryside around Helensburgh - walls, hedges and trees

Travelling into Helensburgh, trees and hedges form the boundaries to properties, together with roads and verges they form Helensburgh’s distinctive “grid” character

Moving towards the sea, trees and hedges start to disappear; shops and flats are built closer to the pavement and begin to define streets. Landmark public buildings help to define location within the town

Closer to the water shops and flats form a continuous “wall” of buildings built right onto the pavement, giving a much higher density.

Arriving at the waterside



## 1.6 Sustainable access and linkage

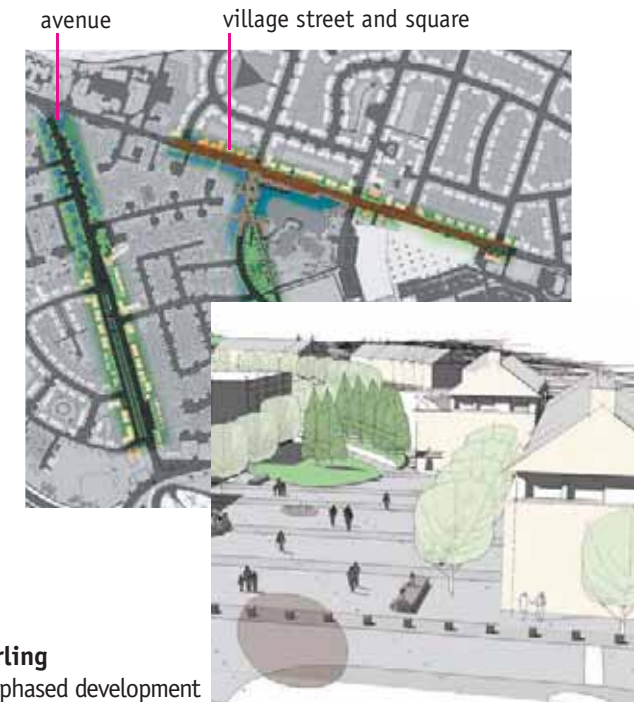
In some newer residential developments it is apparent that road layouts have been designed first, with houses “fitted-in” around the infrastructure. Developments can be dominated by cars - making access more dangerous and therefore less attractive for all pedestrians but particularly for children, the disabled and the elderly. In many cases, uniform, characterless residential developments have resulted from road layouts derived solely from the requirements of Road Department requirements.

A key component of sustainable development is to reduce the use of the car. In an area like Argyll and Bute, cars are essential for longer journeys, but for shorter trips (e.g.. within a new larger stand-alone settlements, or to nearby shops within an adjacent one) pedestrian and cycle use should be promoted.

“Places Streets and Movement ” (a DETR Companion Guide to DB32), details ways to create places which are not dominated by traffic design. It suggests that designers;-

- **Look at the place not the car** The DB32 requirement is to design a “place” first, then to consider a network of public spaces (such as squares, avenues, streets and courtyards) which are used to link different places together.
- **Provide a movement framework** A new development needs to include provision for different kinds of transport. Consider putting pedestrians first, then consider provision for cyclists and public transport, with access for cars considered last.
- **Create quality public realm** Residents will need safe pedestrian access to local shops and other facilities, children need safe places to play. Roads and access ways need to be safe and pleasant for all to use.
- **Consider the Local Context** Studying current routes and movement patterns can suggest the best way to link new developments to existing towns and villages.
- **Safety and security** routes that well-used make people feel safer and more secure. For example, pedestrians and cyclists often feel less secure if they are forced to use isolated footpaths and cycle tracks

Information on this page is summarised from “The Institute of Civil Engineers Knowledge Database Briefing Document “Places, Streets and Movement”



### Designing a ‘place’ Raploch Master Plan, Stirling

Sustainable Master Plan and phased development

- **creation of pedestrian priority ‘village’ street**
- **hierarchy of routes and spaces - avenues, gateways, streets, courtyards and homezones**
- **new quality public realm**
- **integrated cycle and pedestrian routes**

Raploch is an area of urban renewal on the edge of Stirling, beside the historic context of Stirling Castle. From the outset, the community were involved through ‘Planning for Real’ and subsequently with the design of Homezones and pocket parks where existing housing has not been demolished.

The existing main vehicular route through the centre of Raploch has been redesigned as a pedestrian priority village street and traffic diverted around the rural edge. There are a variety of public spaces including a new public square, ‘pocket’ parks and a riverside walkway.

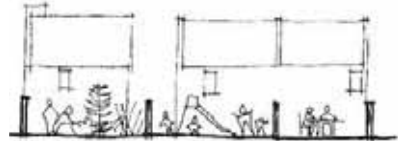
# 1.7 Privacy and security

## New developments should make it clear where people can and cannot go

Poorly designed developments sometimes make it difficult to work out who is responsible for external spaces and often it is all too easy to use spaces in the wrong way - to take short cuts through private ground, for example.

**Good design minimises conflicts between public and private spaces** and should provide a range of spaces

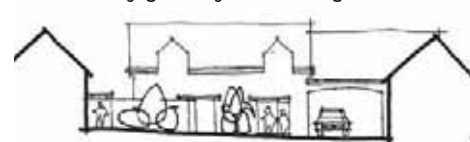
**PRIVATE** - e.g.. back gardens



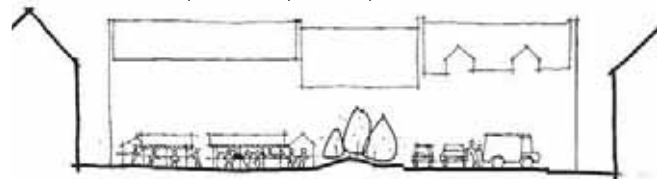
**SEMI-PRIVATE** - e.g.. front gardens within clear boundaries



**SEMI-PUBLIC** - these areas should be overlooked and give a clear message of "belonging" to the residents who are immediately adjacent. "Transition Zones" between public and private spaces can be defined by gateways and changes in materials.



**PUBLIC** - such as parks and public squares



## Security

Crime prevention measures should be tailored to the needs of local people and the underlying level of crime. Police advice should be considered in the context of this guide along with wider planning objectives, and should be an important factor in discussions between the applicant and the local authority. Guidelines can be downloaded from the "Secured By Design" website [www.securedbydesign.com](http://www.securedbydesign.com)

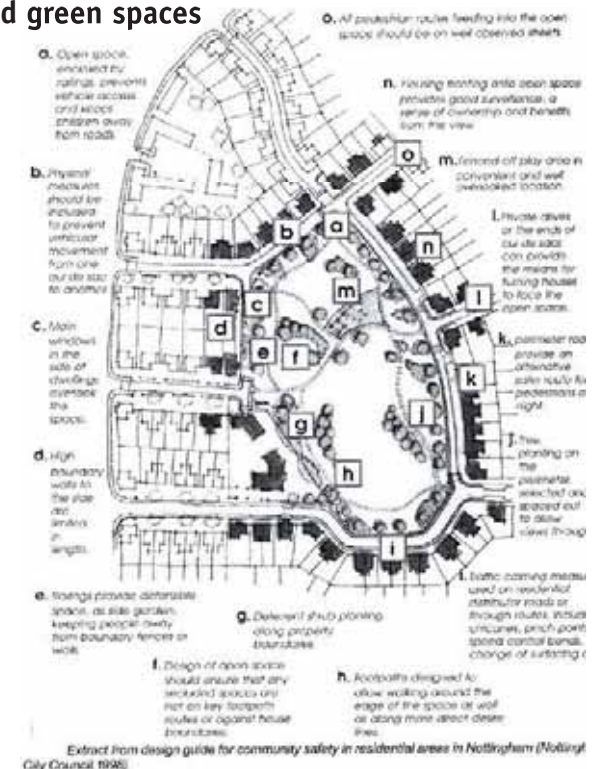
If the security of new developments is considered from the initial design stage, 'passive' security can be designed in and more obtrusive requirements (such as high fencing) can be avoided. Planning out crime also makes sense financially. Once a development has been completed the main opportunity to incorporate crime prevention measures will have been lost. The costs involved in correcting or managing badly-designed developments are much greater than getting it right in the first place.

## Key Aims

- **Ownership:** places that promote a sense of ownership, respect, territorial responsibility and community are less likely to suffer from crime problems
- **Good lighting**
- **Controlling access**
- **Clear boundaries**
- **Passive overlooking;** all spaces immediately accessible to the public (such as driveways or access roads) should be overlooked as far as possible

Refer to the Scottish Executive's Planning Advice Note "PAN77 Designing Safer Places" for further information

## Designing secure and safe developments and green spaces



Extract from design guide for community safety in residential areas in Nottingham (Nottingham City Council 1996)



# 1.8 Community and biodiversity

## Community

Argyll and Bute's needs for development are linked to the successful growth of sustainable, permanent communities. The analysis and consideration of landscape and settlement patterns within the area needs to be complemented by an understanding of the human geography and the social dynamics of places. An appreciation of what is valued within a community should inform design solutions. It is important to consider:-

- **local landmarks and traditional features and their value to the community**
- **promoting and sustaining local skills and crafts**
- **local people's point of view, history and customs, priorities and aspirations**

Different ways of ensuring that design issues are explored in more depth (both before and during the Planning Application Process) include:-

- **Design Statements** a description of the ideas informing a design and how these have been implemented. For example, a Design Statement could typically include an analysis of the landscape or settlement within which a building sits and clear illustrations (such as photomontages) of how the new property will integrate with its setting.
- **Village Design Statements** a community exercise which records peoples ideas about the place in which they live and which suggests areas for improvement and development

## Biodiversity

Argyll and Bute is home to a diverse range of plants and animals together with their habitat. They capture and store energy, decompose organic material, help to cycle water and nutrients through the ecosystem, control erosion and pests, help to fix atmospheric gases and regulate climate.

**"Biodiversity" is the term used to describe this process**

In Argyll and Bute there are many examples of good practice in the management of our habitats and species. A number of land based schemes such as the Environmentally Sensitive Area Scheme, the Countryside Premium Scheme, the Organic Aid Scheme and the latest Rural Stewardship Scheme have provided the financial support for the crofting and farming communities to contribute to nature conservation which in turn supports Biodiversity.

The biodiversity process in Argyll and Bute proposes to maintain and enhance an extensive variety of habitats and species.

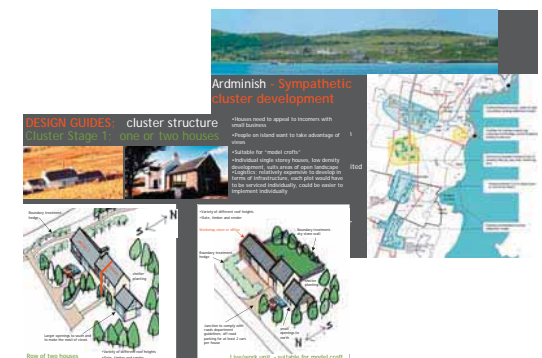
**More tailored Biodiversity proposals can be developed from the Local Biodiversity Action Plan for Argyll and Bute, to meet the needs of local communities and a tool for local involvement in habitat and species action**

## Isle of Gigha Master Plan and Design Guides

A key aim of the masterplanning process was to give Gigha's community as many opportunities as possible to become involved with the planning of future development on the island.

An initial community open day gave residents the opportunity to contribute their knowledge of the island. Initial ideas and strategies evolved from resident's feedback, and a detailed consideration of settlement patterns on Gigha. An open day was held to ensure that the community had the opportunity to make their preferences for the master plan strategy clear.

Subsequently the community voted, and the **"Cluster" Concept** and approach taken for **Design and Materials** gained unanimous approval.



# 1.9 Infrastructure - designing for climate change

## Rainfall and Flood Risk

It is becoming increasingly difficult to predict whether potential development sites will be subject to flooding or not. With increasing rainfall, higher storm frequency and rising sea levels (Scottish Executive figures point to a sea level rise of 150mm affecting Argyll and Bute in the next 50 years) the threat of flooding is increasing from a variety of sources.

Flooding areas have been associated with wind driven tidal surges; inadequate culverts that are vulnerable to blockage and tightly confined flood plain areas bordering river courses.

**Floodline** is operated by the Scottish Environment Protection Agency and provides information on the likelihood of flooding – phone 0845 988 1188 or look up [www.sepa.org.uk/flooding](http://www.sepa.org.uk/flooding).

Prior to design and construction, consider measures to minimise flood risk. These can include:-

- **ensuring that new houses are not located on a part of the site which may be susceptible to flooding** - this may be an intermittent problem related to the existing water table and existing patterns of drainage.
- **minimising hard landscaped areas** so that storm water runoff is reduced.
- **using porous paving schemes (SUDs)** or where only one house is constructed, a soakaway.
- **land to the side of new access roads can be used as a "swale"** to collect storm water which has drained from the road.

## Sustainable Drainage (SUDs)

Scottish Water generally look for separate provision for foul drainage and rainwater. Built-up areas such as hard standings for cars need to be drained to remove surface water.


Unlike traditional drainage systems which are designed to move rainwater rapidly into a soakaway or watercourse, SUDs systems are designed to disperse and treat water locally, before it is returned to the natural drainage system. They exploit the natural processes of sedimentation, filtration and biodegradation to remove pollutants. In addition, SUDs can be integrated into their environmental setting, and some devices offer the opportunity to improve wildlife habitats in more built-up areas.

There are many types of SUDs systems, ranging from reed-bed treatment systems for polluted water to settlement ponds, to simple filter drains. Schemes are usually site-specific, using different SUDs systems either singly or in combination to create a strategy that deals with the surface water drainage for a particular site. The core technologies involved include:-

- **Permeable Paving**
- **Infiltration and attenuation systems**
- **Swales**
- **Ponds and Wetlands**

In March 2000, CIRIA published the "Sustainable Urban Drainage Systems Design Manual for Scotland and Northern Ireland," which provides authoritative design advice for SUDs.

**Refer to Planning Advice Note (PAN) 61** which suggests that developers should draw up a drainage strategy which should be submitted as an integral part of an outline planning application.



1

2

3

1 swale  
2 permeable paving  
3 basin

### Sustainable Drainage (SUDs)

- **Permeable Paving** Surface water is directed into the pavement and then stored or released into the environment in a controlled manner. Most permeable and porous pavements use some form of block paving to create the surface layer
- **Infiltration and attenuation systems** Attenuation cells, (also known as Storm Cells, Soakaway Modules, or Storm Crates) are the modern equivalent of a soakaway. They allow surface water to be stored in one location and gradually released back to the ground, rather than in one sudden deluge, as happens during a storm or downpour.
- **Swales** Swales look similar to any grass verge, but have a gentle depression at the centre. They slow down transfer of water into the ground and allow time for filtration and sedimentation
- **Basins, Ponds and Wetlands** Basins are planted with grass and are usually dry, except after rainfall. By contrast, ponds and wetlands retain a body of water and are planted with wetland and aquatic plants. They all collect surface water runoff from a larger drainage system. They retain water for 2 or 3 weeks, allowing for all the natural processes of sedimentation, filtration and biological degradation to occur. Ponds and wetlands provide opportunity to create wildlife habitats and a focus for local people

## 1.9 Infrastructure - designing for climate change

### Lighting

New developments at the edge of settlements should, where possible, not have standard “street lights” as they are very urban in character and are a source of light pollution. Alternatives that could be considered include-

- **ROUTE MARKING** - cats eyes and solar studs
- **LOCAL PLACE LIGHTING** - solar bollards; other bollard lighting
- **PROPERTY LIGHTING** - movement activated floodlights.

Lighting should point down towards the ground to avoid glare.

### Sewerage provision

Although many properties within Argyll and Bute connect directly into the public sewerage system, many buildings or group of buildings are served by individual drainage provision. Although it is possible to avoid the generation of wastewater and sewerage (through the use of greywater recycling and dry or composting WCs) the most common stand-alone sewerage treatment include:-

- **Septic Tank** The traditional septic tank process relies on sewage solids settling in the tank; anaerobic bacteria cultured in the settled sludge provide a degree of treatment. A Septic Tank needs to be desludged regularly by lorry and partnered with a secondary treatment system, such as a soakaway, where the settled effluent is exposed to naturally occurring bacteria in the subsoil. A correctly constructed soakaway or leachfield provides biological treatment, physical filtration and adsorption. **Very often the location of the septic tank and the soakaway's percolation area – which are determined by the fall across the site – will have a significant impact on the position of new buildings.**
- **Package plants** These are compact pre-built and easily installed systems for small to medium scale applications which reduce the overall system size by using mechanical aeration. Package plants range from those using chemicals

to Rotating Biological Contractors, (RBC, BioDisc®). This type of sewerage treatment requires a power supply and needs regular maintenance and desludging. Energy use, cost and efficiency varies considerably between designs.

- **Reed beds.** This term describes a wide range of technologies from natural wetlands to highly engineered systems. Horizontal flow reed beds have been used widely, and with good results, to treat water from septic tanks and to additionally treat water from other systems.

- **Larger Scale Sewerage Provision** Options available for larger developments need the input and appraisal of an expert;- an engineer, hydrologist or environmental consultant should therefore be involved at an initial stage in order to ensure that sewerage treatment is as sustainable as possible. Larger scale developments mean that the use of greywater is more likely to be financially viable, thus minimising demands on any existing sewerage provision. No matter what solution is adopted, it will need to comply with Scottish Water, SEPA and Building Control's standards. Consultation about proposals should be made at the earliest possible stage, and potential development sites will need a specialist to report on whether ground conditions are suitable for particular design. Consideration also should be given to Water Regulations, any need for wayleaves, issues of land ownership, shared systems and maintenance contracts.

- **Greywater recycling** Greywater recycling schemes collect bath water and water from washing machines and reuse this for flushing WCs, gardens and washing machines. For smaller residential developments its use needs careful consideration as more onerous standards apply to greywater treatment than those for rainwater. A small greywater recycling system may, for example, have a larger environmental impact (materials, energy use for pumps, filters and maintenance) than the water use it is saving. On the other hand, greywater recycling will reduce the loading on a septic tank or sustainable sewerage system.

On a larger scale, a greywater/rainwater harvesting system can be used to reduce the demand on the local sewerage system. Water from roofs, washing machines and other greywater is treated and stored. The system can cater for a single block of dwellings, or a number of blocks, depending on its capacity and design

### Water Supply

Water supply in rural areas is limited. Even if it is currently adequate for an existing number of properties in an area, a mains supply may not be able to cope with even a limited development of new housing. Where developments are located in areas that are remote from the water main, they will need their own water supply. Rainwater run-off is generally to a soak-away, but given the possibility of a limited water supply it would be prudent to consider reusing rainwater - eg. for gardens, WCs etc. New development should therefore incorporate provision for water-saving and rainwater recycling. The location of an existing water source will affect the location of a septic tank and percolation area. Consultation with the Council's Environmental Health Department is necessary to determine the requirements for private water supply. In addition, there is often a need for a qualified hydrologist's report

### Waste disposal

In order to promote sustainable practice, facilities are needed for recycling rubbish and composting. Designers should ensure that there is an appropriate space for locating bins that is easily accessible but does not affect the amenity of the dwelling or development.



# 1.10 Renewable energy

## Community-wide energy production

There are a range of opportunities available within Argyll and Bute to provide environmentally-friendly energy when considering a community-wide development. Renewable schemes like water and wind power have a 'critical mass' or optimum amount for operation that is usually larger than the energy requirements of a single building. Similarly, combined heat and power (CHP) generation becomes more feasible for a whole community, especially one in which there is a mixed-use development.

## Wood Fuel

The potential benefits for a sustainable wood fuel supply chain being created in Argyll are enormous. A renewable energy economy based on wood fuel chips or pellets will benefit Argyll's forest resources and can be kept, as far as possible, within the local community.

## Combined heat and power (CHP)

Combined heat and power (or CHP) heats a building using heat that is produced as a by-product of power generation. CHP units use a variety of different fuel sources, including waste such as biomass and domestic waste. CHP that runs from biomass (including wood) and waste is considered to be a renewable supply and has the potential to deliver significant reductions in greenhouse gas emissions and energy costs where suitable heat loads exist.

Redevelopment of larger urban sites and new, more urban areas are likely to provide the greatest opportunity for CHP development – partly because simultaneous installation is possible, but also because the layout and densities of development are likely to support such proposals.

## Wind power

Wind power produces no pollutants or emissions during operation. The land can still be part of the agricultural system and jobs are often created both in the short and long term in the building and maintenance of the turbines. A typical wind turbine for electrical generation will repay the energy used in its manufacture in the first 6-9 months of its operation. The main issue with wind power is its visual impact. Careful siting is needed to balance the need to minimise visual impact, with the best location for electricity generation.

## Solar

Solar energy can be captured by solar panels. There are two main types of system deployed in Argyll:-

- **Solar Water Heating collectors:** These panels absorb the energy from the sun and transfer it to heat water. There are Two types of solar water heating collector: flat plate and evacuated tubes. Most domestic users have roof mounted south facing solar panels which heat water in conjunction with the existing heating system thus reducing their power bill. This is the traditional use of solar power and still the most common.
- **Photovoltaic systems (PV).** These panels transform the solar radiation directly into electricity in a clean, quiet and renewable way. When first introduced onto the market they were used in conjunction with batteries to store the power when no sunlight was available. Today the best solution is to connect PV systems to the grid; this can be achieved within a home or business with an inverter, to convert the DC output to AC, and a metering system. If more power is produced than is required then the system can produce an income stream by passing this excess onto the power company. Although the daylight needed is free, the equipment is expensive and it can take many years before receiving any payback. However, in remote areas where grid connection is expensive, PV can be a cost effective power source.



## Community District Heating System for Fyne Homes; Lochgilphead

Fyne Homes Whitegates housing development was the first example of a wood fuel district heating system in Argyll. Modelled on successful Austrian district heating systems, the system represented a major advance for wood fuel in the area. New houses are situated around a central boiler system which feeds each individual house on a metered basis.

Fyne Homes and West Highlands Housing Association (WHA) have gone on to adopt renewable energy solutions in many new-build developments. These include the Fyne Homes Shore Road development in Campbeltown and the WHA Glenshellach development in Oban. The Glenshellach system represents the largest wood fuelled district heating scheme to be built in Scotland - 92 houses will be supplied by one boiler system when both construction phases are completed.

# 1.10 Renewable energy

## Ground Source Heat Pumps

Ground source heat pumps provide a new and clean way of heating buildings in the UK although they have been widely used in other parts of the world, including North America and Europe, for many years. Generally they cost more to install than conventional systems; however, they have very low maintenance costs and can be expected to provide reliable and environmentally friendly heating for in excess of 20 years. They make use of renewable energy stored in the ground, providing one of the most energy-efficient ways of heating buildings. They can be installed using a borehole or shallow trenches or, less commonly, by extracting heat from a pond or lake. Ground Source Heat Pumps are normally made up of three principal elements;-

- 1 Heat collecting pipes** located in a closed loop, containing water (with a little antifreeze) are buried in the ground.
- 2 A heat pump/exchanger** is used to pass the heat onto the heating system. The only energy used by Ground Source Heat Pump systems is electricity to power the pumps.
- 3 A system of heat transfer** Ground Source Heat Pumps work best with heating systems which are optimised to run at a lower water temperature than is commonly used in UK boiler and radiator systems. As such, they make an ideal partner for underfloor heating systems. These are best fitted when buildings are being constructed

### Isle of Gigha; Community Wind Farm

This is Scotland's first community owned, grid connected, windfarm. All major decisions on the community owned Isle of Gigha are made by the community and a well-attended trip to a nearby windfarm was arranged by the Trust. Discussion and debate culminated in a meeting where the vote in favour of the windmills was 100%.

Over the first eight years of the project, the Isle of Gigha Heritage Trust will build up a capital reinvestment fund, sufficient to replace all the second hand equipment. The financial model that has been developed to underpin the project is robust and capable of widespread replication by communities throughout Scotland.

The Gigha windmills comprise three second-hand wind turbines. Each turbine stands on a three section, 30 metre, rolled steel tower, set on steel reinforced foundations. The windmills are medium sized by modern standards and are suited to the small island landscape. It is estimated that the three windmills combined will produce approximately Two-Thirds of the island's electricity requirements.



## Microhydro

Small scale and micro hydro represents an option for many community or business schemes in Argyll and Bute. With the vast number of small rivers and burns available, it is potentially a very viable resource for hotels and distilleries etc. One developer, Innogy Hydro (now part of npower Renewables), has a number of such small hydro schemes across Argyll.

With improvements in small generator technology, it is now quite feasible to produce enough energy to power a small workshop or house in a remote location and on islands with no proper electricity infrastructure.

Any hydropower technology turns the potential or kinetic energy of the water into energy by means of a turbine. Turbines either use water "dropped" from behind a dam or from a natural river with no water storage reservoir. Various consents and licences are required for a hydro project. These are generally dealt with by the environment agency and local planning authorities.

### Bowmore; Housing for West Highland HA

- Ground Source Heat Pump



West Highland Housing Association have built Twelve houses in Bowmore, Isle of Islay which are heated by GSHP systems. They have under floor heating at the ground floor and radiators on the 1st floor.

## 1.11 “Using buildings to shape urban spaces”

This section of the Guidance looks at the components which make up a town or village;- neighbourhoods, public spaces and routes and linkage. It advises on the issues which need to be considered in order for a new development to provide a lively, sustainable, linked addition to an existing area.

Every successful settlement has its own distinctive identity. This is determined, in part, by the architectural style of individual buildings but an equally significant factor is the relationship of these buildings to each other and to the landscape surrounding them - their settlement pattern.

There are a number of factors which are common to many successful places;-

- They have distinctive “neighbourhoods”, each with their own character, which is derived from it’s locale.

- **Neighbourhoods are linked together in different kinds of ways.** Good new development should provide a sequence of attractive spaces on a human scale which link areas of different neighbourhood character.

- **There is a range of housing types.** Wherever possible, larger new developments should include a range of housing types - from larger villas to smaller flats - so that scale and density varies throughout a development. Mixing housing types (such as flats and houses) can improve security because different groups of people are likely to be around at different times of day, thus improving informal surveillance of more public areas

- **There are generally attractive, characterful public spaces** from Helensburgh’s tree-lined streets to Rothesay’s seafront. External spaces need to be designed as carefully as those within a building, and buildings themselves can be used to define and organise external spaces.

- There is careful consideration given to the detailed design

- **All of these factors work together so that the whole is more than the sum of its parts.** Successful places are not a series of “zones” but have an organisational pattern which links all of these things together, as people move through different spaces

The following pages go on to consider these issues in more detail. Refer also to the Scottish Executive’s Planning Advice Note - PAN 76 New Residential Streets.

### “Anywhere” modern development

Many modern developments are characterless because they are made up of the same kind of housing unit repeated over and over again. In big, new housing estates it can be difficult for people to orientate themselves and make sense of their surroundings.

Road layouts can be convoluted and meandering, with acres of uniformly spaced housing of either identical or arbitrarily different size and style - avoid this by organising into zones of different character



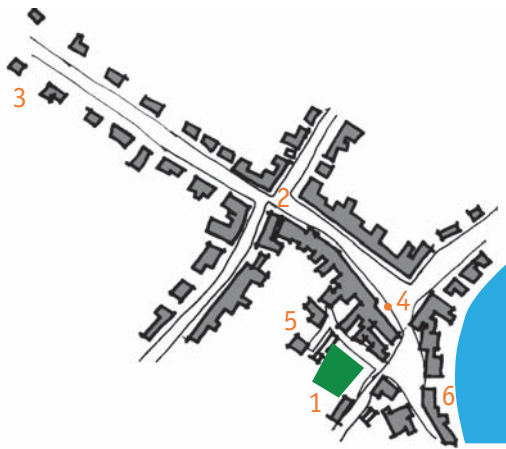


1	2	3
4	5	6
7	8	9

1 Public green space; Campbeltown 2 The Serpentine; Rothesay 3 Waterfront; Oban 4 Port Charlotte; Islay 5 Castle as landmark; Dunoon 6 New housing; Dunoon 7 Waterfront; Rothesay 8 Approach and view; Campbeltown 9 Shopping street; Helensburgh

## Argyll and Bute - Identity

Many towns in Argyll and Bute have a clear centre and a hierarchy of development radiating out. The centre is where competition is fierce and buildings are densely packed and relatively tall. Large houses are found on the outskirts of settlements in their own extensive grounds. There is a logic and pattern to traditional development - buildings are located around principal routes or public buildings or space such as a church or market square.



### Areas of different characters include;-

- 1 Public green spaces
- 2 Busy, dense urban street
- 3 Less dense, more suburban housing
- 4 Landmark
- 5 Housing court
- 6 Waterfront

Larger new developments provide an opportunity for designers to add to Argyll and Bute's diverse, characterful villages and towns



# 1.12 Neighbourhoods key components of a sustainable development

## Neighbourhood character

**A neighbourhood can be defined as an area with its own distinct identity, either forming part of an existing town or village, or alternatively it can be part of a larger new development.**

The best existing development in adjacent towns and villages in an area is generally made up of distinctive neighbourhood types, each with their own character. Easily recognisable examples which are seen throughout Scotland include streets, squares, courtyards and avenues. Within Argyll and Bute other particular neighbourhood types with their own character have also evolved as a response to their landscape setting. These include edge-of-settlement, hillside and coastal developments.

### Neighbourhood type - new edge of settlement development

Unlike free-standing settlements which generate constant car journeys, edge of town extensions allow residents to link into existing infrastructure of public transport in order to get to shops, work and schools.



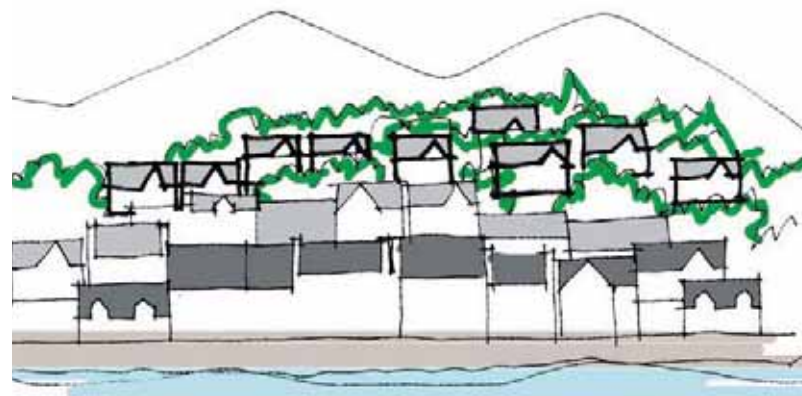
When designing for this location, it is generally helpful if:-

- back gardens face each other rather than onto access roads leading into developments.
- new roads, footpaths and public spaces link into the existing network of public spaces within a town or village.

### Neighbourhood type - hillside and coastal development

Many of Argyll and Bute's towns and villages are located in between the coast and hillside. It is generally helpful if:-

- properties are orientated in the same way as those around them, often they face onto the sea.
- consideration is given to the impact of a new development on a town's roofscape.
- boundaries and landscaping complement those existing.





## 1.12 Neighbourhoods key components of a sustainable development



### The Drum, Boness - Edge of settlement

Articulation in the building line of streets creates different vistas, varied roofscape, intricacy and complexity which together create human scale and interest. Areas of different character have been created. These include:-

1	2	3
4	5	6 7
8	9	

1 more dense neighbourhood area  
 2 public square 3 canopies and boundary walls enclose front garden  
 4 open green spaces 5 avenue 6 and 7 front door opens onto street  
 8 entrance to development defined by boundary walls 9 less dense neighbourhood character.



# 1.13 Routes and access

## Organisational pattern and linkage

Designers should consider the design of areas of different neighbourhood character and the way in which they are linked.

**Refer to the Scottish Executive's Planning Advice Note "PAN76; New Residential Streets" for more information**

### Routes for cars

Recent regulations and standards now shape modern development - where highways standards have been allowed to dictate the layout of new developments, community and context have frequently been in second place. New sustainable developments should therefore aim to:-

- **balance the needs of cars and people** - create places rather than road networks
- **discourage speeding by design;** where possible residential areas should restrict traffic speeds to 20 m.p.h. zones and traffic calming features need to be appropriate to their location. Consider incorporating features such as gateways, different surface materials and narrowing of roads themselves.
- **consider junctions and corners as "places"**, in addition to the requirements for traffic management

## Pedestrian and cycle access

80% of local journeys can be made on foot - for example, people walking from one side of a new, larger development to a play area at another side, or from a new development at the edge of town to local shops. New sustainable developments should therefore aim to provide footpaths and also cycle links which are safe, pleasant and secure so that they are well used. Means to achieve this include:-

### • carefully integrating paths into their setting

Separate footpaths in residential areas are often perceived as dangerous places and should only be included where they are short, direct and overlooked. Where paths are required, their route needs to be carefully considered. For example, if the development is located in the route of a desire path to a local school then care must be taken to integrate the path in such a way that it does not cause nuisance to new residents.

### • clearly defining where people should and should not walk

Pedestrian routes should be designed in a way that ensures that they are overlooked, well lit, direct, and well used. They should not undermine the defensible space of neighbourhoods. Acceptable routes through a development should be clearly identified, thereby encouraging their use

and limiting access/use of other areas to residents and their legitimate visitors. Design features which can help to give the impression that the space beyond is private include:-

- change of road colour and surface
- using features such as artworks to aid orientation
- local narrowing and gateway features

### • ensuring that pedestrians and cyclists interact with traffic safely

Design features which can help to make road crossings safer include:-

- dropped kerbs and tactile surfaces at crossings
- barriers at busy roads to direct pedestrians and cyclists to safe crossing places
- separation of cycles from vehicles wherever possible

## Homezones

Homezones are traffic-calmed streets with a physical layout that limits speeds above 20mph; they have clearly defined entry points, parking and supervised play spaces.

Homezone characteristics include:-

- No separate raised pavements
- A variety of surface treatments suited to a pedestrian environment
- The use of trees, planting and street furniture to define and screen car parking



## Safe and secure streets

Streets should be designed so that it is clear to drivers that they are entering pedestrian priority areas. Techniques could include;

- Slow cars; provide traffic calming
- Blank gables or blind corners should not face onto streets to prevent anti-social behaviour taking place unnoticed
- Good opportunities for passive surveillance allow children to play safely
- Provide a high standard of illumination - (metal halide preferred.)
- Use planting to filter views without creating dense screens
- Consider using hedging as "green walls" to define space



# 1.14 Parking

## Parking

**Designers should consider the design of adequate car parking which is well integrated into its setting.**

Usually, sustainable urban design proposals seek to minimise car use, as vehicles are a major contributor to global warming. Because Argyll and Bute is largely a rural area, any realistic proposals for development will need to include provision for adequate car parking which is well integrated into its setting. Even small areas of poorly integrated car parking can very easily have a detrimental effect on other urban design features, so it is an important aspect of design to consider.

All parking spaces should be big enough for a wheelchair or pram to negotiate comfortably with paths to a suitable gradient rather than steps. Consider using local materials (e.g. gravel from local quarries could be used).

## In - curtilage parking

In - curtilage parking offers good security for residents but needs to be carefully integrated into the design of individual plots. Where developments are low density (for example, houses or flats in an integrated landscaped setting) in curtilage parking is not a problem.

Elsewhere, larger front gardens (designed to accommodate car parking spaces) can lead to a loss of back garden space, plus wider spaces between dwellings which can lead to a loss of neighbourhood character. Where plots are of a limited depth, consider locating parking to the side of a house, remembering that parked cars can be particularly vulnerable to crime need to be overlooked. Where a more dense development is required, garages to the side of houses can be used to tie a development together and allow houses to move closer to the road.

## Parking courts

Parking courts are generally provided where development is at a higher density - for example, parking within curtilage is not achievable for blocks of flats, or for denser housing developments. Their design needs to be carefully considered in order to achieve a balance between security (the need to have a clear view of your own car) and the visual impact of parked cars. Squares and courtyards can happily accommodate around blocks of ten cars at a time before they start to become visually intrusive, but to be an effective counterpoint to parked cars, landscaping in parking areas needs to be substantial. Parking courtyards need to be divided into areas which are small enough for residents to claim ownership - for example by using gateways, planting and by breaking down surfaces with different materials.

**Parking courts should therefore be included as an integral part of any landscaping proposals.**

## Larger car parks

Where possible larger car parks should be surfaced with porous paving following the principles of sustainable drainage. Dry jointed paving units or bound gravel may have less visual impact than 'black top'. Reinforced grasscrete does not even look like a parking area when not in use

### Parking Court

parking provision broken down into smaller areas screened by trees and hedging



### Pedestrian and Vehicular Surface is shared

- different surfaces define different uses
- car parking defined by pergola; future planting will minimise views of cars
- house entrances arrive directly at shared surface
- high quality finishes



### Minimising impact of car parking



- 1 overview; car-parking in Campbeltown
- 2 trees and planting reduce impact of parking
- 3 variation in hard landscaping adds interest
- 4 planters add verticality and help to screen cars

# 1.15 Attractive, characterful external spaces

Buildings, plot boundaries and landscaping can all be used to make interesting, safe, external spaces.

## Outdoor Spaces

Successful external spaces within Argyll and Bute have either grown up around established roadways or paths, or have been considered since the outset of an area's design, (as is the case for many planned towns and villages, such as Inveraray). The best outside spaces tend to be like welcoming outdoor rooms whether they are streets, courtyards or parks.

In order to achieve this within new developments, the spaces between buildings requires as much care and thought as the design of the buildings themselves.

**To achieve well thought-out urban spaces such as attractive streets and courtyards, designers should consider;-**

- **ensuring that outdoor spaces have a clear character and shape** - the boundaries and edges of external spaces should be carefully considered; these can be shaped by the topography and the buildings themselves, together with walls, fences, trees and hedges. There should be no "left-over" spaces which are ambiguous in terms of ownership.

- **rhythm and building pattern** - articulation in the building line of streets creates different vistas, varied roofscape, intricacy and complexity, which together create human scale and interest. Developments should have an overall design concept which controls aspects such as the continuity of building line and a street's horizontal and vertical rhythms

- **active street frontages** - Public spaces which are not well used and overlooked can often feel unsafe, especially at night, so buildings should have active street frontages;- in other words they should face outward and onto the street.

**Active street frontages generally incorporate;-**

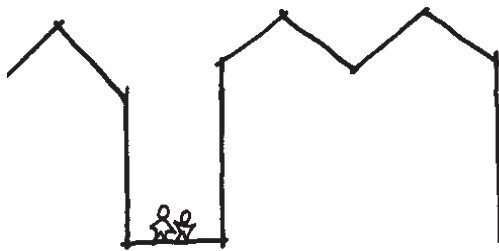
- frequent entrances and doors
- frequent windows to rooms which are in use most of the day (such as living rooms or kitchens)

**Generally active street frontages avoid;-**

- large building set-backs
- large areas of boundary fencing to back gardens, particularly at entrances to developments
- large, obtrusive areas of parking
- blind gables and large areas of blank walls

- **enclosure** - where building facades are used to define external spaces, care must be taken to ensure that they are scaled to complement adjacent public spaces

### Enclosure



**canyon effect** - houses too tall



**prairie effect** - houses too small and spacing between them too great



# 1.15 Attractive, characterful external spaces

## Landscape

- **A strong framework of landscape elements can be used to reinforce the overall neighbourhood character of a development.** Together with neighbourhood urban types such as roads and streets, greenspaces and blocks of landscaping can be used to design attractive sequences of spaces within a new development. Carefully considered, well integrated green spaces have the potential to provide characterful, “added value” design.

- **Blocks of planting** can shape and enclose spaces, screen views and enhance microclimate through provision of shade and shelter. Even small scale green spaces can add significantly to the character of streets.

- **Avenues of trees or planted areas** can be used to define more public routes and can separate homes, pleasant paths and cycle routes and traffic

- **Biodiversity.** Appropriate planting with local species strengthens biodiversity and local character

- **The existing landscape can be used positively in the design of new spaces.** For example, old trees could be retained in a new square or existing hedgerows and trees used to provide planting adjacent to a new road.

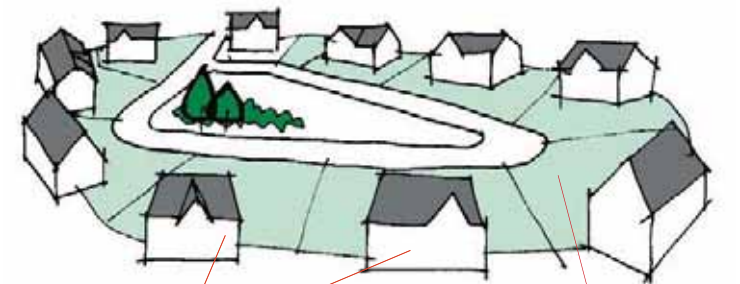
- **A key part of the success of any green spaces is to involve the local community** in their design and ongoing development and maintenance.

(this Guidance is only intended as an introduction to the principles underpinning good landscape design. For more details of landscape frameworks refer to PAN 44 Consultants Design Manual)

## Character and shape

### ✗ Lack of Character

The design of this development is very uniform with no sense of enclosure; as a result it is anonymous, offers little shelter and no overall impression of a grouping with external spaces with any character

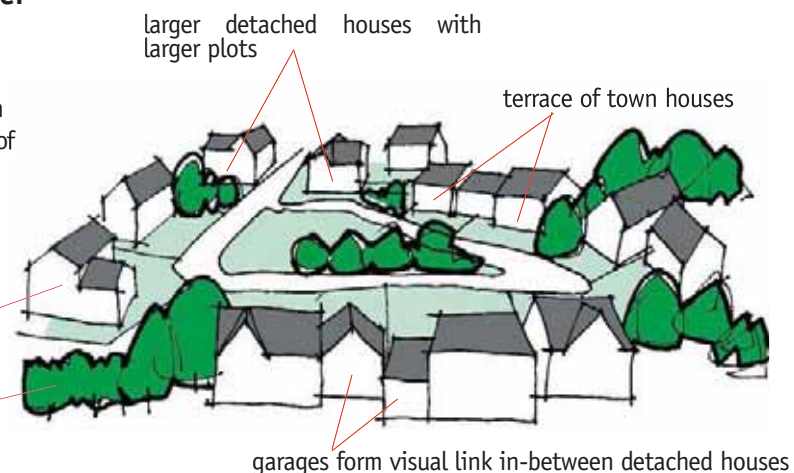


no sense of enclosure

all of these house types are the same and sit on their plot in a similar way.

### ✓ Development with more character

Here the same number of houses have been grouped into areas of different densities. Landscaping is not used to screen houses from each other but to provide shelter and a sense of enclosure.



enclosure is created by houses stepping forward on their plots

structured planting encloses spaces

garages form visual link in-between detached houses

## 1.15 Attractive, characterful external spaces



### Enclosure and defining spaces

As you walk through Campbeltown, a series of stone wall enclose streets and squares. They tie together a disparate range of building types and sizes



### Active street frontage

**This street is poorly designed** - it is anonymous and unpleasant. Walking along here feels unsafe as the path is not directly overlooked



**This street is better designed** - trees and verges provide separation between boundary fences and the path. However, walking along here still feels unsafe as the path is not directly overlooked



**This is the best design** - trees and verges provide separation between parking areas, roadways, paths and properties. Walking along here feels much safer as the path is directly overlooked

### Rothsay - landscape elements

One side of this street incorporates a small landscaped area which makes a significant positive contribution to local character, the other side of the street has no landscaping and a very different character

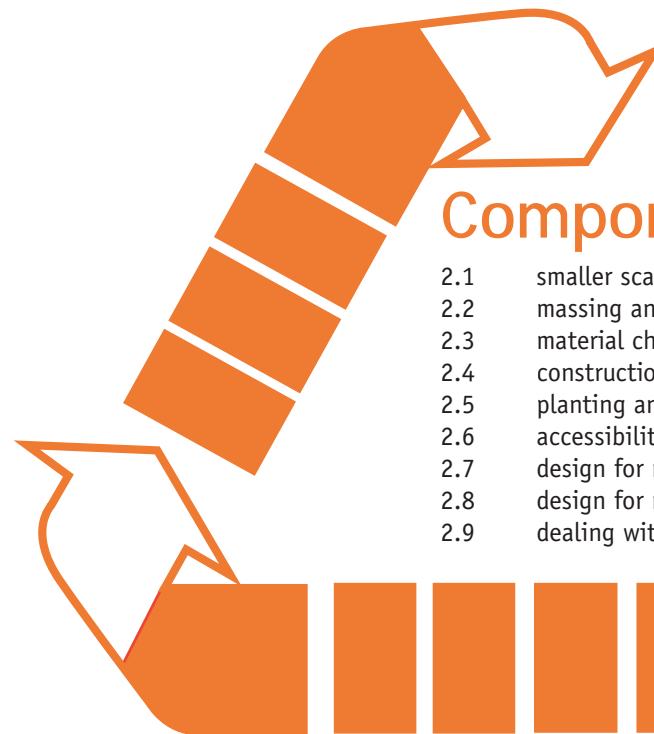


### Community Involvement the Lade; Rothsay

This small "pocket" park is located beside an existing mill lade. The landscape architect worked with local children on the design, which is based on a study of the history of the Lade area.







## Components of a Place

- 2.1 smaller scale components
- 2.2 massing and proportion
- 2.3 material choices
- 2.4 construction details
- 2.5 planting and gardens
- 2.6 accessibility
- 2.7 design for minimal energy use
- 2.8 design for minimal environmental impact
- 2.9 dealing with climate change

## 2.1 Smaller scale components

This final section of the Design Guidance considers the detailed design of individual dwellings within a new development, and their relationship to their immediate neighbours.

### Smaller scale components of successful neighbourhoods

Factors which determine “character” need to be considered at an early stage in the design process. These include:-

- using a limited palette of local, sustainable, high quality materials.

Using local materials and rural details is a good way to refer to the local context, and means that the massing and proportions of buildings do not always need to be the same in order to provide a coherent design concept, and a common aesthetic within a development.

- consideration of rhythm and building pattern

Articulation in the building line of streets creates different vistas, varied roofscape, intricacy and complexity, which together create human scale and interest.

#### building line

**1 and 2** common building line ties together different building heights; buildings are all located on the same vertical plane; front gardens are all the same width and have the same height of boundary walls  
**3** common building line is not followed and new shop unit looks out of place

1

3

2



#### sympathetic materials

this development of courtyard housing in Tarbert uses local materials, details and colour to integrate it into its surroundings.



(typical Tarbert street)



#### roofscape

**1** varied roofscape, Rothesay **2** less variation in roofscape makes housing inappropriately prominent **3** development at skyline makes housing inappropriately prominent

3

1

2



## 2.2 Massing and proportion

In addition to using sustainable construction methods (discussed in detail later in this section) consider either;-

- using the successful aspects of design for dwellings located in existing adjacent towns and villages in the area

or;-

- ensure that new dwellings are of the highest design quality. They should be designed to incorporate the best characteristics of successful designs and include consideration of the relationship of individual properties to their context.

Typically, a good designer would consider -

- **Plot size**

There should be an appropriate relationship between a property and its plot size, taking account of the type of development and its context such as historic plot shape, size and rhythm (the relationship of development across contiguous plots).

- **Overlooking**

It is better to design-out overlooking through careful massing, siting and positioning of doors and windows. If new developments are located beside existing properties which sit within their own garden grounds, they should be designed to minimise their impact on the lifestyle of existing residents. In particular, care should be taken to ensure that new properties do not overshadow existing properties.

If new developments face directly onto adjacent properties, then windows should be a minimum of 18 metres apart from habitable room to habitable room, and 12 metres apart from habitable room to kitchen or bathroom.

- **Massing and height**

Proportion, scale and massing are very important aspects of development and - as with layouts that go against the 'grain' of existing settlement patterns - if the proportions of a building are not carefully considered then development looks out of place and inappropriate.

Applicants and their designers should consider the massing of their buildings in the context of their site and adjacent developments, and the proportion and relationship of roofs, walls and openings. In most cases if the fundamental scale and massing of a design is sympathetic to its setting then there are opportunities for re-interpretation of the relationship of the wall openings and materials in the elevations.

It is not intended that proposals copy the design of traditional buildings but it is important that applicants proposals reflect an understanding of the key elements of existing buildings and why they appear to be integrated in their surroundings.



Tiree



Helensburgh



Dunoon



Dunoon



Campbeltown



Inveraray

Traditional proportions and materials vary, dependant on a building's location within Argyll and Bute

## 2.2 Massing and proportion

### “anywhere” modern development



### deep plan detached house

problems arising from plan and layout



### deep plan terraced houses

problems arising from plan and layout



Many modern buildings look out of place in their location, even when they incorporate traditional materials like render or use details such as stone quoins.

Often the floor plan is complex – an individual house can have a form which steps in and out, perhaps an L or a T shape. Such homes are less likely to sit comfortably in the landscape and may need greater

reshaping of the land. For reasons of economy on a sloping site, new buildings often have a considerable area of unutilised underbuilding. This introduces areas of blank walling at the ground where traditionally doors would have opened onto gardens, and changes the proportion of elevations.

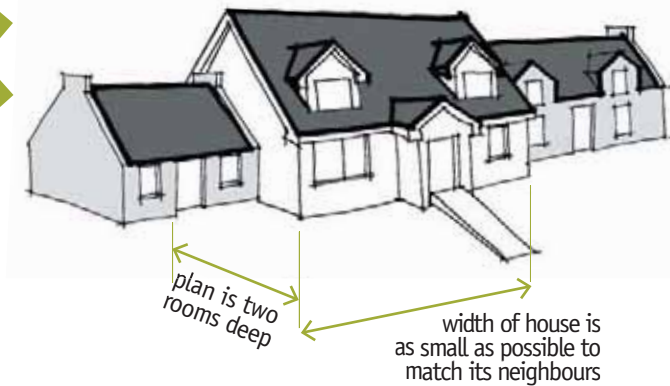
Advances in building technology mean that the basic plan form can be much deeper from front to back. Consequently, new homes generally have a proportionally larger pitched roof.

Changes in construction techniques and materials mean some newer buildings appear clumsy and crude. This is most noticeable at roofs where they often incorporate heavy verge and eaves details, over-large dormers and heavy detailing at porches.

In order to take advantage of the view most new homes have bigger windows. Garages and extensions are often located on a site in an obtrusive and unsympathetic way.



## 2.2 Massing and proportion

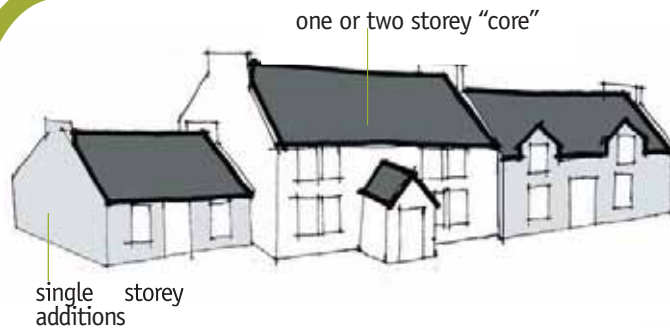


### RECENT DEVELOPMENT - the problem, the “big box” one and a half storey house

This newer one and a half storey timber kit house has been designed to look as much like its neighbours as possible, - it is symmetrical with one and a half storeys, dormer windows, a “traditional” type porch, and vertical windows.

However, it is a big house with a much larger floor area than its neighbours so it has a deep plan in order to make the building look as compact as possible when viewed from the front.

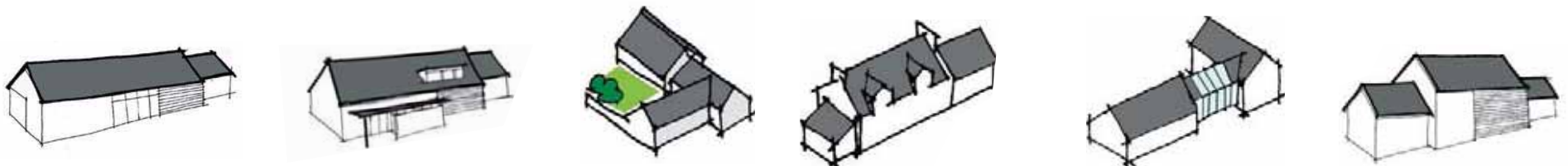
Although the house has the same architectural features as its neighbours, the deep plan and the large roof and dormers means that the scale of the house changes - it starts to look too big.



### RECENT DEVELOPMENT - The “Argyll and Bute” solution

Traditional rural “Argyll and Bute” houses have a plan based on the depth of a single room. More acceptable options for new, larger dwellings could be based on a one or two storey “core” supplemented by single storey additions added in typical rural fashion. Alternatively, single storey houses could be arranged in the same way as typical farm steadings and outbuildings.

(see photographs and diagrams below).



Larger buildings can be successfully broken up into smaller elements in terms of massing



## 2.3 Material choices

Around 30 million tonnes of material are used by the construction industry in Scotland every year. However, improvements in the way that buildings are designed, and the materials that are used, offer opportunities to use materials in a more discriminating way. This guidance therefore firstly considers choices of materials in terms of their visual impact and subsequently goes on to consider the best choices for sustainable materials.

### Choices of materials in terms of their visual impact

This Design Guidance aims for a balance:- creating opportunities for exciting and individual design while preserving and enhancing Argyll and Bute's character. Today, traditional materials (for example render (harling) and stone) are not always appropriate to all scale and types of buildings.

There are opportunities to use materials that are not considered to be traditional but can be sourced locally, fabricated locally or easily transported from other areas. However, their use should be underpinned by an understanding of the essential ingredients of local distinctiveness.

Designers need to consider the landscape setting, and existing buildings and patterns of development in the area when choosing materials, and their selection should be considered from initial stages of design development.

### Consider either:-

- incorporating the successful aspects of existing adjacent material choices and construction details into new designs

Or

- the use of carefully considered material choices and construction details; see table opposite for suggested choices of materials

## Preferred material choices

### Walls

- **Polymer render** (Polymers in factory made renders give consistency and control of what is a powder material. They are less susceptible to cracking and crazing when compared to traditional sand and cement.)
- **Traditional wet dash render**
- **Natural stone**
- **Drystone walling**
- **Timber cladding** (horizontal or vertical timber boarding)
- **Corrugated metal cladding** (to match/complement traditional corrugated iron cladding)
- **Lime based render**

### Roofing

- **Blue grey slate**
- **High quality metal sheeting** (e.g. zinc, lead)
- **Plain concrete tiles with a small profile, to mimic slate**
- **Fibre cement slates (artificial slate)**
- **Timber shingles**
- **Corrugated metal roofing** (to match/complement traditional corrugated iron roofing)
- **thatch**
- **Turf**

## Materials and details which can be detrimental to local character

- Facing brick
- Marble chip finishes to render systems
- Proprietary plastic roof accessories such as verges and eaves details
- uPVC doors and windows
- False window astragals
- Red pantiles

**Avoid artificial decorative features that are not related either to local traditional finishes or the building's function.** Typically these include –

- Brick window surrounds
- Artificial stone features such as quoins and door surrounds
- Complex preformed metal decorative features



Materials and details which are less appropriate for a rural setting



## 2.3 Material choices

### Timber - a renewable material

Renewable materials come from a source which is capable of naturally regenerating and which is therefore considered to be sustainable. Renewable materials include timber, flax, cork and wool.

Within Argyll and Bute, a good example of a locally available material resource is timber. It has the potential to be part of a low energy and healthy building, a supply chain is readily identifiable, and it is a versatile material which can be used for a number of building components

There are many different types of Scottish timber available and it needs to be carefully specified. Much Scottish timber grows very quickly in Scotland's warm, wet climate and is not suitable for either structural use or for cladding. However, some timber types are suitable for construction including oak, elm, and sycamore, as well as durable softwoods such as Douglas fir and estate sourced European larch.

Most timber used in Scotland comes from abroad. Despite the cost of transportation from countries like Canada and Siberia, timber is still relatively low in embodied energy.

The main source of concern when using timber from outside of the UK is whether it comes from a sustainable source or not.

**(The Forest Stewardship Council (FSC) is an international network to promote responsible management of the world's forests. It accredits independent third party organizations who can certify forest managers and forest product producers to FSC standards. Its product label allows consumers worldwide to recognize products that support the growth of responsible forest management worldwide.)**

#### Examples of timber used in Scotland

**1 and 2** Oak from Argyll woodlands; Here We Are Centre, Cairndow David Sumsion Architects **3** Private house, Perthshire; Arc Architects **4** Mount Stuart Visitor Centre; Bute **5** Painted timber cladding; Tarbert **6** Kilmartin Museum; green oak conservatory **7** Local scottish timber; Maud House, Struy **8** Housing at Gremista; Shetland; preservative treated softwood cladding detailed to allow ventilation and drainage **9 and 10** Timber clad houses; Scotland **11** Offices for Loch Fyne Oysters Ltd; Clachan; painted scots pine timber cladding **12** Timber cladding; housing Edinburgh **13** David Douglas Pavilion Pitlochry; shingles were sourced from a sawmill in Argyll and Bute; **14** Larch cladding; Edward Street Dunoon; **15** Timber-clad extension; Crinan

1	2	3
4	5	6
7	8	9
10	11	12
13	14	15



## 2.3 Material choices

### Colour

Consider the use of locally appropriate traditional colours. The use of an appropriate colour will reduce the impact of larger buildings located in the landscape.



Tarbert; coloured buildings

### Stonework

Limited areas of stonework are a cost effective way of making buildings more interesting; coursed rubble elements can be used to firmly locate a building on its site.

It is important that these elements do not appear as a Two dimensional 'veneer', applied to the facade.





## 2.4 Construction details

**Construction detailing must be considered carefully in the context of an appropriate contemporary interpretation of traditional forms.**

### Roofs

The design of roof edges should complement the proportions and style of the other elements of a building.

Although individuality and variation in design is encouraged, care must be taken to ensure that eaves and verges do not become an intrusive element of the building's composition. Many new buildings are constructed with a roof which oversails the walls (not a problem in itself) but are finished with heavy proprietary eaves and verge details. These details are unlike the traditional way in which roofs were finished and generally look inappropriate.

The build up, or thickness, of modern roofs is getting increasingly deeper because of increasing levels of insulation sitting within roof spaces. In order to avoid thick, clumpy details at the edges of roofs, considerable care must be taken when detailing verges and eaves.

Although this guidance does not seek to be prescriptive, it is worth noting that low-key developments which integrate sensitively into their surroundings generally have steeper symmetrically pitched roofs. Where this approach is not adopted (for instance where roofs are at a lower pitch, or are asymmetrical or monopitch) a high level of design quality and control will be needed, which is often only achievable at a high cost.



### Chimneys

Chimney location is determined by the plan form of the building, so the location of fireplaces needs to be considered at an early stage of the design process. Traditionally, chimneys are located either sitting on the ridge of the roof, or flush with the gable ends of the building where they are contained within the gable wall until they reach the roofline.

Care must also be taken in the design of chimney copes and the choice of chimney pots.



## 2.4 Construction details

### Dormers

**Dormers** should be in proportion to the roof of which they form a part.

In a 1 ½ or 2 ½ storey traditional house, the roof pitch is generally high enough to allow the majority of the roofspace to be used. As a result dormers could be incorporated as a continuation of the existing external wall. Any dormers within the roof tended to be small and delicately constructed and detailed.

Many modern houses however have dormers that sit back into the roof either as a result of the use of a deep plan or a shallower roof pitch. These often appear over-large or break up the main roof into a lot of smaller, 'fussy' bits and pieces. When these are constructed (as detailed earlier) with heavy tiles, flashings, fascias etc., the resulting building looks clumsy and heavy.





## 2.4 Construction details

### Conservatories

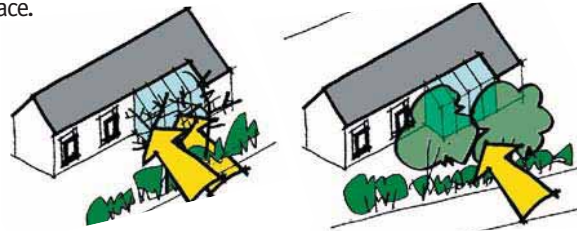
Traditional rural houses generally have conservatory spaces added as a kind of “lean-to”. They are a valuable way to extend the amount of time that “sitting out” spaces can be used. Modern Conservatories come in a range of standard designs and are often made of uPVC. The size of a conservatory should be selected carefully so as not to overwhelm the property to which it is attached.

### Sunspaces

A sustainable type of conservatory space is the “sunspace” which collects the sun’s heat through large, south-facing windows. Once the heat is inside the sunspace, it is “captured” by an element with “thermal mass” within the building. This is generally a masonry floor or wall which warms up slowly during the course of the day. This releases heat into the air within the house which in turn is slowly circulated throughout the building - often passively through windows, doors or vents. Sunspaces are not intended as heated spaces so they are usually separated from the rest of the building with doors and/or windows.

A sunspace can be built as part of a new home or as an addition to an existing one. The simplest and most reliable sunspace design is to install vertical windows with no roof glazing. It is difficult to shade sloped glass whereas a properly sized overhang can shade vertical glass. The orientation of these spaces is crucial as they will need to face onto the sun for a significant proportion of the day in order to function

Sunspaces can have a significant impact on a building’s appearance and their location needs to be carefully considered. If sunspaces need to be located directly beside a road, or in a location where privacy is affected, consider screening them with deciduous planting which will provide shade during the summer. In winter, when leaves have fallen, more low-level sunshine will then be able to enter through into the sunspace.



Deciduous planting in winter allows sun to enter

Deciduous planting in summer screens the sun



Kilmartin House Museum; sunspace used as cafe

### Porches

Traditional single storey houses often have porches added to the front, side or rear walls. Within rural areas traditional porch design is generally very simple, using the same materials as the main building. Alternatively, in some traditional properties, internal draught lobbies were provided.

Many modern homes have an “add-on” porch which can look overcomplicated and out of proportion because they use heavy eaves and verge details and heavy tiles for the roof construction.





## 2.4 Construction details

### Windows and Openings

A fundamental consideration should be to minimise heat loss and make the most of solar gain. This can be done by reducing the size of north facing windows and making south facing windows larger to make the most of solar gain. Heat loss can be further decreased by using low emissivity and triple glazing. Traditionally windows were made of timber, which with regular maintenance will out last uPVC, and unlike uPVC is environmentally friendly.

### Use low energy glazing systems

Most traditional single-glazed windows offer little resistance to the passage of heat so although larger windows allowed more daylight to enter buildings, any benefits from solar gain were lost very quickly.

The latest Scottish Building Standards now ask for a good standard of thermal performance for glazing systems so that heat is retained within buildings. In general, double or triple glazed units - with argon used to fill the space between the panes and a low-e coating\* - will give a good level of thermal insulation. In addition, double glazing provides improved security, sound insulation and minimises condensation.

(\*Low-e Glazing - Low-e glass has a special invisible coating that reflects heat back into the room).

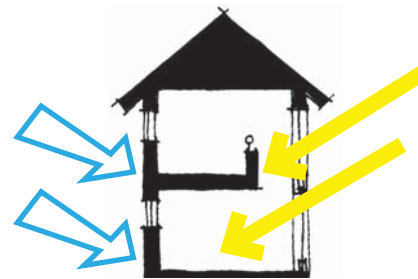
### Lifestyle

Older traditional properties have pleasing proportions of large areas of walling and smaller areas of, generally, vertically proportioned windows. The small size of many traditional windows is no longer compatible with modern lifestyles which require lots of sunlight and where good views are a desirable feature of any new house.

Large picture windows make the most of views in many newer properties but can sometimes be badly proportioned and look out of place. Because the walls of newer houses are not as thick as their traditional counterparts, windows sit closer to the outside edge of the building and the 'depth' of traditionally constructed walls is no longer seen at window and door openings.

**The challenge for contemporary designers is to maximise light and views while maintaining pleasing designs which are appropriate for their location**

### Designing for shelter and solar gain



small windows to north  
maximise shelter

large windows to south  
maximise solar gain

### Lifestyle

Large picture windows make the most of views but are often badly proportioned and look out of place. The wall depth in new houses is much less than previously, so the 'depth' of traditional design at reveals and mullions is no longer always a feature of the façade of a building.



### Solar gain and heat loss

#### Tiree; shutters

This building has an exposed location; new windows are located in a larger opening which can be closed off with shutters at night, minimising energy loss.



### Sustainable Housing

#### A'Chrannag; Rothesay

Full height windows are triple glazed and open out onto balconies



## 2.4 Construction details

### Contemporary Windows

- keep proportions of traditional larger openings
- smaller windows can be incorporated into larger opening
- mass of wall emphasised

Consider maintaining the traditional relationship between walls and windows so that large areas of glazing are counterbalanced by larger areas of wall. Larger areas of glazing in the proportions of bigger traditional openings,- where glazing is carried down to floor level with the window head at door height - often look right.

### Traditional



### Examples of good contemporary windows



## 2.5 Planting and gardens

### Planting and gardens; Garden spaces

It is important to get the relationship between a property and its plot (or site) size right. In other words a house should have a garden which is in proportion to its size, so a large country house should sit in larger grounds than a small, single storey cottage.

The overall aim should be to achieve a natural-looking relationship between the rural landscape and new gardens. As outlined below, the use of walls and fences is an important factor in this. Well sited and appropriate planting can also be used effectively.

### Integration into landscape

Garden spaces, boundary treatments and planting can be used to integrate developments into their surroundings. In the best developments gardens and the ground around buildings flow naturally into the landscape and, if possible, there should be no 'unnatural' discontinuation of this relationship. Boundary treatments and planting can be sited to naturally break up clusters of houses into groupings that match the local scale of similar buildings and gardens.

### Shelter

Wind shelter can be provided by tree planting and boundary walls or fencing. Where a development is for four or five homes it is worth considering a landscape design for the site as a whole which can locate shelter planting for the whole development.

In the summer, consider providing partial shade to sunspaces using deciduous trees and planting.

### Screening

Views to and from access roads can be "buffered" by using native planting - in other words planting can provide a comfortable degree of separation. Consider retaining existing hedges and trees intact wherever possible, or planting new ones to stimulate biodiversity.

Unightly activities or elements associated with new buildings e.g. fuel storage, work areas or storage areas for machinery etc. should be sensitively sighted and screened from general public view.

### Boundary treatments

If fences or walls are required they should aim to match traditional existing boundary treatments in the same area - for example, drystone walling or simple post and wire fencing. Rear boundaries or any boundary onto fields and rural open spaces should be unobtrusive - post and wire fences are much less obvious than timber screen fencing.

Where fences and walls are required for security, they can have a significant impact on their surrounding environment. The aim should therefore be to create safe, contained places that are also attractive. The use of low hedges and prickly native planting is a highly useful way of providing security and marking the public/private divide.

### Ancillary Buildings

The siting and design of smaller ancillary buildings such as garages, sheds and greenhouses needs to be as carefully considered as a property itself. The key points to consider are:-

- Consider the relationship between main property and any "ancillary buildings". They should sit together as "parts of a whole" and not as a series of disjointed elements.
- Think about the character of any spaces created in between a property and ancillary buildings, such as gardens or the area between a house and a garage.
- Use materials and details which will enhance the main property

### Biodiversity\*

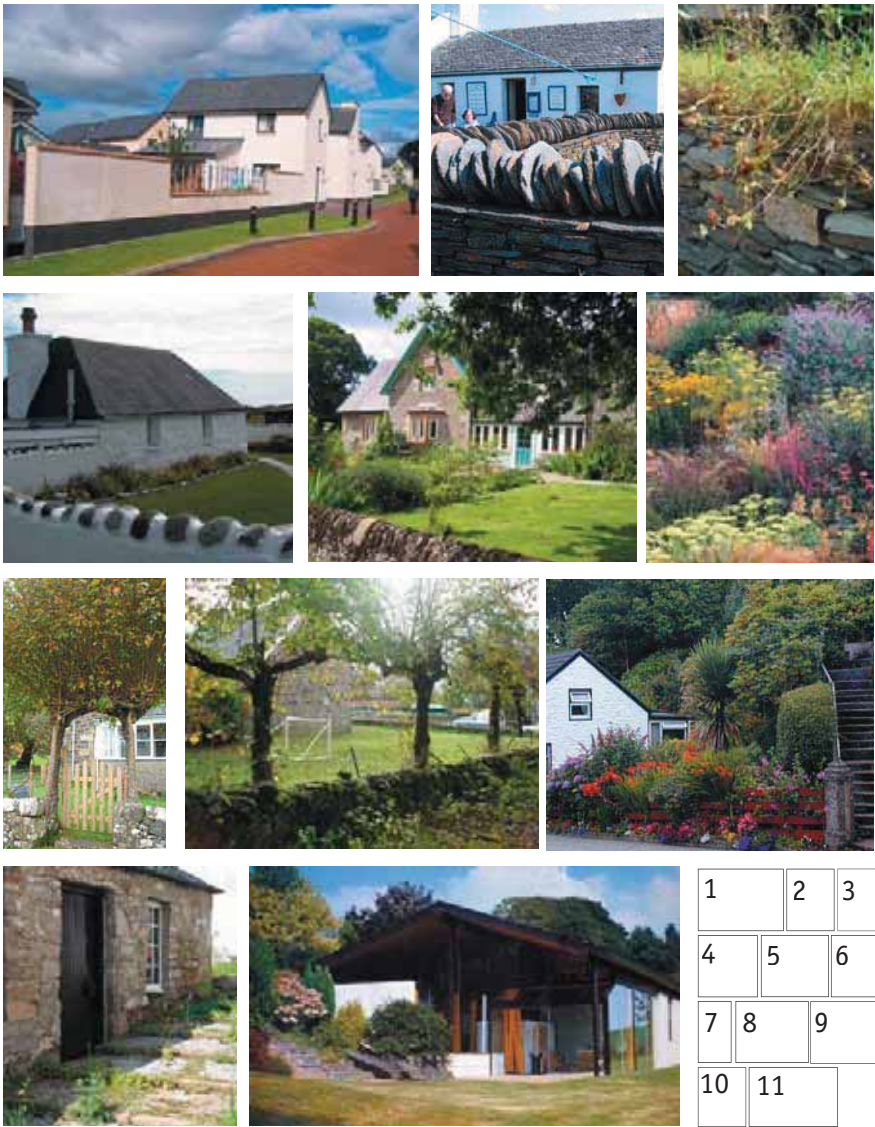
Sustainable design seeks to promote biodiversity. In smaller scale developments it is appropriate to:-

- Minimise any disturbance to existing land
- Identify any wildlife habitats within or adjacent to the development site at an early stage
- Enhance biodiversity by creating different kinds of wildlife habitat eg. woodland, water, hedgerows
- Leave areas of grass uncut to provide wild meadow habitat
- Discontinue the use of pesticides and fertilizers
- Use native species for landscaping
- Provide bird boxes
- Provide ponds or swales (linked to SUDs land drainage systems) which can be used by wildlife
- Retain mature trees

**\*Argyll and Bute is home to a diverse range of plants and animals together with their habitat. They capture and store energy, decompose organic material, help to cycle water and nutrients throughout the ecosystem, control erosion or pests and help to fix atmospheric gases and regulate climate. "Biodiversity" is a term used to describe this process.**

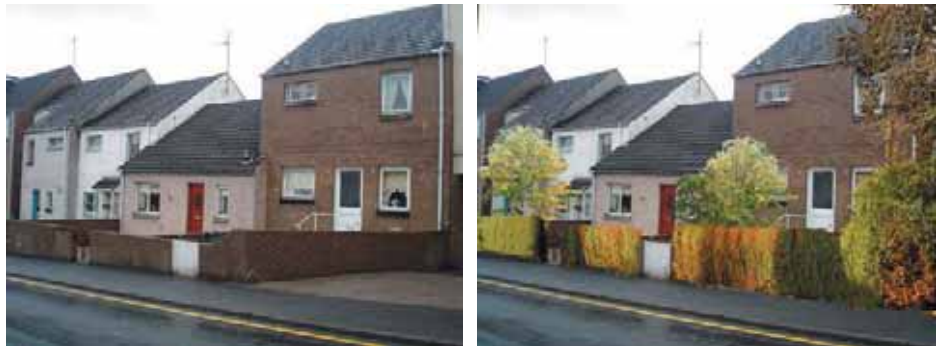


# 2.5 Planting and gardens



1 Screen walling to road 2 Dry stone wall; Easdale Island 3 Stone wall provides habitat; good for biodiversity 4 Boundary wall integrated with dwelling; Tiree 5 Boundary walls; School; Kilmartin 6 Scottish planting; Fife 7 Entrance to dwelling; Mull 8 Boundary wall and planting; Mull 9 Garden links house to landscape, near Oban 10 Steps; Inveraray 11 Garden; links house to landscape

## garden spaces improve surroundings



Without gardens.....

With gardens

## award-winning contemporary landscape design; Dunoon

A sustainable development of fourteen flats which are designed to make the most of southerly views towards the Clyde. The garden design;-

- retains mature trees
- new gate and walls are similar to others in Dunoon
- hedging is used to define and enclose spaces



## 2.6 Accessibility

### Design For Life - “barrier free design “

Buildings and their environment should be designed to be accessible and useable by everyone, from mothers with prams and buggys, to elderly people, and disabled people such as wheelchair users. An individual's housing needs will almost certainly change throughout their lifetime, and new homes should make it as easy as possible for a person to continue to live independently as they get older.

For more information refer to the Scottish Executive's Planning Advice Note “PAN 78 Inclusive Design”.

For example, (in addition to the downstairs WC suitable for use by a disabled or elderly person required by the building regulations), the following can be “designed-in” at an early stage to increase the flexibility of new housing:-

- Stairs which are suitable for a future stairlift to be easily fitted
- A downstairs space which could be easily converted to a future shower (for example a cupboard)
- Bathroom walls suitable for fixing grab rails
- Corridors/ hallways which are wider than normal so that all areas of the building are, as far as practically possible, negotiable by a wheelchair user



**Problems....**poor surfacing, drainage in wrong location, kerbs



**Solutions** - covered entrances and level thresholds...

### Level access

A key feature of ‘barrier free’ design is the need for level access to new buildings. To achieve this, the following points need very careful consideration:-

- **Parking spaces** need to be large enough for a wheelchair user to get in and out of a car, and they need to be reasonably close to a property
- **Access paths** need to have a gradient shallow enough to allow a wheelchair user or ambulant disabled person to access a property. This point needs to be considered very carefully at the beginning of the design process because a site is unlikely to be completely level. If the gradient along a path is to be kept to a minimum it is likely that the path will need to be significantly longer than might be expected - if this is the case, the minimum path length will start to influence a building's location on the site and its position relative to parking areas. Materials used for access paths need to be carefully considered - for example, gravel is difficult for a wheelchair user
- **Level thresholds** at entrance doors are mandatory; it is difficult to make this type of detail weatherproof so it is important to consider the following at an early stage-
  - Locating entrances in a sheltered position
  - Providing a suitable porch or canopy
  - Providing suitable run off/land drainage for the area around an entrance door



**good example**

entrance door has threshold sitting at existing ground level

**poor example**

ramp required to overcome underbuilding which raises entrance above ground level

### Flexibility

**‘Live-work’ units** – Significantly more people work from home than previously – particularly in scenic areas such as Argyll and Bute. New houses can be designed to provide for their needs – this might simply be the provision of wiring and sockets for a home office or additional storage.

• **Designing to allow for future change** - Many traditional buildings in the countryside are no longer used as originally intended - for example a number of different building types, such as barns, schools and churches, have been changed to houses.

Over the years many houses have themselves been altered and extended to meet changing needs. It is very likely that new developments will not be used in exactly the same way in thirty or forty years time as they are today.

New buildings should be sited and designed to allow for changes to suit future needs. For example, they could include loft spaces which can be easily converted into future living areas, or even bedrooms with extra power and telephone points so that they can be easily converted into home offices.

Non-structural partitions can be designed so that they can be repositioned relatively cheaply.



## 2.7 Design for minimal energy use

**Reducing the amount of energy that is used within buildings on a day to basis will not only impact on global warming, but will lead to increased energy efficiency and reduced energy bills. To reduce energy use consider integrated proposals for maximising energy efficiency and minimising air loss**

### Maximise energy efficiency within the building

- **Make the most of insulation to get the full benefit of energy retained through solar gain.**

Orientating buildings for shelter and solar gain will increase the amount of heat which they can collect (and lose), but the effects of correct siting and design will quickly be negated unless the building is well insulated. The more insulation in the external fabric of a building, the less heat will be lost - well insulated buildings have heating systems which are significantly smaller than usual.

- **Using the right size of heating system.**

A heating system should be correctly sized to match the heat loss from a building;- if it is oversized and produces too much heat, energy will be wasted. Heating controls must be easy to understand and adjust by the user so that a building's occupants do not waste energy.

- **Maximising daylighting.**

Electricity consumption, particularly for lighting, can account for a large proportion of total energy costs. Reduce energy costs by maximising available daylight through larger windows. Where buildings have a deep plan, resulting in rooms without an external wall, introduce roof- lighting.

- **Choosing appliances and fittings which use less energy.**

Use time switches to control the amount of time a fitting or appliance is used, for example communal lighting can be controlled with time switches. Specify low energy lighting and appliances.

### Minimise air loss

Even if a building is very well insulated, heat will be lost if there are gaps in the building fabric where air can escape, so this needs to be controlled. Typical situations where this occurs include;-

- around windows and external doors
- air leakage paths where different materials meet (such as chipboard flooring and plasterboard internal walls)
- gaps around services where they enter the building

If air loss has been minimised it is important to maintain an adequate level of ventilation to reduce the risk of condensation, and to ensure that occupants are comfortable (if not, they will open the windows, resulting in substantial heat loss!)

### Provide an integrated package of energy efficiency measures

Insulation, heating and ventilation all need to be considered together. There are various methods by which alternative energy efficiency measures can be measured and compared.

### Ventilation

All buildings need to have some degree of air moving through them - those that do not will fail to comply with the building regulations and are likely to suffer from condensation.

Although newer buildings can minimise energy use by insulating the building fabric, maximising solar gain and using an efficient heating system, a significant proportion of heat is lost through air movement within ventilation systems.

The costs involved can be a significant proportion of space heating costs - up to one half in a modern well-insulated dwelling (because of the lower overall heat loss), and typically one third in older properties. At the same time, newer, more energy efficient and sustainable buildings are designed to allow much less air to pass through the building fabric than was previously the case,

in order to conserve heat and minimise energy use, so a serviceable ventilation system is essential.

A more energy-efficient alternative to conventional extract ventilation is passive stack ventilation (PSV). This system uses the ability of air to rise up through a building naturally - exhaust air exits through extract pipes that typically exit at the ridge of a roof. It requires no power and has no moving parts. PSV can be controlled by humidity sensors so that ventilation only occurs when needed, thus avoiding energy wastage. The disadvantage is that it needs sufficient height to create a steady flow of air. It is therefore not suitable for all locations (for example, it is less suitable for ground floor WCs located in porches).

Mechanical heat recovery systems can recover heat lost through ventilation by extracting heat from exhaust air and using it to pre-heat incoming fresh air.



## 2.8 Design for minimal environmental impact

**“Embodied Energy”** is a way of describing the total amount of energy used in a material’s manufacture, transport, assembly, subsequent use and final disassembly. This embodied energy includes the energy it takes to extract minerals and raw materials from the Earth, the fuel it takes to transport the material to the manufacturing site, and the energy used at the plant to make the product.

Also included is the energy it takes to use and, later, dispose of the product, or the building itself. The shorter and simpler the this process is, the less harm done to the environment, and the lower the embodied energy a material is considered to have.

For example, unfired earth blocks have significantly lower embodied energy than fired bricks.

Materials and construction methods which minimise energy use and their impact on the environment include:-

### Using renewable materials

A renewable material comes from a source which is capable of naturally regenerating. Renewable materials include, for example, timber, flax, cork and wool.

### Minimising assembly and construction time.

Many parts of Argyll and Bute are remote and travel time is lengthy. Not only are transportation costs high for materials, but there can also be costs associated with accommodating site personnel. It therefore makes sense to:-

- Tailor construction methods and materials to those which are locally available
- Avoid building materials and techniques which are time consuming and labour intensive
- Minimise the use of very specialist materials and details if cost and rapidity of construction are important
- Consider the use of more prefabrication. Prefabricated components can range from the use of timber kit to the prefabrication of entire houses

- Minimise maintenance. By carefully selecting and detailing the right materials, it is possible to conserve resources which would otherwise be used for new construction and new products.

- Use long lasting and durable materials which are easy to maintain

- Consider carefully the use of technology and components which need specialist maintenance.

### Designing for deconstruction and reuse.

Buildings should be designed to facilitate the easy and economical re-use and recycling of components (such as doors, windows and kitchen units) and materials.

### Using recycled and reclaimed materials

Using recycled products, (or products with recycled content) helps the environment and the economy in several ways. Material that would otherwise have ended in landfill sites after its useful life can be reprocessed for use in other products. Newspapers can be converted into cellulose insulation, for instance. Reclaimed materials can include the reuse of building materials such as slate and local stone, and the reuse of individual components such as doors, fireplaces etc.



### Housing for Dunbritton H.A. Garelohead

Local contractors received training to become registered installers of a prefabricated structural insulated panel system.



### Housing for Fyne Homes; Dunoon

Houses are constructed from a prefabricated locally made timber-kit which offers faster construction time than standard masonry construction



### Taransay Pods

“Pods” from the TV show ‘Castaway 2000’ were designed and prefabricated elsewhere. Their mainframes are made from oak and Douglas Fir. Pods were dismantled and removed at the end of the 12 month period; Two have been re-erected as an artists retreat near Kilcreggan.

## 2.8 Design for minimal environmental impact

There is concern over the negative health effects of toxic chemicals used within buildings. Many modern building materials - including paint and wood products - contain solvents and other volatile organic compounds which can "off-gas" i.e. they leach into the atmosphere, contaminating the indoor environment. More effective air tightness and controlled ventilation means that these contaminants are less likely to be dissipated than was the case in older buildings; using healthy materials which are low in toxins becomes more of a priority.

### Ecological building products

Ecological building materials and products are non toxic and actively promote healthy and comfortable living conditions. Typically, they include insulation made out of flax, cellulose or sheep wool; boards made from a composite of clay, reed and hessian; fired clay blocks; clay and lime based plasters and woodfibre boards.

These basic technologies have been extensively tested by many years of weather and habitation. Many of them help with moisture control and regulation because of their vapour permeability and water absorbing properties, leading to a reduced risk of condensation. Developers should seek to specify products and materials which minimise their negative impact on the environment.

For example, the manufacture of UPVC construction components is extremely energy intensive requiring the use of a range of petrochemicals (which are not a renewable resource). In contrast, the timber used in construction is renewable and sustainable, its growth is considered environmentally appropriate and it has a low embodied energy.



PVC product	Alternative
Rainwater guttering and drainpipes	Steel, cast iron, hdpe
Water supply pipes,	Polyethylene
Sewerage and drainage pipes	Vitrified clay pipes or High Density Polyethylene piping
Doors, windows and conservatory frames	Timber from a sustainable source; high quality timber window systems
PVC floor and PVC (vinyl) wall	Linoleum, cork, stone, ceramic tiles

## 2.8 Design for minimal environmental impact

### Timber treatment

Over the last 50 years a number of toxic chemicals (such as DDT and Lindane) have been used to preservative-treat timber against fungal and insect attack. Recently a new generation of timber treatments has been introduced with much lower acute toxicity. These include Permethrin, organic zinc compounds, IPBC, Dichlofluanid and Propiconazole. Although these are much less toxic than the earlier treatments, health and environmental concerns remain. In order to avoid treating timber with toxic preservatives try to either:-

- use durable timber which does not require treatment
- or
- use very low toxicity preservatives without toxic solvents such as inorganic borates

#### Dun Beag; Tighnabruaich

Dun Beag is a project concerned with the revitalisation of 30 acres of ancient oak woodland. It has developed innovative ways of using the extracted timber for building. The trees are felled and milled in-situ; the cut timber is then treated with Tim- Bor. (a natural boron salt preservative)



### Products containing formaldehyde

Wood based boards are ubiquitous in modern interiors and in some cases formaldehyde based resins are used to bond together the constituent parts. Even at a low level, exposure to formaldehyde through inhalation can cause irritation to the eyes, nose and throat; it is also a suspect carcinogen.

Low formaldehyde wood-based boards are available; alternatively timber can be specified.

### Paint treatments

Conventional synthetic paint consist of numerous ingredients to give it the properties required for its purpose, including resins, pigments, drying agents, and solvents.

Many of these components may be toxic, but the primary concern relates to the use of volatile organic compounds (VOC's) used as a solvent, as thinners and in cleaning materials.

After the paint is applied, the toxic ingredients can be given off ('off gassing') for some time afterwards, and there is concern about the neurological effects of solvents.

Mineral and plant based paints can be considered to be generally environmentally benign (although minerals are not renewable), but in some cases there can be disadvantages, such as durability, drying time, ease of application and cost. Alternative paint treatments are available - the table below details them in ascending order of environmental acceptability.

#### Generic paint type

#### Example supplier

**Petroleum origin, solvent based paints**

Most conventional paints

**Minimal VOC paints**  
0.00 to 0.29 %  
(water based paints)

Crown "breathe easy" range  
Low odour  
covermatt emulsion range  
Acrylic Eggshell

**Low VOC** 0.3 to 7.99%  
(water based paints)

Crown Indulgence and Easy Clean

**Mineral based paints**  
are low maintenance and environmentally friendly- they are waterborne, odourless, non-toxic and provide a breathable, semi-permeable membrane.

Keim Mineral Paints for external render, stonework and masonry

**Natural Paints and Finishes**  
are made from natural raw ingredients such as plant oils and dyes; bees' wax, earth and mineral dyes. Natural paints have minimal embodied energy; some are 100% biodegradable and many ingredients are from renewable sources.

Biodur paint systems for timber and internal walls  
[www.biodur.net](http://www.biodur.net)

Auro organic paints  
[www.auro.co.uk](http://www.auro.co.uk)

worst

better



## 2.9 Dealing with climate change

Climate change will have direct and indirect impacts in Scotland. Over the next century, it is likely that Scotland will become warmer, sea levels will rise, rainfall and severe gales will increase, and there will be an increased risk of flooding. There is likely to be less snow lying during winter.

Yearly rainfall is likely to increase by between 5 and 20 per cent by the end of the next century, with autumn and winter seeing the biggest increases. The amount of rain falling at one time is likely to increase, leading to increased risk of flooding.

**Floodline** is operated by the Scottish Environment Protection Agency and provides information on the possible risks of flooding in your area– phone 0845 988 1188 or [www.sepa.org.uk/flooding](http://www.sepa.org.uk/flooding).

### Higher rainfall

It is worth considering how buildings can be designed for higher rainfall. Typical measures can include;-

- **providing rainwater guttering and pipework which are large enough to cope with a 30% increase in rainfall.**
- **using sturdy, durable roofing systems;** sarking boards are a better alternative to only using battens and roofing felt
- **ensuring all building components (such as roof, eaves and verges, and door thresholds) are designed to cope with increased exposure to storms and heavy rainfall**

### Increased Risk of Flooding

Prior to design and construction, consider measures to minimise flood risk. These can include;-

- **ensuring that new houses are not located on a part of the site which may be susceptible to flooding** - this may be an intermittent problem related to the existing water table and existing patterns of drainage
- **minimising hard landscaped areas** so that storm water runoff is reduced.
- **using porous paving schemes (SUDs)** or where only one house is constructed, a soakaway
- **land to the side of new access roads can be used as a “swale”** to collect storm water which has drained from the road

### Construction and Materials for Flooding

**(this advice is based on PLANNING ADVICE NOTE 69: Planning and Building Standards Advice on Flooding)**

If there is no alternative to locating a new building in an area of known flood risk, then it is likely that applicants will be asked to include design features which will reduce the extent of flood damage.

There are Two basic approaches that may be appropriate for the protection of buildings against the effects of flooding.

**Dry proofing** prevents flood water from entering a building in the first place; it uses waterproof barriers at openings, and non-return valves on drains. It is not easy to “dry-proof” a building - simple measures will only protect a dwelling for a few hours and more complex methods are unlikely to work if buildings are subject to flooding for long periods.

Simple methods could include (among others);-

- **Air bricks** –utilise higher air bricks connected to the solum (underfloor area) with a periscope ventilator.
- **Porches** – these can be designed so that they form an added barrier to flood water reaching the front or back door.
- **Boundaries** – can be used to create a solid, relatively waterproof barrier
- **Landscaping** – contoured to encourage water to drain away from the house.
- **Drainage** - use of SUDS

**Wet proofing** assumes that houses will tolerate flooding - that materials will be used which will suffer minimal damage after immersion in water. It is important to bear in mind that services (such as electric wiring) will need to be located above the maximum flood level and there will need to be methods for water to drain easily from the building following a flood.

Simple points to consider at construction and design stage, in an area of known flood risk could include;-

**Floors** - raise floor levels, use dense concrete screeds or solid concrete floor slabs and use steel joists and wall plates as an alternative to timber.

**Walls** - Fix plasterboard horizontally so that lower sheets can be more easily removed

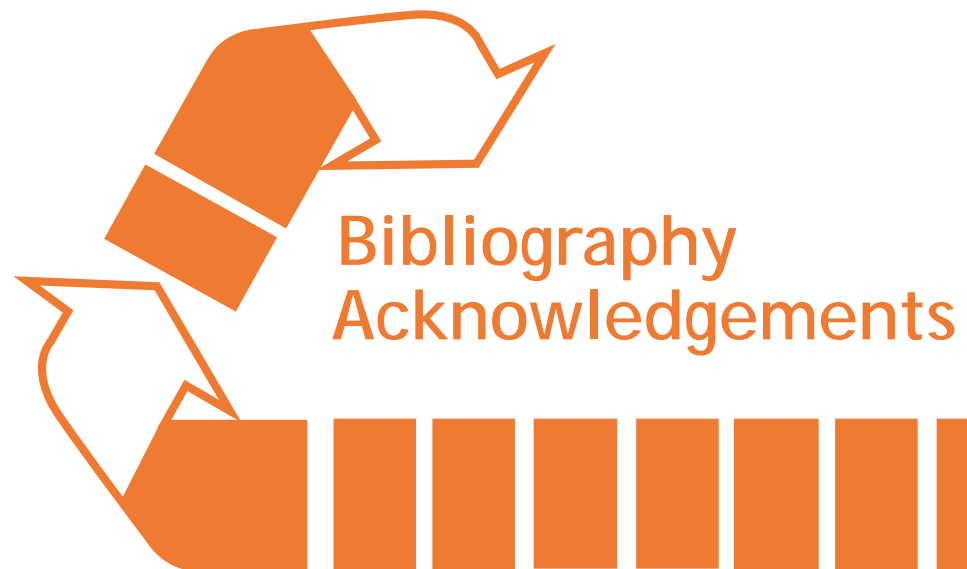
**Interiors** - Replace door hinges with butt hinges that allow doors to be removed

**Services** - Locate service meters above ground floor level where this is possible

### Steel gutters and downpipes;

alternative to UPVC Galvanised sheet steel rainwater systems combine a good performance with fast and easy assembly This type of system is installed in the majority of buildings in Sweden.





# Acknowledgements

This Guidance incorporates illustrations from the following sources;-

- RCAHMS
- Claudia Ferguson-Smyth
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- Tighmor Developments
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- Anderson Bell Christie Architects
- Fyne Homes
- Mike Davis
- Mike Hyatt
- Tiree Development Partnership
- Simpson and Brown
- Gaia Architects
- the Easdale Island Trust
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- Isle of Gigha Trust
- West Highland Housing Association
- Vernon Monaghan
- Sills Associates
- Jamie Troughton
- Page and Park
- Elder and Cannon
- Chris Stewart Architects
- Kingdom Housing Association



# Bibliography

## Information about Argyll and Bute

### Argyll and Bute Local Plan

The Local Plan is available digitally from the Argyll and Bute Council website at:-  
<http://www.argyll-bute.gov.uk/content/planning/developmentpolicy>

Argyll and Bute Council **Library and Information Service's Local Collection**  
Highland Avenue, Sandbank Dunoon PA23 8PB Tel: 01369 703214  
Fax: 01369 705797 Contact Eleanor Harris, Local Studies Librarian, for more details  
(eleanor.harris@argyll-bute.gov.uk).

Each branch library holds a small Local Collection specific to its area, but the bulk of the material, including books, pamphlets, maps and postcards is held at Library Headquarters

The Buildings of Scotland, Argyll and Bute  
Frank Arneil Walker ISBN 0140 710 795  
A guide to historic buildings in the Argyll and Bute Area

Argyll and the Islands: An Illustrated Architectural Guide  
Frank Arneil Walker ISBN: 1873190522  
RIAS Series of Illustrated Architectural Guides to Scotland

The North Clyde Estuary: An Illustrated Architectural Guide  
Frank Walker, Fiona Sinclair ISBN: 1873190077  
RIAS Series of Illustrated Architectural Guides to Scotland

**The Stenlake Publishing Series 'Old Islay' etc.** -compilations of old photographs are available at [www.stenlake.co.uk](http://www.stenlake.co.uk)

The CANMORE database contains details of archaeological sites, ancient monuments and buildings in Scotland. It also provides an index to the catalogued collections of RCAHMS and images of some of the photographs or drawings in the collection and can be found at [www.rcahms.gov.uk](http://www.rcahms.gov.uk)

Buildings at Risk Register for Scotland - redundant buildings of architectural interest which have the potential to be redeveloped  
<http://www.buildingsatrisk.org.uk>

## Information about Sustainability and Renewable Energy

### Potential Adaptation Strategies for Climate Change in Scotland

Andy Kerr, Andy McLeod; University of Edinburgh Scottish Executive Central Research Unit 2001

### Sustainable Housing Design Guide for Scotland

**Fionn Stevenson and Nick Williams**  
**HMSO**

### ALI Energy

ALI Energy is a local charitable organisation dedicated to increasing the use of renewable energy and increasing energy efficiency. They can give advice on both the technology and funding available.

Their website can be found at <http://www.alienergy.org.uk>. Alternatively email [enquiries@alienergy.org.uk](mailto:enquiries@alienergy.org.uk) or tel 01631 565 183

### SEPA

SEPA is responsible for the protection of the environment in Scotland so it deals with issues related to pollution, sewerage and waste disposal. Their website is a good source of information and can be found **at** <http://www.sepa.org.uk>

SUDs information is available on their website at  
<http://www.sepa.org.uk/publications/leaflets/suds/index.htm>

**SEPA is the Flood Warning Authority for Scotland.** The section of their website dealing with flooding is located at <http://www.sepa.org.uk/flooding/floodline/index.htm> and details products and publications. SEPA are developing internet flood maps for Scotland

### The Energy Saving Trust

The Energy Saving Trust is a public body which encourages energy efficiency and the use of renewable energy. It provides comprehensive advice and can provide funding. Its web site is located at <http://www.est.org.uk/>

**Scottish Ecological Design Association** has links to a number of useful websites and is available at <http://www.seda2.org/>

**WRap** - information about recycling and reclaimed products is available at this website <http://www.wrap.org.uk/>

# Bibliography

## General Planning Guidance

### Planning Guidance from the Scottish Executive

The Scottish Executive have compiled a range of Guidance on design within both rural and urban areas. Relevant Guidance can be accessed from their website at

**<http://www.scotland.gov.uk/Topics/Planning-Building/Planning>**  
and includes

- PAN 78 Inclusive Design
- PAN 77 Designing Safer Places
- PAN 76 New Residential Streets
- PAN 75 Planning for Transport
- PAN 72 Housing In the Countryside
- PAN 69 Planning and Building Standards Advice on Flooding
- PAN 68 Design Statements
- PAN 67 Housing Quality
- PAN 65 Planning and Open Space
- PAN 61 Planning and sustainable urban drainage systems
- PAN 52 Planning in Small Towns
- PAN 44 Fitting New Housing Development into the landscape (PAN 44 incorporates a detailed illustrated consultants manual of design and analysis techniques prepared by Gillespies.)

## Scottish Buildings and their care

### Scottish House: A Review of Recent Experience in Building Individual and Small Groups of Houses in Rural Scotland with a View to Sustainability, the Use of Traditional and New Materials, and Innovative Design

By Sandy Halliday, Gaia Research and Gill Pemberton, Scottish Ecological Design Association

Available from the Scottish Executive website at

**<http://www.scotland.gov.uk/cru/resfinds/cnh11-00.asp>**

The Conversion of Redundant Farm Steadings to Other Uses

by Andy Davey (with assistance from Lesley Kerr)

Simpson and Brown Architects

Available from the Scottish Executive website at

**<http://www.scotland.gov.uk/cru/kd01/orange/crfs-01.asp>**

### Historic Scotland

Memorandum of Guidance on Listed Buildings and Conservation Areas Historic Scotland

This Comprehensive guidance for working within conservation areas and working with Listed Buildings can be downloaded from the Historic Scotland database

Other Information about Historic Scotland's policy and guidance available includes:-

- Maintaining Your Home: A Short Guide for Homeowners
- Scotland's Listed Buildings; a guide for owners and occupiers
- Passed to the Future; Historic Scotland's Policy for the Sustainable Management of the historic environment
- Looking after your sash and case windows; a short guide for homeowners

available on

**<http://www.historic-scotland.gov.uk/index/publications/pubsforowners.htm>**

### Timber frame Housing in the Scottish Countryside

John and Margaret Richards

HMSO

## General Design Guidance

### Cork Rural Design Guidance; building a new house in the countryside

Cork County Council

### Edinburgh Standards for Urban Design

Edinburgh City Council

**Institute of Civil Engineers Knowledge Database** - this internet site has many useful briefing documents such as "Briefing Document Places, streets and movement (Supplement to DB 32)" the site is located at **<http://www.ice.org.uk/knowledge/>**

### Urban Design Compendium

LLewelyn-Davies for English Partnerships and the Housing Corporation

## Safety and Security

### "Secured By Design"

Improving home security - website address which lists contact names in the Argyll and Bute Area - **<http://www.securedbydesign.com>**. Alternatively, contact **ACPO Crime Prevention Initiatives**; 7th Floor, 25 Victoria Street, London SW1H 0EX  
Tel: 020 7227 3423 E-mail: [acpocpi@acpo.pnn.police.uk](mailto:acpocpi@acpo.pnn.police.uk)