



SUSTAINABILITY REPORT

RESIDENTIAL DEVELOPMENT

Burnside Poultry

Clinterty, Aberdeen

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SUSTAINABILITY REPORT
BURNSIDE POULTRY, CLINTERTY

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DON'T MAKE SOMETHING
UNLESS IT'S BOTH
NECESSARY AND USEFUL;
BUT IF IT'S BOTH NECESSARY
AND USEFUL, DON'T HESITATE
TO MAKE IT BEAUTIFUL

INTRODUCTION

The proposed development at Burnside Poultry will provide an eco-development of two new homes within the area of Clinterty. The concept for the development is to achieve a showcase of best practice in low energy and ecological design.

STRATEGY FOR SUSTAINABLE DEVELOPMENT

Principles of sustainability have been applied throughout the development of the site plan and conceptual arrangement of the homes and supporting amenities. These principles are described throughout this report, and include:

- building design and materials
- low energy design and renewables
- water and drainage
- waste and recycling
- ecology and biodiversity
- transport
- community and education

The next stages of design development, specifically in relation to the buildings, offer great opportunities to address principles of low energy and sustainable design. The proposed site at Burnside provides a basis from which to achieve a highly sustainable development.

Some of the main points that were considered from the initial stages are:

• Public Transport:

The site is located nearby a major bus route between Aberdeen and Inverurie and the bus can stop at the A96, nearby the site.

• Local Amenities:

A range of local amenities including a shop, village hall and park are available at Blackburn nearby with more extensive facilities available in Inverurie and Dyce, which are both accessible by bus and are all within cycle distance from the site.

• Reduction of Surface water run off:

The homes have been located outwith the 1 in 200 year flood level, and there will be a high percentage of attenuation through soft landscaping and porous surfaces.

• Recycling facilities:

Recycling and storage areas have been included within the garages.

• Protection of Ecological Features:

The newly planted native trees at the North will be protected throughout the construction. Additional planting has been incorporated into the proposals on the East and West boundaries.

• Private Space:

Both homes have their own large garden space with uninterrupted views across the countryside. Separation between the properties will restrict overlooking.

BUILDING DESIGN & MATERIALS

Burnside Poultry can accommodate two contemporary houses reflecting the local vernacular style of architecture, these flexible designs based are on traditional forms. These would be easily adapted to suit changing lifestyle requirements and provide homes for life.

Housing design will be simple gable forms with lean-to additions, orientated to exploit sunlight with large areas of glazing facing south and small openings to the north. To enable the development to blend in with the local landscape, natural materials will be specified, including timber, local stone, and slate. Sitting well in the landscape these designs will be robust and suited to the local climate.

The houses will typically be timber framed and super-insulated using structural insulated panels. The colours and textures will give a unique sense of place to the development, which aims to promote good design and provide site specific solutions, for individual needs.

The materials used throughout the development should display a variety in colour and texture. The following materials are suggested:

- Render finish
- Natural timber cladding
- A limited variety of roof materials to add texture and colour to the development; slate | corrugated metal
- A variety of fenestration openings to add variety in scale and colour
- Hardcore and gravel
- Paving slabs



Scottish larch cladding

Natural slate

Profile corrugated metal roof sheeting

Wet dash render



LOW ENERGY DESIGN & RENEWABLES

The most effective way in which to reduce CO2 emissions associated with energy use is to minimise the demands for heat and electricity in the homes through well considered design, taking into account factors such as:

- orientation
- solar energy in association with thermal mass
- super insulated building envelope
- air tight construction
- daylighting
- heat recovery
- efficient services, lighting and appliances

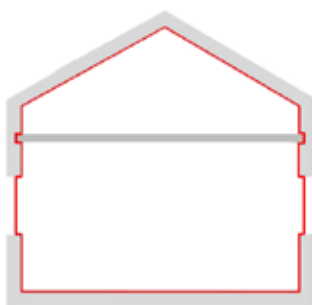
The low energy design approach at Burnside will incorporate high levels of insulation and make use of solar energy to offset heating requirements. Analysis will also be carried out to test the most effective strategy for the homes, including comparisons of passive ventilation against mechanical ventilation with heat recovery.



Once the lowest possible energy demand has been achieved through design measures, a range of renewable energy technologies will be investigated for the development and used to offset the requirement for fossil fuel energy sources on site. Detailed feasibility studies will be carried out to determine the most appropriate technologies for the site, although initial observations have identified the following as suitable for further consideration:

- solar thermal panels to produce hot water
- wood burning stoves to replace secondary heating

A detailed energy strategy for the site will be produced as part of the next stages of the design development for Burnside, and will be based on the best practice approach of an initial reduction in energy demand, followed by the application of suitable renewable energy technologies. These measures will result in very low or zero CO2 emissions from the development, which will be reflected in the achievement of high ratings for their Energy Performance Certificates.



Airtight continuous construction



Solar PV panels



Wood fuel stoves



Dual fuel boilers

WATER & DRAINAGE

Water is a resource which should be used sparingly, like any other. The proposal at Burnside will investigate the use of rain water harvesting and grey water re-use. This will work in combination with efficient water sanitary appliances to ensure a low demand for water usage. The design also includes for a provision of water butts throughout the development. This will provide non-potable water for irrigation of the soft landscaped areas and allotments.

The design of all landscaped areas will ensure the reduction of all surface water run-off. It is essential that, as a result of the development, the surface water is not made any worse as a result of the development and this will be resolved by using measures such as porous surfaces and ecological planting.



WASTE & RECYCLING

Waste and recycling are to be key considerations for all stages of the proposed development. Some possible strategies could include:

- designing around standard material sizes
- production of a Site Waste Management Plan
- use of pre-fabrication
- agreements with manufacturers to return unused materials
- “just in time” deliveries
- re-use of high value materials

Wherever possible, substitutions for building products with a higher than average recycled content will be made, so as to achieve a best practice level of recycled content for all buildings at Burnside.

Each dwelling has ample space to allow for the sorting and storage of recyclable waste. This will include segregation for all materials that can be recycled locally, including paper, cans and plastics. In addition, it is proposed that the residents have access to composting facilities to prevent biodegradable waste from being sent to landfill. This will have the additional benefit of providing a local source of compost which can be used within the garden areas.

Any existing materials on site are to be re-used and re-cycled where possible. Subject to contamination zones, concrete and rubble should be considered for crushing and re-use. Timber downtakings should also be considered for chipping and re-use in landscaping.



ECOLOGY & BIODIVERSITY

The site at Burnside boasts a diversity of wildlife which varies with the seasons, including numerous species of birds, insects and flora.

The development aspires to protect and enhance the rich natural heritage of the land by creating a wildlife habitat which provides a haven for existing species and encourages other native species to become established and thrive in a bio-diverse environment. Some examples of features currently being considered include:

- incorporation of existing ecological features in the proposed site layout
- log piles for frogs and insects
- bird and bat boxes
- limited car movement / hard landscaping around the development

The proposal at Burnside aims to improve ecological connectivity and natural countryside setting. The existing site in its redundant state (ie concrete foundations and rubble) offer little in the way of a route or habitat for wildlife. The proposal for the site has increased and improved soft landscape and substantial areas of new planting, offering a greatly improved wildlife corridor.



TRANSPORT

The rural location of the site determines that car use cannot be completely eliminated from the development. However, this is recognised to be a key issue in terms of creating a sustainable eco-development.

The site is located nearby a major bus route that runs between Aberdeen and Inverurie. The site is also located within cycling distance of Dyce 9.4km, Westhill 7.3km, Kingswells 11.2km and other areas. This in turn means that residents at Burnside would not require to have sole reliance on a private car.

The distance from the junction of the Burnside track where it meets Clinterty Road up to the bus stop at Bishopston is 0.9 km.

The road is quite straight with good visibility from Burnside up to the junction of the old A96, turning right, there is a wide double lane road up past Bishopton Farm where the underpass with a lit pedestrian footpath on each side leads to the bus stop on the new A96. (This is a dead end to traffic as the old A96 ends and only vehicles going to and from the farm and a few cottages use that road.) In addition to this there is also a bus stop on the near side of the A96 accessed by a pedestrian footway. In summary there are two bus stops with pedestrian access, one in the direction of Aberdeen and one in the direction of Inverurie.

It is also worth noting that there is no need for pedestrians to venture on the dual carriageway in order to reach the bus stop - the pedestrian route along the existing farm track and the underpass is well used by students from the College and schoolchildren.

The alternative pedestrian route to the nearest bus stop in Blackburn village is to turn left at the end of Clinterty Road and use the pedestrian island on the west side of Clinterty Roundabout to cross the A96, this route is 1.2km. There is a footpath to the roundabout crossing which is lit.

There is an official signed public footpath which runs directly from Clinterty Roundabout through Little Clinterty farmyard to the direction of Westhill. The neighboring farm received public funding to create the footpath and continues to receive funds to maintain it.

The footpath can be accessed from the farmtrack which runs Westward from the site at Burnside Poultry. There is also a paved footpath beginning at Roadside Cottage and runs past the entrance to Little Clinterty Farm yard then crossing on to the A96

An alternative option for transport is the new “ Park and Choose” facility which is now operational - this is approx 4km from Burnside.

The new bypass is also due to open at the end of 2017 which will dramatically reduce the use of Clinterty Road as a “rat-run” for rush hour traffic.



COMMUNITY & EDUCATION

As the site is located on a major bus route and within cycle distance of nearby peripheral towns this allows for connectivity to leisure, retail and employment opportunities.

With the provision of dwellings with such great transport links to the local areas, the residents will help to support the growth of the area by ensuring the survival of local services and facilities such as the shop, village hall and Blackburn Primary School.



SUMMARY

The proposals for the eco-development of two new homes at Burnside Poultry have been generated using best practice principles of sustainability, and address the following key areas:

- building design and materials
- low energy design and renewables
- water and drainage
- waste and recycling
- ecology and biodiversity
- transport
- community and education

The next stages of design development will build on the sustainable features already incorporated into the site layout, and will address details of renewable energy feasibility and materials selection.

This is an opportunity for a community to build contemporary homes in a choice of suitable materials, using construction methods at the forefront of green technology. The development aspires towards creating a contemporary rural lifestyle with sustainable living at its heart.