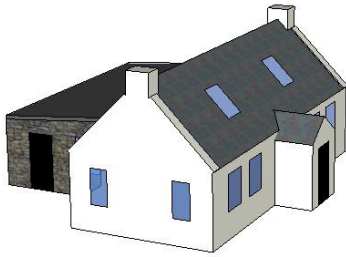


---

# *Site and Design Considerations*

---



---

*Proposed New Dwelling,  
Clabhach, Isle of Coll.  
Planning Application Data*

---

*Ian & Gillian Rae*

---

## Table of Contents

|          |                                 |           |
|----------|---------------------------------|-----------|
| <b>1</b> | <b>Document Objective</b> ..... | <b>3</b>  |
| <b>2</b> | <b>Our Goals</b> .....          | <b>3</b>  |
| <b>3</b> | <b>Site Plan</b> .....          | <b>4</b>  |
| 3.1      | Cottage position .....          | 4         |
| 3.2      | Site Entrance .....             | 8         |
| 3.3      | Site Services .....             | 9         |
| 3.4      | Site Ownership.....             | 10        |
| <b>4</b> | <b>House Design</b> .....       | <b>11</b> |
|          | <b>Summary</b> .....            | <b>15</b> |

|   |    |
|---|----|
| <i>Figure 1: Our design inspiration is a traditional Croft vernacular</i> .....   | 3  |
| <i>Figure 2: PPP Site Plan showing approximate dwelling position</i> .....  | 4  |
| <i>Figure 3: Shadow pattern in December at 13:15hrs. Photograph is taken looking west; the PPP dwelling position is on the left of the field in the shadow already</i> .....      | 5  |
| <i>Figure 4: Proposed dwelling position superimposed for illustration. Further left or back is in winter shadow and raises the roofline significantly on the slope</i> .....      | 7  |
| <i>Figure 5: Original position on slope below stone wall, requires a significant infill to achieve a level surface at the intersection with the road</i> .....                    | 8  |
| <i>Figure 6: Proposed track is just left of stone wall on a level surface; it maintains the same visibility splay as PPP requires and reduces the visual impact</i> .....         | 8  |
| <b>Figure 7: Notional position of Treatment System. Foul drainage will be to a settlement tank and Biorock treatment system; this will drain to a herringbone soakaway.</b> ..... | 9  |
| <i>Figure 8: The Electrical supply will be in a trench from an existing transformer</i> .....   | 9  |
| <i>Figure 9: The approximate position for a private Water Supply from a Borehole</i> .....  | 10 |
| <i>Figure 10: We are the crofting tenants of the shaded area (case No 4.130.29580), part of croft reg No A0411.</i> .....   | 10 |
| <i>Figure 11: Illustrative 3D image of proposed cottage</i> .....   | 11 |
| <i>Figure 12: Nearest neighbour Benmeanach cottage has the similar width and height</i> .....   | 12 |

## **1 Document Objective**

The objective of this document is to convey our thought process in concluding that the design and situation of the proposed dwelling would create a space that we would be happy to live in and be acceptable to the wider community and development control. It supplements the planning permission application form.

## **2 Our Goals**

We are local residents of Coll and currently live in rented accommodation in Arinagour. We are also the croft tenants of the proposed dwelling site.

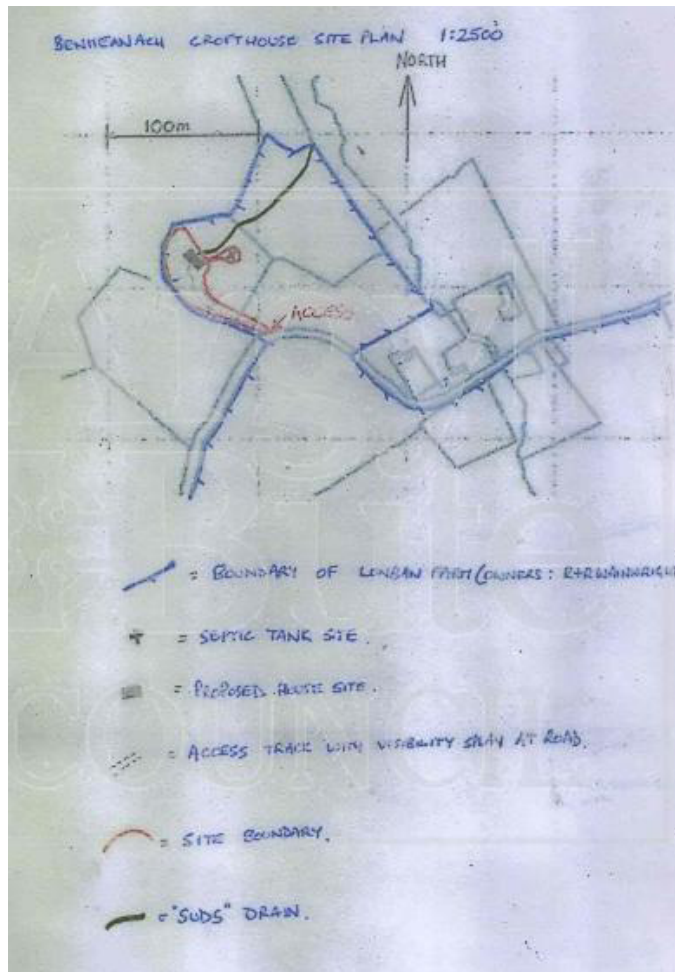
Our vision is a modest sized dwelling for the two of us, with a traditional croft vernacular, using up to date building techniques to create modern comfortable living spaces. We also have taken into account our parents advancing years, the potential for our children to take over and planning for our own future in the design of the spaces. *Figure 1* illustrates the type of building that inspired our design.



***Figure 1: Our design inspiration is a traditional Croft vernacular***

### **3 Site Plan**

Our goal is to ensure the visual impact to the surrounding area is minimal while taking advantage of the natural elements of sun and shelter. We initially reviewed the site position given in the Planning Permission in Principle (PPP)(see *Figure 2*)



**Figure 2:** PPP Site Plan showing approximate dwelling position

#### **3.1 Cottage position**

After review and numerous site visits we concluded the initially proposed PPP dwelling position had a number of significant drawbacks, namely:

- Virtually no direct sunshine during mid winter (frost pocket) (see *Figure 3*)

- Significantly raises roofline up and into the seascape
- Into bedrock in places
- Significant problems in getting level access for disabled / elderly
- Access ways would be visually far more prominent
- Significant expense and impact on the environment as a result of additional materials, transportation and labour in the build process from building on a slope, into rock and out of the sun



**Figure 3:** Shadow pattern in December at 13:15hrs. Photograph is taken looking west; the PPP dwelling position is on the left of the field in the shadow already

The Argyll & Bute Sustainable Design Guide encourages use of the sun as an energy source and the reduction in transportation and energy costs both in the build and sustainment phases. As the Local Plan has this whole area marked as a 'Rural Opportunity Area' we reviewed the position choices within the field with respect to these and other principles in the guide.

During the PPP stage the planning officer requested that the building was 'as far west in the field as practical' [This was as a result of a 2006 study that has not been adopted by the council and is in conflict with the Local Plan maps, Isle of Coll Design

Guide and recent planning decisions]. However, as the existing PPP position provided a conflict with a number of the recommendations in the sustainable design guide, and introduced a high roofline into view from the road behind, our aim was to look at a trade off to establish the optimal '*practical*' position to provide least impact from a visual, energy efficiency and wider living environment perspective.

From a sustainable design perspective the most efficient position is the North Eastern corner of the field, providing:

- Most exposure to the sun
- Lowest roof line
- Level surface
- Level access from parking for the disabled and elderly
- Least materials required
- More sheltered
- Least build time
- Least expense

However, the drawback is that from a visual perspective this is closer to the view of the beach from a small section of the road up the hill behind the dwelling.

We concluded moving the building to the central North end of the field provided the optimum combination of advantages:

- Sits the building down in the lowest part of the field and does not encroach on the view of beach from up the hill behind
  - The roofline is lowered by 4m to 5 m from the PPP position
- Maintains most of the advantages of the Eastern position
  - Only slightly reduced sun
  - Orientation is SSW to gain solar benefit
- Avoids the significant disadvantages of the West end position
  - Including raising the building significantly into view
  - Sitting in the frost pocket



**Figure 4:** *Proposed dwelling position superimposed for illustration. Further left or back is in winter shadow and raises the roofline significantly on the slope*

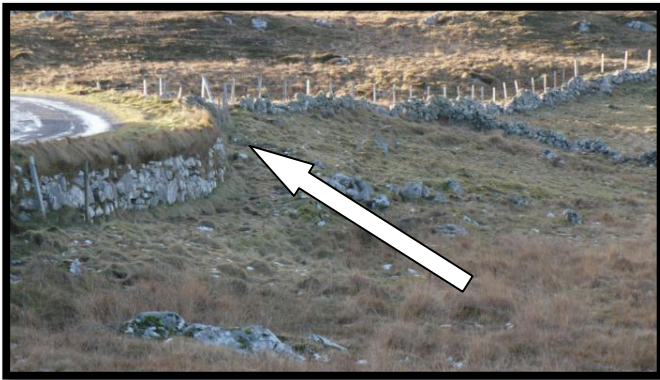
Any further movement west or south starts to reduce exposure to the sun considerably earlier in the day in winter, due to the high contours to the south beyond the boundary. It would also raise the roofline considerably further into view. After agreeing this position with the planning officer, we propose the position illustrated in *Figure 4* and identified in the planning application as the optimal position.

In conclusion the proposed position represented in the site plan:

- Provides the minimum visual impact from road and surrounding countryside
- Maintains the majority of the advantages of Sustainable Design
  - Receives winter sunlight to reduce energy consumption
  - Has a level access from the parking area for the disabled and elderly
  - Has the least impact in terms of transportation and materials
- Minimises the concerns raised in the un-adopted Landscape Capacity Study
- The traditional size and shape of the dwelling makes best use of the plot contours and dimensions and is appropriately sized for position

### 3.2 Site Entrance

The initial proposal site entrance would involve a considerable new structure to be built where indicated in *Figure 5* to get acceptable height and gradients required for the entrance and visibility splays. We noticed that the opposite side of the wall provided a flat surface for runoff from the road (*Figure 6*), which could also maintain the PPP required 42m visibility splays. This moves the centreline of the track approximately 6m only and runs across to a natural gradient into the site field. This land is owned by the neighbour who we have discussed the proposal with.



*Figure 5: Original position on slope below stone wall, requires a significant infill to achieve a level surface at the intersection with the road*



*Figure 6: Proposed track is just left of stone wall on a level surface; it maintains the same visibility splay as PPP requires and reduces the visual impact*

The position in *Figure 6* represents the entrance track position proposed in the PP site plan.



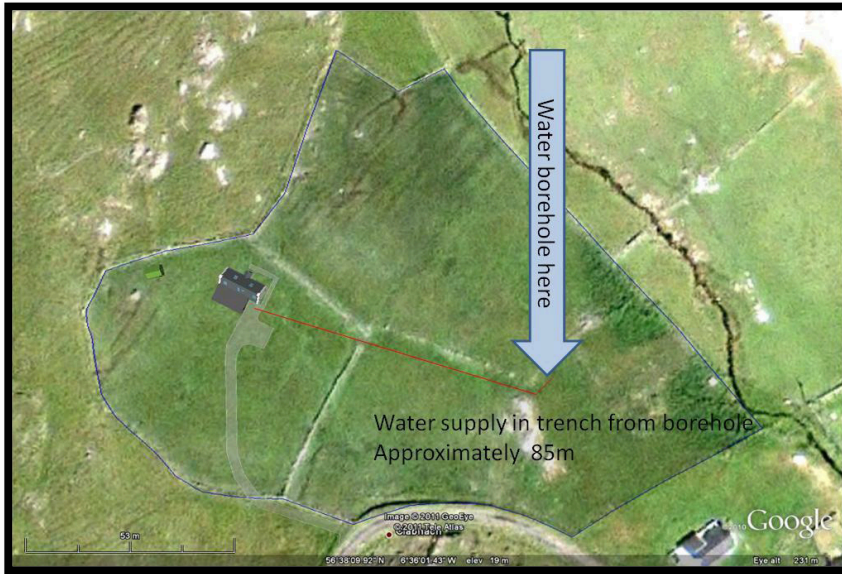
### 3.3 Site Services



**Figure 7:** Notional position of **Treatment System**. Foul drainage will be to a settlement tank and Biorock treatment system; this will drain to a herringbone soakaway.



**Figure 8:** The **Electrical supply** will be in a trench from an existing transformer



**Figure 9:** The approximate position for a private **Water Supply** from a Borehole

### 3.4 Site Ownership



**Figure 10:** We are the **crofting tenants** of the shaded area (case No 4.130.29580), part of croft reg No A0411.

The shaded land is owned by:

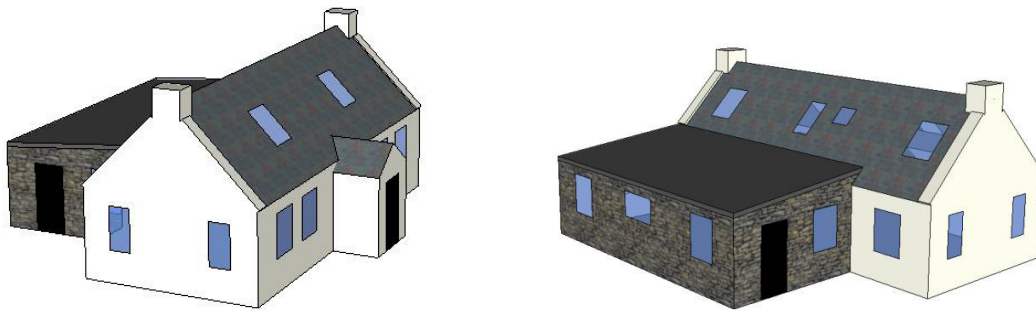
Mr & Mrs R Wainwright, Cliad Farm, Isle of Coll.

The surrounding land to the West within 20m of the development, which includes the first 27m of the track from the road, is owned by:

Mr A. Brodie, Ballard, Isle of Coll.

## **4 House Design**

The examples in *Figure 1* were illustrative of our design goals. They provide the basis for the overall proportions and look in our design. In developing our own design, we have researched a number of existing character cottages and some contemporary designs with similar proportions to provide inspiration on size, look and space utilisation. We have also used the Argyll & Bute council 'Isle of Coll Sustainable Design Guidance' which provided a very useful insight into maintaining the character and standards required to fit into the Coll vista. *Figure 11* represents our proposed design.



***Figure 11: Illustrative 3D image of proposed cottage***

The design incorporates features from traditional croft cottages such as:

- narrow main section with a relatively shallow roof
  - smooth slightly undulating white rendered finish
- lean to added to extend lower floor living space
  - natural stone finish to road
- double chimney
- Gable ends extended above roof line for wind protection
- minimal overhangs
- dark slate finish to pitched roof
- windows generally have a vertical emphasis
- small porch

This traditional appearance will integrate the proposed dwelling into the surrounding environment and align to the vernacular of older local cottages on Coll. It is of very similar dimensions to its nearest neighbour, Benmeanach cottage (see *Figure 12*), with a very similar width and height in the main body of the building but a larger lean to and thinner walls providing more living space. This is similar to a number of cottages on the island and indeed all over the Highlands and islands.



***Figure 12:*** Nearest neighbour Benmeanach cottage has the similar width and height

On internal design, the kitchen and lounge main living areas are only separated by stairs with a cupboard underneath; this creates a larger more open feel to both areas without losing the cottage proportions. In the lean to it has a downstairs bedroom together with a shower room, utility room and large cupboard for the heating and airing; this layout is suitable for our ageing disabled parents to visit. Upstairs there are two bedrooms and small bathroom, also making it suitable for a potentially younger family in the future.

The winds on the island can be severe so external doors are on opposite facings to always give a sheltered entry. The front buffered by an external porch and rear buffered by an internal porch.

The aim is to have a highly insulated and sealed house that has an exhaust air heat pump to provide heating and ventilation ensuring the minimal heating energy required provides a fresh, comfortable living environment. The exhaust air heat

pump unit has the capability to take other heat sources like solar in the future if the energy use should require this.

The walls will be highly insulated and the windows will be low e, high performance argon filled double glazed units, with south facing windows incorporating some solar gain. The external doors will also be high performance. We intend to use a warm roof design incorporating insulation over rafters and insulation will also be installed in the ground floor to ensure an all round low U value approaching passivhaus standards.

The intended building materials are mainly lightweight and utilise sustainable materials, minimising construction time and reducing transportation requirements while providing a very strong, robust building.

Due to the good insulation properties, air tightness and ventilation system, the heating system will only be required on the ground floor, the upper floor benefiting from preheated air ventilation. A solid fuel stove will provide an alternate energy source and gives a focal point for the lounge. The stove will be 'room sealed' to aid air tightness. So with total floor space of less than 120m<sup>2</sup> the heating demand will be small, easily controllable and with minimal waste.

We will also be looking to ensure an efficient, low energy approach to installation of electrical goods, lights and other powered appliances. Outside lighting will be kept to the minimum required standard to reduce spillage but maintain a safe environment.

On renewable energy, our aim is not to have a high requirement in the first place. The new position provides better light and warmth through the glazing. This combined with the very high insulation level, air tightness and exhaust air heat pump provide the most cost effective and energy efficient approach.

Renewable energy is supplied from the exhaust air heat pump; other options to consider with planners in the future include photovoltaics, solar panels or a small wind turbine if the energy requirement warrants this.

Fresh water will be obtained by private means utilising a borehole and pump system, conserving local supply for other residents. For foul water drainage we will install a treatment system with a soakaway.

Outside we will make minimal changes to the landscape with a porous gravel drive and parking supporting SUDs, any paths will be of similar construction except where required for disabled access. The fencing around the upper drive will be stock proof post and wire as existing and incorporate a galvanised farm gate. Any other fences and gates will match the existing types in the area.

Refuse containers will be kept near the house and transferred to the gate for collection; we will also use containers for recyclable goods that can be transported to local collection sites.

## Summary

In summary the proposed position:

- provides the minimum visual impact from road and surrounding countryside
  - The traditional size and shape of the dwelling makes best use of the plot contours and dimensions and is appropriately sized for position
- follows the guidelines of the Argyll and Bute Sustainable Design Guide and addresses the concerns of the un-adopted 2006 capacity Study
- has a rear elevation that is nearly south facing, that now provides sunlight in the winter, allowing an energy efficient solution
- is relatively sheltered in all directions (less from the North)
- has access from parking that will now be level for the disabled and elderly
- has an entrance that provides a reasonably level exit from the road without a large visual impact

The proposed dwelling:

- is based on the traditional vernacular
- has modest proportions to ensure it blends in with the environment
- is set in the plot to take advantage of natural contours and screening
- will incorporate significant energy saving features
- uses materials that minimise construction time and traffic
- demonstrates a responsible approach to renewable energy and sustainable living that can be enhanced, if required, in the future