The Prince's Foundation
FOR THE BUILT ENVIRONMENT

NORTH HIGHLAND INITIATIVE

Developer's Companion

Contents

Purpose of the Developer's Companion

The purpose of the Developer's Companion is to create a recipe which will halt the problems caused by the suburbanization of the countryside and strengthen the urban character of existing towns and villages in the North Highlands' Region.

Background

The predominance of the car as a mode of transportation in the late 20th century has not only led to the degradation of the quality of life in the Region's villages, but has also caused the unforseen consequences of the suburbanization of the Region's Countryside. As a consequence, this rather rapid transformation has degraded farmlands and tarnished the inherent beauty of the countryside. Houses which once sat harmoniously with the land, now appear as foreign objects in the landscape.

This transformation has also impacted the local tourism industry. Tourism plays a vital role in the economy of the Region. Those who come to view the breathtaking scenery and untainted landscape are now disappointed to discover that much of the land has been pepper-potted with rural villas which look out of place.

One way to reverse these negative impacts is to build on the local economy through the sourcing of local materials for future construction. Not only will this stimulate the local economy, it can also have a positive impact on the architectural character of the Region and, in turn, inspire new construction standards and a new generation of North Highlands' craftsmen.

Developer's Companion

The Companion provides a choice of the best Caithness settlement patterns, building types, details,materials necessary, and landscaping elements for creating the right environment to suit individual, modern lifestyles.

Isolated houses blighting the landscape through bad design

By correctly following the simple process outlined, applicants will be awarded a prestigious NHI quality mark, demonstrating quality and distinction.

Traditional Scottish Long Houses in Caithness

Settlement in Caithness blending with the landscape

Five qualities of Caithness

Ancient land

The geological history of the Region dates back 370 million years. Sandstone is estimated at a depth of over 4,000 metres, consisting of sediments from Lake Orcadie, which is believed to have stretched from Shetland to Grampian during the Devonian period.

Big skies

In contrast with other areas of the Highlands Region, the general aspect of Caithness is flat. Along with the relative absence of forests, the area is endowed with unimpeded views to the horizon and subsequently to wide open skies.

Rugged coastline

Dramatic views over rolling open farmland, out to the picturesque coastline, in the north eastern area of Caithness reveal the waters of the Pentland Firth and the North Sea.

Solid simplicity

Metamorphic granite and red sandstone, split to form large flagstones, have been quarried to build the architecture of the Region since the arrival of the Picts. The shapes of these large cuts of stone lend themselves to solid structures with relatively simple forms.

Subtle colours

The subtle colours of locally sourced materials naturally complement the somber beauty of the landscape. For this reason, renders and paint coulours with similar light absorbtion qualities are common.














Intended users of the Developer's Companion

This Companion is an essential manual for all developers and home-owners interested in building or redeveloping attractive and sustainable Scottish dwellings. Good building practice not only helps to stimulate the local economy, but enhances long-term value. For example:

Architects

Architects will find information about how to design a house for a client which appropriately fits into the landscape whilst building upon the architectural legacy of the Region. The Architectural Patterns Section (Section B) provides detailed information on how to compose an elevation all the way down to typical dimensions for doors and windows.

Self-Builders

Self-Builders wanting to do it themselves, in consultation with local kit builders, will be able to find out information about how to site their new home(s) and what requirements they will need to fulfil before they send in their planning application.

Developers

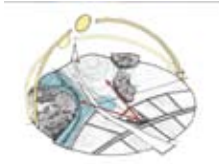
Developers who have been able to acquire larger plots of land and wish to build new housing settlements, will benefit from the Companion's Settlement Patterns Section (Section A) which spells important town building principles, including guidelines on how buildings should be sited in relation to each other and the roads.

Builders

Builders will find information on which materials are appropriate and how they should be sourced.

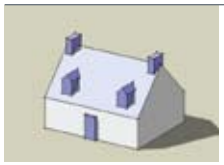
How to use the Developer's Companion

1 Identify appropriate settlement type from Section A



2 Undertake site analysis as set out in Section A (visual impact, movement networks, topography, orientation, micro-climate, plot division, field patterns etc.)

3 Show proposed siting and servicing of building/s utilising settlement pattern examples compliant with Section A



4 Select the appropriate building type/s for the site compliant with Section B

5 Show elevations of building/s at 1:100 and profiles of key details at 1:10 (ridge, eaves, windows, porches etc.) incorporating building elements compliant with Section C

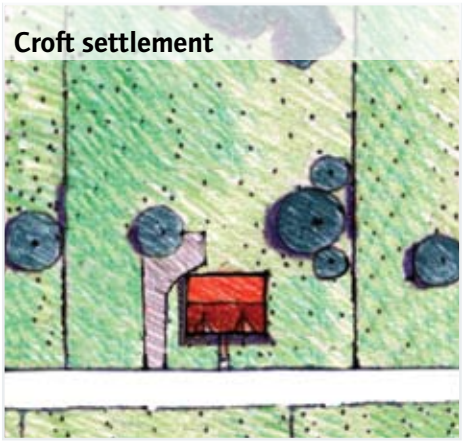
6 Draft outline building materials specification compliant with Section D

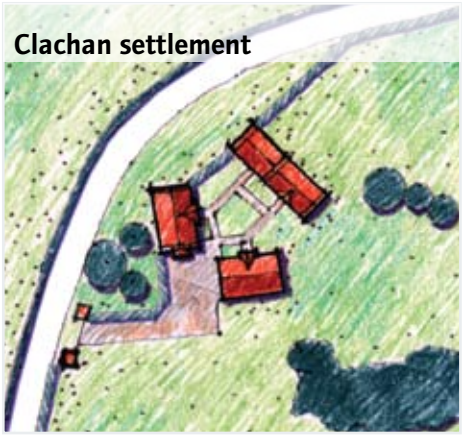
7 Show landscaping proposals (boundary treatments, external works, planting etc.) compliant with Section E

SECTION A

Settlement Patterns

Types of settlement





Today we no longer have the same relationship with the land on which we live, making it increasingly difficult for us to understand why our current interventions in our environment often feel out of context or foreign.

The purpose of this section is to bring to light some of the simple rules of thumb which our ancestors would have considered when they had to go about the task of choosing where to site their homes and other structures necessary for their day-to-day lives; with an emphasis on responding to the land and climate on which the building or group of buildings will sit and consideration for today's amenities.

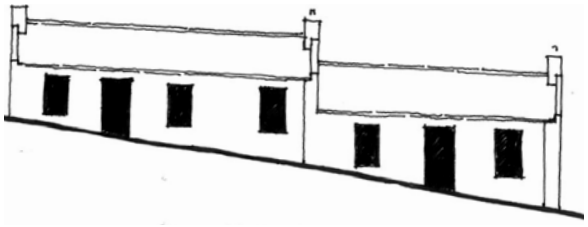
Whenever feasible, land owners will be encouraged to utilise their plot of land for agricultural production and/or rearing of livestock. The role of local agriculture in the context of local food consumption is ultimately at the heart of this initiative.

Three settlement patterns are presented in this section as a means of establishing distinctions between the various scales of development so that planning applications may be assessed for their key attributes. These include Crofts, Clachans, and Townships and Hamlets.

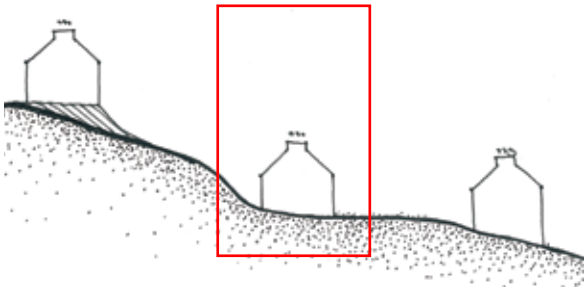
"For millennia before the arrival of the modern architect, human intervention in the environment often managed to be beautiful, irrespective of stylistic concerns, because the "deep structure" of those interventions was consonant with a natural order, and therefore generated an organic, Nature-like order in the built world."

PRINCE CHARLES 2009 R.I.B.A SPEECH

Site analysis



Houses step down with level changes



Terracing *Correct Placement* *Underbuilding*

1. Development Feasibility

Before proceeding to the Settlement Patterns Case Studies, a feasibility study must be undertaken to support the viability of the development. Sites should fulfil the following general requirements.

- Site should have good road access.
- Site should be selected with good drainage.
- Site should have access to a safe water supply.
- Site must not sit within moorland areas or flood plane zone.

2. Identifying Siting Opportunities to Strengthen Existing Settlement Patterns and Landscape Setting.

Once the development has been proven feasible, natural constraints and environmental factors must be understood in order to effectively site your building/buildings into their context. The following analyses must be undertaken and accounted for in the design;

A. Topography

Special attention must be paid to ensure that the development will work with the contours of the land. A rectangular plan aligned parallel to the contours is usually the best option for sloping sites, however, houses should be adapted to gradients by using stepped levels. Neither underbuilding nor terracing is common in the North Highlands and should be avoided.

B. Wind

In areas with high prevailing winds, dwellings should be placed in the lee of the hill to get relief from the brunt of these winds. Also, new buildings should be orientated with side gables to receive the brunt of the wind. Houses should be sited near copses, when they exist, to shield occupants from strong winds.

C. Natural Drainage

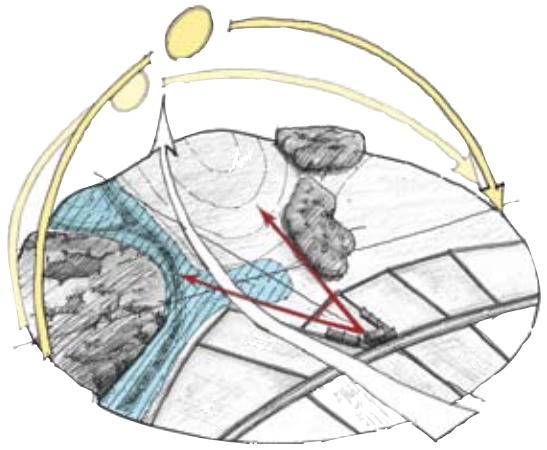
Dwellings should not impede the natural drainage of the site.

D. Cultural patterns

From patterns of agriculture, field division and crofting to characteristic town and village patterns. An awareness of the ancient landscape, archaeological remains and sacred sites should also be demonstrated.

E. Access

Roads on the property should be sited to respect the existing landscape and ecology.



View corridor
Moorland floodplain
Prevailing winds
Sun orientation

House in Caithness with opportunity to refurbish

Side gables should face winds in open landscapes

F. Views

Take into account views to the countryside from inside home. In most cases, try to frame a view to an area of enhanced beauty.

3. Assigning and Siting the Building: the Building in Relation to the Plot & Vicinity.

Rural Areas

Consider locating near property boundary rather than centred in order to connect building with landscape features such as hedges and walls and to maintain the largest possible area for potential farming and crofting purposes.

Semi-Urban Areas

Understand and reinforce the characteristic arrangement of building to plot boundary and street adjacency.

Re-Building

New-build work should occupy the same site as original buildings. Redevelopment should be a first priority in villages before considering future growth areas.

In semi-urban areas, houses should be sited closer to plot boundary near street

Crofts

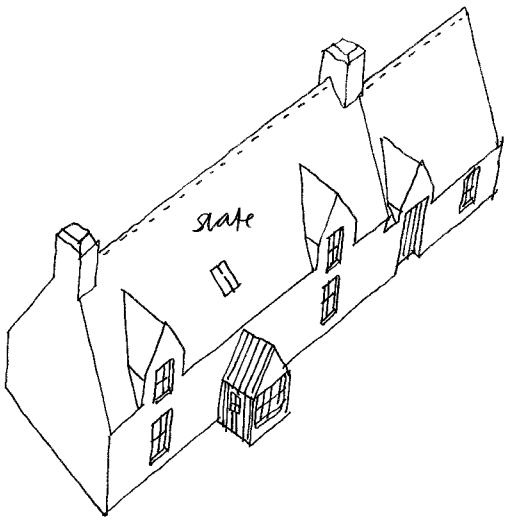
Isolated settlements, traditionally known as crofts, are enclosed areas of land, usually small and arable with a (crofter's) singular dwelling thereon. These settlements are characterized by their remoteness from other dwellings. Before the 18th century, society was largely divided between rich and poor and the scale and level of embellishment reflected this in the variety of settlements found in the Region. By the 18th century, many new homes were being built which reflected the rise of the middle class.

Today, the variety of housing types reflects the varieties not just of economy, but taste and use. The croft settlement pattern presents three types of houses which reflect this variety. However, some house types lend themselves to specific site constraints. The three types are Steadings, Cottages, and Laird's Estate.

Cottage near plot boundary

New-build Laird House

Typical Steading



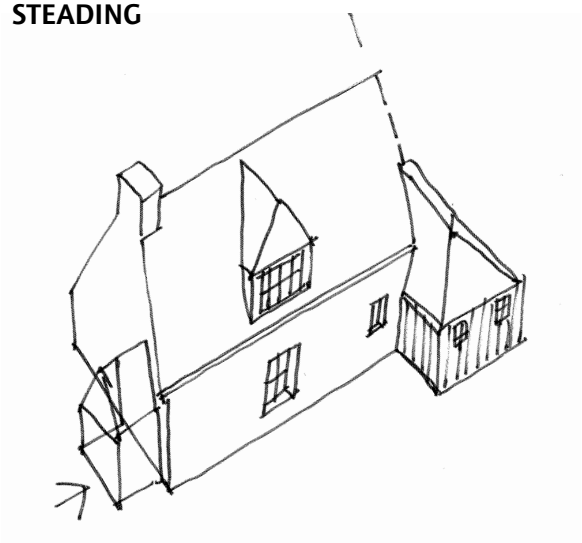
STEADING

Steading

A steading is a farm building such a barn, byre, cart house, stable etc. including the farm house. These dwellings are simple in form and have an intimate relationship with the landscape. They are usually one storey and have the option of utilising the attic as a loft or storage space.

Characteristics

- Small families fit well in this type of dwelling
- Work well on sites with sloping terrain and the layout reflects site conditions
- Work well in open countryside.
- Parking is provided in garage as extension of steading.
- Front façade is orientated, when possible, in the direction of best sun exposure.
- Sited near plot boundary.



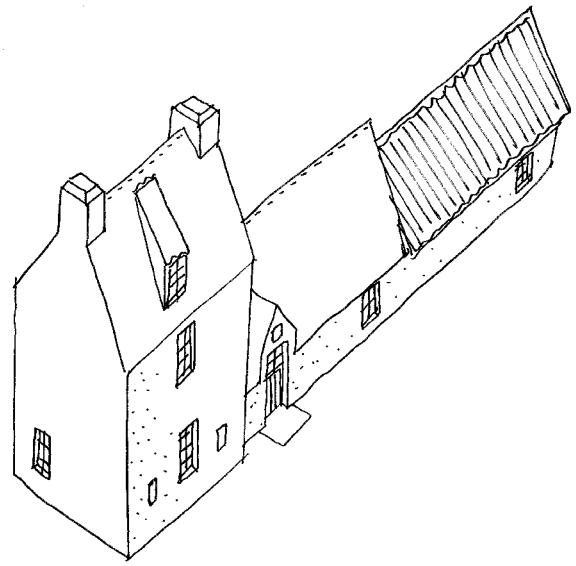
COTTAGE

Cottage

A cottage is often associated with later 18th century houses. These are often found in urban settlements, but also work well in the open countryside. These houses work best on flatter terrain and are often built for slightly larger families than those who might live in a Steading.

Characteristics

- Mid-size families fit well in this type of dwelling
- Work well on flatter sites
- Parking is provided in rear in either a garage or a parking pad.
- Plot boundary is delineated by low hedge wall.



LAIRD HOUSE

Laird Estate

Historically, a laird estate was land upon which a landowner leased out tenanted houses and farms. Often built for defence, the main living quarters were elevated well above ground and took on a tower-like appearance. Today, a Laird Estate is a grand house and the corresponding service buildings associated with it. Often times the arrangement of buildings and property walls, delineates a green or yard.

Characteristics

- Large (typically two or more storeys) house with elegant proportions.
- May often have a tower or tower element as part of the design.
- House sits on prominent part of site.
- Common to ocean-front properties.

Clachans

Clustered settlements, traditionally known as clachans, are small scale developments lacking a church, post office, or other public buildings. They are typically composed of no more than five dwellings and their associated service buildings.

Typical clachan in Caithness

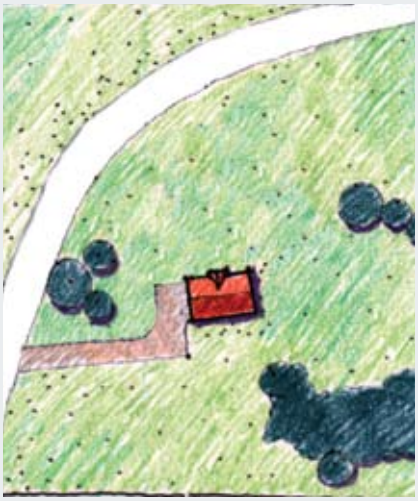
Clachan near the sea in Caithness

Informal | Clachans

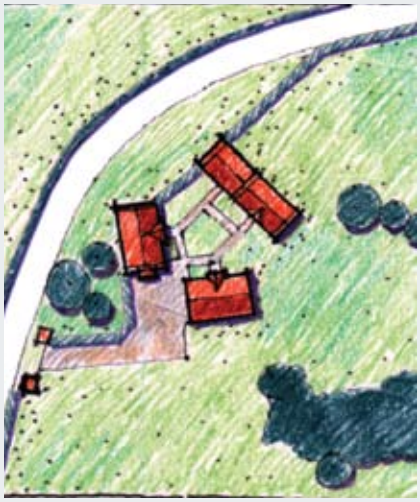
Clachans may be sited informally in response to site analysis. When sites are not perfectly flat, the arrangement of buildings will often shift to sit appropriately in the landscape.

Characteristics

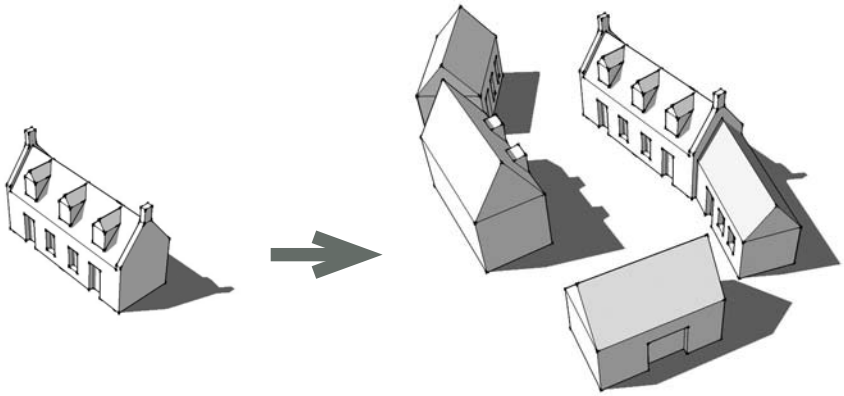
- Buildings are arranged around an informal garden space.
- New houses and steadings may are phased more gradually because this pattern lends itself to a more organic form of growth.
- Common space is designed as a shared tenancy garden or green but is not paved. Paving is reserved for the parking area.
- Parking area is separate from the common green space and accessed by a private drive. Parking is buffered by a either a low hedge or wall.



Existing house set in landscape



Possible cluster arrangement



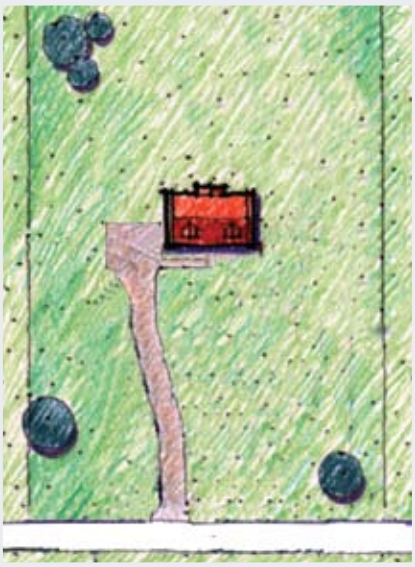
This informal arrangement shows how some farms have grown organically over time, without much planning. It can also demonstrate how farming buildings were arranged in difficult sites, adapting to slopes and topographical constraints.

Clachans | Formal

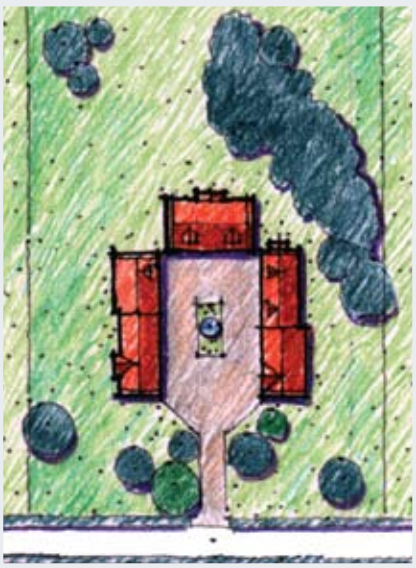
The tradition of buildings arranged around a formal courtyard originates from historic farm steadings which typically grew wings to form a rectilinear common space for the shelter of livestock. This type lends itself to remedying the visual blight of houses sited in the centre of a plot, which have little regard for natural features, view corridors, or landscaping.

Characteristics:

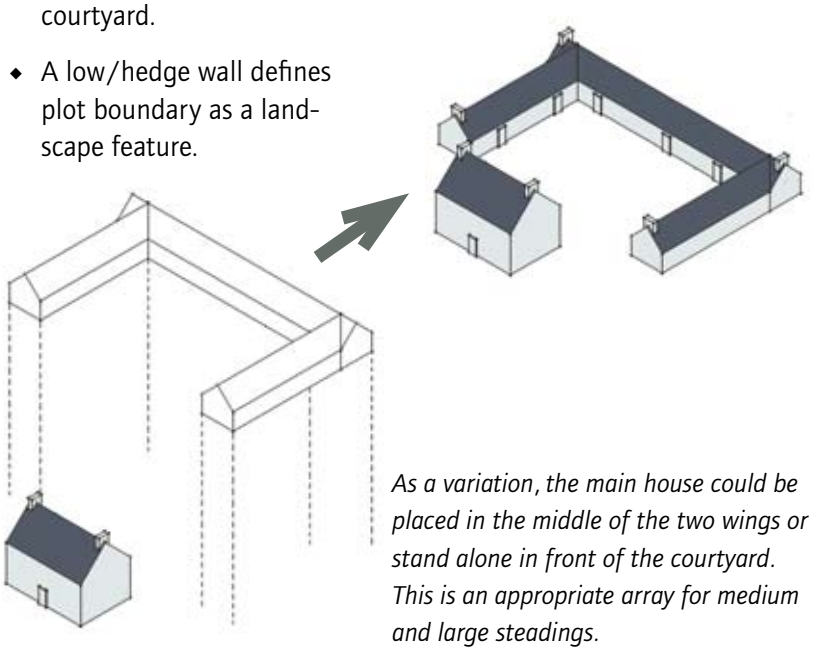
- The courtyard form is considered from the beginning of the design process.
- The dimensions of the courtyard are of a square or rectangular proportion.
- The buildings are orientated to shield the courtyard from the prevailing winds.
- Parking is provided within one of the buildings forming the cluster in either a garage or carriage house. It is preferable for cars to access the garage off the courtyard.
- A low/hedge wall defines plot boundary as a landscape feature.



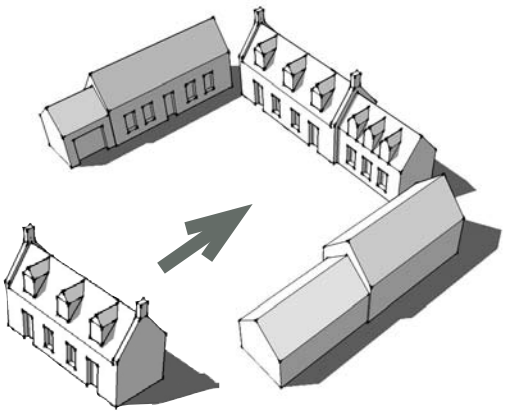
Existing house in the centre of the plot



Houses clustered in the centre of the plot



As a variation, the main house could be placed in the middle of the two wings or stand alone in front of the courtyard. This is an appropriate array for medium and large steadings.



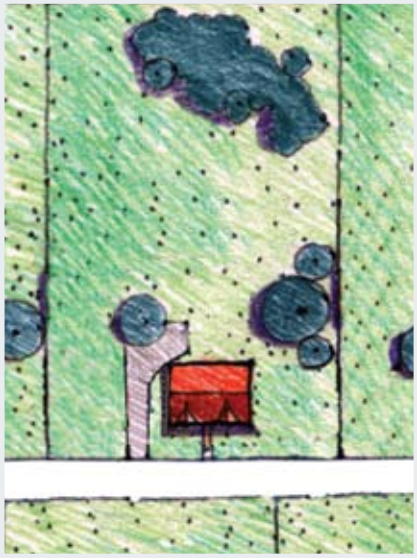
This is a more formal arrangement, with buildings grouped to form an open rectangular courtyard.

Linear | Clachans

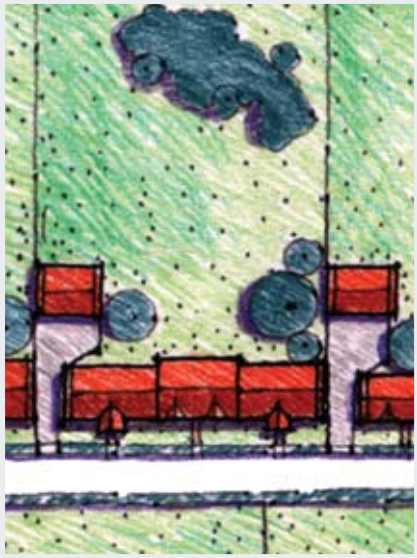
Clachans dwellings are arranged linearly when the site is sloping and the linear stepping down of buildings is a natural response to these site conditions. For sites on the outskirts of small villages, the linear arrangement of dwellings sited near the road, creates the effect of becoming more urban.

Characteristics:

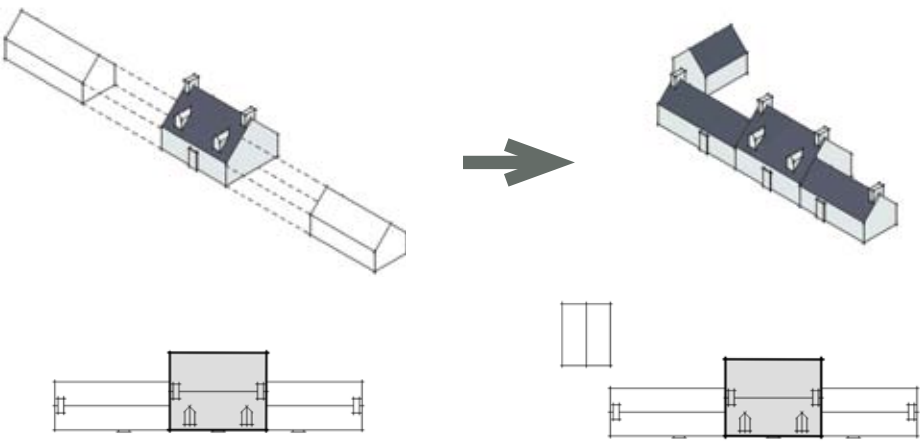
- Buildings arranged side-by side in response to site conditions.
- Parking is provided within one of the buildings forming the linear chlachan.
- A low/hedge wall defines plot boundary as a landscape feature.



Existing house near plot boundary



Houses clustered along rural road

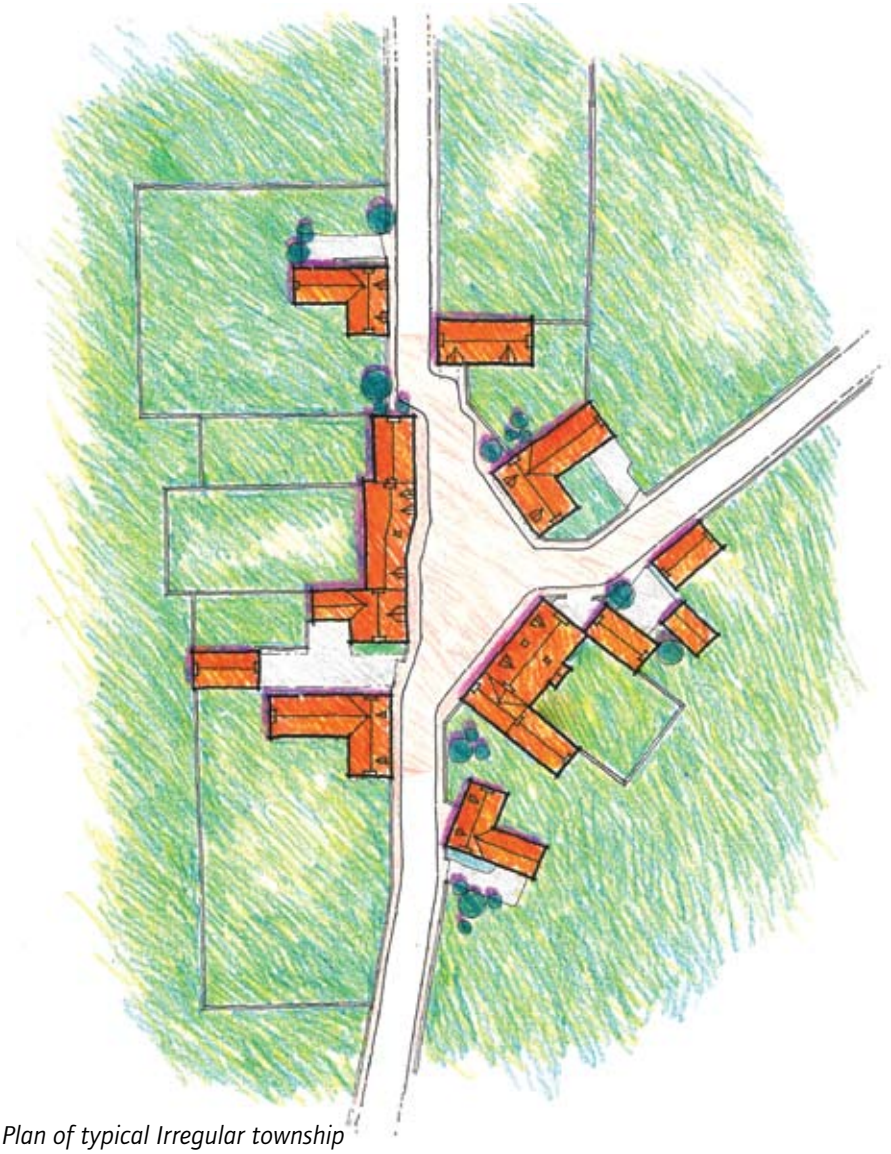


A house is flanked by steadings or other farming buildings. A shed is typically added perpendicularly to the grouped houses.

Townships & Hamlets

A township is a group of (agricultural) smallholdings, each with its own few hectares of pasture and arable land (in-bye land), holding in common a substantial tract of unimproved upland (grazing). The difference between the two lies in the arrangement of the buildings and the similarity lies in the scale of development, typically no more than 30 dwellings. Both contain one public space and an associated community facility.

Irregular Edge | Townships

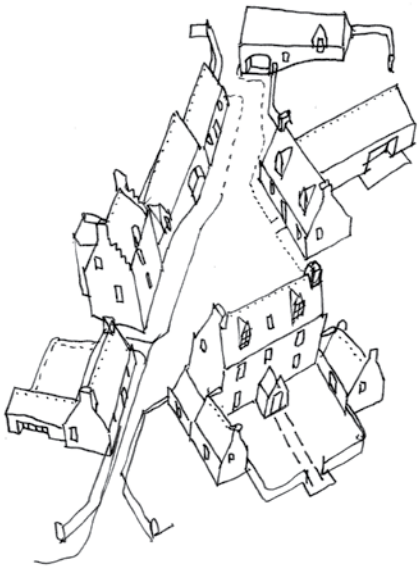


Plan of typical Irregular township

Existing road arrangements may often dictate the form of the space at their convergence. The placement of buildings to form a clearly defined public space may often take on an irregular shape.

Characteristics

- Irregular convergence of roads into public space.
- One large Detached House anchors the space.
- Placement of buildings near the township edge slows traffic to create safe environment within public space.
- On street parallel/ head in parking is common
- Shared pasture location determined by where arable land is.
- Community facility is located on outer edge, so that when not in use, space is still relatively active.
- Commercial/ business buildings should be mixed use with residential units above.



Aerial view of irregular township

Photo of irregular urban edge in Caithness

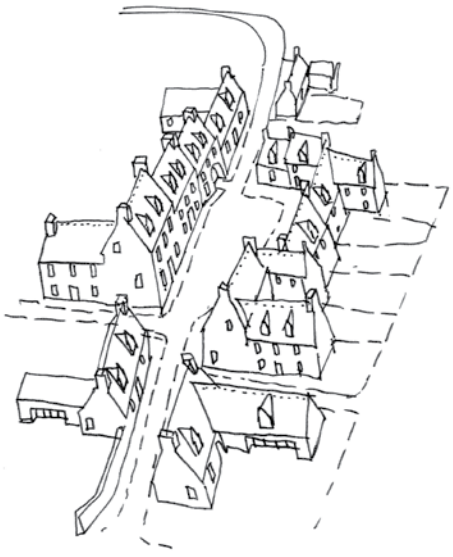
Townships | Regular Edge

On flats sites, the arrangement of buildings around to form a public space, in the shape of a square is most practical. The size and proportion of the space may be adjusted to fit the scale of the development and the use of the space.

Characteristics

- Regular urban edge forming public space in the shape of a square.
- On street parallel/head in parking is common, with private rear accessed parking for individual dwellings.
- Placement of buildings near the township edge slows traffic to create safe environment within public space.
- Shared pasture location determined by where arable land is.
- Community facility is typically sited in most prominent building.
- Community facility is located within square in most prominent building.
- Commercial/ business buildings should be mixed use with residential units above.

Plan of typical regular township



Aerial view of regular township

Photo of regular urban edge in Caithness

Hamlets

Hamlets are small scale settlements, too small to be considered a village, ideally focused around a single source of economic activity.

Characteristics

- Buildings are loosely knit together so as not to give the feeling of urbanity.
- A logical hierarchy of streets allow for logical movement through hamlet.
- Community facility is typically sited in the most prominent building, roughly in the centre of the hamlet.
- Commercial/ business buildings should be mixed use with residential units above.

SECTION B

Architectural Patterns

Introduction

The architectural tradition in the North Highlands is based on solid geometries and simplicity of detail. Frontier conditions over the centuries forced economic resources to get directed at maintaining only the essentials. When a building managed to keep out the elements it was simply adequate. Today, we find delight in this simplicity as there is much beauty in its natural orders.

"[North Highlands' vernacular buildings are] capable of creating a powerful but not unwelcome contrast to the openness of the Scottish countryside. Built as they have (it has) been with suitable materials, in appropriate colouring and fitting their (its) conditions of climate and topography, they have (it has) generally adopted a response to suit their (its) surroundings. The harmony of this situation could be maintained provided new buildings or additions continue to follow the example of what has been shown to be seemly and in good taste."

NAISMITH

How to use this section

The purpose of this section is to establish guidelines for the development the North Highlands vernacular architecture. However, the highest attainment of this document is to begin to get all those involved in the built environment, once again, building with local materials.

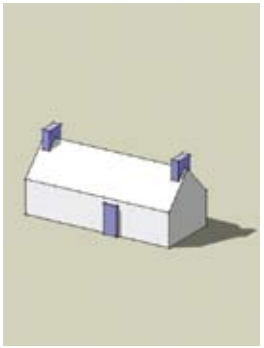
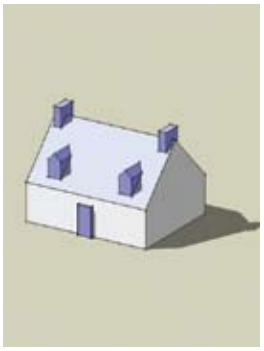
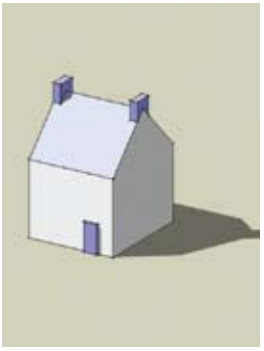
The section is broken down into three parts; Building Types, Building Character, and Proportioning System. Each part should be followed in sequence according to Step 4 of the How to Use the Developer's Companion page.

The Building Matrix helps to determine which building type is appropriate for each type of Settlement Pattern. Once the building/buildings types has been selected, the Building Character Guidelines acts as a filter to ensure that any proposed elevations abide by simple ordering systems which are sensitive to the local vernacular. The Proportioning Systems then acts as a rule of thumb guide for how to proportion elevations and place windows. The Section then presents a number of case studies for houses which fulfil the housing market demand. These examples provide exemplars for good design and may be used to as a starting point in the design process.

Building types

Traditional towns in the North Highlands have a mix of building types. The Pattern Book provides an inventory of four basic building types which are based on traditional Scottish buildings but are slightly modified to adjust to current production methods and to programmatic needs.

Each of the building types is illustrated as an axonometric drawing. The matrix indicates the appropriate height and width for each of the unit types. Precedent photos accompany these types on the following page to depict from where the new building types have evolved.

		width (m)	depth (m)	Height (storeys)	
Long detatched house		10–15	5-7	1	Long house / steading/ farmhouse/ laird 
Detached house (can be grouped)		8–11	7–10	1–1.75	Cottage / Laggan cottage 
Narrow terraced house		5–7.5	8–12	2–2.5	Townhouse / terraced houses 
Wide terraced house / mixed-use		9–14	9–16	2–2.5	Merchant's house / large terraced houses 

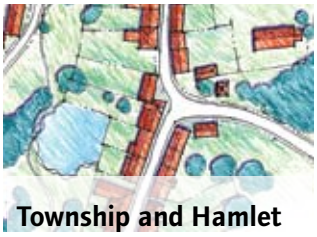
Building System Matrix

This Pattern Book defines building types by form, scale, and use. In using the Pattern Book, architects and builders will be working with plan types that differ from the historic ones that generated many of the original building types. However, the character, image, and architectural style of those building types have enduring value, especially in the creation of small scale and larger scale settlements that are consistent with the distinctive qualities of the North Highlands traditional buildings

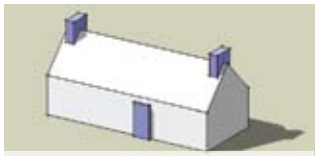
The purpose of the building system matrix is to create a link between the settlement types and the architectural building types. It shows which types of buildings can be located within each of the three different settlement types — isolated settlements, clustered settlements, and villages. Each building type can be appropriate for several, but not all, of the settlement types.

Croft

Clachan



Township and Hamlet



Long detached house

Detached house (can be grouped)

Narrow terraced house

Wide terraced house / mixed-use

Croft

Clachan

Township and Hamlet

Building System Matrix

Some optimal house plans and simple elevations are provided in the appendix for developers and builders. These serve as a varied inventory to be used as guidance through the preliminary stages of design. These should not be used as the only possible option to be replicated indiscriminately. Within each type there is enough flexibility to allow for design liberties.

Building Character

In the North Highlands, the architecture tends to be relatively informal in character. At first glance, façade compositions give the initial impression of a lack of order, often suggested in the more formal types. However, as demonstrated previously, carefully designed window and door proportions, as well as the overall façade, reveal a sophisticated compositional system. If new buildings are to build upon the Region's architectural legacy, a series of general characteristics should be observed.

Hierarchy

Hierarchy is a system of grading the importance of each part of a building relative to another part.

Hierarchy is imparted both by composition (i.e. placing a door in the centre of a symmetrical building) and by use of enrichment (i.e. door surround).

Designs should demonstrate a sense of logical 'hierarchy' within buildings. In more important/larger building types and in the most prominent floor of buildings, ceiling heights should increase.

Regular spacing of openings

Uniformly aligned openings are especially predominant in terraced architecture where it's crucial for the openings to be regularly spaced.

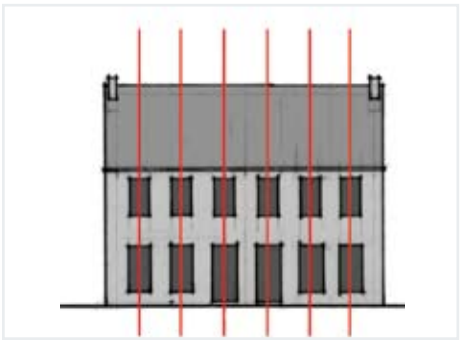
For more complex façades (5 bays, 7 bays or more), different groups of openings can be regularly spaced in different rhythms in order to emphasise certain parts of the composition.

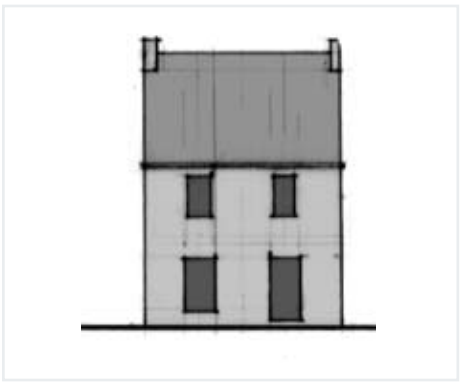
Clustered wall openings in more irregular compositions allow for larger areas of wall space. Clusters appear in groups of twos and threes.

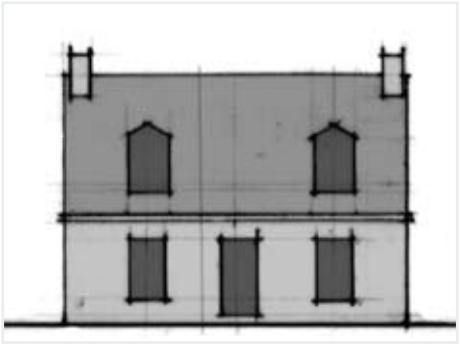
Uniformity of openings

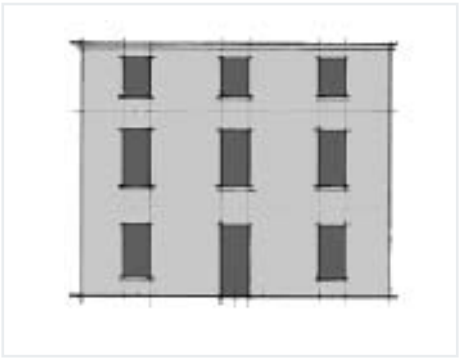
Historically, uniformity of windows is not of primary importance, nevertheless it is desired and should be observed where possible and especially in new compositions. For instance, standard window sizes may vary between stories, but windows in the same story should be the same size.

Openings should align both vertically and horizontally in a composed façade, although smaller townhouses could often show misalignments between ground and first floor windows reflecting internal staircase/hall layouts.









Proportion of openings

Windows most commonly have a vertical 'portrait' emphasis even in the local vernacular where they appear to be relatively squatter than in more formal architecture. Nonetheless, windows should still be vertically proportioned and never less than square.

The main floor—ground or first, typically has the largest windows, which diminish in size in upper stories.

Window size should reflect a logical hierarchy within the façade as a whole.

Relationship of window to wall

On a Regional and national scale, most formal and vernacular architecture shows a fairly consistent relationship between openings/windows and wall. Orientation, design of interior layouts and specific architectural style may dictate variations from the norm, but in all cases the size of openings must relate coherently to the wall to create a harmonious solid to void ratio.

Windows should occupy not less than 15% and not more than 35% of main elevations. Designers who wish to vary these rules, should either use sunrooms, which are hidden from public view, or a suitable architectural precedent, such as large bay windows, in order to produce a justifiable design.

Degree of enrichment

All the above rules concern underlying compositional arrangement. Finally, buildings are given more or less formality according to the degree of architectural enrichment used. Building sizes and proportion do not necessarily need to change, but formality can increase drastically according to the level of detail.

Typically, most buildings in the North Highlands' rural areas have little enrichment, but can be seen in large villas. In towns, it should be limited to civic buildings and buildings of primary importance to the community.

Degree of enrichment should reflect local and Regional precedent, with enrichment typically limited to string courses, eaves, cornices and, in more formal buildings, parapet walls at eaves. Classical orders or details should only be applied to more prominent buildings and based on local or historic precedent.

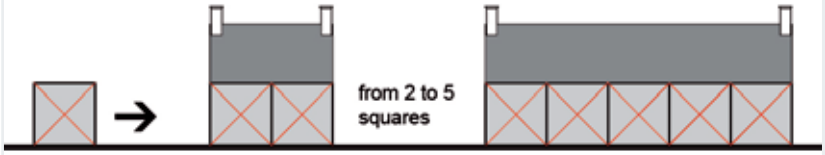
Proportioning system

Even when buildings are properly sited in the landscape and built with the appropriate materials, this alone is not sufficient to produce the coherent architecture which makes great places. Historically, a great deal of attention was paid to compositional principles and regulating lines, generating well balanced and proportioned exemplars. This set of design rules was extensively understood and applied by builders and underlie the common language of buildings.

The Pattern Book illustrates and uses these principles in a proportioning system. Proportion is simply a method of relating each part to its neighbour and to the whole, with a shared series of common shapes and relationships.

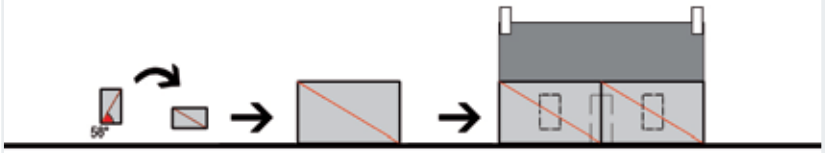
Most elevations are based on proportions of squares and rectangles with set geometries based on an angle ranging from 57 to 63.5 degrees. This system applies from the scale of the window to the scale of the elevation.

There are two basic methods of setting the overall shape of an elevation according to a comprehensive system of proportions:



Based on the square

Buildings are often divided into multiples of squares from 2 to 5 units in length

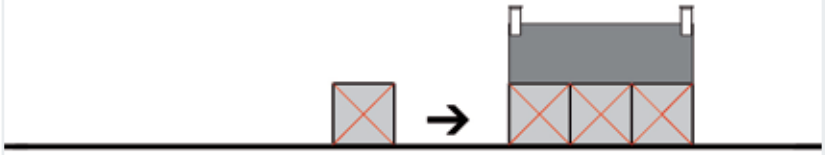


Based on the proportions of rectangular windows

Rectangles proportional to the shape of a chosen window are repeated to form the elevation. The majority of rectangular windows have diagonals that vary between 57° and 63.5°

1 to 1.5-storey elevation | Based on the square and rectangle

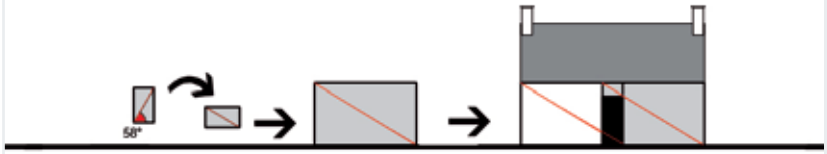
1



Based on the square

Repeated squares lying next to each other

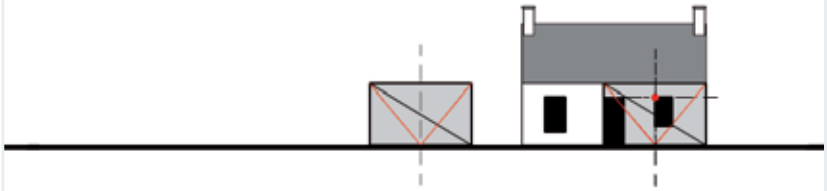
2



Based on the proportions of rectangular windows

Alternatively, elevations can be composed of repeated rectangles proportional to the windows. Notice that the squares or rectangles can sometimes be overlapped or spaced exactly across the width of a door

3

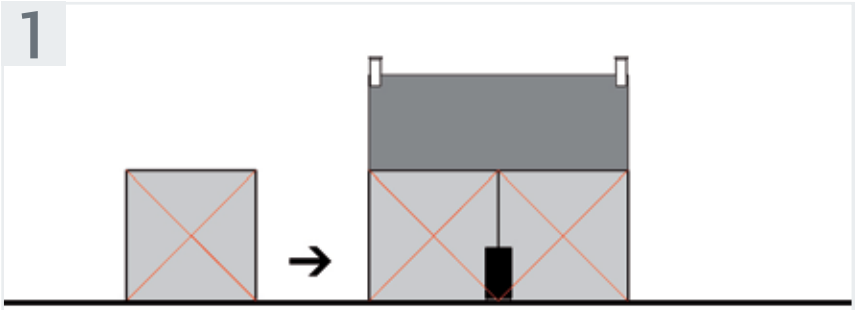


Locking the windows in place

The top-left corner of the window can be aligned with the top of the door and positioned in the middle of the main rectangle

Based on the square | 2 to 2.5-storey elevation

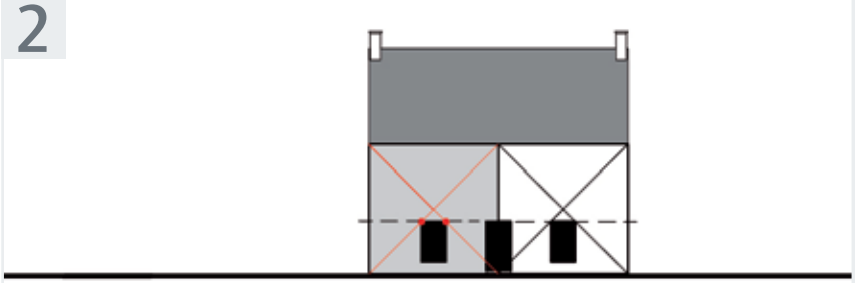
1



Based on the square

Repeated squares lying next to each other

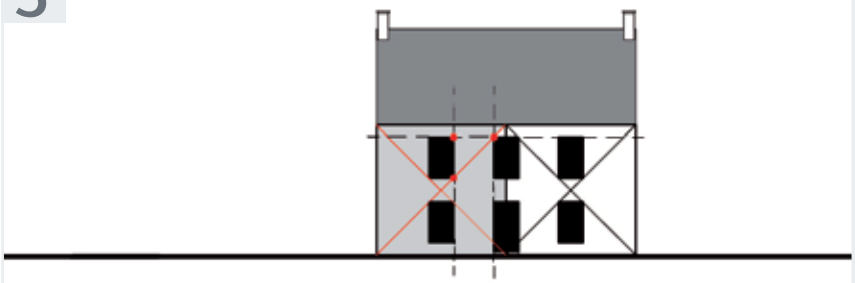
2



Locking the windows in place, ground floor

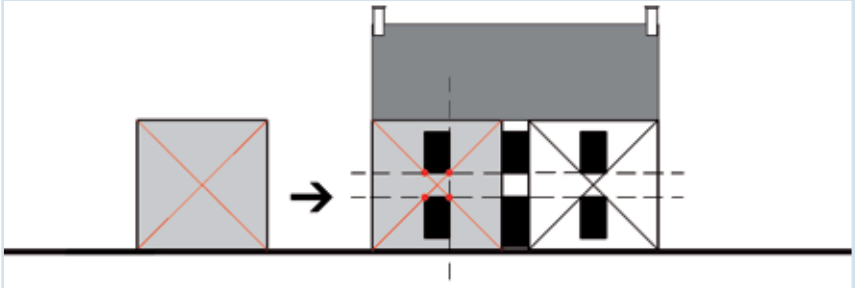
The top corners of the ground-floor windows can be aligned with the top of the door where they meet the diagonals of the square

3



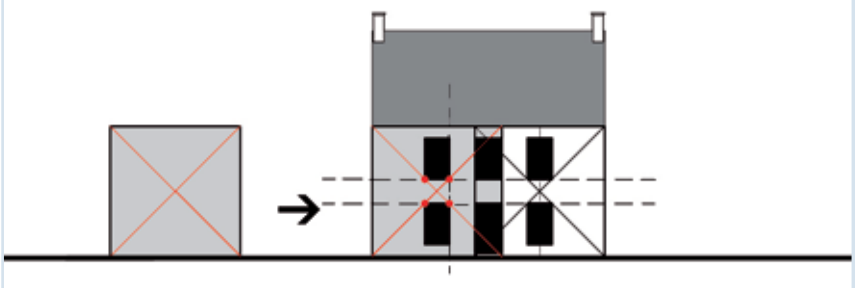
Locking the windows in place, first floor

The First-floor windows can be aligned with the ground floor windows and set where they meet the diagonals of the square



VARIATION: Spaced squares

Alternatively, the repeated squares can be spaced according to the width of the door. The windows will be positioned as before

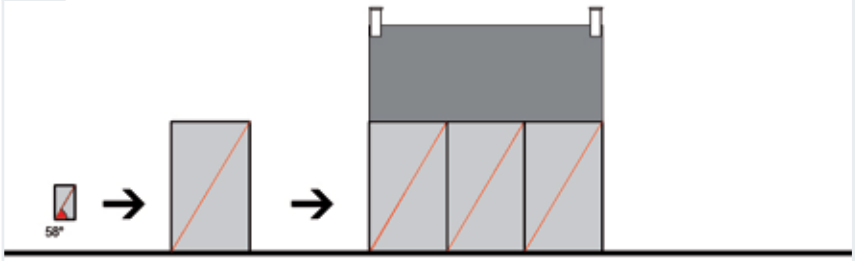


VARIATION: Overlapped sqaures

The repeated squares can also be overlapped across the width of the door. The windows will be positioned as before

2 to 2.5-storey elevation | Based on the rectangle

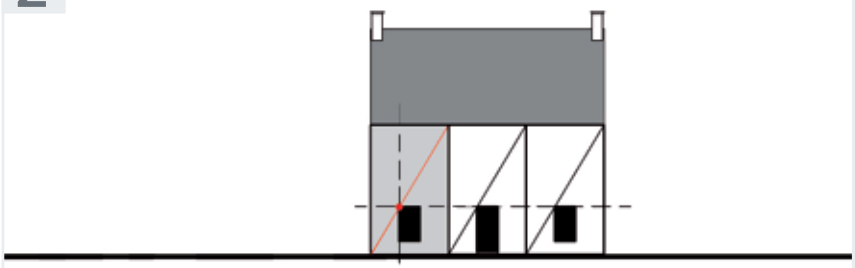
1



Based on the rectangle

Repeated rectangles (proportional to the chosen windows) lying next to each other

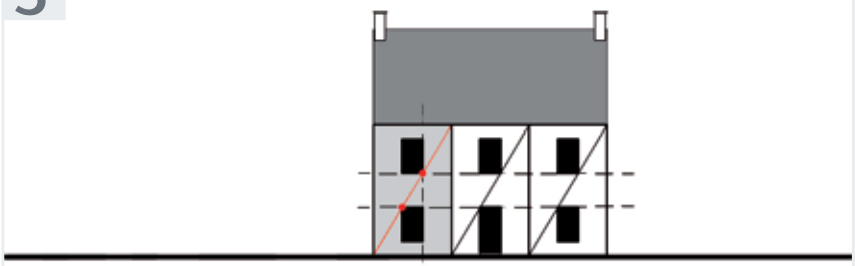
2



Locking the windows in place, ground floor

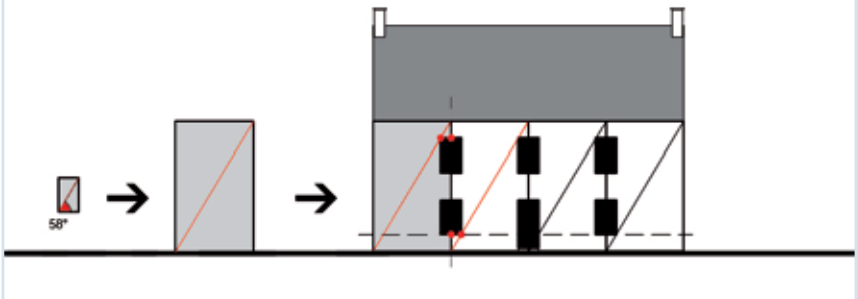
The top corners of the ground-floor windows can be aligned with the top of the door where they meet the diagonals of the rectangle

3



Locking the windows in place, first floor

The First-floor windows can be aligned with the ground floor windows and set where they meet the diagonals of the rectangle



VARIATION: Larger houses

Larger houses with the same number of bays are also possible combining more rectangles. The middle of the windows can then be aligned in between rectangles and where the corners meet the rectangle diagonal

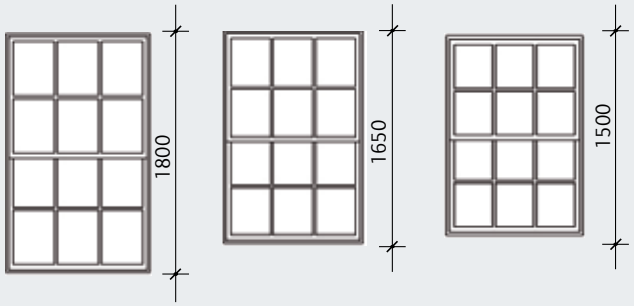
SECTION C

Building Elements

Building elements | Doors & Windows

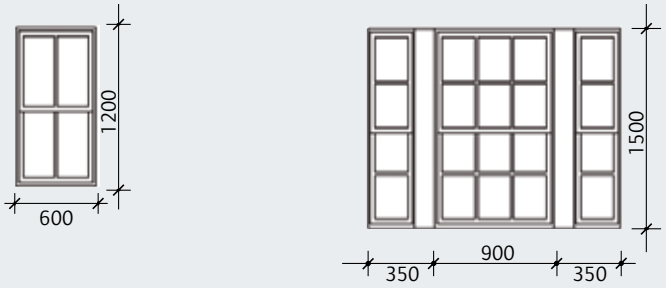
Standard windows

Vertical double-hung sash window with muntin patterns ranging from 2-over-2 to 6-over-6 are typical. Panes should be proportioned so that they are taller than square. Basic window dimensions range from: widths of 900mm to 1050mm; heights of 1350mm to 1800mm. Large windows allow for sufficient day lighting and ventilation for the main living spaces on the ground floor and smaller windows should be used for smaller rooms such as bedrooms and bathrooms



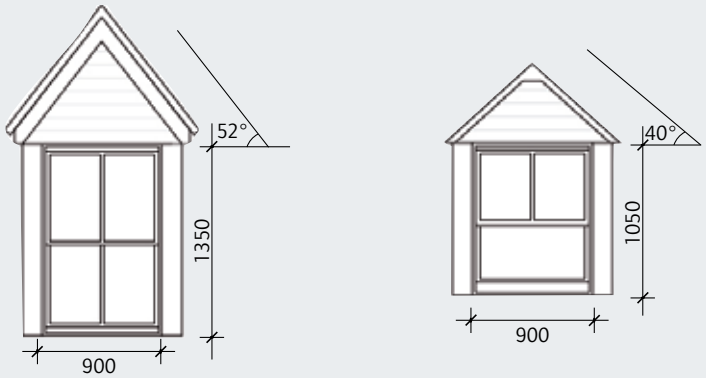
Special windows

These include pairs, triples and accent windows and should be used carefully. Special accent windows should be used for smaller rooms that require minimal ventilation and they should not detract from the composition of the main façade.



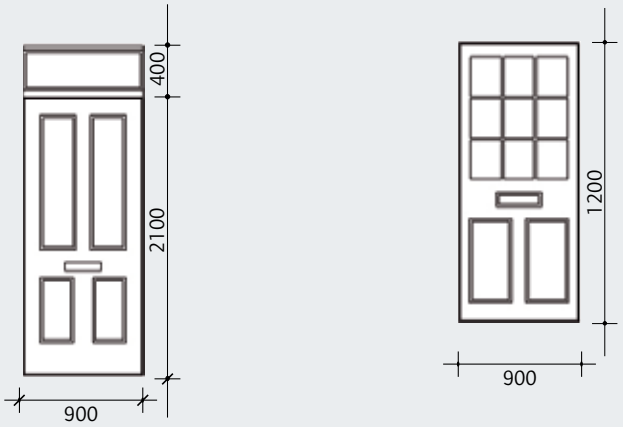
Dormers

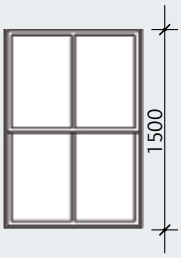
Dormer windows should be simple and designed to suit the roof they sit on. They can be multi-paned like standard windows and often have gabled roofs. Their placement can either be flush to the wall of the main body or set back on the roof.

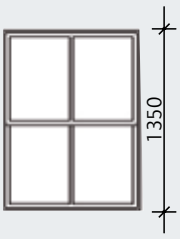


Doors

Front doors should be simple. They typically have 4 to 6 panels and they are made of painted wood. A fan-light above the door can be provided to optimize day lighting and, where this is not possible, the top panels of the door can be glazed.




1500


1350

Materials & Colour

Materials & colour

Designers and builders should utilize materials that respect the character of the area. The palette of materials allowed for Caithness is not only based on a thorough understanding of the North Highlands context but is also designed to ensure that new buildings are in harmony with their surroundings and recognisable as coming from the Region.

Adaptability

Buildings should be robust, adaptable and the basic structure should be built for a target lifespan of 300 years. Developers must demonstrate that they have contemplated conceivable future change of use in producing their first use design. Each house should demonstrate its flexibility to other residential uses and where buildings have other uses indicated by the land use plan, they must demonstrate how they can be converted to the other plan type/s specified. Houses built in isolated or clustered settlements are an exception to this rule. Mixed use and apartment buildings should also demonstrate how they may be laterally converted within the building and, if required, through to adjacent buildings. This is particularly important on the high street where most change of use us likely. Developers should demonstrate that all commercial buildings are adaptable to a variety of internal plan configurations. Equally office buildings must demonstrate their ability to be adapted to residential subdivision. All buildings should be designed based on plan types that have been proven to adapt well over time. These historical types should be carefully refined in both plan and elevation to incorporate new requirements of minimising energy consumption in the building and the changing climate.

Local Materials

Builders and developers should look to source materials from within a 50 mile radius of the site, where reasonable, this will help to reduce the transport impacts of development and contribute significantly to the local economy. The target for sourcing local materials is 65% bulk materials by mass, from a distance no greater than 50 miles by road. All developers must be able to demonstrate efforts to achieve this target. A minimum of 35% must be achieved.

Bulk building materials will include 15% (as a percentage of the value of materials used) recycled content.

Materials used in the construction of roads and external hard surfaces must utilise at least 30% recycled content from local reclaimed or recycled sources within 50 miles by road.

All of these requirements may be modified with regard to:

- Availability
- Ethical production
- Lifespan
- Renewability of source materials
- Energy performance
- Practical or viable feasibility

Local materials are defined as:

- found in the area as raw material
- produced in the area from materials that are either from or outside of the area
- processed in the area but the source material is found either within or outside of the area

External Wall Finish

Rough textured render may be used on a substantial majority of buildings. Render shall be lime based paint or approved premixed (Bayosan, K-rend, Marmorite or similar). Corner beads should not be used. A wood float or roughcast finish should be employed for vernacular-style buildings.

Acceptable colours include: white, soft cream colours in pinks, pale yellows and ochres are permitted colours for walls. Dark red, grey or blue grey painted trim are typically used with white walls to create distinctive contrasts. Smooth finish render used for trim should be used.

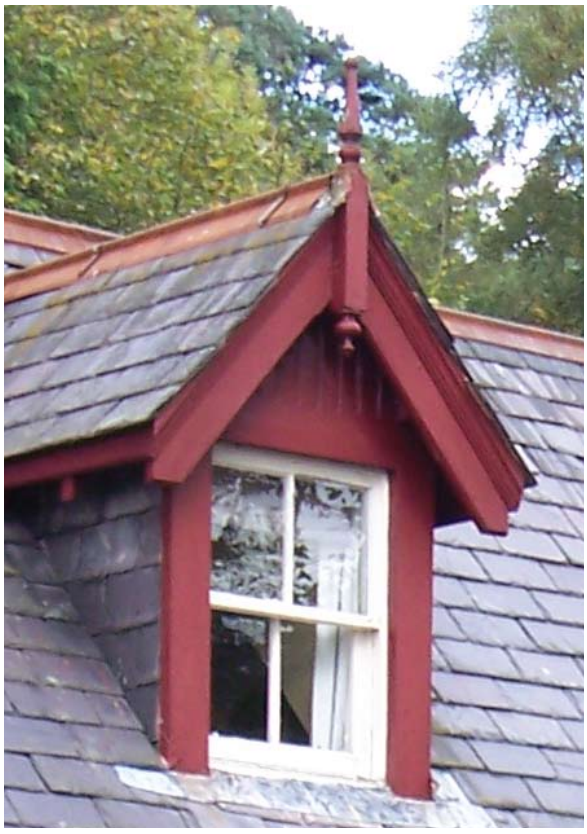
Slate-hung walls of a red sandstone and grey granite colour should be used to match local buildings. However, they should be contrasted with white painted joinery. A high quality of lead detailing should exist on slate-hung buildings (especially, for instance, below window cills).

Rubble stone walling may be lime washed with colours to match render above. Rubble stone, where used for boundary walls, should be from red/grey slate material, laid coursed random rubble with pale lime mortar and course textured sand. Walls should be finished with a slate/mortar cap.

Rubble stone retaining walls, particularly at banks, should be laid vertically, without mortar.

Traditional weathered slate roof

Typical granite wall with render trim



Croft plot boundary wall

Lintels should be finished flush with rendered walls (not to be express scored). Profiled rendered mouldings should be used for more formal buildings. Exposed steel lintels are not permitted. Stone walls, should utilize stone lintels (and surrounds if required).

Timber cladding should employ locally sourced softwoods. Larch, oak, sweet chestnut, and western red cedar, preservative treated Douglas fir, Scots pine, and whitewood are all permitted. Alternate timber cladding will be subject to review.

Roofs

Every roof should make provision for the future installation of embedded renewable devices such as solar thermal and photovoltaic tiles. Furthermore, the design and orientation of the roof should, where possible, seek to maximize the performance of current and future embedded renewable devices.

Grey clay tile with flat profile and pantiles, or slate or concrete tile should be used. Red tile should be used sparingly.

Eaves

The treatment of eaves should relate to local precedent and to architectural style. Fascias and box soffits may not be used. More formal building should have deeper eaves/correctly designed cornices or parapet walls with a classical cornice and hidden gutter for more formal classical types.

Flat roofs (or portions of roof) may only be used for terraces but only for the purpose of roof gardens, specifically for grey water collection, concealing solar thermal/photovoltaic or for green roofs. When flat roofs are employed on tops of buildings they should have parapet walls designed with proper cornice and coping stone details or be flat patches of mansard roofs.

Roofs Miscellaneous

Exposed television aerials, antennae and satellite dishes are not permitted. Roof lights may be a 'Conservation' type and must not be raised above the line of the roof.

Rainwater Goods

Rainwater goods for all properties should be cast iron or cast aluminium, painted black or coloured to match the house joinery.

Chimneys

Each building should have a chimney (including a working flue), which should be located above a party wall (or internal structural wall for semi or detached dwellings). Chimney materials should be appropriate for the style and material of the walls below (not fibreglass replicas). They should be a minimum 450mm x 675mm and rise generously above the ridge line. The structural properties of the chimney shall be such that a micro wind turbine could be installed in the future without the need for further strengthening.

Ventilation

Vent stacks should be located in chimneys where practical. Where this is not possible, vent stacks (and other penetrations) must be located at the rear roof slope and be clad in an alternative to lead where possible. Ridge vent tiles should not be used, unless proven low profile and not visible from street level.

Windows

Plain frosted glass may only be used in obscured windows not patterned or textured. Coloured glass is not permitted except as small segments in corners of windows or borders. Obscured windows are not permissible at the front elevation of any building. Bathrooms may be situated at the front elevation but must be clear glazed in this location.

Traditional six-over-six pane window

Windows with 'clip-on' glazing bars will not be permitted unless there is a thermal performance gain* and no discernable visual detriment. Glazing bars should be coordinated with the packers within each double glazed unit. *(rare situation where you might have a triple glazed glass and no need for real glazing bars)

Window sills should be provided unless a stringcourse sheds water below the window. Frames to all windows should be painted, stained wood or oak. The majority of joinery should be painted; developers should use white, off-white, black,or dark grey colours. Dark paints should only be employed when exterior render or cladding is either white or off-white.

Dormer Windows

Dormers should always suit the roof they sit within. They should typically have posts at corners with wood or lead cheeks and simple cornices to shed water. If gabled, fascia boards should be in scale with the size of the dormer as a whole.

Exterior Doors

Doors should be painted in a co-ordinated range of colours, matching the joinery. The top two panels may be glazed where no fan-light can be accommodated. Varnished hardwood doors, doors with pressed mouldings, uPVC & metal doors are not permitted. Cottages and more vernacular buildings may use tongue & groove vertical boarded doors.

Front doors should typically be recessed from the front face of the house by at least 10 cm and in houses without porches, by a full wall thickness. Colours should be chosen in coordination with window trim or other buildings.

It's advisable for garage doors to be double and fold in two in order not to present an obstacle to pedestrians or cars. 'Stable' doors may be used where appropriate to architectural style.

Window and Door Surrounds

For render or slate hung walls, surrounds should be constructed of cast stone, stone, or smooth textured render with a negative joint separating it from the rough texture of wall surfaces. Surrounds may be in a colour that contrasts with the wall surface in more vernacular buildings. Surrounds may be omitted on façades not visible from public areas.

High pitched timber roof with suble colours

Shop Front Signage

- Shop front signage may be attached to the front façade and constructed of either wood or metal.
- It may also be painted on building wall or windows.
- Band signage, installed across the full width of the shop front, should be just above the top of the shop front glazing. It should be on an exposed beam face or entablature if appropriate. When using lighting, gooseneck lights must be specified.
- Attached board signs consist of vinyl graphics on a signboard. They are secondary to a band sign and retail establishments should not have both.
- Illuminated box fascias are prohibited.

Window Signs

- May be neon behind glass or paint or vinyl onto the glass. Opaque signboards are not permitted.
- The height of any window sign is limited to one-third the height of the sash where the sign is installed.
- The width of any window sign is limited to 90 per cent of the width of the glass in the sash.

Railings, Balconies

Railings shall be in cast iron, wrought iron, mild steel, and cast aluminium generally finished off black or a heritage colour to match joinery. Timber railings, less common, shall be either natural hardwood or match joinery colour.

Small Entry Wings:

Additions to timber clad buildings should employ the same cladding material and dimensions as external walls. Additions to render or slate hung buildings may be built with timber framing and timber cladding running horizontally. Appropriate precedents should be presented to justify design. Additions to slate hung buildings should employ the same materials and dimensions as all external walls.

Landscape Elements

Landscape

Field Boundaries

Field boundaries should be delineated by low rubble walls built from red sandstone or local grey granite. Mortar joints should not be used.

Outside the low rubble wall, a verge should be laid with permeable gravelled material. Upstand kerbs between carriageways and verges should not be permitted as this creates a more urban condition. Grass verges between carriageway and low wall is not typical and should be avoided. Neither standing vehicles nor permanent parking areas should be permitted in allocated front of rubble walls.

Simple ruble wall field boundary

Semi-Urban Walls

Semi-urban walls should use the same materials as field boundary walls, however, they should use recessed joinery in order to establish a more urban character.

Croft plot boundary wall

Garden Treatment

Rural

Houses set further back from the road should contain a narrow path in front of the entry door and beyond that allocate a grass area for recreation or for livestock to stray. When the country comes close to the walls of houses without landscaping such as gardens or curbs, building are able to maintain a rural setting.

In isolated settlements, houses may be set within a walled garden like a villa with planning and lawns. This type is not common and must follow a justifiable precedent so as not to repeat common contemporary mistakes.

Along the roadside in rural areas, linear clusters and isolated country houses should be set back less than 5 meters from a low rubble wall. In this space, a narrow strip of earth should contain plants and flowers of the owner's choice. A stone plate should be placed in front of the door, about 25 mm above the earth within the garden. Parking should not be allowed in this space.

Informal medium urban setback

Urban

Medium Setback

In an urban setting, this condition should only appear along residential streets and should maintain a relatively consistent setback zone. The setback ranges from 1 to 3 meters. Within this setback, plants and flowers of the owners or communities choice should be planted.

Urban condition with zero setback

Front elevation

Front elevation

Front elevation

Front elevation

Zero Setback

Houses in urban settings may have no setbacks. This condition occurs on small residential streets with terraced housing. It also occurs along high streets and public squares.

Fences and Gates

Rural

Fences should only be used when low rubble walls cannot be afforded. Locally sourced woods should be used but if resources are not available, suitable materials include softwoods such as Corsican Pine, Scots Pine, Douglas fir, UK grown larch, Sitka Whitewood, and Norway Spruce which are all grown in the UK. Ranch fences are not permitted.

Urban

Cast iron railings are preferred to timber fences in semi-urban conditions.

Gates should employ the same materials as fences or railings. If a more formal gate or railing is desired, iron is preferred.

Street Furnishings and Signage

Benches are timber and iron, durable and robust. They may incorporate civic motifs or insignia. In exposed sites they are best situated against low walls or pavilions, which buffer strong winds. Waste bins are of a similar construction.

Signage for public spaces other than shop front signage should be attached to buildings. They should be clearly visible but should not visually clutter public spaces by being attached to posts, unless in areas which already have a pre-determined design criteria. They may be etched into stone façades or attached in wood or metal.

When not attached to buildings, signage may also appear on public art such as monuments. If not here then, it is appropriate to place signage at ground level on stone plaques. This is, again, subject to existing design criteria for particular areas.

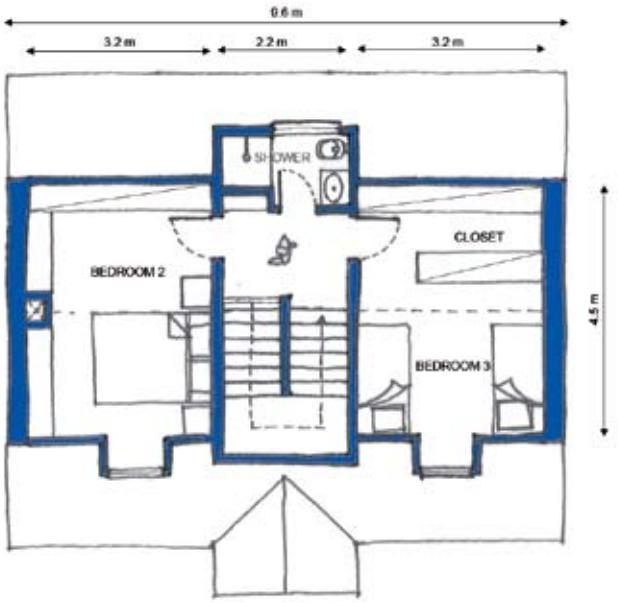
Ground Materials

In rural areas, tarmac, shingle, and block paving are not permitted for entry drives or parking pads. Local gravels are recommended in rural areas for drives and paking pads. Shingle is permited only on small setback in urban conditions when used as a natural drainage filter.

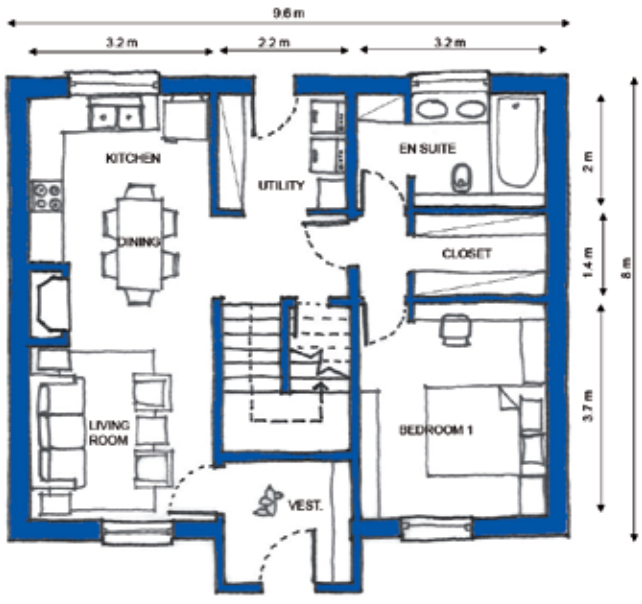
Appendix

Building Inventory | Detached house

Front elevation



First floor plan



Ground floor plan

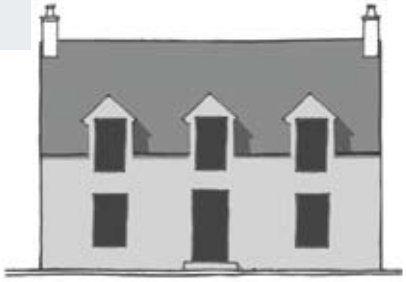
Eighteenth-century village planning in Scotland stemmed from the transformation of agriculture in the late 17th century. In these new villages, Classical designs were introduced by architects from other Regions which in turn, also began to appear in the countryside, as old timber steadings were torn down. This type originates from this precedent and fortunately still has functional relevance nowadays.

This type can work as a detached house or be grouped to form terraced houses. It usually ranges from small to larger cottages of 1 to 2,5 stories high with simple gable roofs. Typically its internal layout consists of circulation placed centrally and rooms on each side. This arrangement is reflected in the composition of the elevation as a 3-bay façade.

SQUARE FOOTAGE	
Ground floor	57.5m²
First floor	33.5m²
Vertical circulation	6.0m²
Total	**97.0m²**

Different composition options

1



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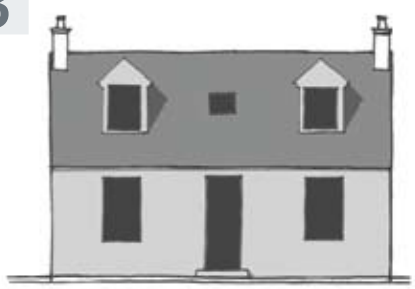
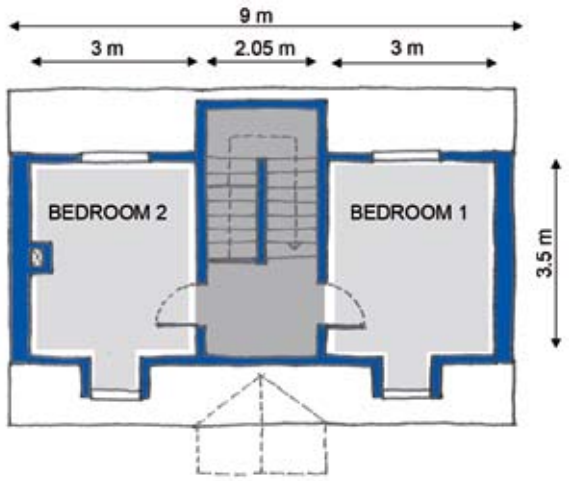
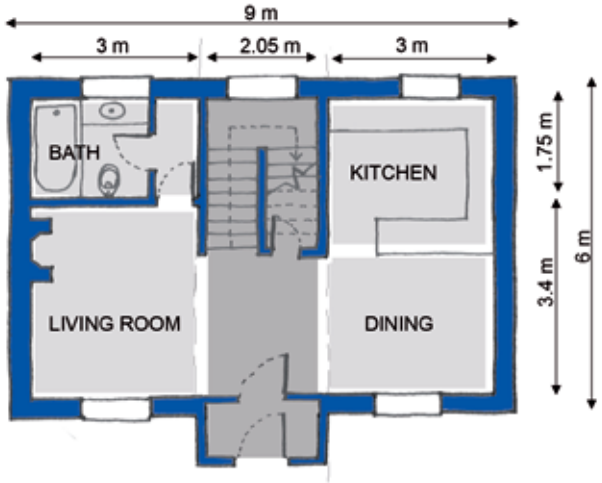




First floor plan



Ground floor plan

Two bedroom, one bath cottage with smaller floor plan

SQUARE FOOTAGE

Ground floor	39.0m²
First floor	24.0m²
Vertical circulation	5.5m²
Total	**68.5m²**

Building Inventory | Mixed Use

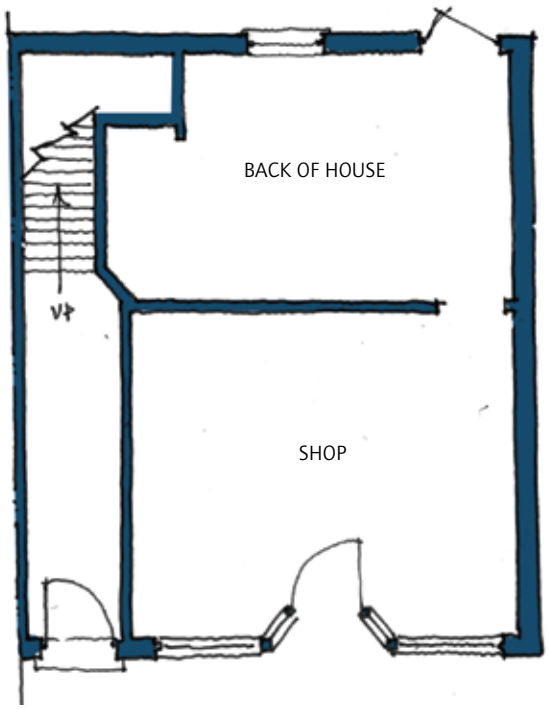
Front elevation

In the 18th century, as people began to move to urban centres, the role of trade in the Region became more prominent. Butchers, tailors, bakers, shoemakers, all made their way to townships or villages to sell their goods. Subsequently, there are many fine examples of mixed-use buildings in the North Highlands from which me draw inspiration.

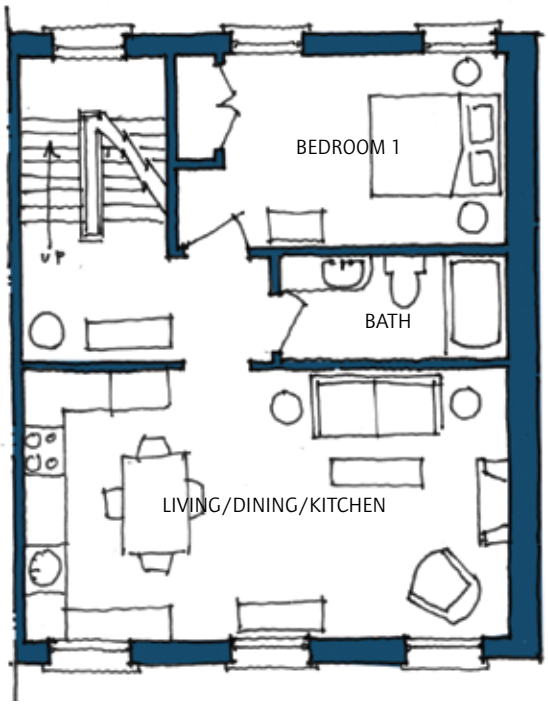
Mixed-Use buildings may vary in size and scale and their uses may evolve over time. However, they should be adaptable for later conversions, either into stacked flats or large terraced houses. There are only two minor difference between terraced houses and mixed-use buildings; the placement of the stairs, near the rear of the building, and the larger footprint.

SQUARE FOOTAGE

Ground floor	54 m²
Vertical circulation	9.0m²

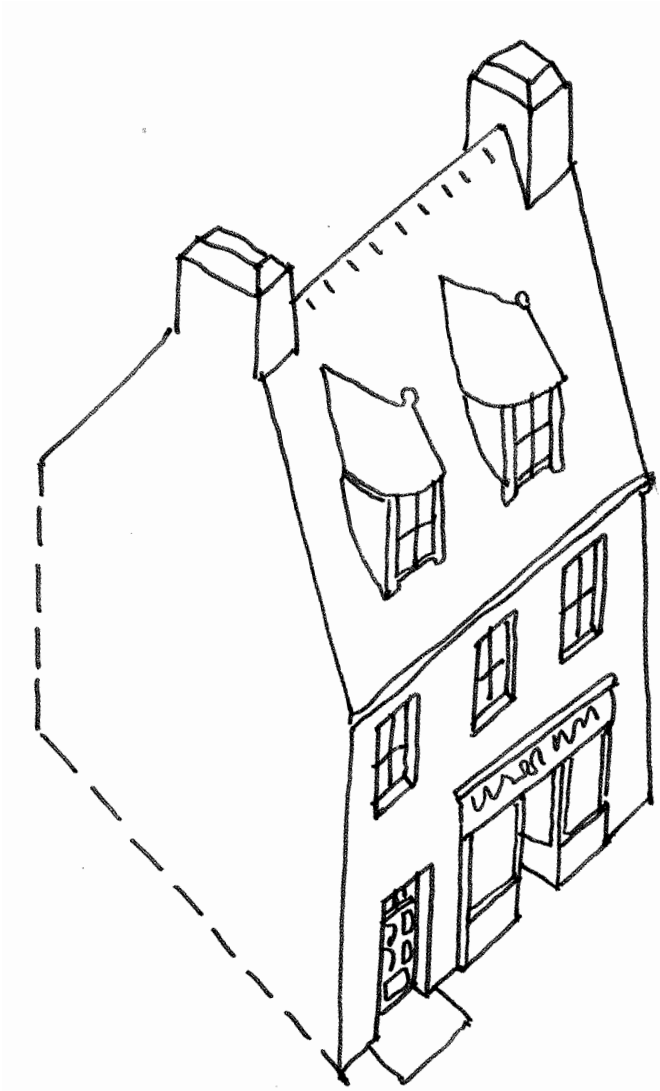


First floor plan



Second floor plan

Mixed Use | Building Inventory



Axonometric drawing of amixed use building

Mixed use building in Thurso

Mixed use building in Castletown

Mixed use building in Castletown

Mixed use building in Wick

Notes

The Prince's Foundation for the Built Environment is an educational charity which exists to improve the quality of people's lives by teaching and practising timeless and ecological ways of planning, designing and building.

Over the next five years, The Prince's Foundation has set an ambitious and hopefully compelling set of goals:

We will work with a growing global network of traditional urbanists, architects and developers to capture a significant market share of new development and regeneration for sustainable urbanism by attracting and defining projects, referring them to trusted partners, and overseeing build out and quality over time.

We will train and place professionals and craftsmen who can take forward this new agenda, through a comprehensive educational offering, delivered by The Foundation and a network of educational partners.

Through research, development and practice, we will define and promote new tools and methodologies for sustainable urbanism, architecture and building, creating a new economic model for local and ecological building in response to the global crisis.

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