

TCP/11/16(469)

Planning Application – 16/02068/FLL – Erection of a dwellinghouse, installation of air source heat pump, formation of a riding area and associated landscaping on land 100 metres South of Craigend Cottage, St Davids, Madderty

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TCP/11/16(469)

Planning Application – 16/02068/FLL – Erection of a dwellinghouse, installation of air source heat pump, formation of a riding area and associated landscaping on land 100 metres South of Craigend Cottage, St Davids, Madderty

**PAPERS SUBMITTED
BY THE
APPLICANT**

LTR/1527/002/RRT

22 March 2017

Local Review Body
Perth & Kinross Council
2 High Street
Perth
PH1 5PH

Dear Councillors

Erection of dwellinghouse, installation of air source heat pump, formation of a riding arena and associated landscaping at Land 100 Metres South Of Craigend Cottage, Madderty
Application Ref: 16/02068/FLL

This letter is to provide important supplementary information relevant to the appeal of the recent decision to refuse planning application ref: **16/02068/FLL**. The application was principally assessed against Policy RD3 – Housing in the Countryside and the Housing in the Countryside Supplementary Guidance 2012.

The application was prepared and submitted to specifically meet the requirements of Policy RD3 – Housing in the Countryside and the Housing in the Countryside Supplementary Guidance 2012. In particular, the proposals are in accordance with Section 3 - New Houses in the Open Countryside which supports development falling into one of 5 criteria. The application satisfies the following categories:

3.3 Economic Activity
3.5 Pilot Projects Creating Eco-Friendly Houses

It is considered the case officer's reasons for refusal are not based upon a reasoned assessment of the highlighted Policies. Instead, they have been formulated as an unsubstantiated and questionable attempt at dismissing potential support for the application.

Furthermore, there was no prior notice of the case officer's concerns prior to refusal of the application. The Report of Handling also states that no clarity on some matters has been sought, even though desired. Given this opportunity, further reasoned discussion could have been entered, which may have alleviated the uncorroborated reasons for refusal.

It is requested that the following points be noted in review of the application:

1. An SAC report has confirmed the requirement for additional essential worker housing, demonstrating compliance with The Housing in the Countryside Policy.
2. The site has been selected based on an operational and serviceability point of view due to appropriate land availability on the farm (other sites were considered but deemed unsuitable for various reasons) and the private water supply on the farm having no further capacity.
3. Other dwellings on the farm, mentioned in the Report of Handling, are not in the direct control of the farm business.
4. Farming activities are split between arable and livestock. There is an assumption in the Report of Handling that the occupant of this dwelling is to manage livestock. That will not necessarily be the case.
5. This site will also enable the occupants to engage with village/community life and be in proximity to local public transport networks.
6. The dwelling has been sited sensitively on the site, behind a ridge line and mostly hidden from view. The proposals are far more considerate than many applications of a similar nature within this area and beyond.

7. The proposal is in keeping with the area and allows any occupant to fully engage with a rural lifestyle. The design, massing, landscaping and use of the dwelling (including any equine activities) are wholly in context in this area.
8. The Report of Handling suggests that horse riding activities are not suitable in this landscape. This is a wholly inappropriate assessment as this will be only a defined area of grassland. This is demonstrative of the inappropriate assessment of the application.
9. The proposals create a definite sense of identity through formal landscaping, siting and presentation of an exemplar modern building within a rural context.
10. The proposals will not erode the local distinctiveness and diversity. This is a single dwelling in a rural setting of which there are many in the area.
11. The site is appropriately sized and does not dilute the landscape character. It is consistent with most dwellings within a rural context.

It is anticipated that the above points present a reasoned refute of the case officer's reasons for refusal and assessment in the Report of Handling. Should further clarification of any points be required, the applicant is happy to provide this.

It is the view of the applicant that nothing in the proposal is contrary to the requirements of the Housing in the Countryside Policy. We look forward to having the opportunity to discuss this application with the Local Review Board in person and would be more than happy to supervise a site visit. We will endeavour to supply any additional information requested.

If you have any queries regarding the above, please feel free to contact me.

Yours sincerely

Richard Taylor
for studioEAST

Enc

NOTICE OF REVIEW

UNDER SECTION 43A(8) OF THE TOWN AND COUNTRY PLANNING (SCOTLAND) ACT 1997 (AS AMENDED) IN
RESPECT OF DECISIONS ON LOCAL DEVELOPMENTS

THE TOWN AND COUNTRY PLANNING (SCHEMES OF DELEGATION AND LOCAL REVIEW PROCEDURE)
(SCOTLAND) REGULATIONS 2013

THE TOWN AND COUNTRY PLANNING (APPEALS) (SCOTLAND) REGULATIONS 2008

IMPORTANT: Please read and follow the guidance notes provided when completing this form.
Failure to supply all the relevant information could invalidate your notice of review.

Use **BLOCK CAPITALS** if completing in manuscript

Applicant(s)

Name

Address

Postcode

Contact Telephone 1

Contact Telephone 2

Fax No

E-mail*

Agent (if any)

Name

Address

Postcode

Contact Telephone 1

Contact Telephone 2

Fax No

E-mail*

Mark this box to confirm all contact should be
through this representative: ☒

* Do you agree to correspondence regarding your review being sent by e-mail?

Yes ☒ No ☐

Planning authority

Planning authority's application reference number

Site address

Description of proposed development

Date of application Date of decision (if any)

Note. This notice must be served on the planning authority within three months of the date of the decision notice or from the date of expiry of the period allowed for determining the application.

Nature of application

- | | |
|--|-------------------------------------|
| 1. Application for planning permission (including householder application) | <input checked="" type="checkbox"/> |
| 2. Application for planning permission in principle | <input type="checkbox"/> |
| 3. Further application (including development that has not yet commenced and where a time limit has been imposed; renewal of planning permission; and/or modification, variation or removal of a planning condition) | <input type="checkbox"/> |
| 4. Application for approval of matters specified in conditions | <input type="checkbox"/> |

Reasons for seeking review

- | | |
|---|-------------------------------------|
| 1. Refusal of application by appointed officer | <input checked="" type="checkbox"/> |
| 2. Failure by appointed officer to determine the application within the period allowed for determination of the application | <input type="checkbox"/> |
| 3. Conditions imposed on consent by appointed officer | <input type="checkbox"/> |

Review procedure

The Local Review Body will decide on the procedure to be used to determine your review and may at any time during the review process require that further information or representations be made to enable them to determine the review. Further information may be required by one or a combination of procedures, such as: written submissions; the holding of one or more hearing sessions and/or inspecting the land which is the subject of the review case.

Please indicate what procedure (or combination of procedures) you think is most appropriate for the handling of your review. You may tick more than one box if you wish the review to be conducted by a combination of procedures.

- | | |
|---|-------------------------------------|
| 1. Further written submissions | <input type="checkbox"/> |
| 2. One or more hearing sessions | <input type="checkbox"/> |
| 3. Site inspection | <input checked="" type="checkbox"/> |
| 4. Assessment of review documents only, with no further procedure | <input checked="" type="checkbox"/> |

If you have marked box 1 or 2, please explain here which of the matters (as set out in your statement below) you believe ought to be subject of that procedure, and why you consider further submissions or a hearing are necessary:

Site inspection

In the event that the Local Review Body decides to inspect the review site, in your opinion:

- | | Yes | No |
|--|-------------------------------------|--------------------------|
| 1. Can the site be viewed entirely from public land? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Is it possible for the site to be accessed safely, and without barriers to entry? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

If there are reasons why you think the Local Review Body would be unable to undertake an unaccompanied site inspection, please explain here:

Statement

You must state, in full, why you are seeking a review on your application. Your statement must set out all matters you consider require to be taken into account in determining your review. Note: you may not have a further opportunity to add to your statement of review at a later date. It is therefore essential that you submit with your notice of review, all necessary information and evidence that you rely on and wish the Local Review Body to consider as part of your review.

If the Local Review Body issues a notice requesting further information from any other person or body, you will have a period of 14 days in which to comment on any additional matter which has been raised by that person or body.

State here the reasons for your notice of review and all matters you wish to raise. If necessary, this can be continued or provided in full in a separate document. You may also submit additional documentation with this form.

Please see attached covering letter

Have you raised any matters which were not before the appointed officer at the time the determination on your application was made?

Yes ☒ No ☐

If yes, you should explain in the box below, why you are raising new material, why it was not raised with the appointed officer before your application was determined and why you consider it should now be considered in your review.

The case officer did not raise any concerns or open a dialogue to allow the clarification of any matters

List of documents and evidence

Please provide a list of all supporting documents, materials and evidence which you wish to submit with your notice of review and intend to rely on in support of your review.

Cover Letter
SAC Report
Design Statement
Location Plan
Plans 7
Elevations
Entrance Details
3d Images
Farm Map

Note. The planning authority will make a copy of the notice of review, the review documents and any notice of the procedure of the review available for inspection at an office of the planning authority until such time as the review is determined. It may also be available on the planning authority website.

Checklist

Please mark the appropriate boxes to confirm you have provided all supporting documents and evidence relevant to your review:

- ☒ Full completion of all parts of this form
- ☒ Statement of your reasons for requiring a review
- ☒ All documents, materials and evidence which you intend to rely on (e.g. plans and drawings or other documents) which are now the subject of this review.

Note. Where the review relates to a further application e.g. renewal of planning permission or modification, variation or removal of a planning condition or where it relates to an application for approval of matters specified in conditions, it is advisable to provide the application reference number, approved plans and decision notice from that earlier consent.

Declaration

I the ~~applicant~~/agent [delete as appropriate] hereby serve notice on the planning authority to review the application as set out on this form and in the supporting documents.

Signed

R Taylor

Date

22/3/17

Design Statement

New Farm Worker's House

at

Muir O'Lea Farm, St David's, Madderty

Applicant: Mr D Piper

Planning Application Ref: -

Prepared: 01st December 2016

Revisions: -

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7	Design & Materials
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Introduction

This report has been prepared to support an application for construction of a new single storey dwelling for a farm worker on Muir O' Lea Farm.

The report will provide details on the site, justification of the proposals in relation to local and national planning policy, reasoning for the functional requirement for a house on this site and a summary of the design and technical aspects of the house itself.

There has been one previous planning application on the site (15/02088/FLL) which was withdrawn by the applicant.

The applicant is enthusiastic about the proposals and would be happy to enter discussions with the case officer to address any queries with a view to a successful determination.

The applicant currently owns and actively farms land within this area of Perthshire. An SAC report has been prepared, justifying the proposals, and is submitted as part of the application documentation.

Site

The site extends to approx. 2.19 acres or 0.89 hectares and is currently owned wholly by the applicant, Mr D Piper.

This preferred site for the new dwelling is permanent grassland and the SAC report demonstrates that the use of this site has no negative impact on the farming business due to its limited agricultural benefit.

The ground features a gentle rise of 2.0m over the first two thirds of its length with a steeply sloping area, down 4.75m from the high point, for the remaining third. The site is currently laid to grass with long established post and wire boundary fencing and some intermittent mixed hedgerow planting.

At 233m² the footprint of the proposed dwelling will occupy approx. 2.5% of the available ground.



View along W Boundary Looking South

Topography & Landscaping

The proposed dwelling has been positioned on the site to give minimal impact when viewed from the road. Given the sloping nature of the site and its rise to a prominent high point, this has led to the dwelling being sited beyond the high point within the steeper area of sloping ground.

This has successfully allowed the building to be further recessed into the ground using the existing site topography to its advantage and to provide excellent masking when viewed from the road.

The only elements of the building which can be viewed from the road will be a gently sloping green roof (providing further blending on the site) and a natural slate roof.



Site Section (NTS)

New native boundary hedge planting and mixed native specimen planting is proposed along the access track and in the immediate vicinity of the proposed dwelling. This will reinforce its position on the site, provide further masking and privacy and create a well-defined curtilage.

It is the intention that the remainder of the site will be divided with post and wire or post and rail fencing to create small paddock areas and a horse exercise/break-in area. This will allow the applicants to keep horses within close quarters of their home allowing immediate supervision at all times for both care and security purposes.

Access & Parking

Located immediately to the south of the settlement of St David's, the site is currently accessed from an entrance area shared with Parkside of Craig. The access point has excellent visibility splays in both directions and the road is considered to have the capacity to accommodate the minimal extra vehicular traffic.

The access point is a substantial area accessed immediately off the main road which runs through St David's and will receive a new hard surface finish to prevent deleterious material being carried on to the main carriageway.

The existing access point will be re-used and upgraded with feature stone boundary walls and timber gates. The access track within the site will receive a gravel finish and lead to a private parking area suitable for a minimum of 4 vehicles. All vehicles will be able to turn within the site and leave in a forward gear.



Existing & New Site Access

Design & Materials

The original design brief was to create a contemporary dwelling in form and style while maintaining the use of traditional and common materials typically found within the area. A single storey dwelling was preferred by the client, in this instance, as this project is being undertaken with a view to retirement and future accessibility.

The proposed dwelling has been positioned on the site to give minimal impact when viewed from the road.

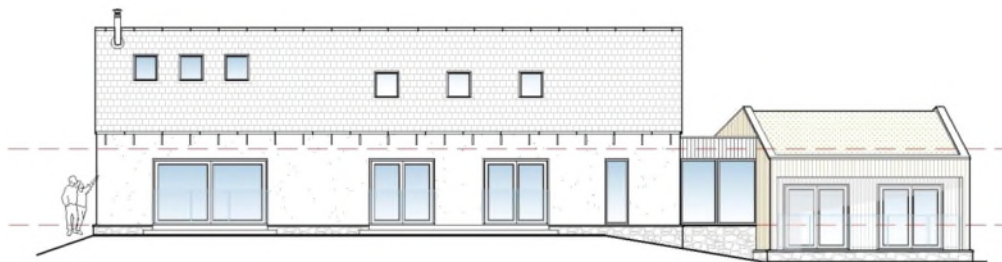
The general concept has been to form two distinct elements: one a functional public space taking a more traditional, grounded appearance with the other a private space taking on a more lightweight modern aesthetic.

Externally, each element will be of a uniform finish comprising smooth render, natural stone and untreated larch cladding. One element will be roofed with natural slate with the other a green roof to blend with the surrounding landscape.

Internally, the new house will be of a high design quality and will feature high ceilings and feature glazing elements. The southerly aspect of the principle living area will be heavily glazed to offer a contemporary aesthetic and to allow the dwelling to benefit from passive solar gains.

The main entrance is approached via an entrance bridge with feature balustrading. This serves a functional purpose and also enhances the nature of the house being located on a steeply sloping part of the site. This slope is further acknowledged through the use of a deep natural stone base course to reads as a solid plinth upon which the house sits.

A modern approach to the design allows for the creation of a dwelling suitable for 21st Century living. This will also provide a functional work space through creation of an office area at first floor level from where business operations can be centred.



South Elevation

Drainage & Services

Foul drainage will be by a new septic tank and soakaway within the site. It is also intended that surface water drainage will be connected to a suitably sized soakaway within the site. Design of this will be carried out by the project engineer, once engaged.

The electricity supply will be provided by a new mains connection. It is understood that this is in the immediate vicinity and there is network capacity available.

The underlying nature of the development is to have a minimal impact on both the site and the environment. As such, the principal heating system will be an air source heat pump system. Supplemented by wood burning stove(s), this will take the space and domestic hot water heating off grid.

The use of solar panels (system size and position tbc) will off-set the electricity use of the air source heat pump and provide additional income for the farm through available Feed in Tariffs.

It is intended to investigate the use of bore holes to provide a domestic water supply. The technical aspects and availability of this are currently uncertain. If, following a more in depth survey, this option is not available then a new mains connection would be sought. It is understood that this is in the immediate vicinity and there is network capacity available.

Sustainability

The applicant is approaching this project with a sustainable agenda. Many materials will be locally sourced thus resulting in a low embodied energy.

The project will benefit from a variety of renewable energy sources: heating will be provided by an air source heat pump. Electricity is provided by a mains connection however the use of solar panels (system size and position tbc) will off-set the electricity use of the air source heat pump and provide additional income for the farm through available Feed in Tariffs.

The construction of the building will be predominantly timber frame, designed to surpass the current building standards for thermal performance and air-tightness. It is anticipated that a 'near-Passive' standard will be achieved and the use of passive ventilation systems will further minimize electricity use within the building.

The aspect of the site and subsequent orientation of the building will allow the occupants and internal environment to benefit from uninterrupted passive solar gains. This will be through large elements of south facing glazing and minimal glazing to the north of the dwelling.

It is intended to investigate the use of bore holes to provide a domestic water supply. The technical aspects and availability of this are currently uncertain, however it is hoped that this will be a potentially valuable addition towards creating an off-grid property.

The use of a green roof on one part of the proposed dwelling will not only contribute towards the thermal performance of the building envelope but help it blend with the surrounding landscape, resulting in a sympathetic development.

Policy Assessment - National

Scottish Planning Policy (2014)

Scottish Planning Policy (2014) sets out national planning policies which reflect Scottish Ministers' priorities for the operation of the development and use of land. The SPP introduces a presumption in favour of development that contributes to sustainable development, making the efficient use of land and buildings. It encourages rural development that supports prosperous and sustainable businesses and also pledges support for sustainable travel. It does suggest that where small scale and justified housing in rural areas is required that these properties should not be tied by occupancy conditions.

The applicant currently owns and actively farms land within this area of Perthshire. Upon retirement from day-to-day farming operations the applicant intends to reduce his hours moving towards full retirement. The resultant labour requirement will be covered by a full-time employee.

It is proposed to build an additional dwelling house on the lands owned by Donald Piper. This house will be included in an employment package, for a full-time employee, which will be on offer as the applicant retires.

Policy Assessment - Local

Perth and Kinross Local Plan (Feb 2014)

RD3 Housing in the Countryside and Perth and Kinross' Housing in the Countryside Supplementary Guidance Document (2012), advises that the Council's objective is to strike a balance between the need to protect the outstanding landscapes of Perth and Kinross and to encourage appropriate housing development in rural areas including the open countryside. The Council seeks to encourage sustainable development in rural areas which means guiding development to places where existing communities and services can be supported, and the need to minimise travel.

Where a house is required either on site or in the locality for a local or key worker associated with either a consented or an established economic activity the applicant must demonstrate to the satisfaction of the Council that there is a need for the house(s).

It is considered the applicant has demonstrated a requirement for housing within the proximity of their existing rural business operations and the proposals are therefore in accordance with the above policies.

Refer to SAC Report

-

TA1B: New Development Proposals, advises that all development proposals that involve significant travel generation should be well served by, and easily accessible to all modes of transport.

The site selection will allow occupants to be in close proximity to available public transport and result in less private travel than a farm-worker having to travel from further afield.

-

PM1A: Placemaking, advises that the design, density and siting of development should respect the character and amenity of the place, and should create and improve links within and, where practical, beyond the site. Proposals should also incorporate new landscape and planting works appropriate to the local context and the scale and nature of the development.

The dwelling has been finished to respect local design characteristics resulting in a coherent proposal that does not detract from the visual amenity of the site.

The proposed planting scheme is befitting of its location through the use of native species and siting to enhance screening of the proposed development.

Perth and Kinross' Housing in the Countryside Supplementary Guidance Document (2012) supports projects creating eco-friendly houses if the following criteria are met:

- a) it blends sympathetically with land form;*
- b) it uses existing trees, buildings, slopes or other natural features to provide a backdrop;*
- c) it uses an identifiable site, (except in the case of proposals for new country estates) with long established boundaries which must separate the site naturally from the surrounding ground (e.g. a dry stone dyke, a hedge at minimum height of one metre, a woodland or group of mature trees, or a slope forming an immediate backdrop to the site). The sub-division of a field or other land artificially, for example by post and wire fence or newly planted hedge or tree belt in order to create the site, will not be acceptable;*
- d) it does not have a detrimental impact on the surrounding landscape.*

It is considered that all the above criteria are met as the proposals have been designed to reflect the local rural design characteristics and, through the use of a green roof and blend with the existing topography of the site. The building has been positioned against the slope of the site, sensitively avoiding the prominent skyline above.



Proposed Location of Dwelling Looking North

Conclusion

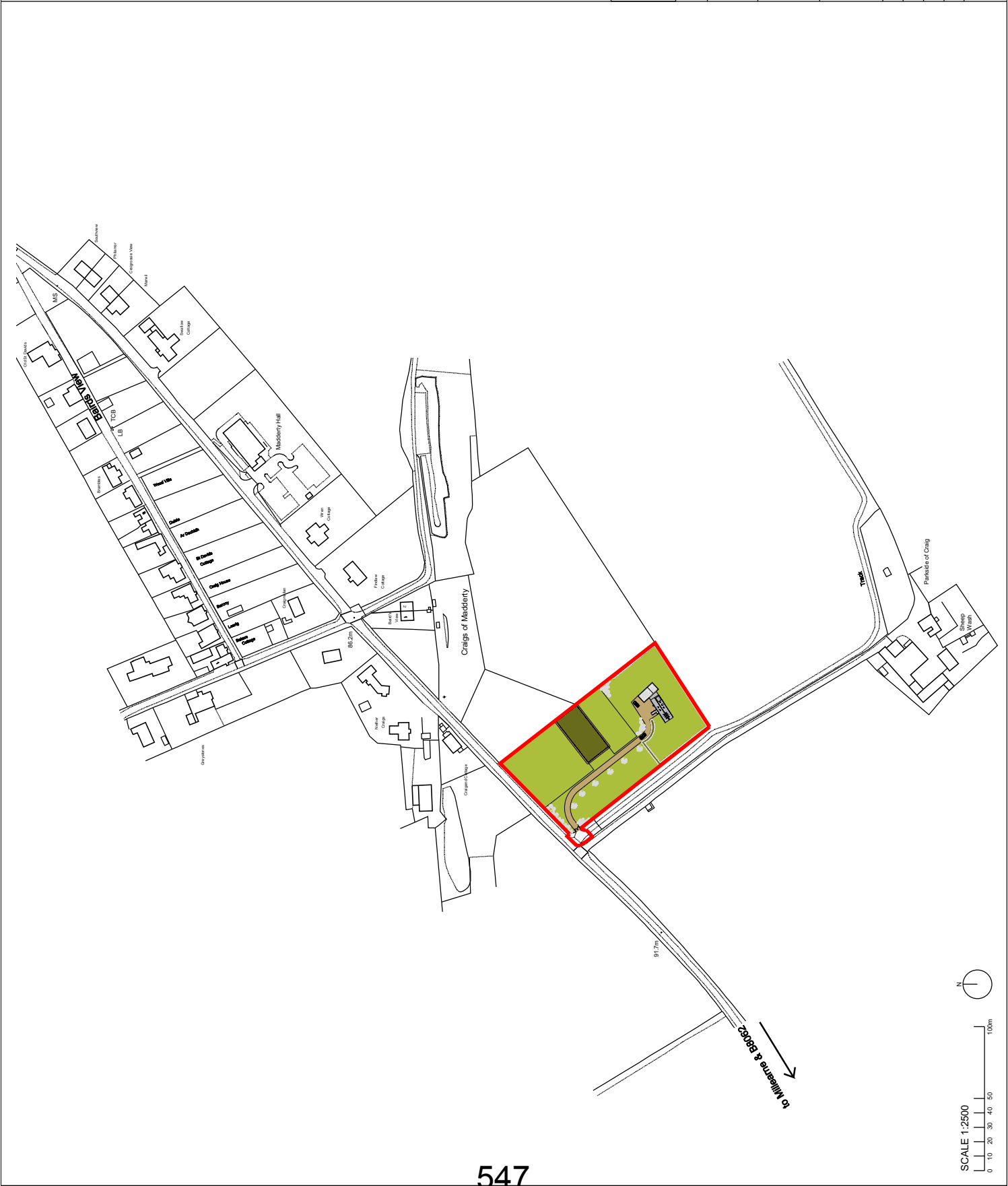
In summary, the following points should be noted:

- This application is for a single storey farm workers dwelling on a rural site near St David's, Madderty, Perthshire.
- The construction of a new dwelling on this site is justified within the SAC Report
- The site extends to approx. 2.19 acres with an overall dwelling footprint of 233m².
- The proposals include for the provision of at least 4no parking spaces.
- The dwelling will comprise of two main elements to achieve a contemporary aesthetic with traditional form. Both will receive a traditional material palette common with the area.
- A high quality of design and construction will provide a quality addition to local housing
- The proposed dwelling has been positioned on the site to give minimal impact when viewed from the road.
- New native planting is proposed to reinforce its position on the site, provide further masking and privacy and create a well-defined curtilage.
- The access point has excellent visibility splays in both directions and the road is considered to have the capacity to accommodate the minimal extra vehicular traffic.
- A sustainable agenda has been taken in the design and specification in order to produce an energy efficient building with minimal impact on its natural and built surroundings.
- The proposals are in line with elements of both local and national planning policy.

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IF IN DOUBT...ASK!

Rev A Dec 15 Amendments for Planning

studioEAST	
Client:	Mr D Piper
DWG. NO.	01
Project:	New House Land North of Parkside of Craig Madderty St Davids
Title:	Location Plan
Scale	1:2500 @ A3
Job No:	1527
Date:	Nov 15
Purpose:	Location Plan
Drawn by:	RRT
King James VI Business Centre, Ffion Rd, Perth, PH2 8DY t: 01738 472090 e: hello@studio-east.co.uk	





Rural Payments and Inspections Directorate

Location Code 661/0002

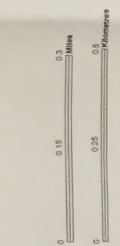
Map 1 of 1

Land Parcel System Version Date: 15 March 2013

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Scale 1:5,000
1 cm equals 50 Metres
1 cm equals 55 Yards
1 inch equals 139 Yards



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Materials

Walls

- Smooth white render
- Laurel cladding black stain (entrance & link)
- Feature stone finish basecourse

Roof

- Natural slate with lead flashings
- Green Roof (sedum)

Rainwater Goods

- Stainless steel

Windows/Doors

- Painted timber (grey)
- Glazed balustrades

Landscaping

- Access ramp with timber deck and balustrade
- Riverstone gravel driveway
- Grass to remainder of site inc. paddocks
- Misc. native planting to boundaries

Areas

- Site Area 2.19ac/0.89ha
- Ground Floor 191m²
- First Floor 28m²
- Footprint 233.5m²

Rev C Dec 16 Amendments for Planning
Rev B Dec 15 Amendments for Planning
Rev A Nov 15 Design Amendments

studioEAST

Client: Mr D Piper

DWG. NO. 02

Project:
New House
Land North of Peninsula of Craig
Maidenhead St Davids

Title:
Plans & Elevations

Scale 1:100 @ A1

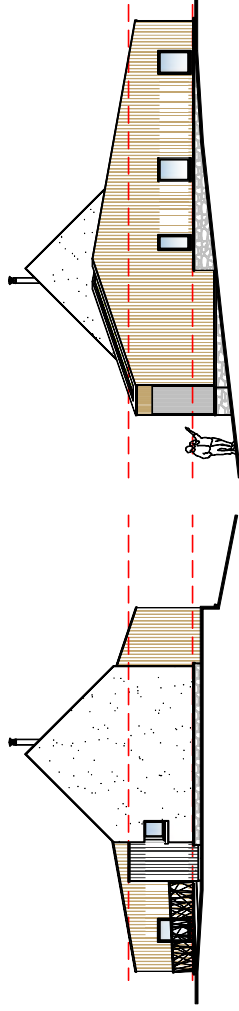
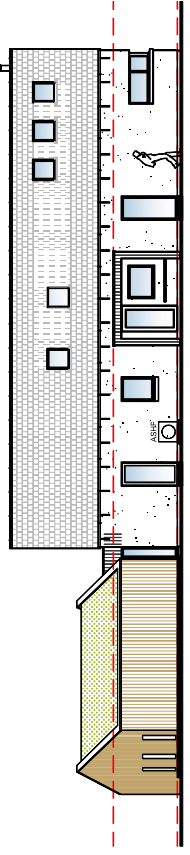
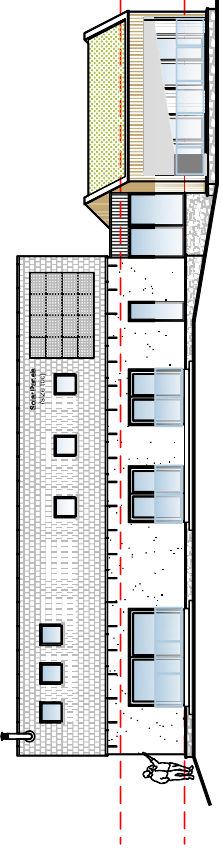
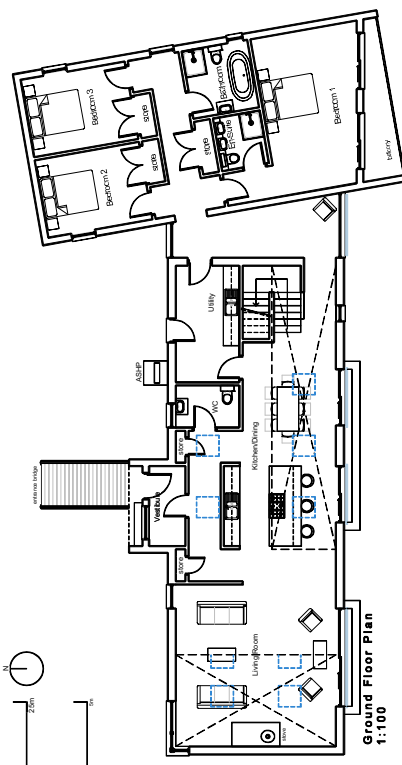
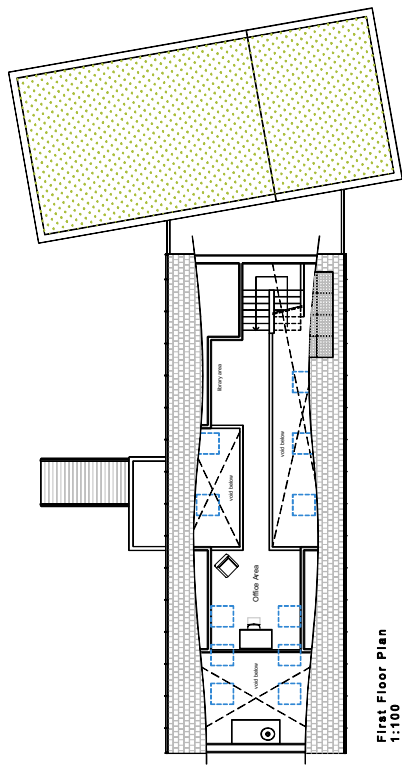
Job No: 1527

Date: Oct 15

Purpose: Design

Drawn by: BRT

King James Williams Centre, Farnham Rd, Penryn, Cornwall
PL20 9AP, UK. Tel: 01752 866666



East Elevation 1:100

Section 1:200

Site Section 1:200

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Client: Mr D Piper

DWG. NO. 03

Project:
New House
Land North of Parkside of Craig
Madderty St Davids

Title:
Entrance Details

Scale 1:100 @ A3

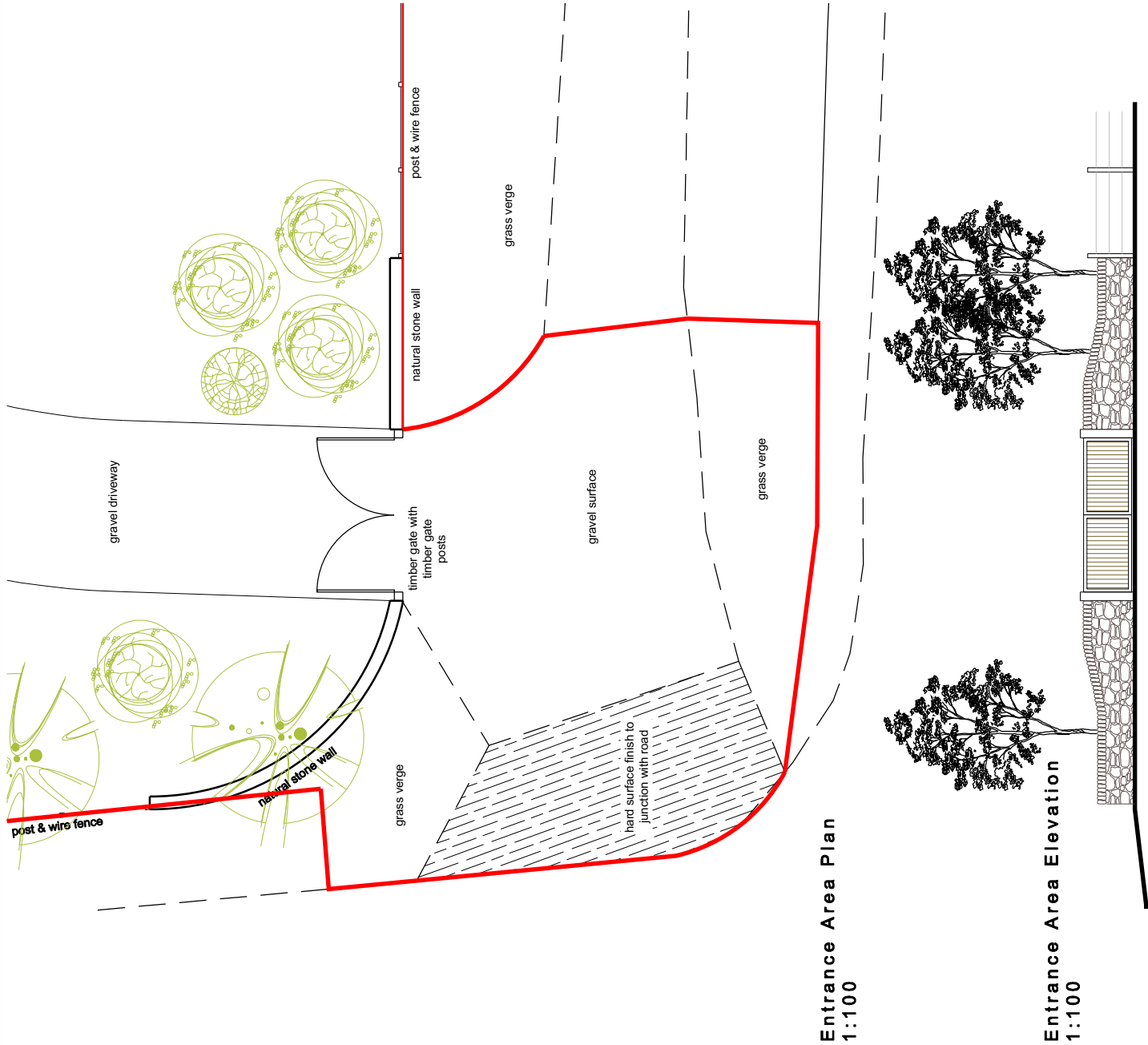
Job No: 1527

Date: Nov 15

Purpose: Planning

Drawn by: RRT

King James VI Business Centre, Ffionton Rd, Perth, PH2 8DY
t: 01738 472090 e: hello@studio-east.co.uk















Planning Justification Report

Muir O' Lea Farm

Prepared for: D & L Piper

Prepared by: SAC Consulting

Contact: Kara Craig
Sandpiper House
Ruthvenfield Road
Inveralmond Industrial Estate
Perth PH1 3EE

Date: November 2016



SAC Consulting is a division of SRUC

Leading the way in Agriculture and Rural Research, Education and Consulting

Prepared for:

Mr D. Piper
Muir O' Lea
Millearne
By Auchterarder
Perthshire
PH7 3RL

Farm Code: 89/661/0002

Prepared by:

SAC Consulting

Contact:

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PH1 3EE

Tel: [REDACTED]
Mob: [REDACTED]
Email: [REDACTED]
Fax: [REDACTED]

Reviewed by:

Peter Lindsay

This report has been prepared exclusively for the use of the above client, on the basis of information supplied, and no responsibility can be accepted for actions taken by any third party arising from their interpretation of the information contained in this document. No other party may rely on the report and if they do, then they rely upon it at their own risk. No responsibility or liability is accepted for any interpretation made by any party that may be made of the contents of this report.

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INTRODUCTION

This report has been prepared at the request of Mr Donald Piper to supplement a planning application for the construction of a new dwelling house for a farm worker at Muir O' Lea Farm.

Information about the farm business policy and factors that would support the proposed dwelling house was gathered by Kara Craig, SAC Consulting (Perth) in discussion with Mr Piper.

Data for enterprise labour requirements is based on the standard labour figures published by Defra in a UK Farm Classification Document (October 2014).

SUMMARY AND CONCLUSION

Muir O' Lea Farm is a NLFA arable unit extending to 204.96 hectares (506.46 acres). The business of D & L Piper farms the unit. In addition to the arable enterprises, cattle are also farmed and sheep are overwintered on the unit.

Currently the farm work is carried out by Donald Piper, the land and business owner, and a general farm worker. Donald Piper intends to reduce his hours moving towards full retirement. The resultant labour requirement will be covered by a full time employee.

It is proposed to build an additional dwelling house on the lands owned by Donald Piper. This house will be included in an employment package, for a full time employee, which will be on offer as Donald Piper retires.

There is currently one house on Muir O' Lea Farm which is owned by the business of D & L Piper. There is currently no existing accommodation opportunities on site for a new farm worker.

The estimated annual labour requirement for the farming operations at Muir O' Lea Farm is 2.02 labour units. Based on the current farming activity described in the report, there is full justification for an additional dwelling house at Muir O' Lea Farm for a full time employee.

It is considered highly desirable for cattle welfare, security, and health and safety that there is qualified, fit and able personnel residing on the unit of Muir O' Lea Farm.

The location of the proposed dwelling house is not prime agricultural land and does not pose any harmful threats or have a significant visual disturbance to the environment and surrounding landscape.

BACKGROUND INFORMATION

The business of D & L Piper farms the land at Muir O' Lea Farm near Auchterarder in Perthshire. The land is all Non Less Favoured Area (NLFA) and the enterprises being operated included arable and cattle with sheep wintered on the unit. There is also a small recreational shooting operation utilising a small area of the land.

The total area farmed is 204.96 hectares (506.46 acres). The arable enterprise involves a full rotation of winter and spring arable crops. The grassland is used for cattle grazing (and sheep in the winter months) and making silage for feeding cattle. The cattle enterprise involves buying 85 store cattle annually, retaining them for 12 months and selling them finished.

All operations associated with the arable and cattle enterprises are carried out by Donald Piper and hired in labour. The operations include, for the arable enterprise, cultivations, crop husbandry, harvesting and marketing the arable outputs. For the cattle enterprise, the work involved includes going to the auction market to buy and sell cattle, feeding, bedding when housed, routine animal health treatments and general day to day stock husbandry. In addition to the practical element of the farming enterprises Donald Piper must manage and maintain all associated records for finances, farm assurance, food safety and cross compliance. The small shooting enterprise involves growing feed (wild bird plots of grain) for the game birds, feeding birds and organising recreational days. This enterprise operates for a 6 month period.

The future business strategy for D & L Piper is to see Donald Piper reduce his workload for retirement and create a full time position for a permanent employee. To ensure that the best employee is found and for the business operations to be managed efficiently, successfully and sustainably, it is important that an on farm dwelling house is provided with the job.

The site preferred for the dwelling house is located on permanent grassland. This land cannot be utilised for arable crops or for making fodder. Neither is it ideal for grazing due to the area of land available and the nature of the soil and grasses present. There would be no negative impact on the agricultural business if this area was taken out of agricultural use. The proposed house site is not prime agricultural

land and is categorised as 3₂, according to the MLURI agricultural classification scheme. Prime agricultural land is considered to be land categorised 1, 2 and 3₁.

The land at the proposed site has no environmental significance (e.g. SSSI) and there are no listed buildings or scheduled monuments nearby. Therefore there would be no loss of any environmental or historic features and there will be limited visual impact on the surrounding area.

LABOUR REQUIREMENTS AT MUIR O' LEA FARM

Using Standard Labour Data for Agricultural and Horticultural Activities, sourced from Defra UK Farm Classification Document (October 2014), and information on existing land areas and livestock numbers farmed by the business, the labour profile for the farming enterprises at Muir O' Lea Farm are shown below.

The Standard Work Capacity is taken as 1,900 hours/person/year. This is calculated on the assumption that one person would work 39 hours per week and takes illness, public holidays etc into account.

Land	Area (ha)	Hours/Annum/Ha	Total
Cereals	124.16	18	2,234.88
Grassland	45.25	3.1	140.28
Rough grazing	2.43	1.5	3.65
Silage	12.95	22	284.90
<i>Sub total</i>			<i>2,663.71</i>
Livestock	Number	Hours/Annum/Number	Total
Store bullocks	85	12	1,020.00
Winter sheep (6 months)	100	2.9 (1.45)	145.00
<i>Sub total</i>			<i>1,165.00</i>
TOTAL			3,828.71
<i>Standard Labour Unit</i>			<i>1,900.00</i>
LABOUR REQUIREMENT (LU)			2.02

This calculation does not allow for administrative tasks required by farming businesses for regulation or accountancy purposes. The calculation, also, does not consider the hours involved in the small recreational shooting enterprise that operates from the farm. The shooting enterprise will account for a further 276 hours.

THE NEED FOR ON-SITE ACCOMMODATION

Farming businesses are finding it increasingly difficult to attract qualified personnel. This is due to several factors but one common issue is the provision of suitable accommodation in close proximity to the main working location. For the efficiency of working practices, animal welfare, health and safety and security it is highly desirable that accommodation is provided on Muir O' Lea.

Animal Health and Welfare

The cattle at Muir O' Lea are purchased as stores and then kept for a 12 month period. The cattle are purchased in batches throughout the year and fed both at grass and in the shed depending on the season and how close they are to being finished. Work associated with the cattle includes:

- Feeding
- Bedding
- Transporting/moving to and from the mart or between fields on the unit
- Administering animal health treatments
- Daily checking for health and welfare
- Clipping

All these duties require fit and able, and skilled personnel to carry them out. A business decision has been made to employ a full time staff member to take this work on as Donald Piper retires.

Efficiency

Residential workers are essential to conduct aspects of running the farm business e.g. taking delivery of supplies such as feeds, large quantities of animal health materials and the loading of stock going off the farm. Having a full time staff member residing on farm helps to ensure efficiency of working practices.

Security

Security is an important consideration.

Opportunist theft and vandalism (deliberate and accidental) are ever increasing incidents in the rural area and farms are most often subject to such activity. These incidents result in much aggravation and add to the daily operations on the farm but are also a severe financial burden.

All livestock, vehicles, equipment and fuel must be safe guarded. The more people living on the farming unit the greater deterrent this is.

Health and Safety

With the increasing awareness by the public of their access rights under the Land Reform (Scotland) Act 2003 there is potential of safety problems on the farm resulting from people not fully understanding their responsibilities in the countryside.

The main risks on the farm at Muir O' Lea include:

- Large machinery, e.g. tractors, forklifts, combines, ploughs etc
- Fertilisers, in store and applied to land
- Chemicals, in store and applied to land)
- Cattle, in fields
- Stacks of silage bales

These risks are all manageable when there is appropriate staff onsite to help educate people and to direct people away from and from causing potential harmful situations.

A major concern with people coming into contact with animals is zoonoses. Zoonotic diseases are those which are transmissible from animals to humans, including Salmonella and Ecoli. All these issues are of high importance with cattle on the unit. The potential for public persons to come in contact with livestock is high and is a concern to be acknowledged. Having accommodation onsite for a farm worker will

better help to manage these situations ensuring that risk has been appropriately managed at all times.

Alternative Accommodation

There is currently one existing dwelling house on the farming unit. This house is the home of Donald Piper. The business does not own any other dwelling house or any building suitable for conversion located at Muir O ' Lea that could be utilised for accommodation for the full time employee.

TCP/11/16(469)

Planning Application – 16/02068/FLL – Erection of a dwellinghouse, installation of air source heat pump, formation of a riding area and associated landscaping on land 100 metres South of Craigend Cottage, St Davids, Madderty

PLANNING DECISION NOTICE

REPORT OF HANDLING

REFERENCE DOCUMENTS *(part included in applicants submission, see pages 547-556)*

PERTH AND KINROSS COUNCIL

Mr Donald Piper
c/o StudioEAST Chartered Architects
Richard Taylor
King James VI Business Centre
Friarton Rd
Perth
PH2 8DY

Pullar House
35 Kinnoull Street
PERTH
PH1 5GD

Date 02.02.2017

TOWN AND COUNTRY PLANNING (SCOTLAND) ACT

Application Number: **16/02068/FLL**

I am directed by the Planning Authority under the Town and Country Planning (Scotland) Acts currently in force, to refuse your application registered on 7th December 2016 for permission for **Erection of dwellinghouse, installation of air source heat pump, formation of a riding arena and associated landscaping Land 100 Metres South Of Craigend Cottage St Davids Madderty** for the reasons undernoted.

Interim Head of Planning

Reasons for Refusal

- 1 The proposal is contrary to Policy RD3 of the Perth and Kinross Local Development Plan 2014 and the Council's Housing in the Countryside Guide 2014 as it does not comply with any of the categories of the policy guidance where a dwellinghouse or dwellinghouses would be acceptable in principle at this location it also fails to adhere to the detailed siting criterion.
- 2 The proposal is contrary to Policy PM1A: Placemaking of the Perth and Kinross Local Development Plan 2014 as the development would not contribute positively to the quality of the surrounding environment. The density and siting of development does not respect the character and amenity of the place.

- 3 The proposal is contrary to Policy PM1B, criterion (a) of the Perth and Kinross Local Development Plan 2014, as the proposal fails to create a sense of identity and erodes the character of the countryside.
- 4 The proposal is contrary to Policy PM1B, criterion (b) of the Perth and Kinross Local Development Plan 2014, as the formation of a dwelling curtilage of this scale would erode and dilute the areas landscape character.
- 5 The proposal is contrary to Policy ER6 of the Perth and Kinross Local Development Plan 2014 as the formation of a dwelling curtilage of this scale would erode local distinctiveness, diversity and the quality of Perth and Kinross's landscape character.
- 6 The proposal is contrary to Policy PM4 of the Perth and Kinross Local Development Plan 2014 as the development is not located within a defined Settlement Boundary in the Plan and there is no justification for its approval under Policy RD3 of the Perth and Kinross Local Development Plan 2014.

Justification

The proposal is not in accordance with the Development Plan and there are no material reasons which justify departing from the Development Plan

Notes

The plans relating to this decision are listed below and are displayed on Perth and Kinross Council's website at www.pkc.gov.uk "Online Planning Applications" page

Plan Reference

16/02068/1

16/02068/2

16/02068/3

16/02068/4

16/02068/5

16/02068/6

16/02068/7

16/02068/8

16/02068/9

REPORT OF HANDLING

DELEGATED REPORT

Ref No	16/02068/FLL	
Ward No	N9- Almond And Earn	
Due Determination Date	06.02.2017	
Case Officer	John Russell	
Report Issued by		Date
Countersigned by		Date

PROPOSAL: Erection of dwellinghouse, installation of air source heat pump, formation of a riding arena and associated landscaping

LOCATION: Land 100 Metres South Of Craigend Cottage St Davids Madderty

SUMMARY:

This report recommends **refusal** of the application as the development is considered to be contrary to the relevant provisions of the Development Plan and there are no material considerations apparent which justify setting aside the Development Plan.

DATE OF SITE VISIT: 12 January 2017

SITE PHOTOGRAPHS





BACKGROUND AND DESCRIPTION OF PROPOSAL

This application is for the erection of an essential workers dwellinghouse on land to the south west of St David's Madderty. The existing farm house and buildings are located at Muir O Lea which is some 2.7km distant from the proposed site.

The site consists of an open field to the south of the B8062, it is enclosed by a post and wire fence. The proposed dwelling would be located to the south of the site. The building is one and a half storeys in height with a single storey wing to the side. The agent confirms that the building footprint would be 233sqm and this would equate to 2.5% of the available ground.

In support of the application a SAC report has been submitted which details the existing farming operation at Muir O' Lea Farm.

SITE HISTORY

15/02088/FLL Erection of a dwellinghouse 26 January 2016 Application Withdrawn

PRE-APPLICATION CONSULTATION

Pre application Reference: 16/00424/Preapp – Advised that construction of a house will not be permitted in advance of the development of the business. Effectively a clearly established need for the dwelling is required and this would have to be associated with an established and profitable enterprise.

Noted that if an economic need for an additional dwelling is justified by the SAC report for the existing business then the planning authority would look for the dwelling to be located next to the existing farm. A remote siting would not be supported.

NATIONAL POLICY AND GUIDANCE

The Scottish Government expresses its planning policies through The National Planning Framework, the Scottish Planning Policy (SPP), Planning Advice Notes (PAN), Creating Places, Designing Streets, National Roads Development Guide and a series of Circulars.

DEVELOPMENT PLAN

The Development Plan for the area comprises the TAYplan Strategic Development Plan 2012-2032 and the Perth and Kinross Local Development Plan 2014.

TAYplan Strategic Development Plan 2012 – 2032 - Approved June 2012

Whilst there are no specific policies or strategies directly relevant to this proposal the overall vision of the Tay Plan should be noted. The vision states *“By 2032 the TAYplan region will be sustainable, more attractive, competitive and vibrant without creating an unacceptable burden on our planet. The quality of life will make it a place of first choice, where more people choose to live, work and visit and where businesses choose to invest and create jobs.”*

Perth and Kinross Local Development Plan 2014 – Adopted February 2014

The Local Development Plan is the most recent statement of Council policy and is augmented by Supplementary Guidance.

The principal policies are, in summary:

Policy PM1A - Placemaking

Development must contribute positively to the quality of the surrounding built and natural environment, respecting the character and amenity of the place. All development should be planned and designed with reference to climate change mitigation and adaption.

Policy PM2 - Design Statements

Design Statements should normally accompany a planning application if the development comprises 5 or more dwellings, is a non-residential use which exceeds 0.5 ha or if the development affects the character or appearance of a Conservation Area, Historic Garden, Designed Landscape or the setting of a Listed Building or Scheduled Monument.

Policy PM3 - Infrastructure Contributions

Where new developments (either alone or cumulatively) exacerbate a current or generate a need for additional infrastructure provision or community facilities, planning permission will only be granted where contributions which are reasonably related to the scale and nature of the proposed development are secured.

Policy PM4 - Settlement Boundaries

For settlements which are defined by a settlement boundary in the Plan, development will not be permitted, except within the defined settlement boundary.

Policy RD3 - Housing in the Countryside

The development of single houses or groups of houses which fall within the six identified categories will be supported. This policy does not apply in the Green Belt and is limited within the Lunan Valley Catchment Area.

Policy ER6 - Managing Future Landscape Change to Conserve and Enhance the Diversity and Quality of the Areas Landscapes

Development proposals will be supported where they do not conflict with the aim of maintaining and enhancing the landscape qualities of Perth and Kinross and they meet the tests set out in the 7 criteria.

Policy HE1B - Scheduled Monuments and Non Designated A

Areas or sites of known archaeological interest and their settings will be protected and there will be a strong presumption in favour of preservation in situ. If not possible provision will be required for survey, excavation, recording and analysis.

OTHER POLICIES

Development Contributions

Sets out the Council's Policy for securing contributions from developers of new homes towards the cost of meeting appropriate infrastructure improvements necessary as a consequence of development.

Housing in the Countryside Guide

A revised Housing in the Countryside Policy was adopted by the Council in October 2014. The policy applies over the whole local authority area of Perth and Kinross except where a more relaxed policy applies at present. In practice this means that the revised policy applies to areas with other Local Plan policies and it should be borne in mind that the specific policies relating to these designations will also require to be complied with. The policy aims to:

- Safeguard the character of the countryside;
- Support the viability of communities;
- Meet development needs in appropriate locations;
- Ensure that high standards of siting and design are achieved.

The Council's "Guidance on the Siting and Design of Houses in Rural Areas" contains advice on the siting and design of new housing in rural areas.

CONSULTATION RESPONSES

Transport Planning – No objection.

Contributions Officer - Education & Children's Services have no capacity concerns in this catchment area at this time.

Scottish Water - No response within consultation period.

Environmental Health - no objection in principle to the application but recommend the under noted conditions be included on any given consent.

National Grid Plant Protection Team – No response within consultation period.

Perth and Kinross Area Archaeologist – No objection.

REPRESENTATIONS

The following points were raised in the 2 letters representation(s) received:

- Contrary to the local plan. Settlement boundary policy, placemaking policy. The housing in the countryside policy and the housing in the countryside supplementary planning guidance.
- Impact on landscape. Does not 'fit' with the landscape and area.
- Concerns with access arrangements to the site.
- Inappropriate land uses.
- Impact on residential amenity.
- Drainage concerns.
- The size of the plot is excessive.
- If approved it could potentially open up infill development between the site and St David's.
- SAC report does not consider alternative locations.
- Does not comply with the 'economic activity' criterion. There is an existing farm house and 2 semi-detached property located at the farm.
- The location of the new essential workers farm house would not provide supervision of the existing farm.
- There are inaccuracies in the agent's correspondence, haylage has been taken from the proposed site and it has been used for grazing.
- The justification is a ruse to build a retirement home outside the village of St Davids on rural farm land.
- There are inaccuracies in the report. The owner does not live at Muir O Lea but Millearne, Kinkell Bridge. There is more than one house at Millearne which may prove more suitable.
- Clarification should be sought that the business does not own any other dwellinghouse or building suitable for conversion at Muir O Lea.

These points are discussed further in the appraisal section of the report.

ADDITIONAL STATEMENTS RECEIVED:

Environment Statement	Not Required
Screening Opinion	Not Required
Environmental Impact Assessment	Not Required
Appropriate Assessment	Not Required
Design Statement or Design and Access Statement	Submitted

Report on Impact or Potential Impact eg Flood Risk Assessment	Submitted
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APPRAISAL

Sections 25 and 37 (2) of the Town and Country Planning (Scotland) Act 1997 require that planning decisions be made in accordance with the development plan unless material considerations indicate otherwise. The Development Plan for the area comprises the approved TAYplan 2012 and the adopted Perth and Kinross Local Development Plan 2014.

The determining issues in this case are whether; the proposal complies with development plan policy; or if there are any other material considerations which justify a departure from policy.

Policy Appraisal

The local plan through Policy PM4 - Settlement Boundaries specifies that development will not be permitted, except within the defined settlement boundaries which are defined by a settlement boundary in the Plan.

However, through Policy RD3 - Housing in the Countryside it is acknowledged that opportunities do exist for housing in rural areas to support the viability of communities, meet development needs in appropriate locations while safeguarding the character of the countryside as well as ensuring that a high standard of siting and design is achieved. Thus the development of single houses or groups of houses which fall within the six identified categories will be supported where they comply with criterion.

Having had the opportunity to undertake a site visit and assess the plans I consider the application does not relate to:-

- (a) Building groups.
- (b) Infill sites.
- (d) Renovation or replacement of houses.
- (e) Conversion or replacement of redundant non-domestic buildings.
- (f) Rural brownfield

The agent considers there is an essential need for the dwelling, category (c) New houses in the open countryside. I therefore turn to supplementary guidance, 'The Housing in the Countryside Policy' that was adopted by the Council in October 2014, which assists with the assessment of Policy RD3.

Essential Workers Dwelling Assessment:-

With regards to development of an essential worker dwelling the SPG highlights that:-

A house or group of houses is required either on site or in the locality for a local or key worker associated with either a consented or an established

economic activity. The applicant must demonstrate to the satisfaction of the Council that there is a need for the house(s). Where the house is to be associated with a proposed economic activity, construction of the house will not be permitted in advance of the development of the business. Permission may be restricted by an occupancy condition to remain as essential worker housing in perpetuity, or convert to an agreed tenure of affordable housing when the employment use is no longer required.

There is also a requirement where an essential workers dwelling has been met that it complies with the siting criterion which I focus on first.

From my site visit I do not consider that the proposed development within this agricultural field will blend sympathetically with the landform, criterion (a). There are no existing trees, buildings, or other natural features which provide a backdrop; the agent has suggested that topography/slopes can accommodate the development but I do not agree that this will reduce the impact to comply with criterion (b) on this open site. The development is not an identifiable site, as there are no long established boundaries which must separate the site naturally from the surrounding ground. The post and wire fence does not create an appropriate form of enclosure. Accordingly I am of the view that the proposed dwelling would have a detrimental impact on the surrounding landscape contrary to criterion (d).

Taking this into account the proposal fails to meet the siting criterion and a dwelling cannot be supported on this site even if a successful case for an essential workers case was provided.

In support of the proposal a SAC report along with a field map has been submitted. The SAC report confirms on page 6 why there is a need for onsite accommodation.

‘Farming businesses are finding it increasingly difficult to attract qualified personnel. This is due to several factors but one common issue is the provision of suitable accommodation in close proximity to the main working location. For the efficiency of working practices, animal welfare, health and safety and security it is highly desirable that accommodation is provided on Muir O’ Lea’.

The need for onsite accommodation to assist working practices, animal welfare, health and safety and security is a common justification for essential workers dwellings. This usually results in essential worker dwellings being sited next to the existing operational farm buildings not on a satellite piece of land some 2.7km distant from the operational farm buildings. In this case I do not consider that a justifiable ‘need’ for the dwelling to be located on this site is provided.

The SAC report calculations support the erection of an essential workers unit with a labour requirement of 2.02 standard labour units. This is based on only one dwelling being in the ownership of the business at Muir O Lea Farm and the applicant residing in the Muir O Lea Farmhouse.

I note the concerns expressed in letters of representation that there are semi-detached cottages next to the existing farm and that the applicant resides in another property at Millearne not Muir O Lea which is closer than the proposed site. These are matters that need clarity, if there are more residential units within the applicants control than stipulated this would mean the 2.02 standard labour detailed in the SAC report could be accommodated and there would be no need for an essential workers house.

I have not sought clarity on ownership from the applicant at this stage given the conflicts with the siting criteria and the proposed location of the property in a satellite location which is divorced from the farm buildings. However this would be a matter to consider should the applicant pursues a revised application for an essential worker unit or if the matter progresses to appeal.

Representations highlight that there are also other options to accommodate an essential workers farm unit at Muir O Lea. The supporting documentation submitted by the agent has discounted any alternative site other than the site proposed but no details have been provided on what alternative locations have been considered by the applicant. Given the conflicts with the proposed location I consider that the alternative locations for essential workers dwelling needs to be presented and why they have been discounted including siting the essential workers dwelling next to Muir O Lea.

Taking the above into account the proposal is contrary to the requirements of this category in the Housing in the Countryside SPG, thus fails to comply with category (c) of Policy RD3. I also consider that the sites relationship with St David's would also give rise to a conflict with Policy PM4.

Design and Layout

The site is also required to be assessed against the 'Placemaking' policies of the adopted local plan.

Policy PM1A confirms that development must contribute positively, to the quality of the surrounding built and natural environment. All development should be planned and designed with reference to climate change, mitigation and adaptation. In this case the design of the dwelling is not at issue but its location and siting is, as discussed in greater detail under the 'Policy Appraisal Section' above. This means the proposal conflicts with Policy PM1A.

From my review of Policy PM1B, the proposal also fails to create a sense of identity and erodes the character of the countryside (a). The development is located in an open field in the landscape with no containment which will dilute the landscape character of the area contrary to criterion (b).

Landscape

Policy ER6 of the local plan seeks to ensure that local distinctiveness, diversity and quality of the landscape character area, the historic and cultural

dimension of the area's landscapes, visual and scenic qualities of the landscape, or the quality of the landscape experience is not eroded. As noted in my assessment above the proposed dwellinghouse will not achieve a suitable landscape fit, this is exacerbated by the proposed formation of the riding arena area.

Residential Amenity

Planning control has a duty to future occupiers not to create situations of potential conflict between neighbours. An acceptable level of amenity for the proposed properties is required and in this case cognisance of the surrounding landuses has to be taken into account.

With regards neighbouring residential dwellings I do not consider that there would be any adverse amenity issues (overlooking/overshadowing).

The Council's Environmental Health Section have been consulted on the application. They note that the application site is within a rural area and the closest existing property to the proposed riding arena and air source heat pump is Craigend Cottage and the closest existing property to the flue exhaust is Parkside of Craig which is approximately 199 metres away.

Air quality:-

As the proposed biomass wood burning stove to be installed is a small domestic stove it is likely to be well below the range to be assessed and the background levels for Particulate and Nitrogen Dioxide within the very rural area are low, Environmental Health therefore has no adverse comments to make with regards to local air quality.

Nuisance:-

Environmental Health note they have experienced an increase in nuisance complaints with regards to smoke and smoke odour due to the installation of biomass appliances. Nuisance conditions can come about due to poor installation and maintenance of the appliance and also inadequate dispersion of emissions due to the inappropriate location and height of flue with regards to surrounding buildings.

As the proposed flue sits above the roof ridge of the proposed property they have no adverse comments to make but they do make recommendations be included on any given consent to protect residential amenity from smoke/odour.

Noise:-

There is the potential for the operation of the proposed Daikin Althermal LT split ERLQ008CU3 air source heat pump unit to create noise nuisance at neighbouring residential properties. The supporting technical information

submitted by the applicant states that the sound pressure level 1 metre away from the unit is 49/62 dB (A).

The World Health Organisation (WHO) issued guidance in 1999 in relation to noise, at which time it was recommended that the following sound levels should be maintained: Leq50-55dB (A) in outdoor living areas, Leq35dB (A) in internal living areas and Leq30dB (A) in bedrooms. This guidance is consistent with BS8233:1999 which recommends the following sound level ranges: Leq30-40dB (A) in living areas and Leq30-35dB (A) in bedrooms.

Given the distance attenuation from the unit to the nearest residential property these levels should be achievable for airborne noise allowing for 10-15dB reduction by a partially open window.

The sound levels recommended in the guidance do not take into account the relative noise level at octave frequency bands. Fixed plant of this type can create noise which has characteristics that are not adequately quantified by means of a Leq limit. In light of this Environmental Health recommend that an additional condition, based on Noise Rating, be included on any given consent to protect residential amenity.

Odour:-

The applicant proposes to have a paddock and a riding arena within the application site, the surrounding area is rural and it is Environmental Health's contention that existing and future residents will at times be aware of odours associated with agricultural activities within the countryside. In light of this they have no adverse comments to make with regards to odour from the arena.

Roads and Access

The proposal if made subject to conditional control would not adversely impact on road or pedestrian safety. Accordingly it would not conflict with Policy TA1B.

I note the concerns expressed regarding access rights with the proposed shared access however this would be a civil matter to resolve between the parties.

Cultural Heritage

There is a local archaeological site within the site. Consultation has been undertaken with Perth and Kinross Heritage Trust and they confirm the proposed development does not raise any issues with the archaeological resource. They also advise that no archaeological mitigation is required. Accordingly there is no conflict with Policy HE1B.

Drainage and Flooding

The site is not in an area subject to river flooding.

Disposal of surface water should be via a sustainable urban drainage system and this would need to be incorporated into the site layout and this can be controlled conditionally.

The agent has confirmed that there is an intention to utilise a private septic tank arrangement to deal with foul flows, this would comply with the Local Plan. The specification of the septic tank will be subject to approval via the building standards section. If there is a discharge to the water then it is likely that a Controlled Activity Regulation Licence will be required from SEPA.

Developer Contributions

The Council Developer Contributions Supplementary Guidance requires a financial contribution towards increased primary school capacity in areas where a primary school capacity constraint has been identified. A capacity constraint is defined as where a primary school is operating, or likely to be operating following completion of the proposed development and extant planning permissions, at or above 80% of total capacity.

This proposal is within the catchment of Madderty Primary School. Education & Children's Services have no capacity concerns in this catchment area at this time. No contribution is required.

Economic Impact

The economic impact of the proposal is likely to be minimal and limited to the construction phase of the development.

Conclusion

In conclusion, the application must be determined in accordance with the adopted Development Plan unless material considerations indicate otherwise. In this respect, the proposal is not considered to comply with the approved TAYplan 2012 and the adopted Local Development Plan 2014. I have taken account of material considerations and find none that would justify overriding the adopted Development Plan. On that basis the application is recommended for refusal.

APPLICATION PROCESSING TIME

The recommendation for this application has been made within the statutory determination period.

LEGAL AGREEMENTS

None required.

DIRECTION BY SCOTTISH MINISTERS

None applicable to this proposal.

RECOMMENDATION

Refuse the application

Reasons for Recommendation

1. The proposal is contrary to Policy RD3 of the Perth and Kinross Local Development Plan 2014 and the Council's Housing in the Countryside Guide 2014 as it does not comply with any of the categories of the policy guidance where a dwellinghouse or dwellinghouses would be acceptable in principle at this location it also fails to adhere to the detailed siting criterion.
2. The proposal is contrary to Policy PM1A: Placemaking of the Perth and Kinross Local Development Plan 2014 as the development would not contribute positively to the quality of the surrounding environment. The density and siting of development does not respect the character and amenity of the place.
3. The proposal is contrary to Policy PM1B, criterion (a) of the Perth and Kinross Local Development Plan 2014, as the proposal fails to create a sense of identity and erodes the character of the countryside.
4. The proposal is contrary to Policy PM1B, criterion (b) of the Perth and Kinross Local Development Plan 2014, as the formation of a dwelling curtilage of this scale would erode and dilute the areas landscape character.
5. The proposal is contrary to Policy ER6 of the Perth and Kinross Local Development Plan 2014 as the formation of a dwelling curtilage of this scale would erode local distinctiveness, diversity and the quality of Perth and Kinross's landscape character.
6. The proposal is contrary to Policy PM4 of the Perth and Kinross Local Development Plan 2014 as the development is not located within a defined Settlement Boundary in the Plan and there is no justification for its approval under Policy RD3 of the Perth and Kinross Local Development Plan 2014.

Justification

The proposal is not in accordance with the Development Plan and there are no material reasons which justify departing from the Development Plan

Informatives

None

Procedural Notes

Not Applicable.

PLANS AND DOCUMENTS RELATING TO THIS DECISION

16/02068/1

16/02068/2

16/02068/3

16/02068/4

16/02068/5

16/02068/6

16/02068/7

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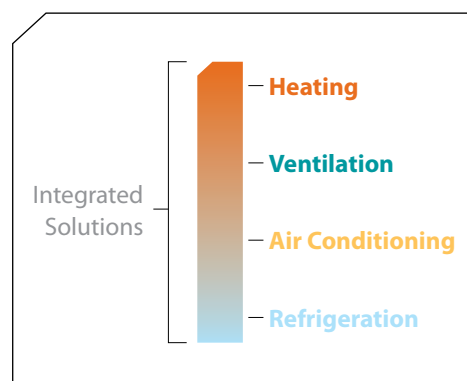
16/02068/9

Date of Report 01.02.2017



Heating Range

Next generation of renewable solutions





Changing the way we heat our homes



Who is Daikin

Daikin has a worldwide reputation for quality and innovative technology, with over 50 years experience in the design and manufacture of heat pump solutions. Daikin is a leading supplier of heating, cooling, ventilation and refrigeration solutions for commercial, residential and industrial applications. Daikin provides a comprehensive choice of domestic heating and renewable energy products which are ideally suited to the UK housing market.

A wholly owned subsidiary of Daikin Europe NV, Daikin UK has an excellent record of concern for environmental issues and applies it to all areas of the business, in many cases pre-empting international and national environmental legislation.

Forward thinking

Now is the time to rethink the way we heat our homes and hot water. Central heating systems as we have known them are changing dramatically today.

Everyone is concerned about reducing their energy bills, and the more eco-conscious (among us) also want to reduce our impact on the environment by using renewable energy sources. Whether for environmental or financial reasons (or even better, both),

finding a more energy efficient and economical way to heat our homes is a real priority – for the Government, for housing providers and for forward thinking home owners alike.

The good news is that you can get cheaper and 'greener' heating, without compromising on system performance. Daikin's efficient heating solutions make maximum use of the renewable energy all around us, converting free heat from the air and the sun to deliver completely reliable and controllable heating and hot water for homes, even when temperatures outside are below zero.

Daikin's heating and renewables range offers:

- > Savings on running costs
- > Reduction in CO₂ emissions
- > Easy installation
- > Space saving, low noise units
- > Safe, easy maintenance
- > High reliability
- > Solutions for new homes and for retrofit

Why the time is right for a new approach to heating our homes

"I want to see more homes, communities and businesses generating their own energy. We can literally bring power back to the people."

Gregory Barker, Minister of State for Climate Change



How are the Government helping?

The UK Government are committed to reducing carbon emissions, with heating within the home being a priority in their strategy. The Climate Change Act of November 2008 commits the UK to reducing carbon dioxide emissions by at least 26% by 2020 with a long-term goal of an 80% reduction by 2050.

The European RES Directive

The European RES Directive took effect in October 2001, and came into force in June 2009 and was designed to set a goal that 20% of European total energy production must be produced from renewable energy sources by 2020. Under the European RES Directive, air source heat pumps and solar thermal systems are recognised as renewable energy sources, this means that the market for these **will** grow fast over the next decade.

The Microgeneration Strategy

The Microgeneration Strategy, published in June 2009 was designed to promote microgeneration technologies. The Department of Energy and Climate Change is also planning a domestic Renewable Heat Incentive (RHI) to encourage the uptake of renewables, with air source heat pumps and solar thermal being included. Full details of the RHI has not been published yet, however for future qualification of grants, Daikin UK recommends customers to only choose MCS approved products, installed by MCS accredited installers.

A Green Deal for householders

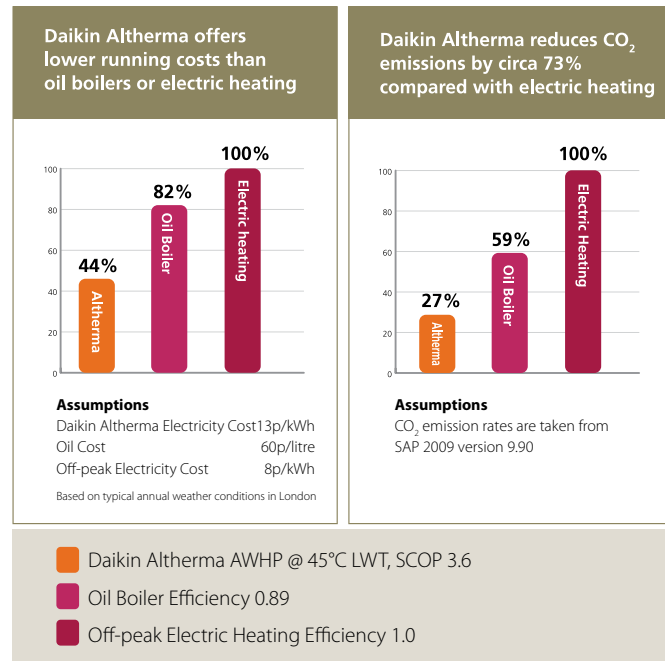
Our homes account for almost 27% of the UK's CO₂ emissions, more than 80% of which is attributed to our heating and hot water provision. Older, harder to heat properties make up the majority of homes in the UK and many have poor insulation, leading to excessive heat loss. The Government is committed to reducing CO₂ emissions and improving energy efficiency in our homes through a new Green Deal, due to be announced in Autumn 2012, which will help individuals to invest in home energy efficiency improvements.

The Code for Sustainable Homes

The Code for Sustainable Homes (CfSH) was implemented in April 2007 as a voluntary standard designed to encourage construction of new homes to higher environmental and sustainable standards. Building Regulations Part L were updated in October 2010 and the energy requirements were increased to reflect CfSH Level 3, i.e. 25% reduction against the previous Building Regulations 2006. There are many local requirements to encourage new homes to meet CfSH Level 3 and even CfSH Level 4.

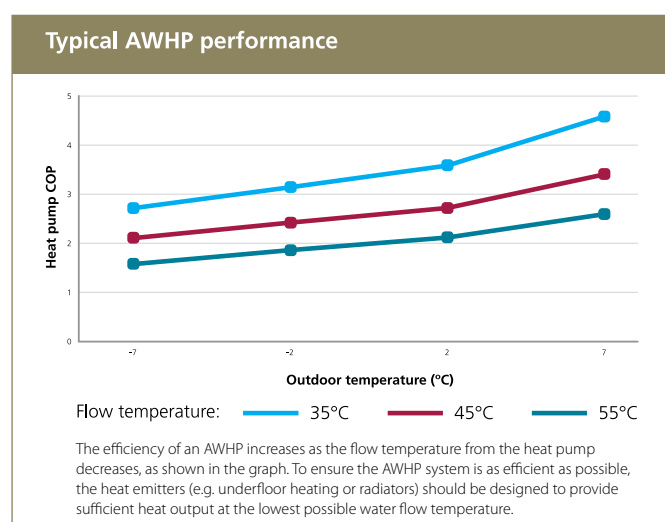
Why choose Daikin renewable energy solutions?

Daikin heating systems are more than capable of delivering all of a homes heating and hot water requirements from renewable sources throughout the year – even when the outside temperature is -20°C.



Reduce running costs with renewables

Daikin Altherma is a domestic heating and hot water system based on air-water heat pump technology, which generates up to 70% of the heat free from the air and represents a highly energy-efficient alternative to oil, LPG and electric storage systems. As a result, Daikin heat pumps can offer efficiencies up to 5 times higher than a fossil fuel boiler, so they will typically save on running costs compared with old oil and LPG boilers.



Minimise the environmental impact of heating

Daikin Altherma low temperature heat pumps deliver some of the very highest efficiencies available in the market today. Capable of achieving a Coefficient of Performance (COP) of up to 5.04¹ when installed correctly, Daikin Altherma LT systems are more efficient than traditional boilers and reduce the environmental impact of new homes, minimising carbon emissions.

European Eco-label

Daikin Altherma products carry the European Eco-label, certifying their performance meets EU-wide environmental criteria. The Eco-label scheme represents products in the top of their class for environmental performance, with compliance verified by an independent test body.



MCS Certification

Daikin Altherma air-water heat pumps are certified by the Microgeneration Certification Scheme (MCS)*, providing reassurance that products and services provided meet rigorous and consistent Government standards. MCS accreditation is a mandatory standard in Government initiatives such as the proposed RHI, so it's important that developers specify MCS accredited products to ensure compliance with any forthcoming funding schemes.

*Please check the MCS website for the latest list of up to date accredited Daikin heat pumps

¹ERLQ004CAV3 - tested in accordance to EN 14511 at A7 W35

Improved ratings in SAP Calculations

Some Daikin Altherma products are also included in the SAP (Standard Assessment Procedure) Appendix Q, which provides specific energy performance ratings of individual products. This means that homes using listed products will reflect the higher performance of those specific heat pumps and achieve better SAP ratings.

How to choose a system that suits your project

To get a better idea of which Daikin system would best suit your installation, please follow the flow chart showing the preferred applications of the Daikin heating products.

Daikin offers a whole range of systems to suit your requirements:

Daikin Altherma heat pump systems

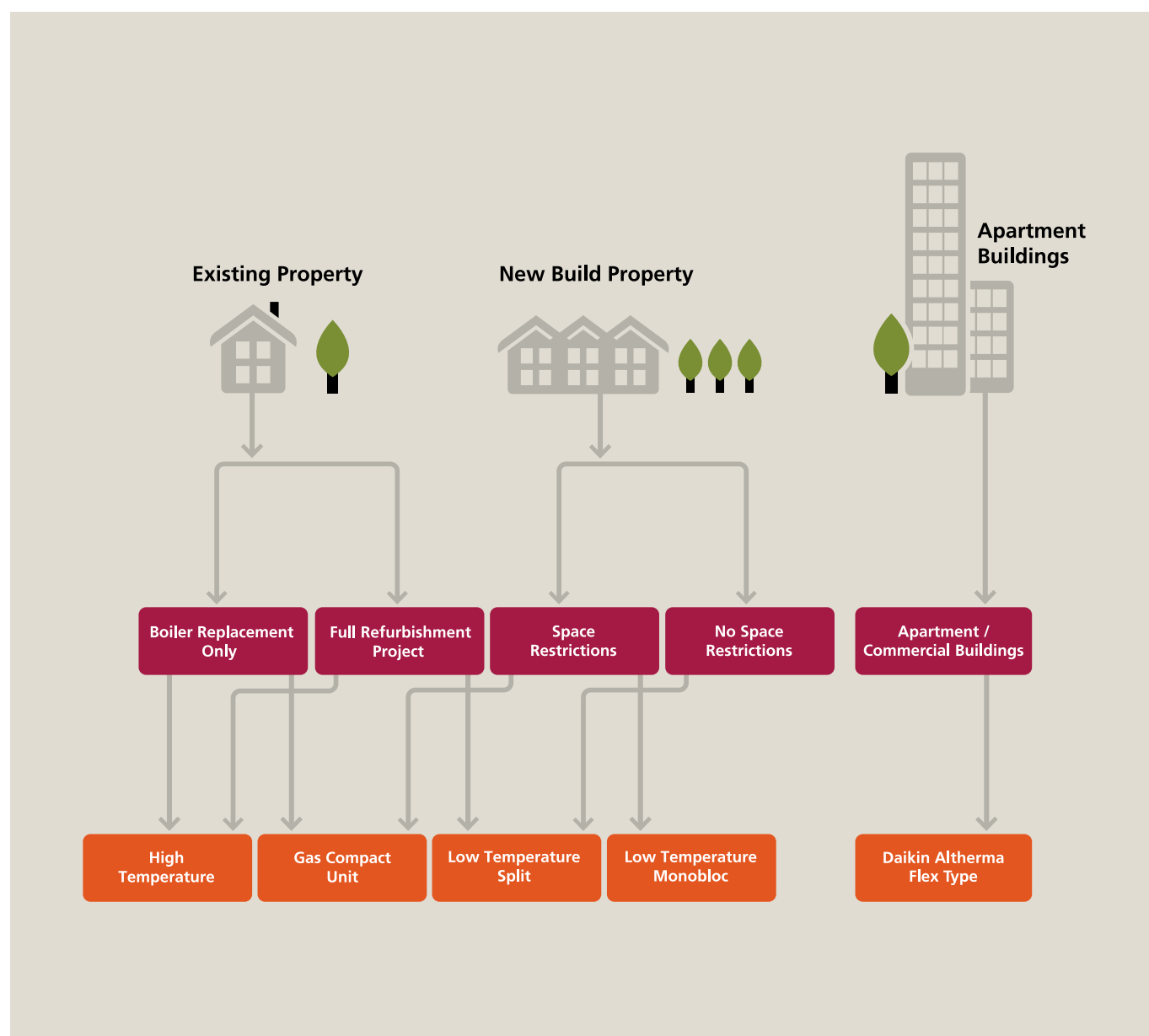
- > Low temperature monobloc
- > Low temperature split systems
- > High temperature split systems

Solar and GasCompactUnits

- > Solar thermal systems
- > GasCompactUnit – combined gas condensing boiler and solar energy

Heat emitters

- > Fan coils
- > Heat pump convectors
- > Underfloor heating

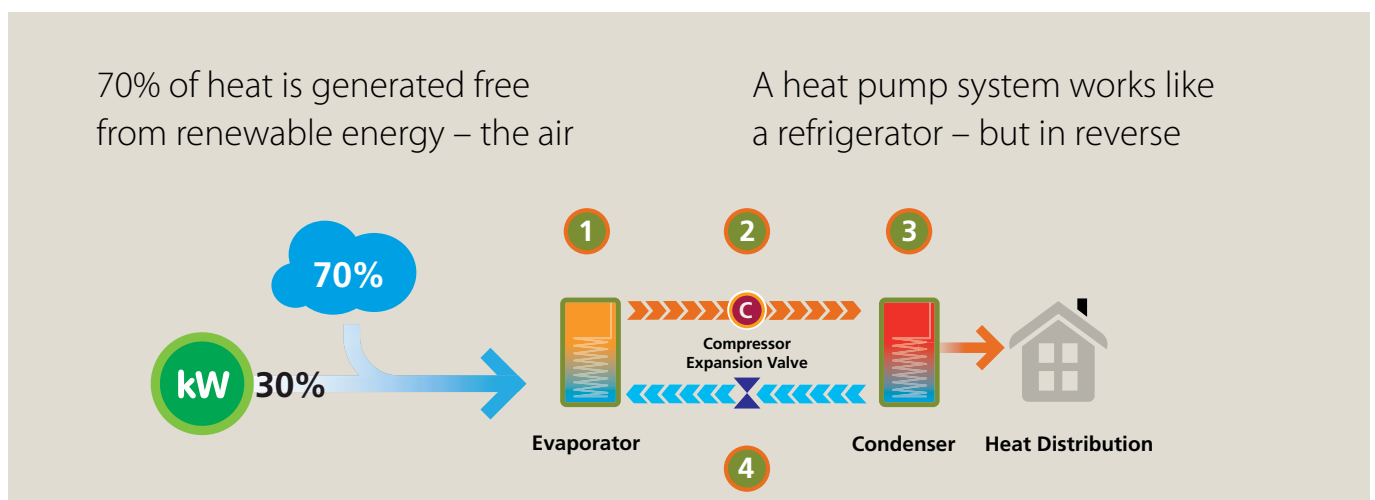


Daikin Altherma air-water heat pumps

Innovation and quality are constantly at the forefront of Daikin's philosophy. Daikin's systems provide highly efficient solutions, which minimise the impact on the environment and running costs.

Daikin Altherma is a domestic heating and hot water system based on air-water heat pump (AWHP) technology. With over 200,000 installations across Europe, it represents a flexible and cost-effective alternative to a fossil fuel boiler.

How does a heat pump work?



1. A heat exchanger contains refrigerant, which is colder than the outside air. As the air passes the exchanger, the refrigerant absorbs the latent heat from the outside air and evaporates.
2. The vapour passes into the compressor and is compressed, increasing its pressure and temperature, effectively concentrating the heat.
3. Hot vapour is condensed in the second heat exchanger where heat is rejected and the vapour condenses back into a liquid. The rejected heat passes into the central heating and hot water system, ready for use in the home.
4. The liquid refrigerant passes back through an expansion valve, ready to start the cycle again.

Daikin Altherma advantages

- > Uses renewable energy source
- > Advanced energy saving features
 - Weather compensation built in as standard
 - Inverter compressor technology
- > Low running and maintenance costs
- > Low noise – unobtrusive and quiet
- > Easy to install, no groundworks needed e.g. boreholes
- > Ideal for off gas grid properties
- > Single phase power supply with low starting current
- > Flexible, can be connected to underfloor heating, radiators or fan coils
- > As a package of energy saving measures, helps towards higher rating in the Code for Sustainable Homes
- > Can be connected with a solar thermal system which can provide up to 60% of your hot water needs for free from the sun

Daikin Altherma advantages over traditional boiler systems

- > Daikin Altherma heat pump is 3 to 5 times more efficient
- > Up to 50% reduction in CO₂ emissions

Heat pumps

Low Temperature (LT) Split system

The new advanced Daikin Altherma LT Split system offers even greater running cost savings than the original.

Based on a tried and tested concept, the new heat pump is the perfect choice for all new build and many refurbishment projects.

In a LT split system, the outdoor unit extracts energy from the outside air. Refrigerant pipework then delivers this energy to the indoor unit (or hydrobox) which can be located up to 75 metres away.

System elements

1. Outdoor unit options

The ERLQ-C-series range now includes three brand new outdoor units – 4kW, 6kW and 8kW – to complement the existing 11kW, 14kW and 16kW units. Designed for installation anywhere in Europe, this range can withstand even the toughest winter climates and will still operate even when the outside temperature drops to -25°C.

The new 4kW model has been specially designed for today's low energy homes. With even higher efficiencies and a modulation range down to 1.8kW (at A7/W35), it easily helps developers to achieve Code for Sustainable Homes Level 4.

All the new heat pumps benefit from the latest Daikin inverter technology. With a higher modulation range, even higher efficiencies are achieved.

The original ERHQ-B-series is still available in 11-16kW capacities.

2. Indoor unit options

A new wall hung indoor hydrobox with a modern design is connected to the outdoor unit. These units can produce water temperatures up to 55°C with guaranteed capacities all the way down to at least -15°C. Operation is guaranteed even at -25°C.

All required hydraulic components are in the hydrobox including circulation pump, expansion vessel and isolation valves. A new high efficiency "A" label circulation pump and a bigger heat exchanger both increase system efficiency. Additionally, the new hydrobox is easier to install and maintain with front access to the wiring and hydraulics.

The new unit is smaller and requires only 10mm side clearances. With its reduced installation footprint, siting the unit is even easier.

The system can be completed with a separate unvented hot water cylinder which can be sited to suit the available space. The hot water cylinder with back-up immersion heater is specially designed to maximise hot water supply and comes in three sizes: 150, 200 and 300 litres.

3. Controller

The Daikin Altherma LT Split heat pumps have a new and improved modern controller. This easy to use back-lit controller can also be installed as a modulating room thermostat to improve system efficiencies still further.

The new controller has a simple to follow menu structure to allow the system to be set up and optimised for each installation. The controller can be commissioned by PC and has energy metering functionality to help the householder understand how much energy is used and generated by the heat pump.



3

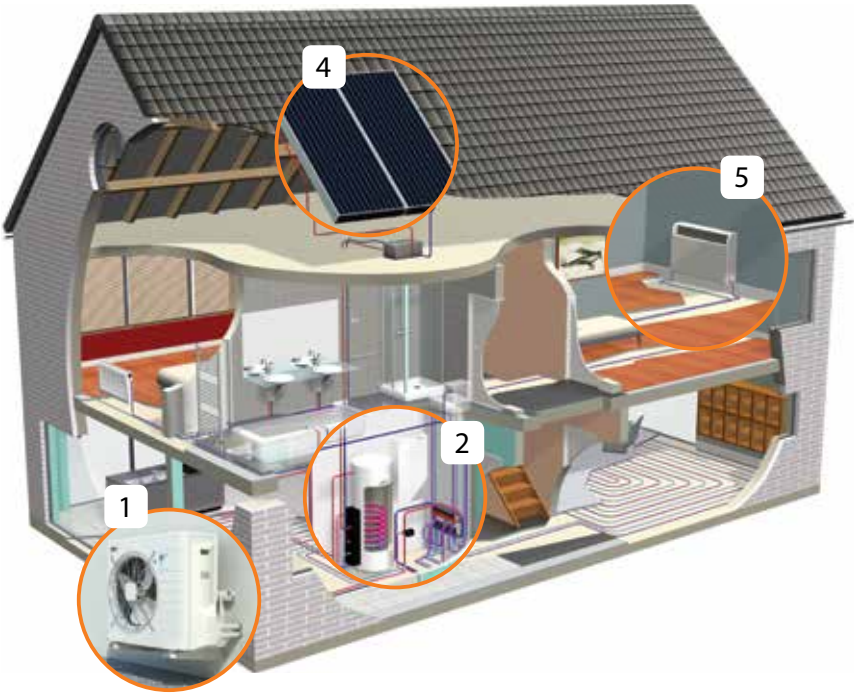
4. Solar thermal system

It is possible to connect an indirect pressurised solar thermal system to provide additional heat to the domestic hot water during summer months.

5. Heat emitters



The system can work with all appropriately sized heat emitters including underfloor heating, radiators, heat pump convectors and fan coil units.

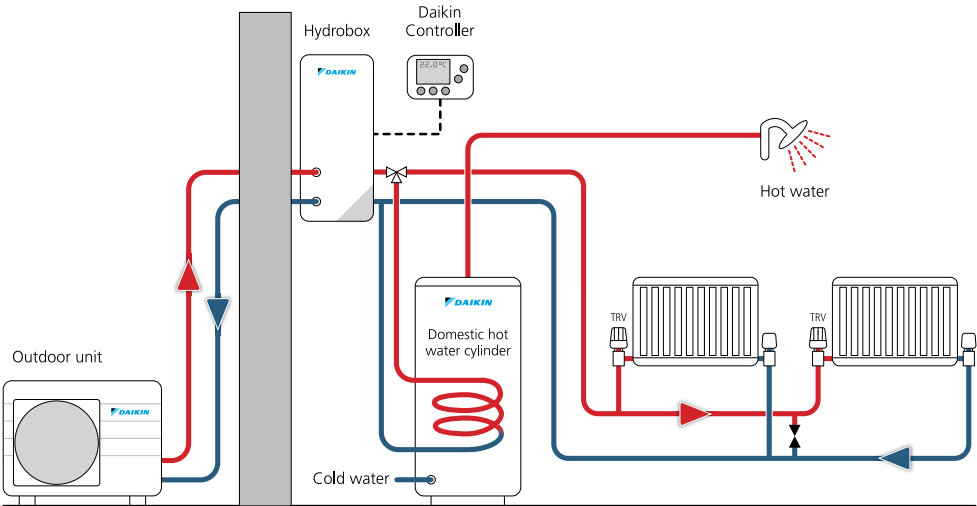
All products are MCS accredited.
The ERLQ-C range is also listed on the product characteristics database.



The Daikin Altherma LT Split system is available in a number of configurations, offering many combinations.

LT split with wall hung indoor unit

INDOOR UNIT	CYLINDER CAPACITY	OUTDOOR UNIT	CAPACITY RANGE	BENEFITS
		C series	4-16kW	High seasonal efficiency providing low running costs Designed to withstand even the toughest winter climates – with operation down to -25°C Hydrobox produces leaving water temperatures up to 55°C Cylinder can be sited to suit requirements Outdoor unit can be sited up to 30m (4-8kW) or 50m (11-16kW) from indoor unit
		B series	11-16kW	Has many similar benefits to the C series, this model is designed for milder climates



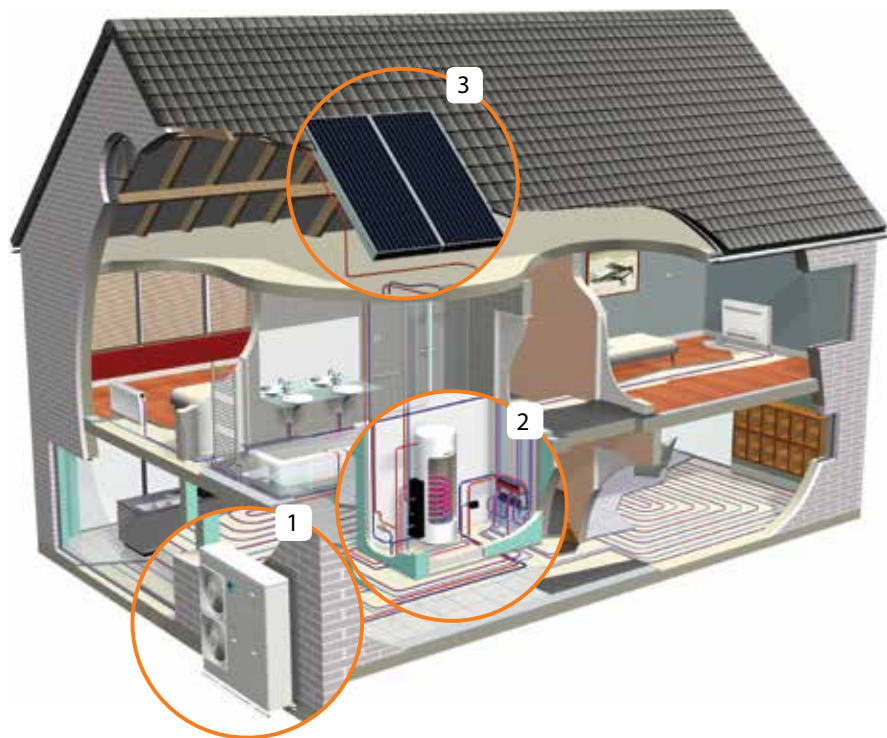
Heat pumps

Low Temperature Monobloc system

When there are internal space constraints, the Daikin Altherma LT Monobloc system offers a perfect solution as it combines all the main hydraulic components in a single outdoor unit. No refrigerant handling qualification is required to install the system.



* Please check the MCS website for the latest list of up to date accredited Daikin heat pumps.



System elements

1. Outdoor unit

Simplified installation, as it requires only power and water connections. Sealed refrigerant circuit including back-up heater.

2. Hot water cylinder

The hot water cylinder is specially designed to maximise hot water supply and comes in three sizes: 150, 200 and 300 litres.

3. Solar thermal system

Optional connection with solar panels to create a fully renewable system.

Daikin Altherma LT Small Monobloc

Available in 6kW and 8kW capacities, ideal for small properties

- > **NEW!** 12 metre interconnecting cable between outdoor unit and control box delivered separately to aid first fix installation
- > Quick installation
- > Simplified wiring
- > All hydraulic components included in the unit
- > Compatible with solar thermal systems to create a completely renewable solution for even greater energy savings
- > Great solution for tight spaces requiring smaller capacities
- > Optional back-up heater indoors
- > Delivers COP above 3.3 at A2/W35



Heat emitters

Heat Pump Convectors and Fan Coils

Daikin Altherma heat pumps are compatible with many different types of heat emitters including heat pump convectors and fan coils.

Heat pump convectors

Heat pump convectors can provide both heating and cooling if required and can be used with the Daikin Altherma heat pump to offer a compact and highly efficient solution:

- > Designed to operate at low flow temperature (35°C) to optimise the efficiency of an air-water heat pump
- > Super quiet operation
- > No draughts
- > Able to heat and cool
- > Compact size
- > Unique solution
- > Savings on running costs
- > Available in 1.5 & 2kW



Intelligent integration with Daikin Altherma system

If required, the heat pump convector and the other heat emitter can be set at two different temperature zones, thanks to the unique interlink function, which enhances the performance of the heating system.

In refurbishment projects, where it can be difficult to install a drain pipe, a unique feature is that the cooling is still possible by limiting the water temperatures.

Can easily replace existing heat emitters

- > Ideal solution instead of underfloor heating (i.e. bedrooms) or as an alternative to unsightly radiators
- > Deliver ample levels of heat, even at low water temperatures
- > Offer remote control of each convector, for easy control of room temperature, fan speed, automatic or night mode, rapid heating or cooling and weekly timer
- > Easy to use controls
- > Can be installed against wall or recessed
- > Plug and play installation

Fan coils

A fan coil is a type of heat emitter that consists of a heat exchanger and a convector fan, which distributes heat, quickly and evenly. Fan coils are designed to work at lower temperatures to optimise the efficiency of the Daikin Altherma heat pump.

Daikin offers a range of fan coils that can be mounted horizontally or vertically. They are also available as cased or chassis units for concealment in ceiling voids, or decorative casings, and provide:

- > A wide operating range
- > Quiet operation
- > Easy installation and maintenance
- > Excellent air flow and air distribution
- > Slim and compact aesthetic design
- > Wireless remote control

Fan coils also offer the additional benefit of comfort cooling when used in conjunction with a heating and cooling Daikin Altherma system.



Heat pumps

Daikin Altherma High Temperature

In older or harder to heat properties, you need a system that reliably delivers higher water flow temperatures of up to 80°C, without necessarily replacing the whole radiator system.

System elements

1. Outdoor unit

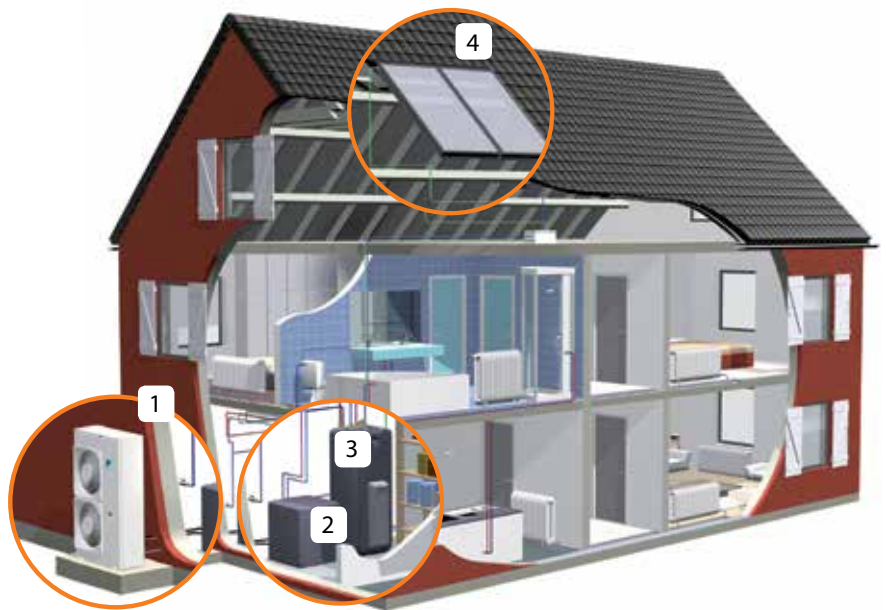
The outdoor unit extracts heat from the outside air and transfers it to the indoor unit via refrigerant piping.

2. Indoor unit

The indoor unit can be sited up to 50 metres away from the outdoor unit.

3. Unvented domestic hot water cylinder

The unvented domestic hot water cylinder can be stacked on top of the indoor unit, thus saving space.



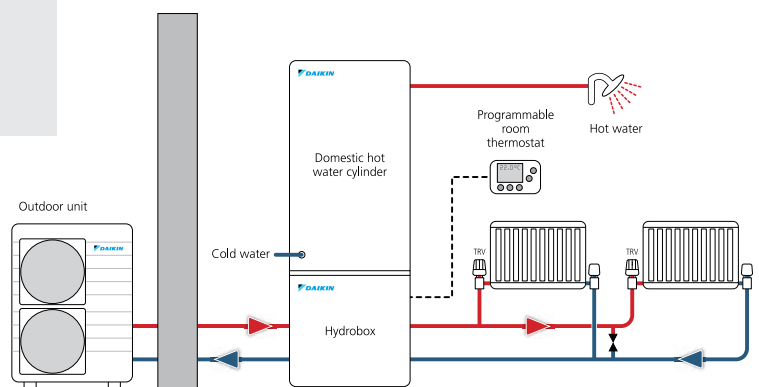
For boiler replacement and retrofit projects:

The Daikin Altherma high temperature system is ideal for straight-forward boiler replacement. The system offers:

- > Superior and unique cascade heat pump technology
- > Water flow temperature of up to 80°C, without need for an electric back-up heater
- > Hot water recovery time as fast as a boiler
- > Modular design and easy to install – all components are pre-assembled

4. Solar system

The HT heat pump can be connected to a solar thermal system for higher hot water efficiencies. A dedicated unpressurised thermal store works together with the drainback solar system and floor standing hydrobox.



Typical HT system



Heat pumps

Daikin Altherma Flex Type

The award winning Daikin Altherma Flex Type air-to-water heat pump is a world-first renewable heating system – ideal for apartment schemes, collective housing, schools, leisure environments and businesses.

Efficient air-to-water heat pump technology for apartments and commercial applications

- > Heating and domestic hot water from a single efficient system
- > Up to 80°C water temperatures by heat pump only
- > For a typical application this system can deliver*:
 - 27% reduction in primary energy use
 - 59% less CO₂ emissions and
 - 33% less operating costs compared to an installation with individual gas boilers

* Simulation calculation carried out on an apartment building in Belgium: 5 floors, 22 apartments, average size per apartment: 107m²; all apartments are assumed to be heated with under floor heating and radiators.

A flexible heating solution

The Daikin Altherma Flex Type is a highly efficient and versatile hot water and heating solution delivering high water flow temperatures of up to 80°C. With two thirds of the heat generated from the renewable energy source of air, it's an ideal solution for replacing existing oil, LPG or electric heating systems. By reducing the total primary energy use, Daikin Altherma Flex Type can help to improve the energy performance of buildings, reduce running costs and cut carbon emissions.

A modular heating system

One or more outdoor heat pump units are connected by refrigerant pipework to multiple indoor hydrobox units. Each outdoor unit provides 23-45kW capacity and can connect up to 10 indoor units. The indoor units (5-16kW) can be configured in a centralised or de-centralised arrangement to meet the building's heating requirements. This offers complete flexibility to integrate air-water heat pump technology in various types of buildings with heat loads up to circa 500kW.

World-first

Centralised system

The indoor units can be located together in one central plant room, to create a centralised system suitable for a wide range of large domestic and light commercial applications. The centralised indoor units offer modular system scalability and capacity to meet the heating demand of the overall building.



De-centralised system

The hydroboxes can be located in individual dwellings, such as apartments, to create a de-centralised heating system. Each indoor unit can be operated independently, providing each property with individual control of heating, hot water and cooling (5 and 8kW models only). Individual dwellings can also be equipped with separate domestic hot water tanks.



Solar thermal systems

Daikin solar thermal systems integrate with the Daikin Altherma range of heat pumps to provide extra renewable energy support for domestic hot water.

System elements

1. Flat plate solar collectors

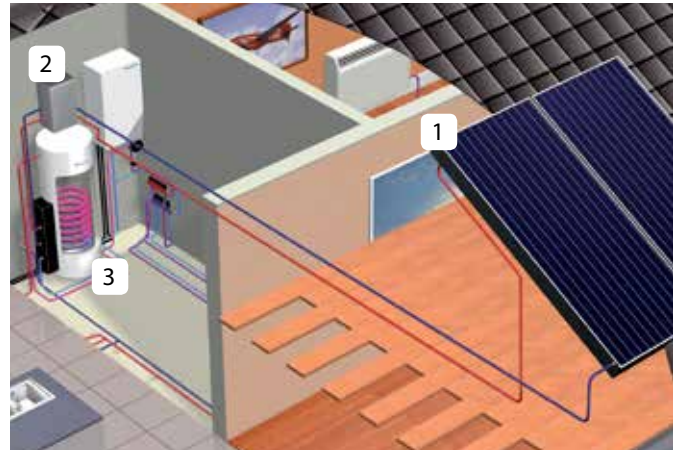
Absorbs solar energy and converts into useful heat. Can be pressurised or drainback. Various roof fixings available.

2. Solar controller and pump station

The controller decides when to start the solar pump to transfer energy from the solar collectors, depending on the available solar gain and tank temperature.

3. Hot water store

This is the store of solar energy to provide domestic hot water. Two options are available : (a) unvented indirect cylinder (150, 200 and 300 litres) for pressurised solar, or (b) vented thermal stores for drainback solar (300 and 500 litres).



Provides up to **60%** of the hot water needs for an average household over a year.

How does it work?

The Daikin high-performance solar collectors convert shortwave solar radiation into useful heat. As soon as the temperature of the fluid within the collectors exceeds the cylinder temperature, by a predetermined value, the solar controller starts the solar pump and charges the cylinder or thermal store.

Three system options

The **drainback solar system** utilises an unpressurised thermal store. Water in the store is pumped to the solar collectors, heated and drains back to the store. Hot water is delivered via an indirect mains pressure coil. The store is also heated by a heat pump when there is insufficient solar energy. There is no need for glycol or a solar fluid collection vessel resulting in lower maintenance costs.

In the **pressurised solar system**, a glycol antifreeze solar fluid collects the solar energy and transfers it from the collectors into the hot water cylinder via a specially designed external heat exchanger kit to the unvented cylinder. This allows the entire volume of the cylinder to be heated efficiently by solar energy or by the heat pump.

The **standalone pressurised solar** system includes an unvented twin coil solar cylinder and is designed to be combined with an auxiliary gas boiler. This system is ideal for on-gas retrofit applications.

Benefits of Daikin solar thermal systems

Solar collector: High efficiency and robust panel design with toughened glass for peace of mind.

Extensive range from one supplier: Daikin offer a comprehensive solar range for all applications. Pressurised or drainback systems, vertical or horizontal collectors, on-roof, in-roof or A-frame fixings and the choice of an unvented cylinder or thermal store. A full range of solar accessories are also available to complete your installation.

Intelligent control: The system automatically decides to run solar or heat pump for optimum utilisation of solar energy and reduced running costs.

Modulating pump: Automatic and controlled solar pump speed for maximum efficiency.

Grants available: The collector is Solar Keymark certified and qualifies for RHPP grants.

10 year warranty: against manufacturing defects for peace of mind.



Solar thermal systems

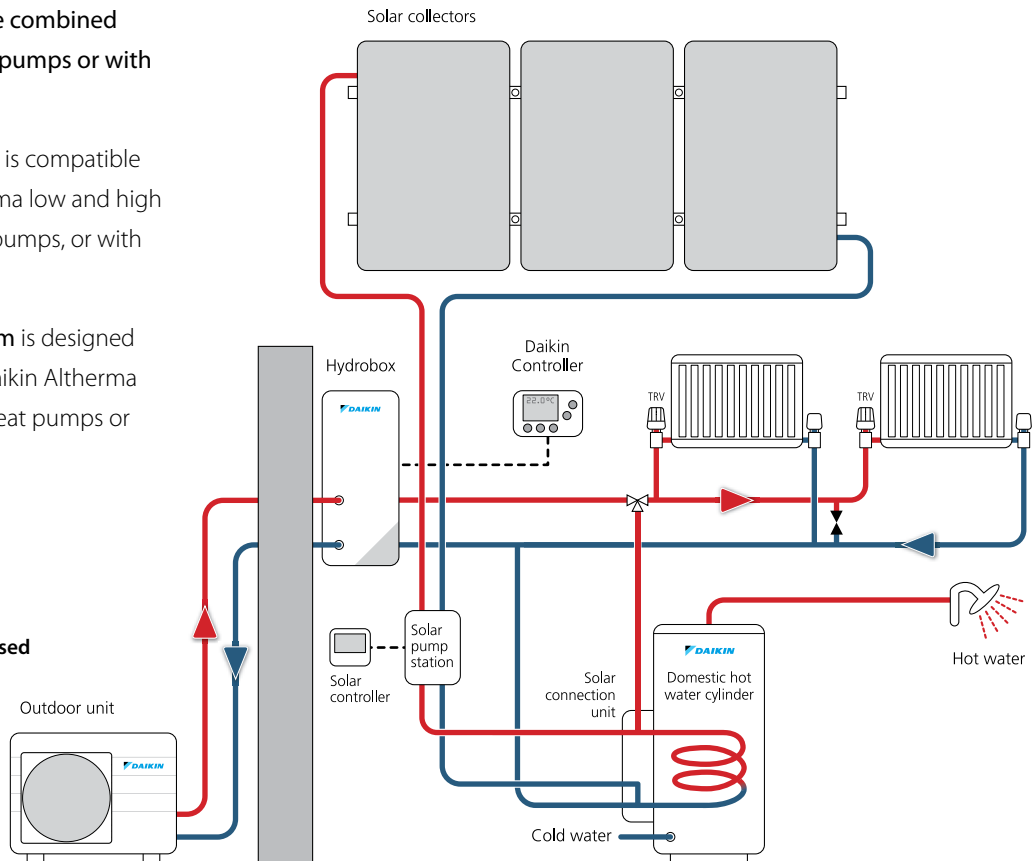
Daikin solar thermal systems offer complete flexibility for every installation. Both vertical and horizontal solar collectors are available with a range of fixing systems on-roof, in-roof and A-frame. Predefined packs are available for easy selection.

Daikin solar systems can be combined with Daikin Altherma heat pumps or with Rotex GCU.

The **drainback solar system** is compatible with both the Daikin Altherma low and high temperature range of heat pumps, or with the Rotex GCU.

The **pressurised solar system** is designed for combination with the Daikin Altherma low temperature range of heat pumps or the Rotex GCU.

Typical LT system with pressurised solar thermal system



Daikin solar packs include:

- > Flat plate collectors
- > Roof brackets
- > Mounting rails for collectors
- > Hydraulic connection kit*
- > Solar controller
- > Solar pump station
- > Flow sensor
- > Solar fluid**
- > Solar expansion vessel**

Additional accessories available to complete the system including solar pipework and mixing valve.

* For fixings at solar panel(s) and pump station

** Required and included for pressurised systems only

Solar Keymark certification

Daikin solar collectors have Solar Keymark certification, the European quality label for solar thermal products. This accreditation certifies that the solar collectors (models EKSV26P and EKSH26P) comply with EN 12975.

The Solar Keymark is accepted by MCS and qualifies for grant funding schemes. The accreditation helps householders to select quality assured collectors.

For an up to date list of products awarded the Solar Keymark, go to www.estif.org/solarkeymark and click 'products'.



011-751016F

Underfloor heating systems

ROTEX underfloor heating systems help to increase the efficiency of a heat pump system and are designed to work seamlessly with the Daikin heating range.

System types

A wide selection of underfloor heating fixing systems are available for a range of applications.



Staples

For quick and easy installation of pipe directly onto high density floor insulation with a protective film.



Clip rail

Rails fixed onto insulation provide a secure and easy clipping system for the pipe.



System plates

Styrofoam nap plates with a protective polystyrene layer provide both insulation and a secure pipe fixing system.



Secco dry system

Dry overlay plates designed for retrofit applications or above timber suspended floors without removing the existing floor.



Controls and accessories

A new range of slim wired and wireless room controls are available to be connected to a wiring centre for multiple zones. An optional small and compact timer module plugs into the wiring centre to provide time control.

A full range of UFH accessories are available, including manifolds with integrated flow meters, actuators, fixing systems and edge insulation.



Rotex Pipes

Monopex®: PE-Xc crosslinked polyethylene pipe, which is corrosion free and is a sustainable material.

Monopex-AL: PE-Xc pipe with an aluminium coating and UV stabilised PE layer for easier handling.

DUO: Dual layer PE-Xc and outer ribbed PE pipe; suitable for flow temperatures up to 80°C.



Underfloor heating benefits

- > **Comfort:** the low surface temperature and large heating area provide an extremely comfortable room climate.
- > **Energy saving:** UFH is designed to run at a lower flow temperature than radiators, at 35-45°C which is the ideal temperature range to achieve higher efficiencies and lower running costs from a Daikin Altherma heat pump.
- > **Simple installation:** easy to lay and allows optimal versatility of design for individual rooms.
- > **Floor coverings:** whether parquet flooring, ceramic tiles, vinyl floor covering or fitted carpets, underfloor heating can be designed for combination with nearly all modern floor coverings.

Applications

ROTEX underfloor heating can be used for heating almost every different type of building, from single and multiple dwellings, to schools, leisure centres, hotels, hospitals and sports halls.

Condensing gas boiler and solar energy combined

ROTEX GasCompactUnit combines a high efficiency gas boiler and hot water solution, with optional solar thermal connection.

Key features and benefits

- > **High efficiency boiler**
Intelligent burner management with gas adaptive combustion system which controls the gas/air mixture for the most efficient combustion.
- > **Easy installation**
Pre-assembled gas condensing boiler and hot water storage, which is a lightweight and easy to manoeuvre. Composite dual layer rigid plastic shell which is highly insulated for low heat loss.
- > **Weather compensator as standard**
Controls flow temperature according to outside temperature and storage tank temperature to achieve highest operating efficiency.
- > **Simple controller**
Intuitive and easy to use for quick commissioning and reduced installation time. Factory fitted with full 7-day heating and hot water programmer.
- > **Instantaneous hot water**
Mains pressure hot water delivered via the indirect heat exchanger. Pressureless storage tank—no G3 required.
- > **Optional solar connection**
A boiler and solar heated store provides a unique option for meeting higher levels of the Code for Sustainable Homes.
- > **Optional Bivalent version**
For connecting an auxiliary heat source e.g. wood fired boiler.
- > **Parts and labour warranty**
2 years on the boiler and 3 years on the tank.



Extensive range of models

Available in a range of heating outputs and tank capacities, the GCU is suitable for a wide range of applications.

All models delivered for natural gas and are LPG ready.

	15kW	24kW	33kW
300 litres	✓	✓	✗
500 litres	✓	✓	✓



Gas appliances must be installed and serviced by a competent person in accordance with the Gas Safety Regulations 1998. Always ensure that your installer is on the Gas Safe Register. Daikin is a Gas Safe Registered company and our Gas Safe Registered engineers are qualified to provide after sales service support on the GasCompactUnit.

Daikin Altherma LT Split

Technical data



OUTDOOR UNIT - C SERIES			ERLQ004CV3	ERLQ006CV3	ERLQ008CV3	ERLQ011CV3	ERLQ014CV3	ERLQ016CV3
Dimensions		H x W x D	mm	735 x 832 x 307			1345 x 900 x 320	
Weight			kg	54	56	56	113	
Nominal Capacity	Heating (a/b)	kW	4.4 / 4.2	6.0 / 5.12	7.4 / 6.13	11.2 / 9.6	14.5 / 10.8	16.0 / 10.9
	Cooling	kW	4.17	4.84	5.36	11.72	12.55	13.12
Nominal Input	Heating (a/b)	kW	0.87 / 1.85	1.27 / 2.31	1.66 / 2.89	2.43 / 4.57	3.37 / 5.19	3.76 / 5.22
	Cooling	kW	1.8	2.07	2.34	4.31	5.08	5.73
COP	Heating (a/b)		5.04 / 2.27	4.74 / 2.22	4.45 / 2.12	4.60 / 2.1	4.30 / 2.08	4.25 / 2.09
EER	Cooling		2.32	2.34	2.29	2.72	2.47	2.29
Operation Range	Heating	°C	-25 ~ 25			-25 ~ 35		
	Cooling	°C	10 ~ 43			10 ~ 46		
	Hot Water	°C	-25 ~ 35			-20 ~ 35		
Sound Pressure / Power Level	Heating	dBA	48 / 61	48 / 61	49 / 62	51 / 64	51 / 64	52 / 66
	Cooling	dBA	48 / 63	49 / 63	50 / 63	50 / 64	52 / 66	54 / 69
Refrigerant Charge	R-410A	kg	1.45	1.6	1.6	3.4		
Piping Connections	Liquid	inch	1/4			3/8		
	Gas	inch	5/8			5/8		
Max Piping Length OU to IU		m	30			50		
Power Supply			1-phase / 230V / 50Hz					
Recommended Fuses		A	20			40		

Nominal capacity and nominal input tested according to EN 14511 at the following conditions:

Heating a: Ambient air temperature 7°C and leaving water temperature 35°C (A7 W35) **Heating b:** Ambient air temperature -7°C and leaving water temperature 45°C (A-7 W35)

Cooling: Ambient air temperature 35°C and leaving water temperature 7°C (A35 W7)

Sound pressure level measured at 1m from the unit



OUTDOOR UNIT - B SERIES			ERHQ011BV3	ERHQ014BV3	ERHQ016BV3
Dimensions	H x W x D	mm	1170 x 900 x 320		
Weight		kg	103		
Nominal Capacity	Heating (a/b)	kW	11.2 / 6.43	14.0 / 7.42	16.0 / 8.49
	Cooling	kW	10.0	12.5	13.1
Nominal Input	Heating (a/b)	kW	2.55 / 3.11	3.26 / 3.88	3.92 / 4.5
	Cooling	kW	3.69	5.39	5.95
COP	Heating (a/b)		4.39 / 2.06	4.29 / 1.91	4.08 / 1.89
EER	Cooling		2.71	2.32	2.20
Operation Range	Heating	°C	-20 ~ 35		
	Cooling	°C	10 ~ 46		
	Hot Water	°C	-20 ~ 35		
Sound Pressure / Power Level	Heating	dBA	49/64	51/64	53/66
	Cooling	dBA	50/64	52/66	54/69
Weight		kg	103		
Refrigerant Charge	R-410A	kg	3.7		
Piping Connections	Liquid	inch	3/8		
	Gas	inch	5/8		
Max Piping Length OU to IU		m	75		
Power Supply			1-phase / 230V / 50Hz		
Recommended Fuses	A		32		

Daikin Altherma LT Split

Technical data

Note that specification tables refer to product part numbers. Please check the material reference on the price list at time of ordering



INDOOR UNIT (WALL HUNG)			EHBH04C3V	EBHX04C3V	EHBH08C**	EBHX08C**	EHBH16C**	EBHX16C**
Function			Heating Only	Reversible	Heating Only	Reversible	Heating Only	Reversible
To use with			ERLQ004CV3		ERLQ006-008CV3		ERLQ011-016C** / ERHQ011-016B**	
Dimensions	H x W x D	mm	890 x 480 x 344 / 380					
Leaving Water Temperature Range	Heating	°C	15~55					
	Cooling	°C	-	5~22	-	5~22	-	5~22
Pump	No. of speeds		Inverter controlled					
Expansion Vessel Volume		litres	10					
Water Connections	Diameter	inch	1 ¼ (female)					
Back-up Heater Fuse Rating	3kW 1ph 230V	A	16					
	6kW 1ph 230V	A	-		32 ^a			
	6kW 3ph 400V	A	-		10 ^a			
	9kW 3ph 400V	A	-		16 ^a			

Note: a: 9W models only



DOMESTIC HOT WATER CYLINDER			EKHWSU150B3V3	EKHWSU200B3V3	EKHWSU300B3V3
Suitable for			Unvented Systems (EKUHWB Kit also required)		
Water Volume	litres		150	200	300
Max Water Temperature	°C		85		
Booster Heater Capacity	kW		3		
Power Supply			1-phase / 230V / 50Hz		
Recommended Fuses	A		16		
Height	mm		1015	1265	1715
Diameter	mm		580		
Empty Weight	kg		38	46	60
Material Inside Cylinder			Stainless Steel (DIN 1.4521)		
Piping Connections (Diameter)	Water inlet H/E	inch	3/4 (female)		
	Water outlet H/E	inch	3/4 (female)		
	Cold water in	inch	3/4 (female)		
	Hot water out	inch	3/4 (female)		

Daikin Altherma LT Monobloc

Technical data



MONOBLOC 6kW-8kW			EBHQ006BBV3	EBHQ008BBV3
Dimensions	H x W x D	mm	805 x 1190 x 360	
Weight		kg	95	
Nominal Capacity	Heating (a/b)	kW	6.00 / 3.77	8.85 / 5.26
	Cooling	kW	5.12	6.08
Nominal Input	Heating (a/b)	kW	1.41 / 1.88	2.21 / 2.56
	Cooling	kW	2.16	2.75
COP	Heating (a/b)		4.26 / 2.00	4.00 / 2.05
EER	Cooling		2.37	2.21
Operation Range	Heating	°C	-15 ~ 25	
	Cooling	°C	10 ~ 43	
	Hot Water	°C	-15 ~ 35	
Sound Pressure / Power Level	Heating	dBA	48 / 61	49 / 62
	Cooling	dBA	48 / 63	50 / 63
Refrigerant Charge (Factory)	R-410A	kg	1.7	
Power Supply			1-phase / 230V / 50Hz	
Recommended Fuses		A	20	
Pump	No. of speeds		3	
Expansion Vessel Volume		litres	6	
Water Connections	Diameter	inch	1 (male)	
Max Piping Length OU to Cylinder		m	10	
Interconnecting Cable			EKCOMCAB1 (12 metres) - Delivered Separately	
BACK UP HEATER KIT (OPTIONAL)			EKMBUHB6V3	
Dimensions	Max depth	mm	170	
	Max width	mm	380	
	Max height	mm	575	
Power Supply			1-phase / 230V / 50Hz	
Recommended Fuses		A	32 (6kW BUH)	
Water Connections	Diameter	inch	1 ¼ (male)	
CONTROL BOX			EKCBH008BCV3	EKCBX008BCV3
Function			HEATING ONLY	REVERSIBLE
To use with			EBHQ006~008BBV3	
Dimensions	Max depth	mm	100 (excluding user interface)	
		mm	120 (including user interface)	
	Max width	mm	412	
	Max height	mm	390	



			HEATING ONLY			REVERSIBLE		
MONOBLOC 11-16kW			EDHQ011BB6V3	EDHQ014BB6V3	EDHQ016BB6V3	EBHQ011BB6V3	EBHQ014BB6V3	EBHQ016BB6V3
Dimensions	H x W x D	mm	1418 x 1435 x 382			1418 x 1435 x 382		
Weight		kg	180			180		
Nominal Capacity	Heating (a/b)	kW	11.2 / 6.19	14 / 7.72	16 / 8.7	11.2 / 6.19	14 / 7.72	16 / 8.7
	Cooling	kW	-			10	12.5	13.1
Nominal Input	Heating (a/b)	kW	2.56 / 3.21	3.29 / 3.76	3.88 / 4.44	2.56 / 3.21	3.29 / 3.76	3.88 / 4.44
	Cooling	kW	-			3.69	5.39	5.93
COP	Heating (a/b)		4.38 / 1.93	4.25 / 2.05	4.12 / 1.96	4.38 / 1.93	4.25 / 2.05	4.12 / 1.96
EER	Cooling		-			2.71	2.32	2.21
Operation Range	Heating	°C	-15 ~ 35			-15 ~ 35		
	Cooling	°C	-			10 ~ 46		
	Hot Water	°C	-15 ~ 35			-15 ~ 35		
Sound Pressure / Power Level	Heating	dBA	51 / 64	51 / 65	52 / 66	51 / 64	51 / 65	52 / 66
	Cooling	dBA	-			50 / 65	52 / 66	54 / 69
Refrigerant Charge	R-410A	kg	2.95			2.95		
Back-up Heater (Factory)		kW	6			6		
Power Supply			1-phase / 230V / 50Hz			1-phase / 230V / 50Hz		
Recommended Fuses	Outdoor Unit	A	32			32		
	6kW BUH	A	32			32		
Pump	No. of speeds		2			2		
Expansion Vessel Volume		litres	10			10		
Water Connections	Diameter	inch	1 ¼ (female)			1 ¼ (female)		
Max Piping Length OU to Cylinder		m	10			10		

Nominal capacity and nominal input tested according to EN 14511 at the following conditions:

Heating a: Ambient air temperature 7°C and leaving water temperature 35°C (A7 W35) Heating b: Ambient air temperature -7°C and leaving water temperature 45°C (A-7 W45)

Cooling: Ambient air temperature 35°C and leaving water temperature 7°C (A35 W7)

Sound pressure level measured at 1m from the unit

Heat pump convectors



HEAT PUMP CONVECTOR				FWXV15AVEB	FWXV20AVEB
Dimensions	H x W x D		mm	600 x 700 x 210	
Heating Capacity	Total capacity	Nom.	kW	1.5	2
	Water Volume	Nom.	m ³ /h	0.26	0.34
			l/min	4.3	5.7
	Water pressure drop	Nom.	kPa	13	22
Cooling capacity	Total capacity	Nom.	kW	1.2	1.7
	Sensible capacity	Nom.	kW	0.98	1.4
	Water Volume	Nom.	m ³ /h	0.2	0.29
			l/min	3.4	4.9
	Water pressure drop	Nom.	kPa	10	17
Air Flow Rate	Heating	H/M/L/SL	m ³ /h	318/228/150/126	474/354/240/198
	Cooling	H/M/L/SL	m ³ /h	318/228/150/126	474/354/240/198
Refrigerant				Water	
Sound Pressure/Power level	Heating		dBA	19 / 35	29 / 45
	Cooling		dBA	19 / 35	29 / 45
Weight	Unit		kg	15	15
Power Supply				1-phase / 230V / 50Hz	
Air Filter				Removable/Washable/Mildew proof	
Air direction control				Right, Left, Horizontal, Downward	
Temperature control				Microcomputer control	

Nominal capacity based on following conditions:

Heating: indoor temp. 20°CDB; entering water temp. 45°C, water temperature drop 5K

Cooling: indoor temp. 27°CDB; entering water temp. 7°C, water temperature rise 5K

Daikin Altherma HT system

Technical data



COMBINATION OUTDOOR INDOOR					
OUTDOOR UNIT			ERSQ011AV1	ERSQ014AV1	ERSQ016AV1
Dimensions	H x W x D	mm	1345 x 900 x 320		
Weight		kg	120		
Nominal Capacity	Heating (a/b)	kW	11 / 11	14 / 14	16 / 16
Nominal Input	Heating (a/b)	kW	3.03 / 3.57	4.07 / 4.66	4.83 / 5.57
COP	Heating (a/b)		3.63 / 3.08	3.44 / 3.00	3.31 / 2.88
Operation Range	Heating	°C	-20 to +20		
	Hot water	°C	-20 to +35		
Sound Pressure / Power Level	Heating	dBA	52 / 68	53 / 69	55 / 71
Refrigerant Charge	R-410A	kg	4.5		
Piping Connections	Liquid	inch	3/8		
	Gas	inch	5/8		
Max Piping Length OU to IU		m	50		
Power Supply			1-phase / 230V / 50Hz		
Recommended Fuses		A	25		
INDOOR UNIT (FLOOR STANDING)			EKHBRD011ACV1	EKHBRD014ACV1	EKHBRD016ACV1
To use with			ERSQ011AV1	ERSQ014AV1	ERSQ016AV1
Dimensions	H x W x D	mm	705 x 600 x 695		
Weight		kg	144.25		
Leaving Water Temperature Range		°C	25-80 Without Electrical Heating		
Refrigerant Charge (Factory)	R134a	kg	2.6		
Power Supply			1-phase / 230V / 50Hz		
Recommended Fuses		A	25		
Pump	No. of speeds		Inverter Controlled		
Expansion Vessel Volume		litres	12		
Water Connections	Diameter	inch	1 (female)		

Nominal capacity and nominal input tested at the following conditions:

a. A7 W45 according to EN14511

b. A7 W65 according to Eurovent rating standard 6/C/003-2006



DOMESTIC HOT WATER CYLINDER			EKHTSU200AC	EKHTSU260AC
Suitable For			Unvented Systems (EKUHWHT Kit also required)	
Water Volume		litres	200	260
Max Water Temperature		°C	75	
Dimensions (Cylinder Only)	H x W x D	mm	1335 x 600 x 695	1610 x 600 x 695
Dimensions (Cylinder Integrated on Hydrobox)	H x W x D	mm	2010 x 600 x 695	2285 x 600 x 695
Empty Weight		kg	70	78
Material Inside Cylinder			Stainless Steel	
Piping Connections (Diameter)	Water inlet H/E	mm	25 (Female quick coupling, supplied, integrated solution)	
	Water outlet H/E	mm	25 (Female quick coupling, supplied, integrated solution)	
	Cold water in	inch	3/4 (female)	
	Hot water out	inch	3/4 (female)	

KITS CONNECTED TO DHW CYLINDER		DOMESTIC HOT WATER CYLINDER EKHTSU
EKFMAHTB	Option Kit for Standalone Cylinder, includes Top Plate and Adaptors (to go from quick couplers to screw connections)	.

Daikin solar thermal system

Technical data



SOLAR COLLECTOR			EKSV21P	EKSV26P	EKSH26P
Orientation			Vertical		Horizontal
Dimensions	H x W x D	mm	2006 x 1006 x 85	2000 x 1300 x 85	1300 x 2000 x 85
Gross Area		m ²	2.1	2.6	
Net Area		m ²	1.79	2.35	
Weight		kg	35	43	
Water Content		litres	1.3	1.7	2.1
Absorber			Harp-Shaped Copper Pipe with Laser-Welded Highly Selective Coated Aluminium Plate		
Coating			Micro-Therm (Absorption max. 96%, Emission ca. 5% +/- 2%)		
Glazing			Single Pane Safety Glass, Transmission +/- 92%		
Heat Insulation			Mineral Wool, 50mm		
Max. Pressure Drop at 100l/min		mbar	3.5	3	0.5
Allowed Roof Angle			15° to 80°		
Max. Standstill Temperature			200		
Max. Operating Pressure			6		
Thermal Capacity (*)			7.0		
Zero Loss efficiency (o)	Absorber/Gross	%	0.784 (78.4%)		
Heat Loss coefficient (a1)	Absorber/Gross	W/m ² K	4.25		

The collectors are standstill resistant over a long period and are tested for thermal shock.
Minimum collector yield over 525kWh/m² at 40% covering proportion, location Würzburg, Germany.
(*) Thermal performance tested according to EN12975-2:2006.
Reference surface for o, a1, a2 = absorber surface & gross surface.



SOLAR ENABLING KIT			EKSOLHWAV1
Dimensions	H x W x D	mm	770 x 305 x 270
Heat Exchanger	Pressure Drop	kPa	21.5
	Max. inlet Temp	°C	110
	Heat Exchange Capacity	W/K	1400
Ambient Temperature	Max.	°C	35
	Min.	°C	1
Power Supply			1-phase / 230V / 50Hz
Power Supply intake			Indoor Unit
Weight			8
Sound Pressure Level			27



SOLAR PUMP STATION			EKSRDS1A with controller EKSR3PA
Mounting Method			On Wall
Dimensions	H x W x D	mm	332 x 230 x 145
Power Supply			1-phase / 230V / 50Hz
Control			Digital Temperature Difference Controller with Plain Text
Max. Electric Power Consumption of the Control Unit		W	2
Solar Panel Temperature Sensor			Pt1000
Storage Tank Sensor			PTC
Return Flow Sensor			PTC
Feed Temperature and Flow Sensor (option)			Voltage Signal (3.5V DC)

Underfloor heating plates

Technical data



ROTEX

UFH SYSTEM PLATES		PROTECT INTEGRAL 33-3	PROTECT 10	PROTECT MINI	PROTECT MINI SOLO
Part Number		171040	171041	171037	171038
For Pipe	mm	Dia 14 / 17		DUO 13, Monopex 14	
Pipe Spacing	mm	75, 150, 225, 300			
Height	mm	48	28	25	17
Insulation Thickness	mm	33-3	10	-	-
Height With Screed	mm	94	74	-	-
Plate Dimensions	mm	1200 x 1200	1200 x 1200	1200 x 1200	-
Package Contents	m²	8 pcs = 11.71	13 pcs = 19.0	10 pcs = 14.6	10 pcs = 14.6
Thermal Resistance	m²K/W	0.75	0.29	0.20	-
Impact Sound Insulation		Yes	-	-	-



UFH SYSTEM PLATES		MONO 15	COMPACT 45	ISODUR
Part Number		171010	171017	171013
For Pipe	mm	Dia 14 / 17		DUO 25
Pipe Spacing	mm	75, 150, 225, 300		200, 300, 400
Height	mm	38	67	55
Insulation Thickness	mm	15	45	25
Height With Screed	mm	79	108	55
Plate Dimensions	mm	1200 x 600		
Package Contents	m ²	14 pcs = 14.4	11 pcs = 7.92	14 pcs = 10.08
Thermal Resistance	m ² K/W	0.43	1.28	0.85



SECCO DRY SYSTEM		SECCO ALUMINIUM PLATES	
Part Number		171112	171113
For Pipe		Monopex 14 Al	DUO 17 Al
Compatible With		Mono And Compact System Plates	
Material		Galvanised Sheet Steel	
Pack Area	m ²	5.35	
Package Contents	mm	1200 x 370 (qty 8) 400 x 370 (qty 6)	

Gas Compact Unit

Technical data



Gas Compact Unit		GCU315/315 Bivalent	GCU324/324 Bivalent	GCU515/515 Bivalent	GCU524/524 Bivalent	GCU533/533 Bivalent
Part Number		157401 / 157402	157409 / 157408	157403 / 157404	157410 / 157406	157405 / 157407
Total Storage Capacity	litres	300	300	500	500	500
Empty Weight	kg	86	86	124	124	124
Total Filled Weight	kg	386	386	624	624	624
Dimensions (W x D x H)	mm	595x615x1920	595x615x1920	790x790x1920	790x790x1920	790x790x1920
Max. Permissible Storage Tank Water Temperature	°C	85	85	85	85	85
Heat Loss	kWh/24h	1.7	1.7	1.8	1.8	1.8
Drinking Water Heating						
Drinking Water Capacity	litres	19	19	24.5	24.5	24.5
Maximum Operating Pressure	bar	6	6	6	6	6
Drinking Water Heat Exchanger Surface	m ²	4	4	5	5	5
Storage Tank Charging Heat Exchanger						
Surface Area Charging Heat Exchanger	m ²	1.9	1.9	2.1	2.1	2.1
Solar Heating Support						
Heat Exchanger Surface Area	m ²	0.8	0.8	1.7	1.7	1.7
Thermal Output Data						
D Value (Specific Water Flow to EN 625*)	l/min	22	24	23	25	27
Max. Draw-Off Rate for a Period of 10min at (T _{KW} = 10°C/T _{sp} = 60°C/T _{WW} = 40°C)	l/min	19	21	20	23	24
Boiler Data						
Nominal Output	kW	5-15	5-24	5-15	5-24	5-33
Device Type		B23 / B23P / B33 / B53 / B53P / C13x / C33x / C43x / C53x / C63x / C83x				
Electrical Data	V/Hz	230/50	230/50	230/50	230/50	230/50
Protection Rating	IP	20	20	20	20	20
Maximum Permissible Operating Pressure	bar	3	3	3	3	3
Maximum Permitted Operating Temperature	°C	85	85	85	85	85
Flue Gas / Air Inlet Connection Diameter	mm	DN60 / 100				
SEDBUK (2009)	%	TBC				
Piping Connections						
Hot and Cold Water	inch	1				
Heating (Flow And Return)	inch	1				

* The specific water flow as defined in EN 625 is the domestic hot water flow which the Gas Compact Unit can supply at an average temperature increase of 30K with two successive withdrawals of water of ten minutes duration each, assuming a charging temperature of 65°C. An interval of 20 minutes is normally assumed between the withdrawals. The Gas Compact Unit achieves these values even with shorter intervals.

Awards & industry associations

National Heat Pump Awards 2013

In 2013 Daikin Altherma LT Split was highly commended for Product Innovation of the Year Award at the National Heat Pump Awards.



In our efforts to support the industry and drive forward developments of new technology, Daikin UK supports the following organisations:

- > Chartered Institute of Plumbing and Heating Engineers (CIPHE)
- > Federation of Environmental Trade Associations (FETA)
- > Heat Pump Association (HPA)
- > Micropower Council
- > Heating and Hot Water Industry Council (HHIC)
- > Domestic Heat Pump Association (DHPA)
- > Heating and Ventilating Contractors' Association (HVCA)
- > National Energy Action (NEA)
- > Northern Housing Consortium
- > Scottish Federation Housing Association (SFHA)
- > Chartered Institute of Building Services Engineers (CIBSE)
- > Building Services Research and Information Association (BSRIA)



Rushlight Awards 2011

In 2011 Daikin Altherma Flex Type won the Ground and Air Source Power award at the Rushlight Awards.

Environmental & Energy Awards 2011

In 2011 the Innovation Award for Environmental Technology at the Environmental & Energy Awards was given to Daikin Altherma Flex Type.



National Heat Pump Awards 2011

In 2011 Daikin Altherma Flex Type won another award at the National Heat Pump Awards for Product Innovation of the Year.



Service dedicated to your needs

When you select a Daikin system, you can depend on absolute quality and reliability, both of our products and of our service.

Support at all stages

As part of our commitment to ongoing service and quality, Daikin offers pre-sales and after-sales support and advice at all regional offices, supported by a dedicated heating team.

Design assistance

When designing a Daikin system, Daikin Altherma selection software can show you the heating system required, its typical running costs, energy consumption and CO₂ savings. System schematics and heat loss calculation tools are also available to help you select the best system for your requirements.

Installer training

Daikin UK's customised product training for installers is designed to raise standards, set industry benchmarks and help develop both product and service expertise. We provide the highest quality training and hands on instruction at our industry leading technology centres, throughout the country in Glasgow, Birmingham, Bristol, Manchester and Woking. The centres are fully equipped with the latest range of products installed and fully operational for maximum hands on experience.

Local training centres

Daikin also partners with specialist technical colleges – City of Bath College, College of North West London, Dudley College, West Suffolk College and PGL Training in Exeter – to help raise standards, set industry benchmarks and ensure that Daikin trained heating engineers have the necessary expertise to deliver the highly energy efficient heating systems on which our future homes will depend.

As well as having a range of Daikin UK heating courses accredited by EAL, Daikin UK has also joined forces with the National Skills Academy for Environmental Technologies to create its first national manufacture hub. For more details please view the Daikin UK training brochure.



Daikin Product Warranty

Daikin are pleased to offer industry leading warranties provided that the warranty registration form has been completed and returned, and that the system has been correctly installed and maintained in accordance with our instruction manuals. Full details of the Terms and Conditions are available separately on request.

- > The Daikin Altherma heat pump (excluding Daikin Altherma Flex Type) has the benefit of a 3-year parts and labour warranty.
- > The Daikin solar panels have the benefit of a 10-year warranty. For the first 3 years, the warranty for the panel will apply to both parts and labour and for the following 7 years, on parts only. In addition, all other solar system accessories have a 3 year warranty.



Comprehensive service support

Daikin UK offers comprehensive service support for all heating and renewable products.

- > Expert and experienced advice
- > Dedicated technical helpline for warranty calls
- > Local fast response
- > Nationwide network of Daikin trained service engineers
- > Comprehensive warranty offer

Contact Details

Pre-sales enquiries

Please contact your local regional sales office

After sales technical support

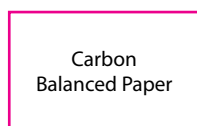
0845 641 9200 / 0845 641 9277

Warranty

0845 641 9275

Training

0845 641 9260



011-7S1016 F



MCS HP0006



Daikin units comply with the European regulations that guarantee the safety of the product.



Daikin Europe N.V. participates in the Eurovent Certification programme for Air conditioners (AC), Liquid Chilling Packages (LCP), Air handling units (AHU) and Fan coil units (FCU). Check ongoing validity of certificate online: www.eurovent-certification.com or using: www.certiflash.com

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Daikin Airconditioning UK Limited The Heights Brooklands Weybridge Surrey KT13 0NY Tel 0845 6419000 Fax 0845 6419009 daikin.co.uk

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20% EFFICIENCY

SunPower E20 panels are the highest efficiency panels on the market today, providing more power in the same amount of space

MAXIMUM SYSTEM OUTPUT

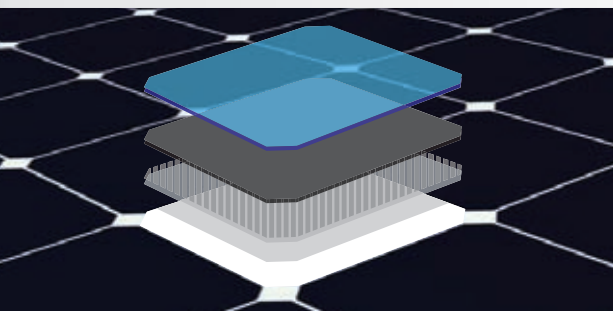
Comprehensive inverter compatibility ensures that customers can pair the highest efficiency panels with the highest-efficiency inverters, maximizing system output

REDUCED INSTALLATION COST

More power per panel means fewer panels per install. This saves both time and money.

RELIABLE AND ROBUST DESIGN

SunPower's unique Maxeon™ cell technology and advanced module design ensure industry-leading reliability



MAXEON™ CELL TECHNOLOGY

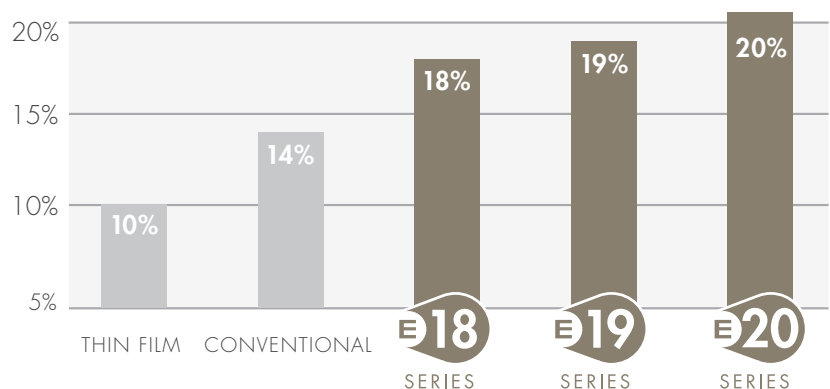
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THE WORLD'S STANDARD FOR SOLAR™

SunPower™ E20 Solar Panels provide today's highest efficiency and performance. Powered by SunPower Maxeon™ cell technology, the E20 series provides panel conversion efficiencies of up to 20.1%. The E20's low voltage temperature coefficient, anti-reflective glass and exceptional low-light performance attributes provide outstanding energy delivery per peak power watt.

SUNPOWER'S HIGH EFFICIENCY ADVANTAGE



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MODEL: SPR-327NE-WHT-D

ELECTRICAL DATA

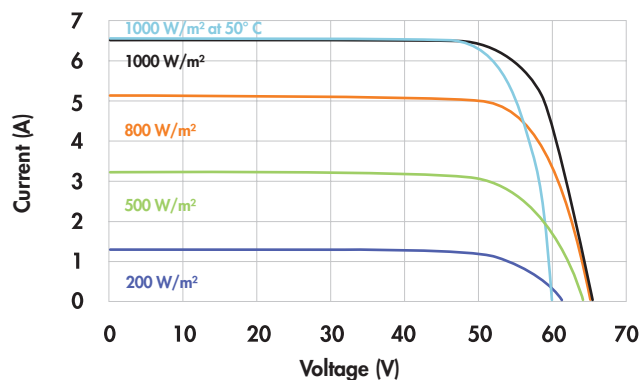
Measured at Standard Test Conditions (STC): irradiance of 1000W/m², AM 1.5, and cell temperature 25° C

Peak Power (+5/-3%)	P _{max}	327 W
Cell Efficiency	η	22.5 %
Panel Efficiency	η	20.1 %
Rated Voltage	V _{mpp}	54.7 V
Rated Current	I _{mpp}	5.98 A
Open-Circuit Voltage	V _{oc}	64.9 V
Short-Circuit Current	I _{sc}	6.46 A
Maximum System Voltage	UL	600 V
Temperature Coefficients	Power (P)	-0.38% / K
	Voltage (V _{oc})	-176.6mV / K
	Current (I _{sc})	3.5mA / K
NOCT		45° C +/-2° C
Series Fuse Rating		20 A
Grounding	Positive grounding not required	

MECHANICAL DATA

Solar Cells	96 SunPower Maxeon™ cells
Front Glass	High transmission tempered glass with anti-reflective (AR) coating
Junction Box	IP-65 rated with 3 bypass diodes Dimensions: 32 x 155 x 128 mm
Output Cables	1000mm length cables / MultiContact (MC4) connectors
Frame	Anodized aluminum alloy type 6063 (black)
Weight	41.0 lbs (18.6 kg)

I-V CURVE



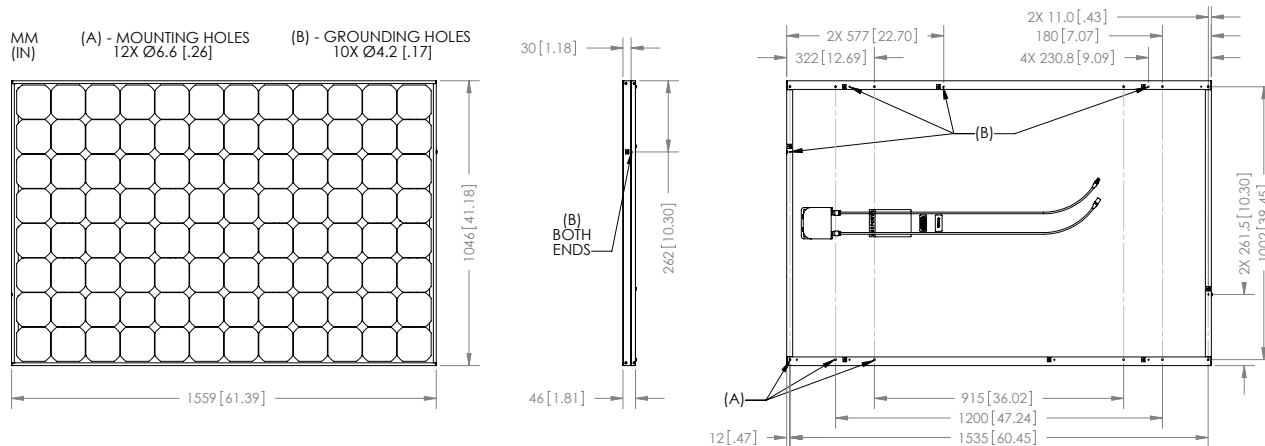
TESTED OPERATING CONDITIONS

Temperature	-40° F to +185° F (-40° C to + 85° C)
Max load	113psf 550 kg/m ² (5400 Pa), front (e.g. snow) w / specified mounting configurations 50 psf 245 kg/m ² (2400 Pa) front and back – e.g. wind
Impact Resistance	Hail: (25 mm) at 51mph (23 m/s)

WARRANTIES AND CERTIFICATIONS

Warranties	25-year limited power warranty
	10-year limited product warranty
Certifications	Tested to UL 1703. Class C Fire Rating

DIMENSIONS



Please read safety and installation instructions before using this product, visit sunpowercorp.com for more details.

TCP/11/16(469)

Planning Application – 16/02068/FLL – Erection of a dwellinghouse, installation of air source heat pump, formation of a riding area and associated landscaping on land 100 metres South of Craigend Cottage, St Davids, Madderty

REPRESENTATIONS

Comments to the Development Quality Manager on a Planning Application

Planning Application ref.	16/02068/FLL	Comments provided by	Euan McLaughlin
Service/Section	Strategy & Policy	Contact Details	Development Negotiations Officer: Euan McLaughlin [REDACTED]
Description of Proposal	Erection of dwellinghouse, installation of air source heat pump, formation of a riding arena and associated landscaping		
Address of site	Land 100 Metres South Of Craigend Cottage, St Davids, Madderty		
Comments on the proposal	<p>NB: Should the planning application be successful and such permission not be implemented within the time scale allowed and the applicant subsequently requests to renew the original permission a reassessment may be carried out in relation to the Council's policies and mitigation rates pertaining at the time.</p> <p>THE FOLLOWING REPORT, SHOULD THE APPLICATION BE SUCCESSFUL IN GAINING PLANNING APPROVAL, <u>MAY</u> FORM THE BASIS OF A SECTION 75 PLANNING AGREEMENT WHICH MUST BE AGREED AND SIGNED PRIOR TO THE COUNCIL ISSUING A PLANNING CONSENT NOTICE.</p> <p>Primary Education</p> <p>With reference to the above planning application the Council Developer Contributions Supplementary Guidance requires a financial contribution towards increased primary school capacity in areas where a primary school capacity constraint has been identified. A capacity constraint is defined as where a primary school is operating, or likely to be operating following completion of the proposed development and extant planning permissions, at or above 80% of total capacity.</p> <p>This proposal is within the catchment of Madderty Primary School.</p> <p>Education & Children's Services have no capacity concerns in this catchment area at this time.</p>		
Recommended planning condition(s)	<p>Summary of Requirements</p> <p>Education: £0</p> <p><u>Total:</u> £0</p>		
Recommended informative(s) for applicant			
Date comments returned	21 December 2016		

Memorandum

To Development Quality Manager

From Regulatory Services Manager

Your ref 16/02068/FLL

Our ref LRE/LJA/MA

Date 22 December 2016

Tel No

The Environment Service

Pullar House, 35 Kinnoull Street, Perth PH1 5GD

Consultation on an Application for Planning Permission

PK16/02068/FLL RE: Erection of dwellinghouse, installation of air source heat pump, formation of a riding arena and associated landscaping land 100 metres South of Craigend Cottage St Davids Madderty for Mr Donald Piper.

I refer to your letter dated 9 December 2016 in connection with the above application and have the following comments to make.

Environmental Health (assessment date –22/12/16)

Recommendation

I have no objection in principle to the application but recommend the under noted conditions be included on any given consent.

Comments

The applicant proposes to erect a single storey farm workers dwelling and the formation of a riding arena on existing grassland.

The plans indicate that the applicant proposes to install an air source heat pump and a wood burning stove within the living area of the property.

The application site is within a rural area and the closest existing property to the proposed riding arena and air source heat pump is Craigend Cottage and the closest existing property to the flue exhaust is Parkside of Craig which is approximately 199 metres away.

Air Quality

The Environment Act 1995 places a duty on local authorities to review and assess air quality within their area. Technical Guidance LAQM.TG (16) which accompanies this act advises that biomass boilers within the range of 50kW to 20MW should be assessed in terms of nitrogen dioxide and particulate matter. The pollution emissions of concern from biomass are particulate matter (PM₁₀/PM_{2.5}) and nitrogen oxides (NO_x).

As the proposed biomass wood burning stove to be installed is a small domestic stove it is likely to be well below the range to be assessed and the background levels for Particulate and Nitrogen Dioxide within the very rural area are low, therefore I have no adverse comments to make with regards to local air quality.

Nuisance

However this Service has seen an increase in nuisance complaints with regards to smoke and smoke odour due to the installation of biomass appliances. Nuisance conditions can

come about due to poor installation and maintenance of the appliance and also inadequate dispersion of emissions due to the inappropriate location and height of flue with regards to surrounding buildings.

I have no adverse comment to make with regards to the flue as it sits above the roof ridge of the proposed property, however I recommend the undernoted condition be included on any given consent to protect residential amenity from smoke/odour.

Noise

There is the potential for the operation of the proposed Daikin Althermal LT split ERLQ008CU3 air source heat pump unit to create noise nuisance at neighbouring residential properties. The supporting technical information submitted by the applicant states that the sound pressure level 1 metre away from the unit is 49/62 dB (A).

The World Health Organisation (WHO) issued guidance in 1999 in relation to noise, at which time it was recommended that the following sound levels should be maintained: $L_{eq}50-55$ dB (A) in outdoor living areas, $L_{eq}35$ dB (A) in internal living areas and $L_{eq}30$ dB (A) in bedrooms. This guidance is consistent with BS8233:1999 which recommends the following sound level ranges: $L_{eq}30-40$ dB (A) in living areas and $L_{eq}30-35$ dB (A) in bedrooms.

Given the distance attenuation from the unit to the nearest residential property these levels should be achievable for airborne noise allowing for 10-15dB reduction by a partially open window.

The sound levels recommended in the guidance do not take into account the relative noise level at octave frequency bands. Fixed plant of this type can create noise which has characteristics that are not adequately quantified by means of a L_{eq} limit. I recommend that an additional condition, based on Noise Rating, be included on any given consent to protect residential amenity.

Odour

The applicant proposes to have a paddock and a riding arena within the application site, the surrounding area is rural and it is my contention that existing and future residents will at times be aware of odours associated with agricultural activities within the countryside. Therefore I have no adverse comments to make with regards to odour from the arena.

I note that there are no letters of objection to this application at the time of writing this memorandum.

Conditions

- EH50** The stove shall only operate on fuel prescribed and stored in accordance with the manufacturer's instructions. The stove and flue and any constituent parts shall be maintained and serviced in accordance with the manufacturer's instructions. No changes to the biomass specifications shall take place without the prior written agreement of the Council as Planning Authority
- EH11** All plant or equipment shall be so enclosed, attenuated and/or maintained such that any noise therefrom shall not exceed Noise Rating 35 between 0700 and 2300 hours daily, or Noise Rating 20 between 2300 and 0700 hours daily, within any

neighbouring residential property, with all windows slightly open, when measured and/ or calculated and plotted on a rating curve chart.

Contaminated Land (assessment date – 15/12/2016)

Recommendation

A search of the historic records did not raise any concerns regarding ground contamination and therefore I have no adverse comments to make on the application.

Water (assessment date – 15/12/16)

Recommendation

I have no objections to the application but recommend the undernoted informatives be included in any given consent.

Comments

The development is for a dwelling house and riding facilities in a rural area with private water supplies believed to serve properties in the vicinity. To ensure the new development has an adequate and consistently wholesome supply of water and ensure the private water supply or septic drainage systems of neighbours of the development remain accessible for future maintenance please note the following informative/s. No public objections relating to the water supply were noted at the date above.

Informative 1

The applicant should ensure that any existing wayleaves for maintenance or repair to existing private water supply or septic drainage infrastructure in the development area are honoured throughout and after completion of the development.

Informative 2

The applicant shall ensure the private water supply for the house/ development complies with the Water Scotland Act 1980 (Section 63) and the Private Water Supplies (Scotland) Regulations 2006. Detailed information regarding the private water supply, including the nature, location and adequacy of the source, any storage tanks/ pipework and the filtration and disinfection treatment proposed to ensure provision of an adequate and consistently wholesome water supply shall be submitted to Perth and Kinross Council Environmental Health in line with the above act and regulations.

Comments for Planning Application 16/02068/FLL

Application Summary

Application Number: 16/02068/FLL

Address: Land 100 Metres South Of Craigend Cottage St Davids Madderty

Proposal: Erection of dwellinghouse, installation of air source heat pump, formation of a riding arena and associated landscaping

Case Officer: John Russell

Customer Details

Name: Mr john holmes

Address: Craigend Cottage, St Davids, Madderty, Crieff PH7 3PJ

Comment Details

Commenter Type: Neighbour

Stance: Customer objects to the Planning Application

Comment Reasons:

- Contrary to Development Plan Policy
- Inappropriate Land Use
- Out of Character with the Area
- Road Safety Concerns

Comment: Please find below a number of concerns I have related to this development which form the basis for my objection to the proposal. I have also sent an e-mail with additional details.

The development being inconsistent with the LDP for St Davids and involves building in the countryside on what is currently farm land. More specifically:

1. This land is outside the village plan/boundary. Refer to the LDP page 270, the village boundary is clearly shown and the proposed development is significantly outside this.
2. The LDP also states "St Davids is not identified for growth during this plan period and the settlement boundary has been drawn accordingly"
3. The draining from the proposed development would adversely impact the house at Parkside of Craig due to run off particularly the septic tank run off.
4. I would be concerned about the impact of any draining on Cowgask Burn immediately south of the development
5. There is insufficient access consideration for the new and increased access onto a road with national speed limit.

Regarding the justification report prepared by SAC consulting, the basis of which is economic reasons associated with the business of running the farm at Muir O' Lea, Millearne and the provision of a dwelling for a farm worker:

1. The report by SAC states "There is currently no existing accommodation opportunities on site

for a new farm worker". However there is nothing backing up this statement, there are no alternative locations considered at the locations of Muir O'Lea Farm. From my own visit to the location there appears to be ample land in the immediate vicinity of Mr Pipers' farm at Muir O' Lea, Millearne. Indeed there is a paddock of almost identical size to the proposed plot. (see screen shots below). This has access, presumably existing utilities and draining. Siteing any proposal here would be more consistent with the stated economic justification claimed in the SAC report. Additionally it would be lower cost and more convenient for any farm worker working on the farm.

2. The report by SAC states "This land cannot be utilised for arable crops or for making fodder." This statement is untrue, this field is regularly cut for silage and up until a few years ago to my knowledge was used for grain. The field immediately next to this is used for grazing and silage each year.
3. As far as I can see the stated justification is a ruse for building a retirement home close to St Davids but as previously mentioned outside the village plan on rural farm land.

Other Points:

1. The size of plot is excessive for a house this size for this village. It is approximately 4 times the size of the largest plot on the original village of St Davids. The addition of a riding ring and paddock is not consistent with the stated aim of providing accommodation for a farm worker.
2. If this development is granted it would set a dangerous precedent potentially allowing infill development along the south side of the road. There has already been extensive mis-use of the infill as justification for development in St Davids, which has resulted in the connection of 2 separate hamlets of St Davids and the Hamlet of Craigie.

Comments to the Development Quality Manager on a Planning Application

Planning Application ref.	16/02068/FLL	Comments provided by	Niall Moran
Service/Section	Transport Planning	Contact Details	██████
Description of Proposal	Erection of dwellinghouse, installation of air source heat pump, formation of a riding arena and associated landscaping		
Address of site	Land 100 Metres South Of Craigend Cottage St Davids Madderty		
Comments on the proposal	Insofar as the Roads matters are concerned I do not object to the proposed development.		
Recommended planning condition(s)			
Recommended informative(s) for applicant	The applicant should be advised that in terms of Section 56 of the Roads (Scotland) Act 1984 he must obtain from the Council as Roads Authority consent to open an existing road or footway prior to the commencement of works. Advice on the disposal of surface water must be sought at the initial stages of design from Scottish Water and the Scottish Environmental Protection Agency.		
Date comments returned	17 January 2017		

RECEIVED

23 JAN 2017

Parkside of Craig

Madderty

Crieff

PH7 3PP

18th January 2017

The Development Quality Manager
Perth & Kinross Council
Planning & Development
Pullar House
35 Kinnoull Street
Perth
PH1 5GD



Dear Sir/Madam

16/02068/FLL | Erection of a dwellinghouse, installation of air source heat pump, formation of riding arena and associated landscaping | Land 100 Metres South Of Craigend Cottage St David's Madderty

We hereby write to object to the above mentioned planning application. We are of the opinion that this proposed development appears to be a speculative application, considerably at odds with Local and National Planning Policies and, if granted, could set a dangerous precedent.

The grounds to our objection are as follows:

- **Non Compliance with Perth & Kinross Council's Local Development Plan 2014: Policy PM4**

The close proximity of the proposed house to the St David's settlement boundary is clearly a concern. If approved, this would threaten and compromise the existing settlement boundary. The policy states that no development will be permitted adjacent to settlement boundaries.

- **Non Compliance with Perth & Kinross Council's Local Development Plan 2014: Policy PM1A**

PM1A seeks to ensure that all new developments do not have an adverse impact on the character and amenity of the area concerned.

- **Non Compliance with Perth & Kinross Council's Housing in the Countryside Policy 2012: 3 New houses in the Open Countryside**

The proposal does not appear to fall into any of the six categories outlined in the Policy. The applicant's Design and Access Statement alludes to the proposal's compliance with subsection **3.3 Economic Activity** which states:

"A house or group of houses is required either on site or in the locality for a local or key worker associated with either a consented or an established economic activity. The applicant must demonstrate to the satisfaction of the Council that there is a need for the house(s)."

Although a Planning Justification Report has been produced, we feel several aspects require further investigation:

1. "There are currently no existing opportunities on site for a new farm worker"(P2). There is an existing farmhouse and 2 semi-detached cottages located at the farm.
2. "It is considered highly desirable for cattle welfare, security and health and safety that there is qualified, fit and able personnel residing on the unit of Muir O'Lea Farm"(P2). Also "...it is important that an on farm dwelling house is provided with the job"(P3). The proposed site is some 2 miles from the farm unit.
3. Of the proposed site, "...This land cannot be utilised for...making fodder" and "Neither is it ideal for grazing"(P3). Haylage was taken from the proposed site in previous years and sheep/ponies have been grazing on this land regularly.
4. "There is currently one existing dwelling house on the farming unit"(P8) (see 1 above) and "This is the house of Donald Piper"(P8). We are lead to believe Mr Piper does not reside at that property, but at Millearne, Kinkell Bridge. We believe there are more than one house at Millearne, which may prove a more suitable option for a new farm worker, as well as being in closer proximity to the farm unit than the proposed site.
5. "The business does not own any other dwelling house or any building suitable for conversion located at Muir O' Lea". This should be confirmed.

The Design & Access Statement also states that the remainder of the proposed site will be divided into paddocks/riding arena to "allow the applicants to keep horses within close quarters of their home allowing immediate supervision at all times for both care and security purposes."(P5) This comment alludes to the fact that this is a proposed home for Mr Piper and not a farm worker. Furthermore, no site plans are provided for the provision of a riding arena.

In addition, regardless if the proposal did fall into any of the six categories noted in the Housing in the Countryside Policy, the development is very unlikely to "fit" within the landscape and area. The proposed site is essentially in a corner of a field with minimal natural landscape framework. There are no surrounding trees or topography to contain or provide a backdrop to the development. We would like to note here Policy 2 from the TAYplan Strategic Development Plan 2012-2032

Shaping Better Quality Places, Policy 4 Landscape and Policy 5 Design from the Strathearn Area Local Plan 2001.

- **Access concerns**

We feel there may also be safety issues with the proposed access point. The Design Statement maintains that the entrance area is shared with our property. This is not the case. This entrance is used by heavy agricultural machinery for a neighbouring land owner, who we believe has a right of access. We would argue that visibility splays are not "excellent" (as stated) in both directions and the proposed planting, in order to mask and provide a curtilage to the site, would have a further detrimental effect on this visibility.

In short, if this application were granted consent, we are concerned that it may set a dangerous precedent for proposed developments adjacent to settlement boundaries, which fail to recognise the intrinsic character and beauty of the countryside.

We appreciate, in advance, your consideration of these comments.

Yours sincerely

Gavin Brown

Morven Graham



To:	John Russell, Planning Officer
From:	Sarah Malone, Heritage Officer
Tel:	[REDACTED]
Email:	[REDACTED]
Date:	18 th January 2017

RE: 16/02068/FLL Erection of dwellinghouse, installation of air source heat pump, formation of a riding arena and associated landscaping at Land 100 Metres South of Craigend Cottage, St Davids, Madderty

Thank you for consulting PKHT on the above application.

In respect to archaeology and the planning process, as outlined by Scottish Planning Policy paragraphs 135-151, the proposed development does not raise issues. No archaeological mitigation is required.

