

TCP/11/16(509) – 17/01524/FLL – Erection of a dwellinghouse and outbuilding, land 150 metres north west of Upper Cloan telecommunications mast, Auchterarder

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TCP/11/16(509) – 17/01524/FLL – Erection of a dwellinghouse and outbuilding, land 150 metres north west of Upper Cloan telecommunications mast, Auchterarder

**PAPERS SUBMITTED
BY THE
APPLICANT**

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 KAREN LAMER & J MALCOLM

Address WESTMILL BATHY
AUCHTERARDER

Postcode PH13 1DP

Contact Telephone 1

Contact Telephone 2

Fax No

E-mail*

Agent (if any)

Name ARCHITECTO

Address 43 ARGYLL ST.
DUNOON

Postcode PA23 7HG

Contact Telephone 1 01369 701 988

Contact Telephone 2

Fax No

E-mail* contact@architeco.co.uk

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

PETH & KINROSS

Planning authority's application reference number

17/01524/FU

Site address

LAND AT UPPER CLAN, AUCHTERARDER
N-711807 E-296616

Description of proposed
development

ERECTION OF ZERO CARBON DWELLING &
ASSOCIATED SMALL HOLDING FOR
SUSTAINABLE LIVING.

Date of application 01/09/17

Date of decision (if any) 19/10/17

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) ☒
2. Application for planning permission in principle ☐
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) ☐
4. Application for approval of matters specified in conditions ☐

Reasons for seeking review

1. Refusal of application by appointed officer ☒
2. Failure by appointed officer to determine the application within the period allowed for determination of the application ☐
3. Conditions imposed on consent by appointed officer ☐

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 ☐
2. One or more hearing sessions ☐
3. Site inspection ☒
4. Assessment of review documents only, with no further procedure ☒

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 APPEAL STATEMENT.

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.

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.

APPEAL STATEMENT & APPENDICES AS ATTACHED.

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:

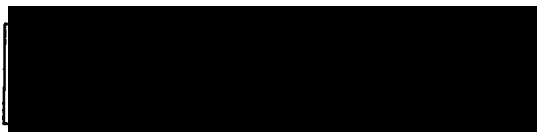
- ☒ Full completion of all parts of this form
- ☒ Statement of your reasons for requiring a review
- ☒ All documents, materials and evidence which you intend to rely on (e.g. plans and drawings or other documents) which are now the subject of this review.

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



Date

19/12/17

K Laver & D Malcolm, Land at Upper Cloan – 1271

Proposed Zero Carbon Dwelling & Associated Land Management Proposal

Planning Application Number: 17/01524/FLL

Appeal Statement - 19/12/17

The Local Review Body is requested to consider this application and approve it in for the following 3 reasons each of which are expanded below:

1 - the Report of Handling does not accurately reflect the submitted application which was for a sustainable eco house **and** associated small holding to be run on sustainable grounds: it merely describes it as a 'dwelling house and outbuilding', which clearly does not reflected the intended proposal, particularly in the context of the Housing in the Countryside policy.

2 - the Report of Handling does not fairly assess the application against Part 3.5 of the Council's policy on Housing in the Countryside which gives encouragement to 'pilot projects for eco houses for which a countryside location is necessary' and discriminated against this proposal in contrast to others which have been enthusiastically approved.

3 - the refusal notice attempts to argue that the proposal would have a detrimental impact on the Ochils Special Landscape Area without reasonably making that case and, in particular, in misreading the Tayside Landscape Character Assessment.

1 Nature of the proposal

The proposal as expressed in the planning application is for 'a new zero carbon dwelling and associated smallholding for sustainable living following the principles of permaculture' the accompanying report 'Permaculture Briefing Document' (appendix 1) and Proposed Site Plan (appendix 2) indicate how the smallholding will be laid out and how the eco house will function in the context of this smallholding. In registering the application only as 'the erection of a dwelling house and outbuilding' it is clear that this error has impacted on how the application has been considered since the appraisal does not consider sufficiently the linkages between the house and the operation of the land.

2 Housing in the Countryside Policy

The Report of Handling and the Refusal Notice claim that the proposal is contrary to the Local Development Plan Housing in the Countryside Policy (RD3) and the associated Supplementary Guidance. It is submitted in fact that the proposal does completely comply with Para 3.5 '*Pilot projects creating eco-friendly houses: Such proposals may be supported where a rural setting is required and the project is linked to the management of land or use of land for sustainable living.*' We argue that the proposal is entirely within the letter and spirit of this part of the policy.

Our accompanying planning statement shows that a very similar house and small holding was given consent at Croftness, Aberfeldy in 2014 (13/01386/FLL) (appendix 3 is the Report of Handling for the Croftness Approval). This was an application by the same

Agent and was designed to similar principles. This was enthusiastically supported by the planner officer who gave it consent under delegated powers noting: *It is considered that the Design Statement which includes the detailed house design principles and land management plan and modelling comprises a satisfactory, comprehensive and recognised approach in achieving sustainable living through the adoption and implementation of permaculture principles and is considered to be in accordance with the Council's Housing in the Countryside Guide 2012. The proposal is also generally in accordance with National Planning Policy which encourages sustainable development and renewable energy production.*

The current Report of Handling does concede that precedent is a material consideration but the officer tries to distance the two applications by arguing, firstly, that the passage of time and that housing expectations have developed in the last three years having implications for the pilot project criteria; and, secondly, that the location of the two houses differs in that the Croftness house is within walking distance to a settlement.

Addressing these two points:

Firstly '*implications for the pilot project criteria*' regarding the passing of time are not specified. The Report of Handling stating that technology has advanced over the years between these application, however, the agent has seen little advancement in mainstream building design, with technological advancements being restricted to battery technology. Despite this little advancement in building design, the agent has moved on since planning was granted for the first application, developing and detailing the SIP system to be the most advanced and energy efficient to date. It should be made quite clear that there is no definition of SIP and the construction proposed at this site is extremely advanced.

Secondly, following guidance from Sustrans report, Active Travel, Active Scotland, the Application site is also within walking distance to a settlement, as noted in our application. Furthermore, the Croftness house is in a very sensitive location adjacent to the Birks and highly prominent from across the Tay valley. The 'eco-house' part of the Housing in the Countryside Policy requires the house to be in a 'rural location' for the land management aspects so the Cloan application should not be criticised for being in such a location.

The lack of clarity on the first point, and the incorrectness of the second point, highlights that the precedence should, in fact, have been a material consideration.

The Planning Officers argue that the house and its operation are not groundbreaking enough, nor constitute a pilot project, yet do not advise what would make it acceptable. It is also significant that the Council has never issued any guidance on what constitutes a 'pilot eco house' and officers have been too quick to dismiss this one. They have had to resort to Wikipedia for their definition of 'pilot project', rather than something more profound. It should be noted that this particular aspect of the policy has been in the Housing in the Countryside Policy for many years and in renewing the Policy in 2014 the Council chose to keep this aspect of it. The Report of Handling therefore implies that the period for such pilot projects is over, but that in itself is a change of policy which the Council should take a decision on the next time the policy is reviewed, rather than Officers making policy changes 'on the hoof'.

We submit that the house is to be 'passive', at the cutting edge of sustainability and associated with its own highly sustainable and creative small holding. The house design is the culmination of four years of research and development and, although the proposal is for a SIP house (which the officer notes as common), the detailing of the house is so advanced that there are no thermal bridges within the SIP kit. This has required extensive thermal modelling, looking at every junction, in order to achieve this – this, in itself, is pioneering, required the use of cutting edge software, and took a substantial amount of research, development and testing. The details developed for this house have not been used elsewhere, as yet, but will inform future house designs.

Part of this pioneering proposal is the use of coppicing for wood gasification for the energy production of the house. This only merits a brief note in the Report of Handling but is very pertinent to the pilot project criteria. Wood gasification for heat and electricity on a domestic scale is relatively untested and is, in fact, extremely rare in the UK. The use of this plant requires the 'outbuilding' noted in the application. With a lack of appropriate information on performance, we have no idea of how successful this will be and is directly appropriate for a pilot project. Post Occupancy Evaluation of the energy production will provide an excellent resource for evaluating the efficiency of this system, as well as the suitability for wood gasification plants for dwellings. If successful, this will be taken forward and specified for future projects where suitable woodlands exist for coppicing, thereby expanding the use of zero carbon technology along with providing an excellent mechanism for woodland management. This also reinforces the requirement for a rural location.

Officers are also critical of the sustainable rural living aspects of the proposal, based on the principles of permaculture, as being too vague. Permaculture, in its very nature, is taken over a long period of time. The land needs careful observation over at least four seasons, with every detail noted, to see what naturally grows and works. This information is then developed into a site specific strategy. By noting the briefing document as 'vague' in the Report of Handling misses the whole idea behind permaculture. It is not land management by force but uses a holistic approach to enhance the existing eco-system to provide sustenance. We cannot dictate how the permaculture scheme will look as this is a site specific system of land management developed over years of following permaculture principles.

There is no greater sustainable way of living than Permaculture, derived from the term Permanent Agriculture. The briefing document provides the basis for land management and the energy solution is site specific due to the on-site resources of the woodland. This proposal illustrates how sustainable living can be accomplished at this site.

These same principles were proposed at the Croftness house and there Officers welcomed the proposal without hesitation. In any event, details of land management and cropping etc go beyond the limits of planning control and the application gives enough detail for the LRB to understand what the land management regime will be. The two aspects of the proposal need to be read together, as at the Croftness house.

Interestingly, a second pilot eco house approved under this part of the policy at Chapelhill, Trinity Gask by Committee in 2013 (12/01283/FLL) gave no information at all about rural land management other than that it was a smallholding. Why is this the application of this part of the policy being assessed so diversely by the Council?

Looking at a specific from the Report of Handling, the suitability of the water feature is raised, however, this has been specifically addressed in the Design Statement and appears to have been overlooked by the Planning Officer, as has the information relating to the polytunnel. This has been a result of the Planning Officer copying much of the Report of Handling from the previous application's Report of Handling and, in our opinion, this illustrates that this application has not been given the due consideration it deserves, with many of the arguments for refusal in the original application being addressed but not taken into consideration.

Officers' argument that the passage of time means that such a house and application is no longer radical or a pilot project cannot be supported. The Report of Handling makes reference to the Sullivan Report - 'A Low Carbon Building Standards Strategy for Scotland' and its aspirations to make all Scottish houses sustainable by 2016-7. However, this report dates from 2007 and the supplementary Sullivan report of 2013 (which the Report of Handling does not mention) accepts that these targets have not been achieved and this target and that of the Scottish Government Building Standards will be many years in the future. The Report of Handling has therefore misrepresented this issue and Scotland and Perth and Kinross are still needing pilot projects to help educate the wider public about sustainable housing. As we understand it, very few zero-carbon or passive houses have been erected in Perth and Kinross to date and therefore there is still a need for exemplary developments of this type since the Council is quite rightly committed to encouraging them through its policy on eco houses. This is the second application by Architeco in Perth and Kinross - the former being the Croftness application - and this practice is committed to trialling 'eco houses which don't look like earth ships' and has offered to share this experience with the Council. This is in the spirit of the Council's Sustainable Design and Zero Carbon Development Supplementary Guidance 2014, which, for some reason the Report of Handling does not make reference to.

With the Report of Handling including a statement referring to potential legislation for 2030, and then stating that even if this application had met the future criteria that it would still not be sufficiently ground-breaking, highlights the resistance to proper consideration of approval under this Para 3.5 of the Policy.

Officers also consider that there is no mechanism for ensuring that the house and grounds are managed in a sustainable way. The applicant would have no objections to conditions reflecting these aspirations, but as a 'passive house' in practice it can only operate in such a way. They also make reference to it being connected to the grid, but this is necessary to allow the export of surplus energy. It should be noted that the planning officer who dealt with the Aberfeldy application felt it unnecessary to raise this issue at Croftness, so why is it an issue in this case?

Officers also raise concern about detailed siting issues associated with the siting criteria contained in the Housing in the Countryside Policy. As they concede, the house will be sited against a backdrop of trees which will soften its impact in longer views (there are no near at hand public views of the site). In their wider appraisal of the impact of the proposal they express concern about the effectiveness of the boundary treatment of the wider field. Unfortunately, they have confused the siting criteria between that required for a single house with the boundaries associated with the wider small holding, which do not need to have the same firm boundaries, although in practice the wider sites edges are well defined by being enclosed by trees and a stream.

3. Landscape Impact

The third reason for refusal relates to impact on landscape. The Report of Handling makes reference firstly to the Tayside Landscape Character Assessment. The site lies within the category of Igneous Hills - Ochils. The Report of Handling makes particular mention that: 'in the TLCA it is noted that there are a few areas that allow arable cultivation to take place but the TLCA considers that reversion to grassland should be encouraged in some of these areas. In this case the change of the application site from grazing to permaculture use would conflict with the landscape character type.' Whilst that may be true of the Ochils in general, the Report of Handling fails to note that on page 181-2 specific mention is made, in contrast to the above generality about grazing, the impact of the Gleneagles Estate has on the maintenance of the agricultural landscape and this site lies within this Estate. This means that this area is characterised by quite intensive agriculture, with associated estate and agricultural buildings and in this context a new small holding with associated house is quite appropriate.

It is surprising that the Report of Handling does not make reference to the Council's more recent Landscape Supplementary Guidance 2015 adopted to support LDP Policy ER6. This Guidance, which is much more up to date than the TLCA, identifies the Ochils as an Special Landscape Area, significantly, the Forces of Change identified within the Ochils are to do with forestry and tall structures rather than rural housing. There is nothing in this guidance which would argue for refusal of this application and no detailed justification is given to the claim this proposal would impact on the nature of the landscape of the Ochils. In addition to the above, with the site already accommodating a mobile communications mast, the impact of a dwelling and associated land management scheme is negligible. Reference is also made to Placemaking policies PM1A and B in the refusal notice but the justification for the refusal is not well articulated. In particular, reference to PM1B is not very relevant since this policy is surely about urban as opposed to rural placemaking.

Summary

Through its LDP policies and Supplementary Guidance on Housing in the Countryside and Sustainable Development and Zero Carbon Development the Council clearly wishes to support the development of eco houses combined with sustainable rural living. The application in front of you is an exemplar of this approach and very similar to the one approved under delegated powers 3 years ago which received warm support from planning officers. There are no technical nor policy issues against this development in this location and it is submitted that this innovative proposal should not only be approved, but positively welcomed by Members, despite the misgivings of Officers.

Appendix

(Page 6)

1 – Permaculture Briefing Document

Pages 7 - 38

2 – Site Plan as Proposed

Page 39

3 – Croftness Report of Handling

Page 40 - 46

Briefing Document

Project: Proposed Dwelling and permaculture garden, Auchterarder.

Client: Karen Laver & David Malcolm

Reference number: 1271

Date: 31 August 2017

Note: Permaculture is an on-going learning and adaptation to the natural world. Certain strategies implemented may require observation, review and continued development.

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2 Project Overview

This proposal is for a new zero carbon dwelling located near Auchterarder as part of a sustainable living proposal. The strategy to achieve this is by the design & construction of a low energy passivhaus, located within a land management area, using permaculture techniques. It looks like a "normal" house. This hides the extensive energy modeling and site-specific optimization that has been carried out. Our goal as architects is mainstream zero carbon homes.

The site lies 1.5km south of the A9 Motorway and 300m East of Nether Cloan. Access to the site is via an existing track opposite Cloan House.

The plot is well defined by woodland to three and a half sides, with a line of mature trees and a stream where there is no woodland. An existing Telecommunication Mast is located in the South corner of the site at the highest point.



The proposal, besides from the dwelling, extends to a land management scheme, following the principles of permaculture, for sustainable living.

There is an existing stable, which will be kept to house the livestock and horse's to work within the permaculture design. Positioned close to the access road is ideal for maintenance by the family. It is directly connected to a grazing area ensuring the animals have ample space and security. Hot composting could be set up to allow heating for the stables.



The site has an existing small rubble wall; it is desirable that it be reinstated. This will define a strong boundary to the site and create a pleasing aesthetic to the proposal. Using traditional dry stonewall techniques further tying the proposal to the site.

This will be annotated on the site plan for reference. We are proposing to locate the house down hill from the existing telecommunication mast (previously approved planning application with reference number: 05/00545/TD). The mast had been previously discussed as coming down. This is why we have updated the house location from our previous application ref No: (17/00329/FLL) The mast is now being proposed to stay where it is.



House Design:

The dwelling has three bedrooms; one on the ground floor and two on the first floor. A full height space for dining and kitchen and a sunroom facing Northwest overlooking the full plot. The house has been designed as a co-generational home with the ground floor bedroom for an elderly relative.

Passive House Standard:

The building uses sympathetic design and materials and it will be super- insulated to Passivhaus standards, including high performance, triple glazed doors and windows.

An extremely high level of air tightness is aimed for. A heat recovery ventilation system will be installed. The house will have coppicing rights to the adjacent woodland, which will provide all of the required heating and hot water energy.

Heat Load = 4.5kW:

Preliminary energy modeling indicates that the design could have a heat load of just 4.5kW. This ensures the coppice will be able to fully meet the requirements for hot water and heating demands.

Zero Carbon:

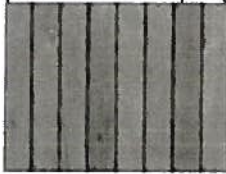
Further to this the house will be zero carbon as it is proposed that the electricity and heating will all be produced via the coppiced woodland through the wood gasifier and solar panels.

Working the Land:

The design is storey and a half, with the house positioned to run parallel with the contours. The topography rises to the Southeast of the site, ensuring the new building will not break the skyline. Siting the house to the South of the site allows this elevated position to provide good surveillance over the remaining site to allow monitoring of livestock, other animals, and food vegetation.

Materials:

In keeping with the sustainable living, a simple palette of materials is proposed. Walls will be finished in render to the gables, with timber cladding to the North & South elevations. The roof proposal is for profile metal sheet to be in keeping with the rural context. This material has a high-recycled content and is fully recyclable at the end of its life. Windows require to be high performance triple glazed for energy efficiency and internal comfort.



(Images are indicative of material palette.)

3 Permaculture Principles

"Permaculture is about creating sustainable human habitats by following natural patterns." It derives its name from "PERMANent agriCULTURE"

In this case we are designing a full plot, which can continuously, all year round provide for the inhabitants, without reliance on external factors. Everything the family of three will need for food shall be provided for. The surplus product can be used to support other avenues within the plot such as rare breed animals, chickens and sale of produce to local outlets. There are potential local outlets such as:

Auchterarder- Corbie & Cheip, Café Kisa, Jon & Fernandas Restaurant.

Crieff (20mins drive) - J, L Gill Greengrocer, The Handy Shop fresh fruit & veg and Crieff and Strathearn Country Markets.

One way of seeing permaculture is as a DESIGN SYSTEM, of looking at how elements are placed in relation to each other in order to maximize their efficiency in creating a self-sustaining, low input/high output, non exploiting whole.

This is not only beneficial for inhabitants but ensures a balanced ecosystem where every animal, insect and plant can benefit from each other within a loop cycle.

This will also involve fully understanding the disadvantages and benefits of each aspect of the garden and finding systems to work in place of energy intensive continual maintenance.

4 Local Trade and Support

Supporting the local community and industry wherever possible is important for the integration of the design.

The decision to use Structural Insulated Panels (SIPs) construction was thoroughly thought through. Using local knowledge and skill is an important consideration within permaculture principles and linking this to all aspects of this project is desirable.

Looking at the construction industry and local trades within the area, JML Contracts based in Auchterarder, Perthshire offer the perfect mix of locality, energy efficient construction and sustainable materials. SIPs are manufactured and processed under factory controlled conditions and can be fabricated to minimize waste for even complex designs.

The polyurethane (PUR) core of insulation in Structural Insulated Panels is CFC/HCFC-free with zero Ozone Depletion Potential and has a low Global Warming Potential (GWP). The outer skins of SIPs panels are manufactured from Orientated Strand Board (OSB). This is made from young fast growing trees, which are deliberately grown in plantations accredited by the Forest Stewardship Council (FSC). Young trees produce oxygen and remove more carbon dioxide from our atmosphere than mature trees and are renewable, recyclable, biodegradable and non-toxic. Unparalleled thermal efficiency combined with high build-speed and low site wastage makes SIPs a very cost effective, and sustainable way of achieving up to passive house standards.

5 Zone and design Strategy

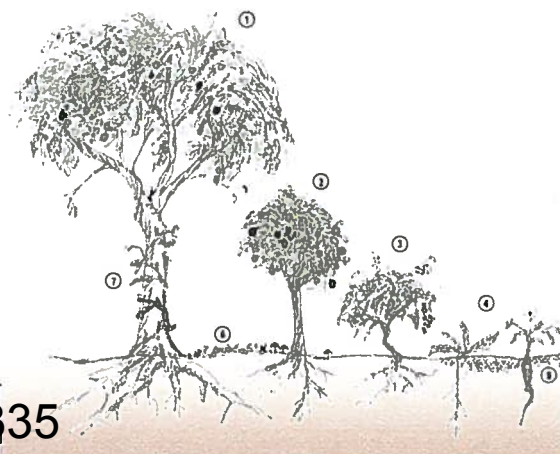
The plot has been divided into zones for organizing the use and requirements of each. Zones closer to the house will be those which require frequent upkeep and observation while those further will be less intensive and frequented less.

Zone 0: The house itself and immediate exterior. The principles that can be observed here have more to do with conservation of heating, energy and water. As we have proposed a highly insulated and airtight design with an estimated heat load of just 4.5kW, it can be seen that a lot can be designed into the fabric itself. The decision to use a wood gasifier to supply the heating, energy and hot water to the property means that the coppiced woodland can support the house and its inhabitant's energy needs. This supplemented with solar panels on the south roof elevation will dramatically reduce the reliance of power from the grid connection, further creating a fully sustaining plot.

With the addition of grey water harvesting feeding into the pond through a filtration system and reed bed, rain water collection from the roof for the plant watering, there will be little input needed from the mains connection for garden maintenance.

Zone1: This zone surrounds the house and will predominantly be planted with herbs and other short growing plants and flowers. Crops such as strawberry or raspberry's can be grown within this area. If a greenhouse is desired it is best suited to being close to the house for maintenance, attention to the surrounding context is important for the placement of a greenhouse as it will require good sunlight.

Zone2: Perennial plants will typically be planted here and if interested would be an ideal spot for placing bee hives, a Polly-tunnel and large compost bins as it is within a central spot with good access to both zone 1, 2 and 3. Current bushes and orchard trees are ideal to be planted here. These should be planted with companion plants, which will help the soil to be maintained yearly and reduce the potential of soil degradation. It would be a good idea to include the seven layers of planting:



Canopy: large fruit & nut trees

Low tree layer: dwarf fruit trees

Shrub layer: currents & berry bushes

Herbaceous: comfrey, beets, herbs

Rhizosphere: root vegetables

Ground cover: strawberry's etc

Vertical layer: climbers & vines

(Modified from: Quercusrobur at the English language Wikipedia, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=5965942>)

Crop beds will also be placed here for longer growing fruit and vegetables. A 3-year crop cycle is suggested for this area, which will be based on a three-plot rotation. It is suggested to split the site into 8 plots keeping two asides for specialist planting and have two groups of three. The first year Plot 1- Brassicas, Plot 2- Legumes and salad crops and Plot 3- Root vegetables. Mulching will be the main care and maintenance proposed.

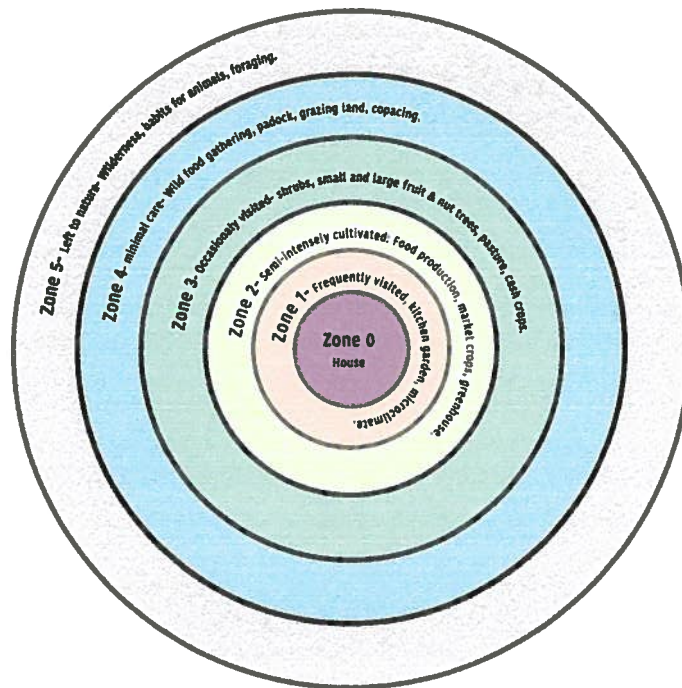
Zone3: Main crops will be planted here. As the area provided will be more than enough to produce crops for a family of three. The surplus can be used for trade purposes. This area will be diverse with a variety of grains, fruit or vegetables again planted with companion plants to aid the maintenance of soil year on year.

There is a paddock located next to the growing area, which would be ideal for chickens. If they are to be kept a chicken tractor can be used to aid the soils maintenance, and keep unwanted pests at bay.

Zone4: This area is to be very low maintenance. It includes a large grazing area for the possibility of horses or other rare breed animals. This includes the bio-diverse pond to encourage a range of animals and insects to inhabit the space. This along with the existing stream will also provide an area for the animals to drink without requiring constant maintenance from the family.

A section of the woodland here will be used for sustainable coppicing to power the wood gassifier providing the house with energy and heat, further ingraining the connection with house and place, offering management of the woodland.

Zone5: This area is not to have any human intervention. It is to be left to nature and enjoyed and appreciated for such. Natural ecosystems will be set up and it will encourage animals to inhabit the area and nurture connections between nature the garden and house. Mushrooms may be able to grow within this area, which can be foraged for.



(Architeco, 2017)

Sectors: Considering the energy's (wind, water, sun, shade, etc.) that flow through the site can drastically affect the way we use the land. As the site is on a substantial slope it was necessary to recommend a way to deal with planting on the steepest area. Wind barriers are naturally sited around the site and no hard walls have been used to separate areas as these could lead to frost pockets forming. The house benefits from the southeast orientation for solar heat gain. The Stables are sheltered and close to the access road for ease of access and movement of supplies for the animals. This is also directly next to the grazing area and unmanaged area. Monitoring the site over the first year will give a good basis for how to carry forward any design revisions, which have been noted due to specific monthly energy factors.

6 Drainage & Pond Design

The standard drainage test is to dig a square hole one spade deep, fill it with water and note the time to drain away. In a dry period this should not be longer than 1 hour. There is a problem if it takes any longer. Fill the hole a second time to get a more accurate account of soil drainage. On a site basis, a drainage system of pipes below the growing strata can be inserted on an oblique grid or herringbone grid draining to the lowest point, into the site pond. For clay soils the herringbone grid should have a maximum spacing of 4m with up to 8m spacing for other soils. Be careful that any water problems are not transferred to the neighbouring land. It may be advisable to consult SEPA* about the final run-off/outflow. (Minister's Forward 2013)

The soil for the site is assumed to be compact sandy clay based with local boulder rocks. This is an assessment from the closest British Geological Survey Maps. A soil investigation should still be carried out to fully assess soil condition and inform the best drainage practice.

7 Access

The site paths are 1m wide with a material that will allow the use of wheelbarrows and such and allow access to all areas of the site. The paths are arranged to cross the contours at a diagonal to reduce the slope and others follow the contours to cross the site. These paths will have

auxiliary routes to allow access into specific growing areas throughout the site, these paths will be less defined and more on a desire line basis.

It may be desirable to have some paths covered with arched trellis, which vine plants can grow. This allows an otherwise unplanted area to support growth, while also adding a shaded and dry area within the garden.



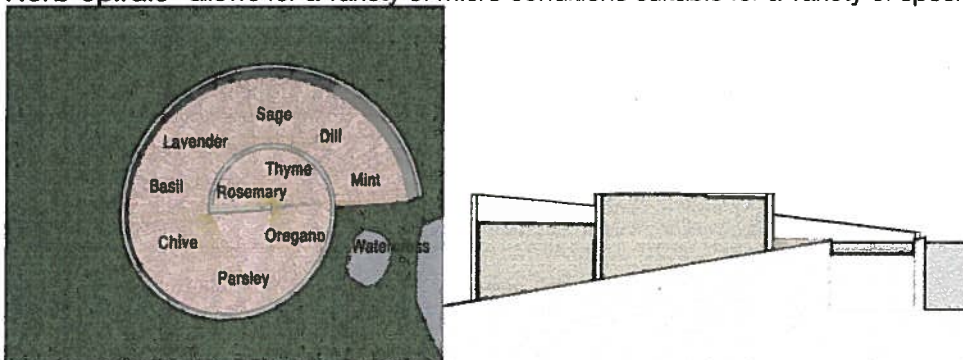
There is a vehicle road right up to the house and one which cuts across the site next to the stables. This route allows for easy harvest and transport of produce from the main growing area. This also separates the animals from the produce further as given the chance they may eat all the crops.

8 Planting Strategy

Within each zone different planting techniques can be implemented. Intermittent planting can save whole areas of crop from being hit all at once by any specific disease or invasive bugs or insects.

Issues that do arise can be dealt with implementing a new system to maintain balance rather than more invasive pesticides and chemicals.

Herb spirals- allows for a variety of micro conditions suitable for a variety of species.



Raised beds with mulching and subsequent no-dig planting- can aid the growth and health of the plants and soil.

Keyhole beds- maximizes the edge condition to the planting area providing easy access to all plants while minimizing the compaction of the usable soil, creates a good habitat.

Agroforestry- where fruit trees are planted, companion agricultural and horticultural crops to create a diverse mixture of planting that aid and maintain each other.

Swales- shallow ditches that collect water, usually dug out along a contour to sink water. Hydrates the soil and prevents water running downhill and eroding the landscape.

Berms- raised plots that prevent runoff. Designed along with swales the two can direct water to plant beds. This conserves water and prevents soil erosion.

Terraces- layered steps into the sloping hillside to prevent water running downhill, gives a flat area for easy access and planting.

Composting- Hot composting can be used. Typically this is done with three boxes one for new material, one with material composting and the last with usable compost. While the materials are composting it radiates heat this can be utilized for other uses such as heating spaces or aiding the growth of seedlings.

9 Year Round Food

As being completely self-sustaining is a desire, it is important to ensure the garden is providing crops all year round with surpluses which can be used as an income stream to pay for maintenance. Within the UK we have four seasons and as such requires careful consideration of when we plant what and how we can benefit from that yield for the short and long term.

Example plots:

"A single person could just about manage with half an acre of rich land"(A & G Bridgewater p11)

"Two people in this day and age would need more like two acres"(A & G Bridgewater p11)

"We could quite comfortably provide for ourselves and our family on 15 acres of reasonable ground. Some people manage very well with a lot less." Dot & Tim North Wales, (Tott, 2015)

"Five acres of medium to good land in a temperate climate, and the knowledge, you could grow all the food necessary for a large family." (Seymour, 2009)

"Five acres of good well-drained land, you could support a family of, say six people and have occasional surpluses to sell" (Seymour, 2009)

From these examples it can be seen that the land available here will be far more than what is required to feed a family of three. This means that there should be a surplus that can be sold or putting back into the garden via livestock or composting.

This table is not exhaustive and only provides examples of potential plants and seeds that can be used each month, dependent on location, soil and climatic conditions.

Month	Save	Plant	Available
Jan	Broad Beans	Bare rooted fruit trees, bushes, garlic.	Cabbage, savoy, broccoli, brussels sprouts, kale, leeks, salsify, spinach, lettuce, celeriac, (beets, carrots, onions, parsnips, potatoes, shallots, swedes, tomatoes, garlic, apples, pears)
Feb	Peppers, Cabbage, leeks, broad beans.	Bare rooted fruit trees, bushes, garlic.	Cabbage, savoy, broccoli, brussels sprouts, kale, leeks, salsify, spinach, lettuce, celeriac, rhubarb, (beets, carrots, onions, parsnips, potatoes, shallots, swedes, tomatoes, garlic, apples, quinoa)
Mar	Cabbage, tomatoes, leeks, carrots, lettuce, peppers, pears, onions, turnips, broad beans, spinach, celeriac, salads	Bare rooted fruit trees, bushes, onions & potatoes.	Broccoli, cabbage, kale, salsify, chickweed, (Beets, parsnips, garlic, potatoes, tomatoes, turnips, apples)
Apr	Carrots, brassicas, leeks, radishes, peas, beans, spinach, beets, lettuce, parsnips, swedes, squash, corvettes, salads.	Onions, potatoes, perennial herbs & vegetables.	Broccoli, cabbage, leeks, spring onions, spinach, rhubarb, salsify, herbs, nettles, (beets, onions, tomatoes, garlic, quinoa, potatoes)
May	Beets, brassicas, lettuce, runner beans, salads, sweetcorn, spinach, squash, turnips, quinoa.	Squashes, sweetcorn, perennial herbs & vegetables.	Broccoli, cabbage, lettuce, spinach, nettles, spring onions, (onions, garlic, potatoes, tomatoes)
Jun	Beets, brassicas, salads, spinach, peas, turnips.	Leeks, tomatoes, sweetcorn, runner beans, squash, peppers, perennial herbs & vegetables.	Broad beans, carrots, cauliflower, cabbage, lettuce, onions, potatoes, peas, radish, spinach, turnips, gooseberries, rhubarb, strawberries, nettles, herbs, edible flowers, (quinoa, tomatoes)
Jul	Beets, brassicas, carrots, Swedes, spinach, lettuce.	Runner beans, sweetcorn, squashes, leeks, perennial herbs & vegetables.	Beans, beets, carrots, lettuce, cabbages, lettuce, peas, onions, potatoes, spinach, garlic, radishes,

Aug	Brassicas, spring onions, spinach.	Cabbages, perennial herbs & vegetables.	gooseberries, cherries, plums, blackcurrants, herbs, (tomatoes) Beans, beets, carrots, lettuce, cabbages, lettuce, peas, onions, potatoes, spinach, garlic, radishes, squashes, marrows, gooseberries, raspberries, blackcurrants, vegetables & herbs, (quinoa, tomatoes)
Sep	Brassicas, beets, lettuce, salads.	Cabbages, perennial herbs & vegetables.	Beans, cabbage, beets, carrots, cauliflower, lettuce, squashes, marrows, onions, potatoes, peppers, peas, spinach, tomatoes, plums, apples, blackberries, peaches, vegetables and herbs, quinoa, (garlic)
Oct	Broad beans, salads.	Bare rooted fruit trees, bushes, garlic, onions.	Runner beans, cabbage, leeks, beets, lettuce, squashes, onions, potatoes, spinach, tomatoes, pears, apples, blackberries, (quinoa)
Nov	Broad beans.	Bare rooted fruit trees, bushes, garlic.	Beets, broccoli, cabbage, carrots, leeks, onions, potatoes, parsnips, spinach, apples, pears, (quinoa, garlic, tomatoes)
Dec	Broad beans.	Bare rooted fruit trees, bushes.	Broccoli, cabbage, carrots, celeriac, leeks, kale, onions, potatoes, parsnips, salsify, swede, turnip, parsnip, (beets, garlic, tomatoes)

(Burnett, 2016)

Companion Planting Chart

The following is a guideline for companion planting vegetables. Keep in mind that companion planting is not the same for everyone, everywhere; it will require experimentation to find what works best in your area.

Vegetable	Companion	Antagonist	Insight
Asparagus	Basil, Coriander, Dill, Parsley, Carrots, Tomatoes, Marigolds	Garlic, Potatoes, Onions	Marigolds, Parsley, Tomato protect from asparagus beetles
Beans	Beets, Brassicas, Carrot, Cabbage, Cauliflower, Cucumber, Celery, Chards, Corn, Eggplant, Peas, Potatoes	Alliums (chives, garlic, leeks, onions), Peppers, Tomatoes For Broad Beans: Fennel	Corn is a natural trellis, and provides shelter for beans. Beans provide nitrogen to soil.
Beets	Brassicas (ie. broccoli, Brussels sprouts, cabbage, cauliflower, collard greens, kohlrabi, turnip), Kohlrabi, Garlic, Lettuce, Onion, Sage	Pole and Runner Beans	The beans and beets compete for growth. Composted beet leaves add magnesium to soil when mixed.
Broccoli	Basil, Bush Beans, Chamomile, Cucumber, Dill, Garlic, Lettuce, Marigold, Mint, Onion, Potato, Radish, Rosemary, Sage, Thyme, Tomato	Grapes, Mustard, Oregano, Strawberry, Tomato	Rosemary repels cabbage fly. Dill attracts wasps for pest control.
Brussels Sprouts	Dill, Potato, Thyme	Strawberry, Tomato	--
Cabbage	Beets, Bush Beans, Celery, Chamomile, Dill, Mint, Onion, Potato, Oregano, Rosemary, Sage	Beans (Pole and Runner), Mustards, Peppers, Strawberry, Tomato	Celery, onion and herbs keep pests away. Rosemary repels cabbage fly.
Carrots	Beans (Bush and Pole), Garlic, Lettuce, Onion, Parsley, Peas, Rosemary, Tomato	Dill, Parsnip	Beans provide nitrogen in soil, which carrots need. Onion, parsley and rosemary repel the carrot fly
Cauliflower	Beans, Celery, Oregano, Peas, Tomato	Strawberries	Beans provide the soil with nitrogen, which cauliflower needs.
Celery	Bush Beans, Cabbage, Dill, Leeks, Marjoram, Tomatoes	Parsnip, Potato	--
Chives	Basil, Carrots, Marigold, Parsley, Parsnip, Strawberries, Tomato	Beans	--
Corn	Beans, Cucumbers, Marjoram, Parsnip, Peas, Potatoes, Pumpkin, Squash, Zucchini	Tomato	Tomato worm and corn earworm like both plants. Beans and peas supply nitrogen.
Cucumber	Beans, Celery, Corn, Dill, Lettuce, Peas, Radish	Potato, Sage, strong aromatic herbs, Tomato	Cucumbers grow poorly around potatoes and sage.
Dill	Cabbage, Corn, Cucumbers, Dill, Fennel, Lettuce, Onions	Cilantro, Tomato	Cross-pollinates with cilantro, ruining both. One only a few plants that grows well with Fennel.
Eggplant	Beans, Marjoram, Pepper, Potato	--	--
Kohlrabi	Beets, Lettuce, Onions	Strawberries, Pole	Lettuce repels earth flies.

Leek	Carrots, Celery, Lettuce, Onions	Beans, Tomato Beans, Peas	Companion attributes are the same as garlic, onion, chives(alliums).
Lettuce	Beans, Beets, Carrots, Corn, Marigold, Onions, Peas, Radish, Strawberries	Parsley	Mints repel slugs (which feed on lettuce).
Marigold	Brassicas (broccoli, etc), Cucurbits (cucumber, etc), Peppers, Tomato, and most other plants	--	It is said that you can plant Marigolds throughout the garden, as they repel insects and root-attacking nematodes (worm-like organisms).
Onions	Beets, Cabbage, Carrots, Lettuce, Marjoram, Rosemary, Savory, Strawberry, Tomato	Beans, Peas	Repels aphids, the carrot fly, and other pests.
Parsley	Asparagus, Beans, Radish, Rosemary, Tomato	Lettuce	Draws insects away from tomatoes.
Peas	Beans, Cabbage, Carrots, Celery, Corn, Cucumber, Lettuce, Marjoram, Parsnip, Potato, Sage	Alliums (Chives, Garlic, Onion, Shallots)	--
Potato	Beans, Cabbage, Corn, Eggplant, Horseradish, Marjoram, Parsnip	Celery, Cucumber, Pumpkin, Rosemary, Strawberries, Tomato	Cucumber, tomato and raspberry attract harmful pests to potatoes. Horseradish increases disease resistance.
Pumpkin	Beans, Corn, Radish	Potato	--
Radish	Cabbage, Corn, Cucumber, Eggplant, Lettuce, Marjoram, Parsnip	--	Radish is often used as a trap crop against some beetles (flea & cucumber).
Sage	Beans, Cabbage, Carrots, Peas, Rosemary, Strawberries	--	Repels cabbage fly, some bean parasites.
Spinach	Beans, Lettuce, Peas, Strawberries	--	Natural shade is provided by beans and peas, for spinach.
Squash	Fruit trees, strawberries	--	Similar companion traits to pumpkin.
Strawberries	Borage, Bush Beans, Caraway	Broccoli, Cabbages	The herb, Borage, is likely the strongest companion.
Tomatoes	Alliums, Asparagus, Basil, Borage, Broccoli, Carrots, Cauliflower, Celery, Marigold, Peppers	Brassicas, Beets, Corn, Dill, Fennel, Peas, Potatoes, Rosemary	Growing basil about 10 inches from tomatoes increases the yield of the tomato plants.
Turkey	Peas	--	--

(VegetableGardeningLife, 2015)

10 Crop Requirements

Human Energy Requirements and growing capacity from the garden.

The number of calories a person needs per day is specific to the individual. Height, weight, gender, age and activity level all affect your requirement. Three main factors are required to calculate how many calories your body needs per day.

1. Basal metabolic rate (BMR) this is the amount of energy your body requires to function at rest.
2. Physical activity that takes into account your daily activities, and inputs such as weight, height etc.
3. The thermic effect of food is also considered which is the energy required to breakdown the food you eat.

For the purpose of this exercise we will average the amount of calories required by the family of three to the basic NHS recommendation of 2500kcal for men and 2000kcal for women. (Choices, 2016)

Taking these figures for the year the family of three will require:

2,372,500 kcal total per year. $((2500+2000+2000) \times 365 = 2372500 \text{ kcal})$

On average 438kg of fruit and veg of food is required per year for three people. (Hugo, 2017)

Taking 2 kg of produce per square meter (How many m2 you need to cultivate in order to be self-sustainable? 2017) for three people on a diet of 438kg fruit and veg per year would require 219m2 of garden space. This is based on a supplemented diet with nuts and meat, which should be considered. Zone 2 alone has an area of 2383m2 taking 2 kg of produce per square meter would give you roughly 3042kg of food, roughly giving you 6200 calories per day. This supplemented with produce from the animals, zone 1 and the orchard will provide an ample amount of calories for the family of three.

This is all dependent on crop, yield and individual species etc.

The list below demonstrates one account of how many plants a family may require for a years worth of food. This is subjective as to what you may prefer to eat but can be used as a starting point for planting quantities.

Asparagus: about 10-15 plants per person

Beans (Bush): about 15 plants per person

Beans (Pole): 2-4 poles of beans per person

Beets: about 36 plants per person.

Broccoli: 3-5 plants per person

Cabbage: 2-3 plants per person

Carrots: about 100 seeds per person (1/4 oz would be plenty for a family of six)

Cauliflower: 2-3 plants per person

Collards: about 5 plants per person

Corn: start out with 1/2 lb. seeds for the family and adjust as needed

Cucumbers: 3-6 plants per family

Eggplant: 3-6 plants per family

Lettuce: 4-5 plants per person

Okra: 3-4 plants per person

Onions: 12-15 plants per person

Parsnips: 12-15 plants per person

Peas: about 120 plants per person

Peppers: 3-5 plants per person

Spinach: about 15 plants per person

Squash (including Zucchini): about 10 per family

Sweet Potatoes: about 75 plants per family

Tomatoes: about 20 plants per family

Turnips: about 1/4 lb seeds per family

The Table to the right gives an average of how many kg of produce can be obtained from a hectare of land. This is one account and in practice a variety of factors may affect the outputs however it can be used as a broad estimate of what to expect.

wheat	8,000 kg / ha
barley	7,000 kg / ha
potatoes	45,000 kg / ha
beet	70,000 kg / ha, accounting for approximately 11,000 kg of sugar
onion	48,000 kg / ha
winter rape	5,000 kg / ha
peas	4,000 kg / ha
beans	3,000 kg / ha
carrots	40,000 kg / ha
tomatoes	5,000 kg / ha
chicory	350,000 kg / ha
leek	30,000 kg / ha
Brussels sprouts	20,000 kg / ha
broccoli	8,000 kg / ha
zucchini	3,000 kg / ha
Chinese cabbage	30,000 kg / ha
flax	6,600 kg of straw and 900 kg grain / ha
apples	40,000 kg / ha (13 yrs, from 5th yr)
pears	25,000 kg / ha (35 yr, from the 7 yr)
wine in the Netherlands:	5,000 l or 8,500 bottles / ha

11 Livestock

Rare bread animals can be a beneficial addition to the plot. Looking at the input and outputs of keeping such animals helps to evaluate their success within a plot.

Inputs: Time/care, food, water, medicine/vaccines, space, other variants dependent on animal.

Outputs: Manure, plot maintenance/grassing, pest control, food, offspring, income, enjoyment, and other variants dependent on animal.

With livestock the possibility of hot composting is very viable. This can aid many other activities within the garden as the compost radiates heat. Seed maturing, heating other areas such as a shed or greenhouse is achievable.

Different animals will require different amounts of space. Within the plan we have set aside 12313m² roughly 3 acre for grazing and housing of animals. It would be advantageous to defiantly keep some chickens (six hens is recommended to get started) and one cock if you would like to bead chicks.

Chicken Space- 6m² roughly

Ducks- 20m² per bird: Will require a lake or pond.

Geese- 20m² per bird

Birds will generally be let out over areas of the garden and moved frequently within a bounded area or in a chicken tractor.

Chicken tractors are popularly used as they keep the chickens caged and safe in a designated area while allowing them freedom to move from house to exterior space. Top right is an example of a simple small chicken tractor.

Horses will be kept and will be stay within the existing stables. Annual basis Cost.

Feed cost (£260 - £520).

Hay/Straw £1040 - £1560

Other supplements can vary in price.

Vets fees £70

Insurance £240 - £480

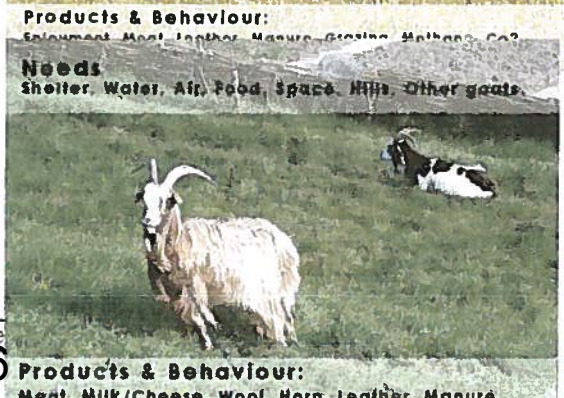
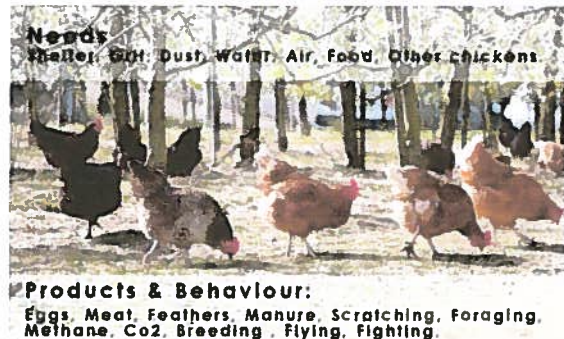
Dentist £50 - £70

Worming £40 - £105

Extras £1000

(Ltd, A.I.,)

Cows, pigs or goats are all viable options for supporting the plot: these will take up the majority of the livestock rearing area.



Products from these animals will support the family and farm. There are possibilities of selling the products from the animals for added income.

Products like goats cheese could be sold to local product manufacturers setting up a micro business and promoting local produce etc.

12 Energy Usage and production

Energy Calculations Draft.

Energy Performance Evaluation 1271 Laver, Auchterarder

Preliminary

Key Values

General Project Data

Project Name: Laver, Auchterarder
City Location: Auchterarder
Latitude: 56.29° N
Longitude: 3.67° W
Altitude: 131.00 m
Climate Data Source: Strusoft server
Evaluation Date: 9 Feb 2017 17:42:51

Building Geometry Data

Gross Floor Area: 261.8 m²
Treated Floor Area: 215.3 m²
External Envelope Area: 390.4 m²
Ventilated Volume: 538.79 m³
Glazing Ratio: 9 %

Building Shell Performance Data

Infiltration at 50Pa: 0.09 ACH

Heat Transfer Coefficients

Building Shell Average: 0.32 [W/m²K]
Floors: 0.15 - 0.15
External: 0.13 - 1.71
Underground: --
Openings: 0.70 - 1.33

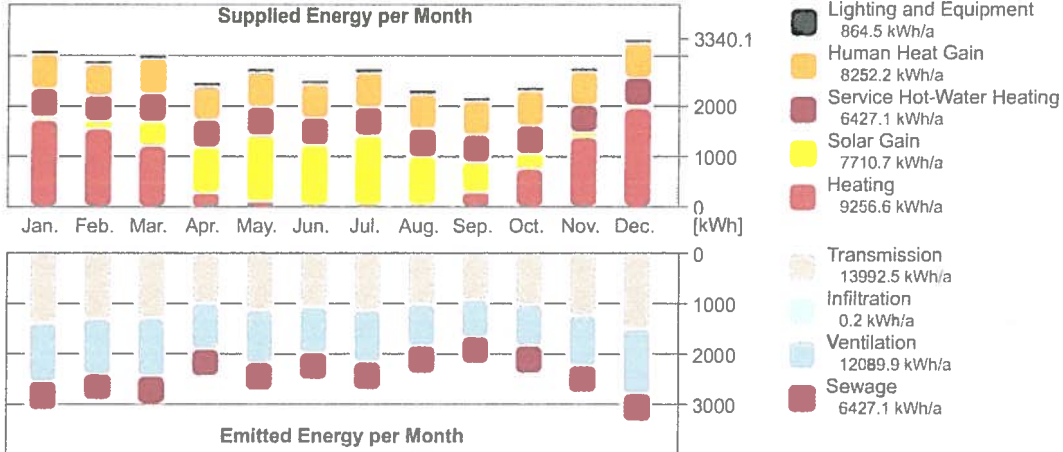
Specific Annual Values

Net Heating Energy: 42.99 kWh/m²a
Net Cooling Energy: 0.00 kWh/m²a
Total Net Energy: 42.99 kWh/m²a
Energy Consumption: 49.99 kWh/m²a
Fuel Consumption: 49.56 kWh/m²a
Primary Energy: 66.36 kWh/m²a
Fuel Cost: -- GBP/m²a
CO₂ Emission: 1.20 kg/m²a

Degree Days

Heating (HDD): 4020.46
Cooling (CDD): 395.67

Project Energy Balance



Thermal Blocks

Thermal Block	Zones Assigned	Operation Profile	Gross Floor Area m ²	Volume m ³
001 GF Thermal Block	7	Residential	137.4	317.51
002 FF Thermal Block	5	Residential	109.7	186.67
003 GF Cold Thermal Block	3	Residential	13.4	33.48
004 FF Cold Thermal Block	1	Residential	1.2	1.12
Total:	16		261.8	538.79

Energy Performance Evaluation

1271 Laver, Auchterarder

Preliminary

001 GF Thermal Block - Key Values

Geometry Data			Heat Transfer Coefficients		
Gross Floor Area:	137.4	m ²	Floors:	0.15 - 0.15	[W/m ² K]
Treated Floor Area:	115.5	m ²	External:	0.13 - 0.23	
Building Shell Area:	181.6	m ²	Underground:	-	
Ventilated Volume:	317.51	m ³	Openings:	0.88 - 1.33	
Glazing Ratio:	14	%	Annual Supplies		
Internal Temperature			Heating:	9256.56	kWh
Min. (22:00 Feb. 06):	20.00	°C	Cooling:	0.00	kWh
Annual Mean:	21.57	°C	Peak Loads		
Max. (18:00 Jul. 10):	32.33	°C	Heating (23:00 Dec. 21):	4.19	kW
Unmet Load Hours			Cooling (01:00 Jan. 01):	0.00	kW
Heating:	0	hrs/a			
Cooling:	138	hrs/a			

002 FF Thermal Block - Key Values

Geometry Data			Heat Transfer Coefficients		
Gross Floor Area:	109.7	m ²	Floors:	-	[W/m ² K]
Treated Floor Area:	88.7	m ²	External:	0.13 - 1.71	
Building Shell Area:	181.0	m ²	Underground:	-	
Ventilated Volume:	186.67	m ³	Openings:	1.10 - 1.33	
Glazing Ratio:	6	%	Annual Supplies		
Internal Temperature			Heating:	0.00	kWh
Min. (24:00 Dec. 21):	11.82	°C	Cooling:	0.00	kWh
Annual Mean:	22.97	°C	Peak Loads		
Max. (19:00 Jul. 15):	46.59	°C	Heating (01:00 Jan. 01):	0.00	kW
Unmet Load Hours			Cooling (01:00 Jan. 01):	0.00	kW
Heating:	3503	hrs/a			
Cooling:	1917	hrs/a			

004 FF Cold Thermal Block - Key Values

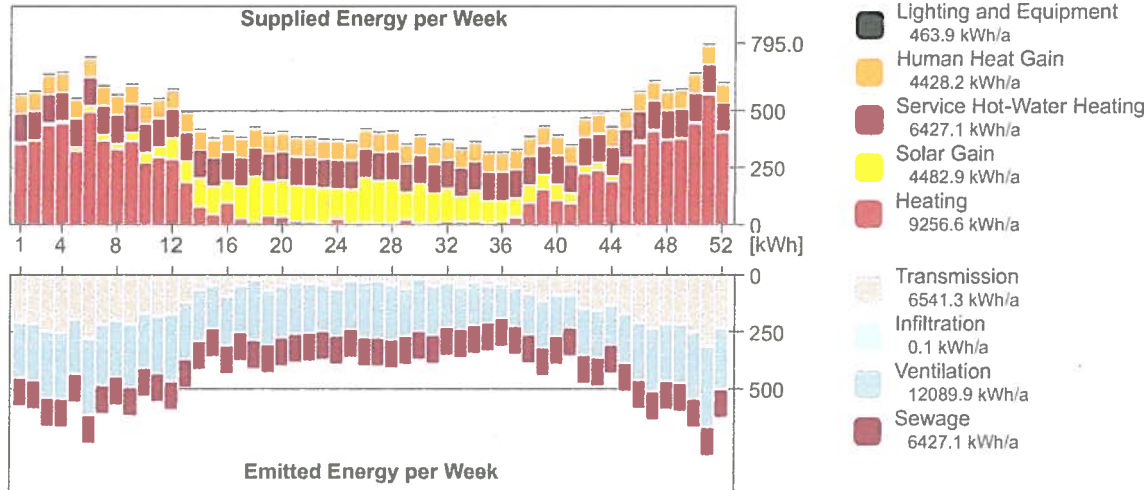
Geometry Data			Heat Transfer Coefficients		
Gross Floor Area:	1.2	m ²	Floors:	-	[W/m ² K]
Treated Floor Area:	0.8	m ²	External:	0.13 - 0.14	
Building Shell Area:	1.9	m ²	Underground:	-	
Ventilated Volume:	1.12	m ³	Openings:	-	
Glazing Ratio:	0	%	Annual Supplies		
Internal Temperature			Heating:	0.00	kWh
Min. (11:00 Dec. 22):	12.46	°C	Cooling:	0.00	kWh
Annual Mean:	23.36	°C	Peak Loads		
Max. (23:00 Jul. 09):	41.22	°C	Heating (01:00 Jan. 01):	0.00	kW
Unmet Load Hours			Cooling (01:00 Jan. 01):	0.00	kW
Heating:	3438	hrs/a			
Cooling:	2218	hrs/a			

Energy Performance Evaluation

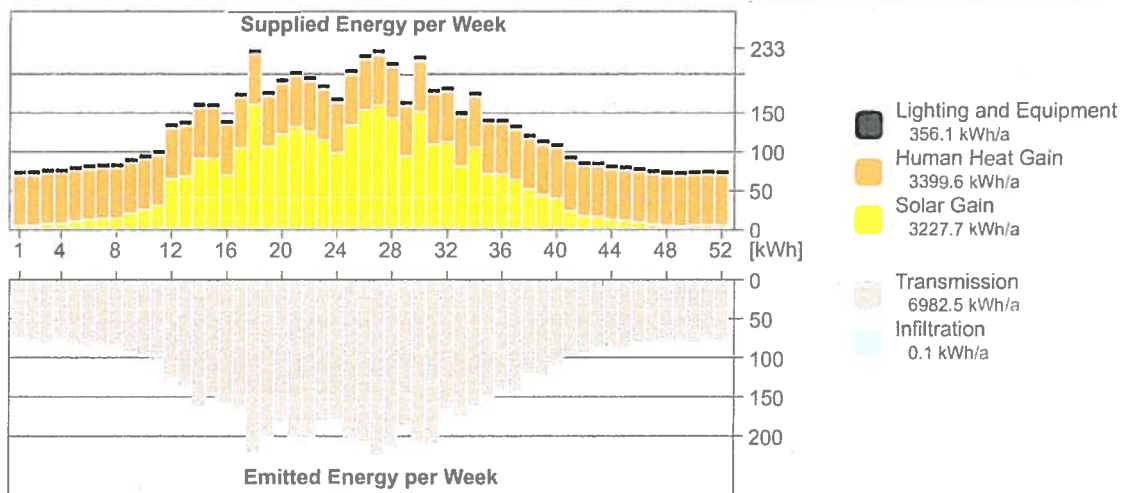
1271 Laver, Auchterarder

Preliminary

001 GF Thermal Block Energy Balance



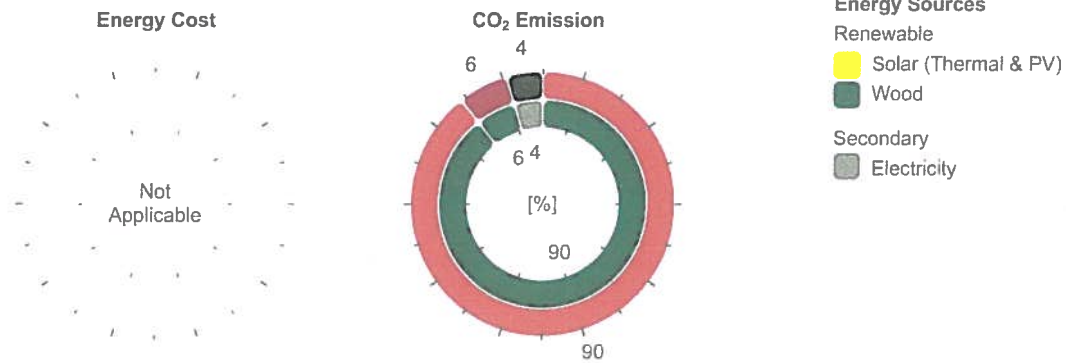
002 FF Thermal Block Energy Balance



Energy Performance Evaluation

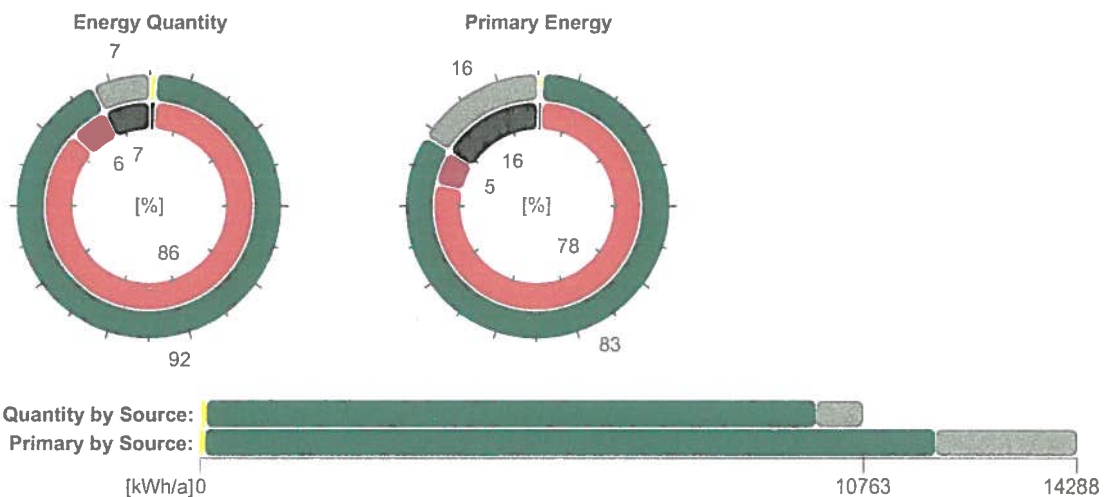
1271 Laver, Auchterarder

Preliminary



Energy Consumption by Sources

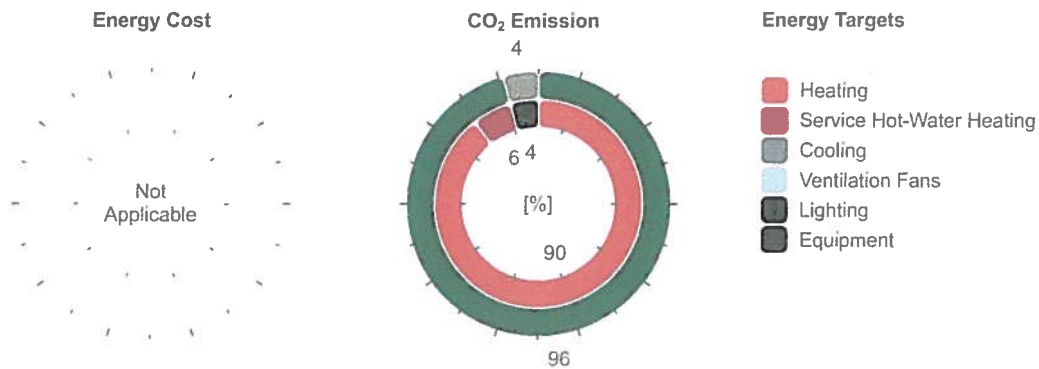
Source Type	Source Name	Quantity kWh/a	Primary kWh/a	Cost GBP/a	CO ₂ Emission kg/a
Renewable	Solar (Thermal & PV)	92	92	NA	0
	Wood	9899	11879	0	247
Secondary	Electricity	772	2317	--	11
Total:		10763	14288	Not Applicable	259



Energy Performance Evaluation

1271 Laver, Auchterarder

Preliminary



Environmental Impact

Source Type	Source Name	Primary Energy kWh/a	CO ₂ emission kg/a
Renewable	Solar (Thermal & PV)	92	0
	Wood	11879	247
Secondary	Electricity	2317	11
Total:		14288	259

Co2 emissions from Coppice- reabsorbed allowing zero carbon to be achieved.

Energy Performance Evaluation

1271 Laver, Auchterarder

Preliminary

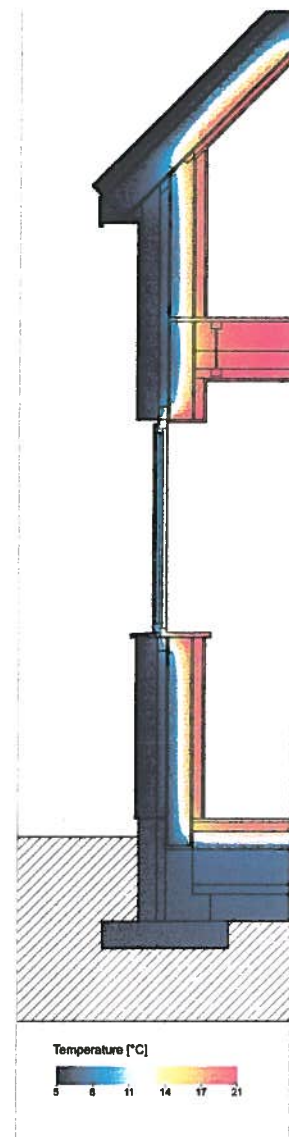
Renewable Building System Summary

Building System	Annual Energy Generated kWh	Renewable Energy Cost GBP
⚡ Photovoltaic System	92	0.0
🔥 Biofuel-based Heating	9899	0.0
Total LEED Renewable Energy:	9991	0
Total:	9991	0

Thermal bridging:

The design has ensured that thermal bridging is kept to a minimum to ensure no energy is wasted from heat escaping and cold entering the house. Our calculations highlight risk areas, so that the design can resolve any possibility of unnecessary thermal bridges ensuring the building is as efficient as possible.

This also allows us to evaluate whether the wall build chosen is best suited to the chosen site and design. Doing this at an early stage helps us to make more informed decisions to ensure a building that is as sustainable and energy efficient as possible.



A **wood gassifier** is a gasification unit which converts timber or charcoal into wood gas, a syngas consisting of atmospheric nitrogen, carbon monoxide, hydrogen, traces of methane, and other gases, which - after cooling and filtering - can then be used to power an internal combustion engine or for other purposes.

Wood gasification is a very clean way to make biogas. The wood acts as a solar store as wood gas is a form of solar chemistry. It is the perfect complement to solar photovoltaic as you can tap into energy day or night and even during winter, leveling out the issues with peak time energy from solar.

The Gassifier can be used intermittently with the provision of solar panels to ease usage and materials for the gassifier.

Recommended batches run for 2-6 hours dependent on feedstock capacity for the wood. Use in the morning, solar during the day and a fill at night is easy and cost efficient.

Power output: 3-20 kilowatts / hr is a realistic output. Each kilowatt-hour requires about 2.5 pounds of dry wood (dependent on machine used).

A 10-kilowatt generator is usually preferred as it is a good blend of power and efficiency.

Below are some examples of gasification units available (others are available, as many gasification units are home made kits, this means they vary on specific technical details)

L.E.A.F GENERATOR



Here is a simple unit that is cost effective. It can be used to run a 7kW generator.

Size: 7kW

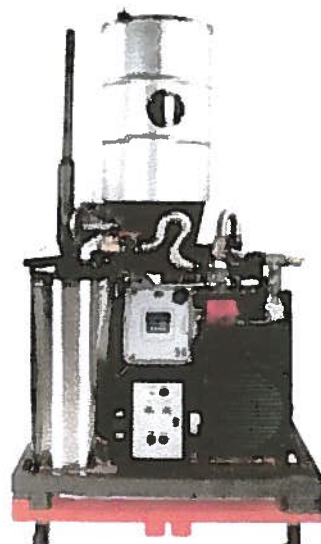
Type: Down Draft Gasifier

Uses: Battery charging, household uses, appliances

Fuel: wood blocks/chips

(Ewings, 2014)

ALL POWER LABS



Size: 20 kW

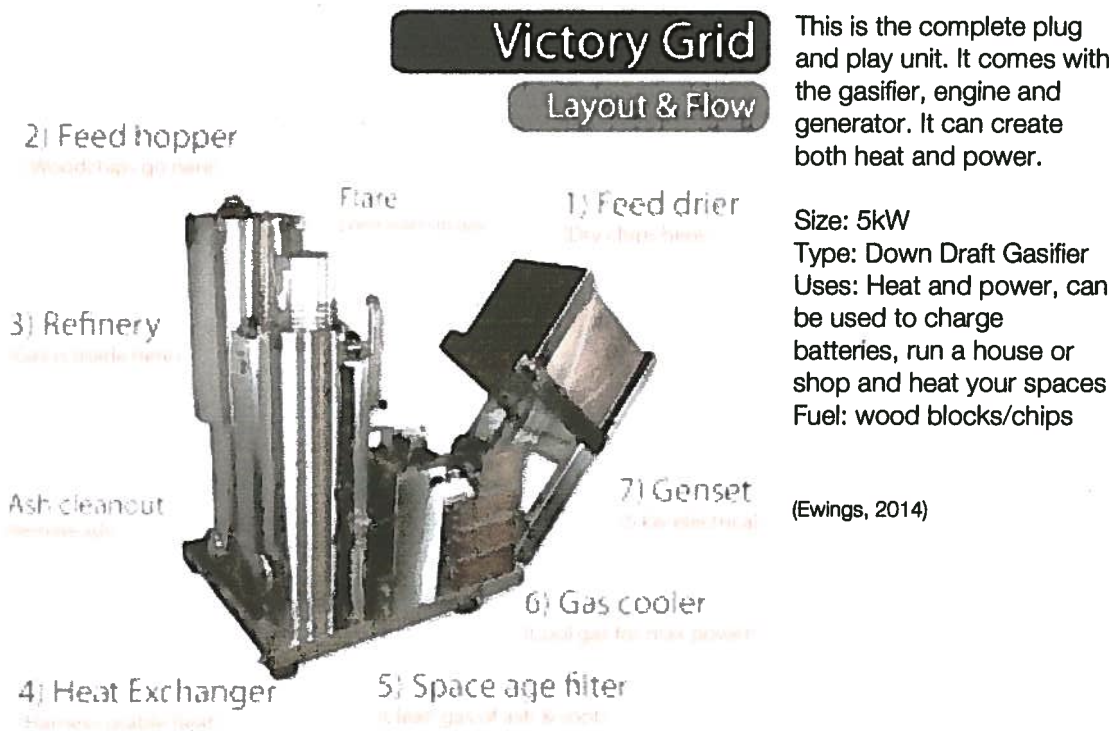
Type: Down Draft Gasifier

Uses: Heat and power, can be used to charge batteries, run a house or shop and heat your spaces

Fuel: wood blocks/chips

(Ewings, 2014)

VICTORY GASIFIER



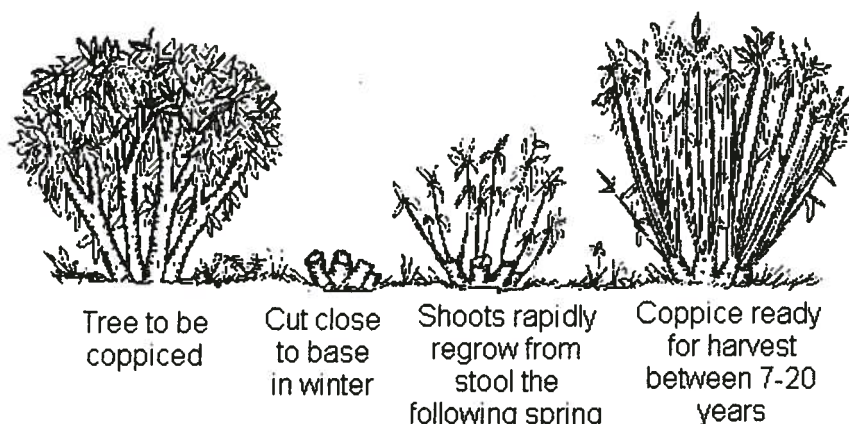
13 Silviculture/Coppicing

Coppicing is a traditional method of woodland management, which produces a highly efficient fast growing, sustainable timber source, without the need to replant. Implementing this can increase biodiversity as well as keeping a traditional craft alive.

Coppicing takes advantage of the fact that many trees make new growth from the stump or roots, if cut down. In a coppiced wood, young tree stems are repeatedly cut down to near ground level. In subsequent growth years, many new shoots will emerge, and, after a number of years the coppiced tree, or *stool*, is ready to be harvested, and the cycle begins again. Typically coppiced woodland is harvested in sections on a rotation. This ensures there is a crop available each year somewhere in the woodland. Coppicing has the effect of providing a rich variety of habitats, as the woodland always has a range of different-aged coppice growing within it, beneficial for biodiversity. The cycle length depends upon the species cut, the local custom, and the use to which the product is put. (Lawton, 2012)

Alder, Birch coppices poorly, beech coppices better in wetter west.

Most frequently coppiced species are oak, hazel, ash, willow, field maple and sweet chestnut. (Giraffe, 2011)



(Image come from English Wikipedia page: <http://en.wikipedia.org/wiki/Coppice> this is an updated version of [Image: Coppice1.png](#) with clearer text. (del) (cur) 19:31, 27 July 2006)

Some animals can eat the newly growing tree stems before they have matured. This can either be protected or cut higher than the animal can reach to protect the growth.

Alder: Opinion varies, works best well seasoned.

Apple: Splendid/ It bums slowly and steadily when dry, with little flame, but good heat. Good scent. Must season well

Ash: Best burning wood; has both flame and heat, and will burn when green, as it has low moisture content. Will bum even better dry.

Beech: Best when well seasoned

Birch: The heat is good but it burns quickly with a bright flame. Nice smell, works well when mixed with other woods that burn more slowly.

Cedar: Good when dry. It gives little flame but much heat, and the scent is beautiful.

Cherry: Burns slowly, with good heat. Wood with the advantage of scent and does not spit.

Chestnut: Mediocre. Apt to shoot embers. Small flame and heating power.??

Cypress: Burns well but fast when seasoned, and may spit

Douglas Fir: Poor. Little flame or heat.

Elder: Mediocre. Very smoky. Quick burner, with not much heat.

Elm: To burn well it needs to be kept for two years. Even then it will smoke. Very high water content – more water than wood.

Hawthorne: burns well

Hazel: Good, burns fast without spitting. but has other uses, so you might not want to burn it

Holly: Good, will burn when green, but best when kept a season.

Hornbeam: Good, burns well

Horse Chestnut: Good flame and heating power but spits a lot.

Laburnum: Totally poisonous tree, acrid smoke, taints food and best never used.

Larch: Crackles and spits, scented, and fairly good for heat. Oily soot in chimneys

Laurel: Has brilliant flame.

Lime: Poor. Burns with dull flame.

Maple: Good.

Oak: Dry oak is excellent for heat, burning slowly and steadily with a good heat. Seasoned for 2 - 3 years is best.

Pear: Slow and steady, good heat and a good scent.

Pine: Burns with a splendid flame, but apt to spit. Needs to be well seasoned. Gives off a large number of resins.

Plane: Burns pleasantly, but is apt to throw sparks if very dry.

Plum: Good heat and scent.

Poplar: Burns slowly with little heat – better for making matchsticks

Rhododendron: The thick old stems, being very tough, burn well.

Robinia (Acacia): Burns slowly, with good heat, but with acrid smoke.

Rowan: Burns well

Spruce: Burns too quickly and with too many sparks.

Sweet chestnut: burns well when seasoned but sends out sparks. Only for use in a stove with door closed!

Sycamore: Burns with a good flame, with moderate heat. Useless green.

Walnut: Good, and so is the scent. Aromatic wood.

Willow: Poor. It must be dry to use, and then it burns slowly, with little flame. Apt to spark.

Yew: Last but among the best. Burns slowly, with fierce heat, and the scent is pleasant.

(Davis, 2012)

Density (kg/m ³)	Softwood Species	Hardwood Species
>800		Hawthorn,
710-800		Ash, Beach, Apple, Pear
610-700	Yew,	Birch, Cherry, Oak, Walnut, Sycamore,
510-600	Cedar, Douglas fir, Larch, Pine,	Chestnut, Elm,
410-500	Hemlock, Spruce,	
<400	Willow, Alder	

Woods Calorific Value (CV)

There are three factors which affect woods CV or the amount of available heat per unit of fuel:

1. Species Choice
2. Wood Density
3. Moisture Content

General differences in species are that hard woods are denser and soft woods tend to contain more resin. When compared at the same moisture content CV species shows little variation. The main differences between species are moisture content when the timber is green, at the time of felling, and the rate at which this moisture is lost during seasoning.

For the above table it can be seen that the wood density of Hawthorn is twice as much as willow.

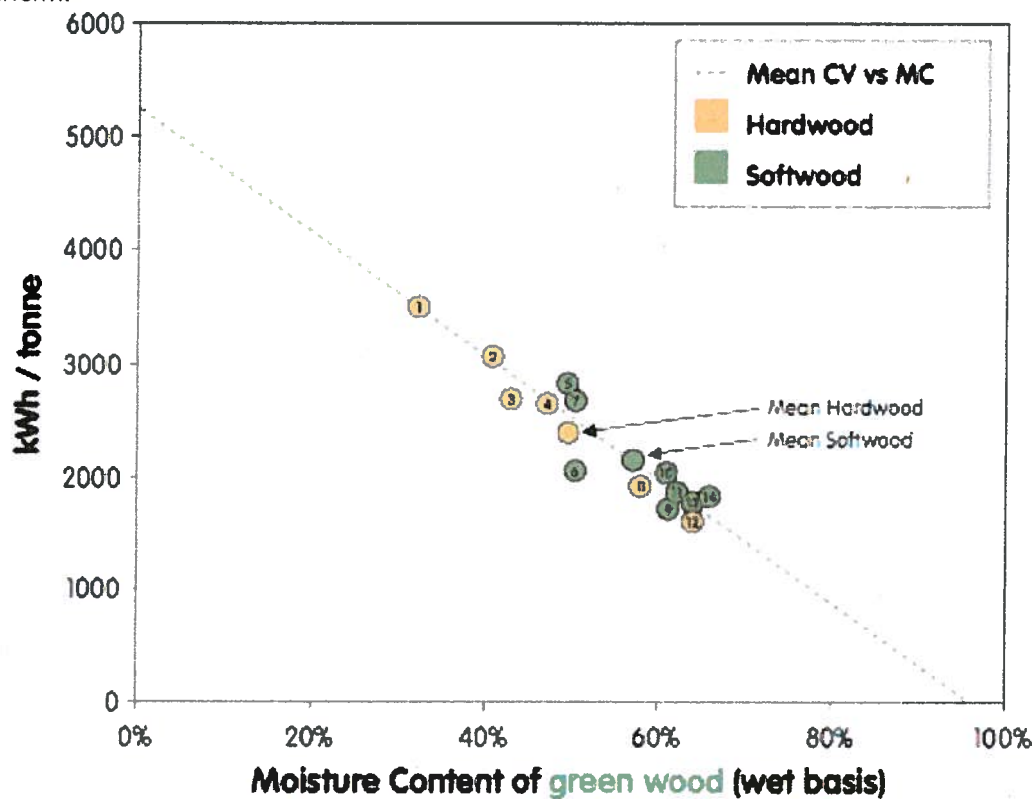
"As hardwood species are generally denser than softwood species, a tonne of hardwood logs will occupy a smaller space than a tonne of softwood logs. Dense woods will burn for longer than a less dense woods, this means you will need fewer top ups to keep a log stove burning. If you measure wood by volume you will generally receive more kilowatt hours (kWh) of heat from a cubic metre (m³) of hardwood than softwood. However, softwoods are often cheaper and easier to source." (HM Government, 2010)

Wood Moisture Content is the weight of water in a piece of wood, expressed as a percentage over the dry weight of wood. Fresh cut trees can have wood moisture contents over 200%, while completely dried wood will have wood moisture contents of 0%.

Weight of water in a given sample $\times 100 = \text{MC\% (wet basis)}$
Total weight of the sample

For example if a freshly sawn timber weighted 50lbs and once dried weighted 20lbs you would divide 30lbs (weight of water) by 20lbs (dry wood weight) $\times 100 = 150\% \text{ MC}$

As Calorific value relates to specific batches and drying conditions among others, it can be difficult to compare x to x however the table below gives a general concept of how each species can perform.



Graph Reference No.	Species	Green MC (wet basis)	kWh per Green tonne
1	Ash	32%	3448
2	Sycamore	41%	3044
3	Birch	43%	2668
4	Oak	47%	2635
5	European Larch	50%	2722
6	Douglas Fir	51%	2596
7	Japanese & hybrid Larch	51%	2653
8	Elm	58%	1915
9	Sitka Spruce	61%	1705
10	Western Hemlock	61%	2040
11	Silver Fir	62%	1855
12	Poplar	64%	1610
13	W Red Cedar & Lawson Cypress	64%	1755
14	Norway Spruce	65%	1787

(HM Government, 2010)

In general there are some species that have been proven through experience to work better for burning within wood gasification than others.

Most frequently coppiced species are: oak, hazel, ash, willow, field maple and sweet chestnut. (Giraffe, 2011)

"Yields of 20 tonnes of firewood per hectare per year are feasible." (andrews, graham)

The area of woodland coppicing is 5255m². By using a woodland coppicing rotation it can be expected to achieve around 8 tonnes per year from the designated woodland area. This includes time for cut specimen to grow and mature ensuring the woodland is maintained appropriately.

14 Water management and harvesting

Water management will be an important factor for the permaculture garden. As the site is on a steady slope with a stream to the east most boundary it is ideal to set up a feed off from, to ensure the soil is well watered. Attention to the details of this setup will be vital as maintaining the right balance for crop diversity is important.

A drip system with a manual close will be perfect as it offers a slow steady exposure of water which is easily turned on and off. This system ensures there is little effect to the stream and lower pond.

Gray water reclamation from the home will be implemented to feed into the pond and stream after filtration. Reducing the waste of water from the home while also adding to the irrigation system to be set up for the crops within the garden.

15 Conclusion & Summary

This proposal has great potential to create a special area of well-managed land. An example of how sustainable living can be implemented and well engrained into its location. Every aspect of this plot feeds and supports another all linking back to how the inhabitants work with the land.

- **Design Aesthetic** – A mainstream zero carbon house. Although it may look normal extensive energy modeling and site-specific optimization has gone into ensuring the design achieves zero carbon.

- **Design Detail** – The building uses sympathetic design and materials and will be super- insulated to Passivhaus standards, including high performance, triple glazed doors and windows. Thermal bridging is kept to a minimum dramatically reducing the waste in heat escaping and cold entering the house. An extremely high level of air tightness is aimed for and a heat recovery ventilation system will be installed. Every aspect of the house is designed to be as sustainable and energy efficient as possible.
- **Local Trades** – the project is designed to benefit from the knowledge of local trades and support the businesses within the area. Exemplifying the possibilities of good design and local trades within the area of Perth and Kinross.
- **On site produce** – All the required food for the family can be cultivated from the designated land with ample produce to spare for resale to outlets such as farmers markets. This also provides an additional income for the family.
- **Energy generation** – The coppiced woodland supplemented with solar panels will provide all of the required energy and heating for the house year round. This allows zero carbon to be achieved.
- **Waste Management** – Gray water will be collected and fed into a filtration system and linked to ponds and irrigation for the planting area. Food, animal and garden waste will be composted creating a waste cycle to minimizing the output from the household.
- **Permaculture principles** - will allow the land to be nourished, maintained and build a natural ecosystem for the area.

16 Bibliography

Book resources:

Bell, G., Clarke, J., Bellamy, D. and Mollison, B. (1992) *The Permaculture way: Practical ways to create a self-sustaining world*. London: Thorsons Pub.

Bridgewater, A. and Bridgewater, G. (2007) *The self-sufficiency handbook*. United Kingdom: New Holland Publishers.

Burnett, G. and Strawbridge, B. (2016) *Permaculture: A beginner's guide*. 2nd edn. London, United Kingdom: Spiralseed.

Candlin, A. (2011) *The self sufficiency manual: A complete, practical guide to living off the land*. London: A & C Black Publishers.

Cooke, I. and Ian, C. (2011) *Self-sufficiency: Grow your own fruit and vegetables*. United Kingdom: New Holland Publishers.

Seymour, J. (2009) *The new complete book of self-sufficiency*. London: Dorling Kindersley.

Web resources:

andrews, graham (no date) *Growing trees for firewood*. Available at: http://www.grahamandrews.com/growing_trees_for_firewood.html (Accessed: 22 February 2017).

Davis, S. (2012) *Heating qualities*. Available at: <http://www.firewood.co.uk/heating-qualities/> (Accessed: 30 January 2017).

By the numbers • the urban homestead (no date) Available at: <http://urbanhomestead.org/about/by-the-numbers/> (Accessed: 27 January 2017).

Choices, N. (2016) *what should my daily intake of calories be?* Available at: <http://www.nhs.uk/chnq/pages/1126.aspx?categoryid=51> (Accessed: 27 January 2017).

Ewings, S. (2014) *Build A Gasifier - build a gasifier - power for homes and business*. Available at: <http://www.build-a-gasifier.com> (Accessed: 27 January 2017).

Experts confirm that fruit and vegetable consumption reduces risk of mortality (no date) Available at: <https://www.sciencedaily.com/releases/2013/09/130926102433.htm> (Accessed: 27 January 2017).

GiffordSmFootprintFam, D. (2012) *How much land is needed to be self sufficient*. Available at: <http://www.smallfootprintfamily.com/how-much-land-is-needed-to-be-self-sufficient> (Accessed: 27 January 2017).

Giraffe (2011) *What is coppicing?* Available at: <http://www.coppice.co.uk> (Accessed: 30 January 2017).

HM Government (2010) *Calorific value by species hardwood species softwood species*. Available at: [http://www.forestry.gov.uk/pdf/FR_BEC_Wood_as_Fuel_Technical_Supplement_2010.pdf/\\$FILE/FR_BEC_Wood_as_Fuel_Technical_Supplement_2010.pdf](http://www.forestry.gov.uk/pdf/FR_BEC_Wood_as_Fuel_Technical_Supplement_2010.pdf/$FILE/FR_BEC_Wood_as_Fuel_Technical_Supplement_2010.pdf) (Accessed: 30 January 2017).

Kendra (2013) how much should I plant to feed my family for a year? Available at: <http://newlifeonahomestead.com/how-much-should-i-plant/> (Accessed: 27 January 2017).

Krajnc, N. and FAO (2015) *Cover photo: Nike Krajnc*. Available at: <http://www.fao.org/3/a-i4441e.pdf> (Accessed: 30 January 2017).

Lawton, G. (2012) *Verge Permaculture – Permaculture for professionals, innovators and entrepreneurs*. Available at: <https://vergepermaculture.ca> (Accessed: 30 January 2017).

Ltd, A.I. (no date) *Cost of owning A horse*. Available at: <http://www.equineworld.co.uk/buying-loaning-selling-horses/buying-a-horse/cost-of-owning-a-horse> (Accessed: 3 February 2017).

Minister's foreword (2013) Available at: <http://www.sags.org.uk/docs/ScotlandAllotmentDesignGuide.pdf> (Accessed: 10 February 2017).

Hugo (2017) how many m2 you need to cultivate in order to be self-sustainable? Available at: <http://survivel.cultu.be/how-many-m2-4-self-sustainable> (Accessed: 27 January 2017).

Roser, M. (no date) *Food per person*. Available at: <https://ourworldindata.org/food-per-person/> (Accessed: 8 February 2017).

Tott, R. (2015) How much land for self-sufficient living? Available at: <https://homefarmer.co.uk/how-much-land-for-self-sufficient-living/> (Accessed: 27 January 2017).

VegetableGardeningLife (2015) Companion planting charts. Available at: <http://www.vegetablegardeninglife.com/companion-planting-charts.html> (Accessed: 27 January 2017).



16.1.1.1.1 REPORT OF HANDLING

16.1.1.1.2 DELEGATED REPORT

16.1.1.1.3

16.1.1.1.4

16.1.1.1.5 Ref No	16.1.1.1.6 13/01386/FLL	
16.1.1.1.7 Ward No	16.1.1.1.8 N4- Highland	
16.1.1.1.9 Due Determination Date	16.1.1.1.10 06.10.2013	
16.1.1.1.11 Case Officer	16.1.1.1.12 Mark Williamson	
16.1.1.1.13 Report Issued by	16.1.1.1.14	16.1.1.1.15 Date
16.1.1.1.16 Countersign ed by	16.1.1.1.17	16.1.1.1.18 Date

16.1.1.1.19

16.1.1.1.20

PROPOSAL:

16.1.1.1.21 Erection of dwellinghouse

LOCATION: Land 130 Metres North East of Croftness, Farmhouse Aberfeldy

16.1.1.1.22 SUMMARY:

This report recommends **approval** of the application as the development is considered to comply with the relevant provisions of the Development Plan and there are no material considerations apparent which outweigh the Development Plan.

16.1.1.1.23 DATE OF SITE VISIT: 25 September 2013

SITE PHOTOGRAPHS - attached

BACKGROUND AND DESCRIPTION OF PROPOSAL

Brief Description

The application site is a 1.9 ha area of grazing land forming part of the agricultural land holding of Mains of Croftness which is situated to the south of Aberfeldy on land between the A826 to the east and the Birks o' Aberfeldy and the Moness Burn to the west. The site is a sloping site and contained within a wooded landscape framework.

This is a detailed proposal for the erection of an eco-house and associated land management proposals based upon a detailed and recognised sustainable living model and concept.

The proposed dwellinghouse is situated to the south east of the application site and comprises a 2 storey traditionally styled dwellinghouse. The proposed dwellinghouse will be "near zero carbon and highly insulated to Passivhaus standards", including high performance triple glazed windows and doors. A high level of air tightness is proposed and a heat recovery ventilation system. Coppicing of woodland will provide all the required heating and hot water energy supplemented by solar thermal energy. Energy modelling has concluded that "coppicing will be able to provide all the hot water and heating". A coppice processing workshop and boiler house is proposed to the east of the dwellinghouse. The land management proposals for sustainable living are based on "permaculture principles" where 6 zones are proposed on the wider site. These are outlined below:-

"Zone 0 - this is the house where aims would be to reduce energy and water needs, harnessing natural resources such as sunlight, and generally creating a harmonious, sustainable environment in which to live and work.

Zone 1 - nearest to the house and including a kitchen garden and herb spiral

Zone 2 - this is a vegetable garden with 2 allotments with crop rotation and chicken coup. 2 rainwater harvesting ponds in this zone allow for irrigation.

Zone 3 - organic mixed fruit orchard with living nitrogen fixing mulch growing between to suppress weeds and feed the trees

Zone 4 - coppicing woodland and ne shelter belt planting area

Zone 5 - is a seeded wildflower meadow with a pond and reed bed for on site water treatment.

The zones are separated by traditional laid hedges and connected by informal paths".

SITE HISTORY

None

PRE-APPLICATION CONSULTATION

A pre-application meeting took place on the 27 November 2012.

NATIONAL POLICY AND GUIDANCE

The Scottish Government expresses its planning policies through The National Planning Framework 1 & 2, the Scottish Planning Policy (SPP), Planning Advice Notes (PAN), Designing Places, Designing Streets, and a series of Circulars.

16.1.1.1.24 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 was adopted by Perth and Kinross Council on 3 February 2014. It is the most recent statement of Council policy and is augmented by Supplementary Guidance.

The principal policies are, in summary:

OTHER POLICIES

Perth and Kinross Local Development Plan 2014

The application site is within the landward area where the following policy is relevant:-

RD3: Housing in the Countryside

Other Policies:-

Perth and Kinross Council Housing in the Countryside Guide 2012

Perth and Kinross Council Primary Education and New Housing Development 2009

16.1.2

16.1.3 CONSULTATION RESPONSES

Education And Children's Services No objections

Scottish Water No objections

Environmental Health No objections

REPRESENTATION

None

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	Not Required

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 application site is within the landward area of the adopted local plan and falls to be assessed under the Council's Housing in the Countryside Guide 2012. Under this guidance favourable consideration will be given to proposals for the construction of eco-friendly houses in the open countryside where a rural setting is required and that the project is closely linked to the management of land or the use of land for sustainable living. The proposal should also blend sympathetically with the landform and topography and not be detrimental to the surrounding landscape.

It is considered that the Design Statement which includes the detailed house design principles and land management plan and modelling comprises a satisfactory, comprehensive and recognised approach in achieving sustainable living through the adoption and implementation of permaculture principles and is considered to be in accordance with the Council's Housing in the Countryside Guide 2012. The proposal is also generally in accordance with National Planning Policy which encourages sustainable development and renewable energy production. The scale and overall design of the dwellinghouse is acceptable. There will be no adverse impact on the residential amenity of the proposed house or neighbouring houses as a result of the proposal as there is sufficient distances between properties.

The siting of the house to the south east corner of the site allows it to benefit from nearby woodland screening to the east and a rising wooded topography to the south ensuring the ridge does not breach the skyline. Further south on the rising ground there is existing housing at a higher elevation

which provides further favourable context for the siting of the proposed house in terms of 'landscape fit.' There is also existing housing to the west at Croftness at a higher elevation. It is considered therefore that the proposal is acceptable in terms of impact on the surrounding landscape and will blend sympathetically with the existing landform and nearby built development.

Roads and Access

There are no objections to the proposal in terms of access and parking subject to conditions on parking spaces and turning facilities on the site.

The core path AFDY/111 provides access to the application site and a condition is recommended on any consent to protect it's use during building works and on completion.

Drainage and Flooding

The Council's Flooding Section were consulted and have stated that there is a small section in the west corner of the application site that sits within the SEPA 1 in 200 year Fluvial Flood Map and therefore this area is at a medium to high risk of flooding. However, as this area is to be used for paddock/livestock grazing, the impact of flooding is low there are no objections raised.

Developer Contributions

There is currently capacity at Breadalbane Academy Primary School and there is no requirement for an education contribution to be made in relation to this development.

Economic Impact

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

Application Processing Time

24 weeks

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 considered to comply with the approved TAYplan 2012 and the adopted Local Development Plan 2014. Having taken account of the material considerations there are none that would justify overriding the adopted Development Plan. On that basis the application is recommended for approval subject to conditions

LEGAL AGREEMENTS

None required.

DIRECTION BY SCOTTISH MINISTERS

None applicable to this proposal.

RECOMMENDATION

Approve the application

Conditions and Reasons for Recommendation

1 The proposed development must be carried out in accordance with the approved drawings and documents, unless otherwise provided for by conditions imposed on the planning consent.

To ensure that the development is carried out in accordance with the plans approved.

2 Details of the specification and colour of the proposed external finishing materials to be used shall be submitted for the approval of the Planning Authority prior to the commencement of the development. The scheme as approved shall be implemented prior to the occupation and or use of the development.

In the interests of visual amenity; to ensure a satisfactory standard of local environmental quality.

3 Prior to the occupation or use of the approved development turning facilities shall be provided within the site to enable all vehicles to enter and leave in a forward gear.

In the interests of pedestrian and traffic safety and in the interests of free traffic flow.

4 Prior to the occupation or use of the approved development a minimum of 2 No. car parking spaces shall be provided within the site.

In the interests of pedestrian and traffic safety and in the interests of free traffic flow.

5 The core path AFDY/111 which provides access to the application site shall not be obstructed during building works or on completion. Any damage done to the route and associated signage during building works must be made good before the house is occupied.

To ensure continued public access along the public paths.

6 Prior to any works starting on site, details shall be submitted to and approved in writing by this Planning Authority of the monitoring equipment and processes to be used in the development to establish levels of energy use. The details agreed shall be fully operational to the satisfaction of this Council as Planning Authority prior to the occupation of the dwellinghouse and shall be maintained thereafter. All information and data collected through this monitoring shall be provided in writing to this Planning Authority on an annual basis unless otherwise agreed in writing by the Planning Authority.

The dwellinghouse has been approved under the Council's Housing in the Countryside Guide 2012 and to ensure that the success of the development can be monitored.

7 Prior to occupation of the dwellinghouse the applicant shall submit for the approval of the Planning Authority a detailed land management plan for the woodland management and horticultural use on the site associated with sustainable living. All information and data collected through this monitoring shall be provided in writing to this Planning Authority on an annual basis unless otherwise agreed in writing by the Planning Authority.

In the interests of sustainability.

Justification

- 8 The proposal is in accordance with the Development Plan and there are no material reasons which justify departing from the Development Plan

Informatives

- 1 This planning permission will last only for three years from the date of this decision notice, unless the development has been started within that period. (See section 58(1) of the Town and Country Planning (Scotland) Act 1997 (as amended).
- 2 Under section 27A of the Town and Country Planning (Scotland) Act 1997 (as amended) the person undertaking the development is required to give the planning authority prior written notification of the date on which it is intended to commence the development. A failure to comply with this statutory requirement would constitute a breach of planning control under section 123(1) of that Act, which may result in enforcement action being taken.
- 3 As soon as practicable after the development is complete, the person who completes the development is obliged by section 27B of the Town and Country Planning (Scotland) Act 1997 (as amended) to give the planning authority written notice of that position.
- 4 No work shall be commenced until an application for building warrant has been submitted and approved.

Procedural Notes

Not Applicable.

PLANS AND DOCUMENTS RELATING TO THIS DECISION

13/01386/1
13/01386/2
13/01386/3
13/01386/4
13/01386/5
13/01386/6

Date of Report 04.03.2014

TCP/11/16(509) – 17/01524/FLL – Erection of a dwellinghouse and outbuilding, land 150 metres north west of Upper Cloan telecommunications mast, Auchterarder

PLANNING DECISION NOTICE

REPORT OF HANDLING

REFERENCE DOCUMENTS

PERTH AND KINROSS COUNCIL

Mrs Karen Laver
c/o Architeco Ltd
Colin Potter
43 Argyll Street
Dunoon
Argyll
PA23 7HG

Pullar House
35 Kinnoull Street
PERTH
PH1 5GD

Date 19th October 2017

TOWN AND COUNTRY PLANNING (SCOTLAND) ACT

Application Number: **17/01524/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 5th September 2017 for permission for **Erection of a dwellinghouse and outbuilding** Land 150 Metres North West Of Upper Cloan Telecommunications Mast Auchterarder 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 as it does not comply with any of the categories of the policy guidance or criterion where a dwellinghouse or dwellinghouses would be acceptable in this location.
2. The proposal is contrary to the Council's Housing in the Countryside Guide (SPG) 2014 as it does not comply with any of the categories of the policy guidance or criterion where a dwellinghouse or dwellinghouses would be acceptable in this location. Specifically the proposal fails to comply with category 3.5 as it is not a test pilot project or sufficiently ground-breaking to warrant a dwelling house in this countryside location. Furthermore there is no mechanism for ensuring the occupant or prospective purchaser of the site be required to live and operate the site in an ecologically sound and sustainable manner.

3. The proposal is contrary to Policy ER6 of the Perth and Kinross Local Development Plan 2014 as it erodes local distinctiveness, diversity and quality of Perth and Kinross's landscape character, visual, scenic qualities of the landscape and the quality of landscape experience through the siting of the development within the Ochil Special Landscape Area.
4. The proposal is contrary to Policy PM1A of the Perth and Kinross Local Development Plan 2014, as the proposed siting of the development does not respect the character and amenity of this area of the Ochils.
5. 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.

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

17/01524/1

17/01524/2

17/01524/3

17/01524/4

17/01524/5

17/01524/6

17/01524/7

17/01524/8

REPORT OF HANDLING

DELEGATED REPORT

Ref No	17/01524/FLL	
Ward No	P7- Strathallan	
Due Determination Date	04.11.2017	
Case Officer	John Russell	
Report Issued by		Date
Countersigned by		Date

PROPOSAL: Erection of a dwellinghouse and outbuilding

LOCATION: Land 150 Metres North West Of Upper Cloan
Telecommunications Mast Auchterarder

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: 21 September 2017

SITE PHOTOGRAPHS





BACKGROUND AND DESCRIPTION OF PROPOSAL

The site lies to 1.5km south of the A9 Motorway and 300m East of Nether Cloan. Access to the site is via an existing track opposite Cloan House. The access track passes through a number of gates and fields before entering the main body of the application site, at this point there is an existing stable to the left of the access track, which sits at a lower level than the track. From reviewing the site history there are no records associated with the erection of this structure.

The access track then travels in a southerly direction and climbs up the hill to the existing telecommunication mast in the South corner of the site (application 01/01453/TDPD and 05/00545/TD refer) this represents the highest point in the site. It is worthwhile noting that the planning authority previously received an application to relocate the existing telecommunication infrastructure to a new site however this was refused. The telecoms mast therefore remains on the site and the proposed dwelling associated with this application has been moved northwards below the mast.

It is worth noting that an earlier application 17/00329/FLL for a dwelling house on the site was refused. The agent confirms:-

We have chosen to resubmit rather than appeal the previous decision since the location of the house has been moved and the nature of the proposal has been clarified to address the reasons for refusal and to respond to some of the comments made in the Report of Handling of the previous application. The previous application was lodged with the assumption that the communications mast on the site was to be relocated. This is no longer the case, with the mast

staying in its current location, requiring amendment to the application boundaries.

SITE HISTORY

01/01453/TDPD Installation of telecommunications equipment on 31 October 2001

03/00566/FOR Mixed workings on 25 April 2003 Application Permitted

05/00545/TD Extension to telecommunications mast, installation of 3 antenna and erection of 2 equipment cabinets 17 May 2005 Application Permitted

17/00329/FLL Erection of a dwellinghouse and outbuilding 27 April 2017 Application Refused

17/00401/FLL Installation of replacement telecommunications mast and associated works 25 May 2017 Application Refused

PRE-APPLICATION CONSULTATION

Pre application Reference: 16/00740/PREAPP

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 2016-2036 and the Perth and Kinross Local Development Plan 2014.

TAYplan Strategic Development Plan 2016 – 2036 - Approved October 2017

Whilst there are no specific policies or strategies directly relevant to this proposal the overall vision of the TAYplan should be noted. The vision states *“By 2036 the TAYplan area 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, study 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 adaptation.

Policy PM1B - Placemaking

All proposals should meet all eight of the placemaking criteria.

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 TA1B - Transport Standards and Accessibility Requirements

Development proposals that involve significant travel generation should be well served by all modes of transport (in particular walking, cycling and public transport), provide safe access and appropriate car parking. Supplementary Guidance will set out when a travel plan and transport assessment is required.

Policy NE2A - Forestry, Woodland and Trees

Support will be given to proposals which meet the six criteria in particular where forests, woodland and trees are protected, where woodland areas are expanded and where new areas of woodland are delivered, securing establishment in advance of major development where practicable.

Policy NE2B - Forestry, Woodland and Trees

Where there are existing trees on a development site, any application should be accompanied by a tree survey. There is a presumption in favour of protecting woodland resources. In exceptional circumstances where the loss of individual trees or woodland cover is unavoidable, mitigation measures will be required.

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 EP3B - Water, Environment and Drainage

Foul drainage from all developments within and close to settlement envelopes that have public sewerage systems will require connection to the public sewer. A private system will only be considered as a temporary measure or where there is little or no public sewerage system and it does not have an adverse effect on the natural and built environment, surrounding uses and the amenity of the area.

Policy EP3C - Water, Environment and Drainage

All new developments will be required to employ Sustainable Urban Drainage Systems (SUDS) measures.

Policy HE1A - Scheduled Monuments and Non Designated A

There is a presumption against development which would have an adverse effect on the integrity of a Scheduled Monument and its setting, unless there are exceptional circumstances.

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

Historic Environment Scotland – HES advise the development has the potential to affect Ogle Hill, fort which is recognised as being of national importance and is designated as a scheduled monument under the Ancient Monuments and Archaeological Areas Act 1979 (SM 3073 Ogle Hill, fort).

HES do not have any comments to make on the proposals. They confirm that their decision not to provide comments should not be taken as support for the proposals.

Scottish Water – No objection.

Contributions Officer – The Primary Education and Auchterarder A9 Junction Developer Contributions are applicable to this development.

Transport Planning – Insofar as the Roads matters are concerned I have no objection subject to conditions.

REPRESENTATIONS

The following points were raised in the 1 representation that objects to the proposal.

- Adverse effect on visual amenity.
- Inappropriate landuse.
- Out of character with the area.
- Prominent construction in a highly visible position in open countryside.
- Formation of a pond on a slope without showing the civil works necessary to retain water. Slopes would be a considerable height due to the steep slope.

These matters are covered in the appraisal section of this report.

ADDITIONAL INFORMATION RECEIVED:

Environmental Impact Assessment (EIA)	Not Required
Screening Opinion	Not Required
EIA Report	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

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 2016 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.

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.

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) Replacement of houses.
- (e) Conversion or replacement of redundant non-domestic buildings.
- (f) Development on rural brownfield land.

The proposal for the new dwelling should be assessed under criterion (c) New houses in the open countryside on defined categories of sites as set out in section 3 of the Supplementary Guidance. I therefore turn to the supplementary guidance that was adopted by the Council in October 2014, which assists with the assessment of Policy RD3.

From my review it does not meet 3.1 Existing Gardens, 3.2 Flood Risk or 3.4 Houses for Local People.

Category 3.3 can provide for housing where there is a clear agricultural need or other rural business justification for key worker accommodation. However there is no existing business on the site that could justify operational need.

Category 3.5 can provide support to pilot projects creating eco-friendly houses where a rural setting is required and the project is linked to the management of land or use of land for sustainable living. It is this criterion that the application should be assessed against.

It is worthwhile noting the agent's criticism of the earlier refused application 17/00329/FLL incorporated into the updated Planning and Design Statement:-

The design of the house and the proposals for sustainable land management are very similar to those approved enthusiastically as fulfilling the terms of this part of the Housing in the Countryside Policy by the planning officer in relation to PKC13/01386/FLL – Erection of a dwellinghouse 130 m north east of Croftness Farmhouse, Aberfeldy in 2013 and if these proposals were so positively received in a rural location in Aberfeldy it is hard to understand why such similar proposals are not acceptable here. In this former case, the proposal was accepted as a pilot project without hesitation.

The agent has effectively raised the issue of precedence. This is a material consideration in the determination of an application.

However, every site presents different characteristics. In this case application 13/01386/FLL is located within walking distance to a settlement (Aberfeldy) when this site is not. Furthermore the passage of time between the 2013 application and 2017 application also makes a difference as changes and advances in construction technology will have implications for the pilot project criteria.

In light of this there is not sufficient similarity between the two applications referenced for precedent to be a material consideration of weight in the determination of this application.

Accordingly it is important to drill down on whether this proposal is a pilot project creating an eco-friendly house which requires to be located in this part of the countryside. The assessment then needs to look at how the project is linked to the management of land or use of land for sustainable living.

Is the house Design a pilot project creating a eco-friendly house?

The supporting statement confirms that the proposed dwelling will be insulated to Passivhaus Standards. A heat recovery ventilation system will be installed. The house will have coppicing rights to the adjacent woodland, which will provide all of the required heating and hot water energy. They also note that the house will be zero carbon as electricity and heating will all be produced via the coppiced woodland through a wood gasifier and solar panels. The preliminary energy modelling provided by the agent indicates that the design could have a heat load of just 4.5kW and they advise this would ensure the coppice would meet the requirements for hot water and heating demands.

The dwelling has three bedrooms; one on the ground floor and two on the first floor. There is a full height space for dining/kitchen and a sunroom facing North-west overlooking the full plot. Structural Insulated Panel Construction will form the main envelope of the building. Walls will be finished in render to the gables, with timber cladding to the North & South elevations. The roof

proposal is for profile metal sheet to be in keeping with the rural context. The agent confirms these materials have a high-recycled content and at the end of its life is fully recyclable.

A pilot project can be defined as a small scale preliminary study conducted in order to evaluate feasibility, time, cost, adverse events, and effect size (statistical variability) in an attempt to predict an appropriate sample size and improve upon the study design.

In this case I do not consider that the proposal meets this test as a pilot project.

The proposal relates to the construction of a house using a structural insulated panel system (SIPS). SIP kits are a common form of construction and there are a number of companies that manufacture the panels in factory conditions throughout the UK. This is a tried and tested form of construction and is therefore not a pioneering as required by the policy.

While I note the intention is to meet passivhaus standards it should be noted that this is also not a new concept. The passivhaus standard was developed in Germany in the early 1990s and the first dwellings to be completed to the passivhaus Standard were constructed in Darmstadt in 1991. The (BRE) British Research Establishment now confirms that 30,000 buildings are now constructed to the passivhaus standard with Passivhaus buildings constructed in every major European country, Australia, China, Japan, Russia, Canada the USA and South America. The passivhaus standard is therefore well tested and developed.

The agent also notes that the development is to be zero carbon as electricity and heating will be produced via the coppiced woodland through the wood gasifier and solar panels.

A report entitled 'A low carbon building standards strategy for Scotland' (the 'Sullivan Report') makes 56 recommendations to the Scottish government for challenging but realistic targets for housing and non-domestic buildings.

The majority of the recommendations are within the remit of the Scottish government's Building Standards Division, which has responsibility for setting Building Regulations within Scotland. The report recommends that 'net zero carbon' buildings (ie space and water heating, lighting and ventilation) are made a requirement by 2016/2017, if practical. In this case I do not consider that the proposal for carbon zero to be ground breaking enough given the existing requirements that are incorporated into the building regulations. I also note the building will be connected to the Grid.

There is a further recommendation in the Sullivan report for buildings to be 'total life zero carbon' by 2030. This is described as the building's total carbon emissions including those from construction and demolition as well as in use. While the agent has highlighted that the building could be recycled there is no breakdown showing the total life cycle. Even if this was provided I do not

consider that this would be sufficiently ground-breaking in the context of this housing in the countryside policy to warrant approval of the application in this countryside location.

How the project is linked to the management of land or use of land for sustainable living.

My assessment has already confirmed that this proposal is not a pilot project creating an eco-friendly house which requires a location in the countryside. This alone means the proposal cannot be supported under criterion 3.5 of the SPG. However for fullness I will also review the information submitted on land management.

The agent's supporting statement confirms that the area within the applicant's ownership will follow permaculture principles. They note that the site has been divided into zones ranging from Zone 0 to Zone 5 as follows:-

Zone 0 is the house itself, with the remaining zoning being dependent on input required and frequency of tending.

Zone 1 is nearest to the house and includes the kitchen garden with short growing season vegetables. Wild flowers and herbs are spread in front of the house while two rainwater harvesting ponds allow for irrigation of the allotments. A herb spiral created the optimum conditions and aspect, from dry and sunny to shaded and damp, in a small area.

Zone 2 consists mainly of two areas: the crop rotation beds of long growing season vegetables and the fruit trees. Between the lines of fruit trees, an organic mixed fruit orchard, living nitrogen fixing mulch grows between to naturally suppress weeds, feed the tree fruit system and provide further food crop. Those two areas should provide the majority of fresh produce for the family using a system of crop rotation to ensure ground fertility is maintained.

Zone 3 includes the main farming crops for use or sale and paddock for regularly monitored and attended animals. It also includes the existing stables situated south west of the fence, anew larger paddock close to it and evergreen trees to act as a shelter belt.

Zone 4 includes the grazing field for the family's livestock as well as their horses. Zone 4 also includes part of the existing woodland area, which will be coppiced to supply the heat and hot water fuel requirements for the house. The coppicing will manage the woodland for the future. The management of the woodland will use only 10% of coppice annually for the heating requirements. This allows a 10 year regeneration and maintains the woodland ad infinitum. A pond with reed bed acts as the final on-site water treatment is located in the North-West end of the site, fed by an aerating stream and with an uneven edge to promote a variety of water plants and aquatic life. This can provide a sustainable watering hole for the animals

Zone 5 is an unmanaged wild natural ecosystem, as it exists in its natural form – an essential area for sustainable living. Beyond the site, a mature forest provides wind protection from the northerly winter winds. The boundaries of this zone extend beyond the plot and connect this undamaged ecosystem to the surrounding forest. The zones are separated by traditional laid hedges and connected by informal paths laid in loops allowing for the whole area to be attended to on a single walk round.

From reading the agent's design statement and supporting brief associated with the permaculture zoning there are a lot of 'suggestions' or 'possibilities' of what could come forward to comply with the ethical aspirations and spirit of permaculture. However, there is a lack of detail on what will actually be secured. For instance there is no ground investigation on whether the pond in Zone 4 could be formed and there are no details on the extent of land engineering required to form this water feature. There is reference to the potential formation of a pollytunnel but there is no detail on how this will be formed. Furthermore there is no clarity on the mechanism for ensuring the occupant or prospective purchaser of the site be required to live and operate the site in an ecologically sound and sustainable manner.

Siting Criteria

Proposals for a new house falling within category 3 are required to demonstrate that they meet the siting criteria of the SPG. The proposed dwelling is located within the south-west corner of the field. There is containment to the west and south boundary with the existing trees to the south forming a backdrop. However there is no curtilage definition for the dwelling to the north or east of the site. I do not consider that the boundary treatment associated with the existing field creates an identifiable site for the dwellinghouse to be sited as required by criterion (c). Furthermore I consider that the scheme as proposed will conflict with criterion (d) as it will have a detrimental impact on the surrounding landscape and I explore this further under the landscape heading.

Overall Sustainability

The council's approach as set out in the new Housing in the Countryside Policy is 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 travel minimised. This proposal would be sited some distance from the nearest substantial settlement of Auchterarder. Its location would not provide any support for local existing communities or services. Occupants of the new dwelling would substantially or wholly rely on private transport as there is no local bus service in close proximity to the site. This proposal would therefore not meet with the general approach of the council's policy to sustainable rural development.

Landscape

Development and land use change should be compatible with the distinctive characteristics and features of Perth & Kinross's landscape. 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 of Policy ER6 - Managing Future Landscape Change to Conserve and Enhance the Diversity and Quality of the Areas Landscapes.

The site is located within the Ochill Hills Special Landscape Area (SLA) which lies between Strathearn and the Loch Leven basin. The northern edge of the Ochils is formed by the Strathallan and Strathearn valleys. The northern boundary is drawn along the A9 from Greenloaning, past Blackford to Gleneagles from where the railway line forms the boundary.

The Ochils are the most significant hill range in central Scotland, cutting dramatically across the lowlands between Forth and Tay. The Ochils form a backdrop to a whole series of communities to north and south, and have a clear identity as a distinct landscape feature, the hill range therefore contributes to the setting of Strathearn and Strathallan.

The site is located on the northern scarp. Here geometric plantations and shelterbelts are prominent in this open, large scale landscape. These features often enclose areas of grazing. This agricultural use is considered to sit comfortably with the Igneous Hills landscape character type. In the Tayside Landscape Character Assessment it is noted that there are a few areas that allow arable cultivation to take place but the TLCA considers that reversion to grassland should be encouraged in some of these areas. In this case the change of the application site from grazing to permaculture use would conflict with the landscape character type.

I note that the Landscape Guidelines for the Ochil Hills Landscape Character Type in the TLCA notes the following:-

- **Encourage new development to reinforce the existing settlement pattern, focused on market towns and smaller villages outwith this landscape type. Discourage development in the open countryside.**
- **Encourage the appropriate conversion of redundant farm buildings. Guidance should be provided on the way buildings should be converted (including the provision of drives, gardens etc.) to prevent the suburbanisation of the countryside**

The proposal does not meet these guidelines. As a consequence I am of the view the proposal will erode local distinctiveness, diversity and quality of this Perth and Kinross landscape character area. It would detract from the character type's visual integrity, identity and scenic quality, thus contrary to Policy ER6.

Policy PM1A confirms that development must contribute positively, to the quality of the surrounding built and natural environment. In this case the siting of the development does not respect the character and amenity of this area of the Ochils and is contrary to 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).

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.

I do not consider that this proposal would have any detrimental impact on residential receptors or neighbouring agricultural/woodland uses. An acceptable level of residential amenity would be achieved for the occupants of the proposed dwelling if the existing telecommunications mast is removed or relocated.

Previous consultation with Environmental Health has confirmed that this area is served by private water supplies. To ensure the new development has an adequate and consistently wholesome supply of water and maintain water quality and supply in the interests of residential amenity conditional control is recommended. They also note that the development should take account of existing private water supplies in the vicinity of the site and/or septic drainage systems of neighbour.

Roads and Access

There are no objections to the proposed dwellinghouse on technical roads or access grounds from Transport Planning. Comments on sustainable travel have already been discussed under the policy appraisal section.

Drainage and Flooding

There are no flooding issues at the site. While the agent has highlighted that they intend to install a pond on the site that would comply with the SUDS principles there is not sufficient detail on whether this can be satisfactorily installed a matter that has also been pointed out in the letter of representation on the application.

Cultural Heritage

Based on the consultation response from Historic Environment Scotland I do not consider that the development would significantly impact on Cultural Heritage assets to a level that would warrant refusal of the application. Accordingly given the scale of the development there is no conflict with Policy HE1A.

Developer Contributions

Primary Education

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 Community School of Auchterarder Primary School where there is a capacity issue. An education contribution of £6,460 is required.

A9 Junction

The Council Developer Contributions Supplementary Guidance requires contributions from developments within the Auchterarder and wider Strathearn housing market area towards meeting the cost of delivering the A9 junction improvements which are required in the interests of safety. An A9 Junction contribution of £3,450 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 2016 and the adopted Local Development Plan 2014. I have taken account of material considerations identified in the agent's Design Statement and Briefing Document and find none that would justify overriding the adopted Development Plan or Supplementary Planning Guidance. 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 as it does not comply with any of the categories of the policy guidance or criterion where a dwellinghouse or dwellinghouses would be acceptable in this location.
- 2 The proposal is contrary to the Council's Housing in the Countryside Guide (SPG) 2014 as it does not comply with any of the categories of the policy guidance or criterion where a dwellinghouse or dwellinghouses would be acceptable in this location. Specifically the proposal fails to comply with category 3.5 as it is not a test pilot project or sufficiently ground-breaking to warrant a dwelling house in this countryside location. Furthermore there is no mechanism for ensuring the occupant or prospective purchaser of the site be required to live and operate the site in an ecologically sound and sustainable manner.
- 3 The proposal is contrary to Policy ER6 of the Perth and Kinross Local Development Plan 2014 as it erodes local distinctiveness, diversity and quality of Perth and Kinross's landscape character, visual, scenic qualities of the landscape and the quality of landscape experience through the siting of the development within the Ochil Special Landscape Area.
- 4 The proposal is contrary to Policy PM1A of the Perth and Kinross Local Development Plan 2014, as the proposed siting of the development does not respect the character and amenity of this area of the Ochils.
- 5 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.

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

17/01524/1

17/01524/2

17/01524/3

17/01524/4

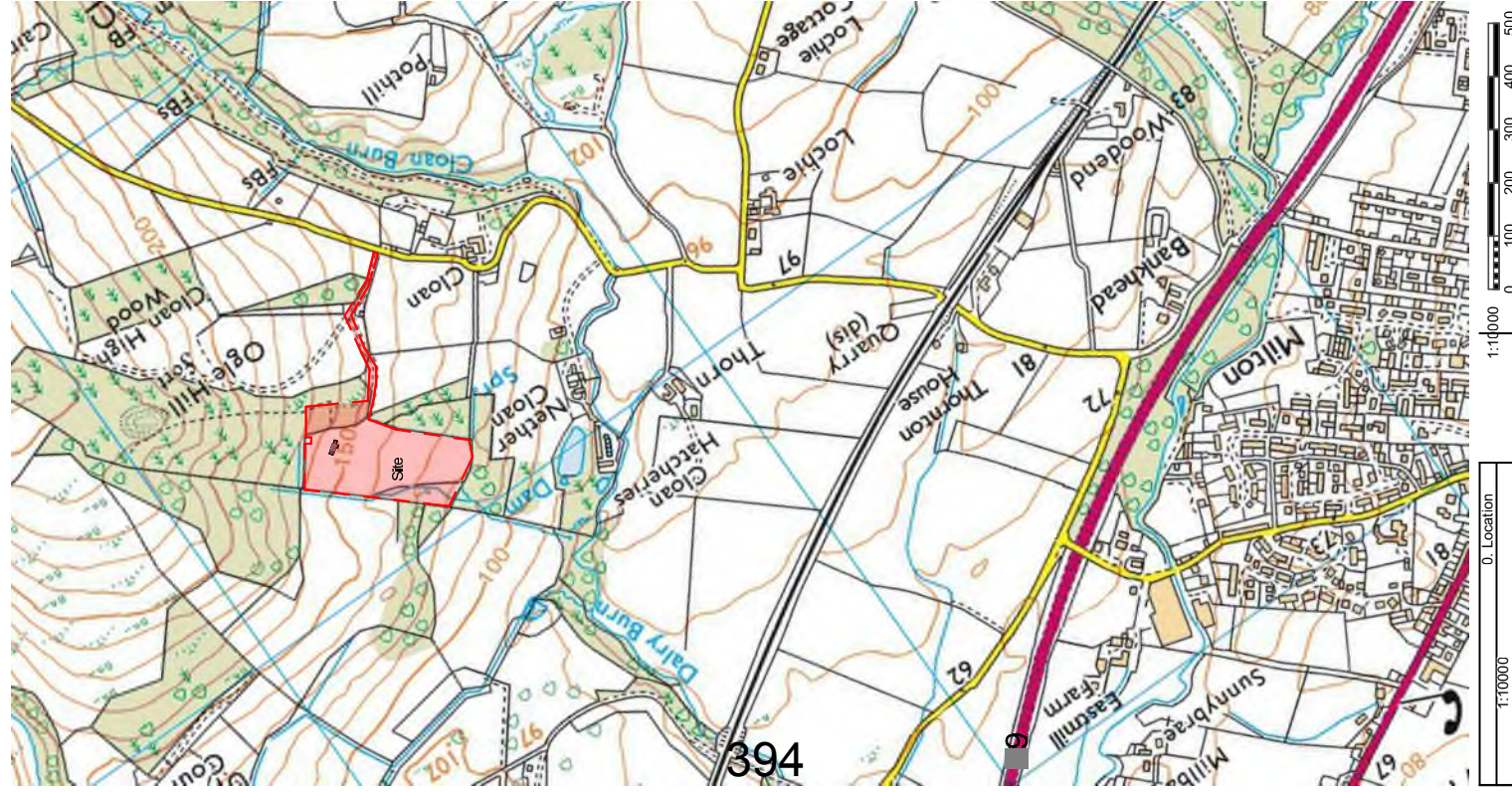
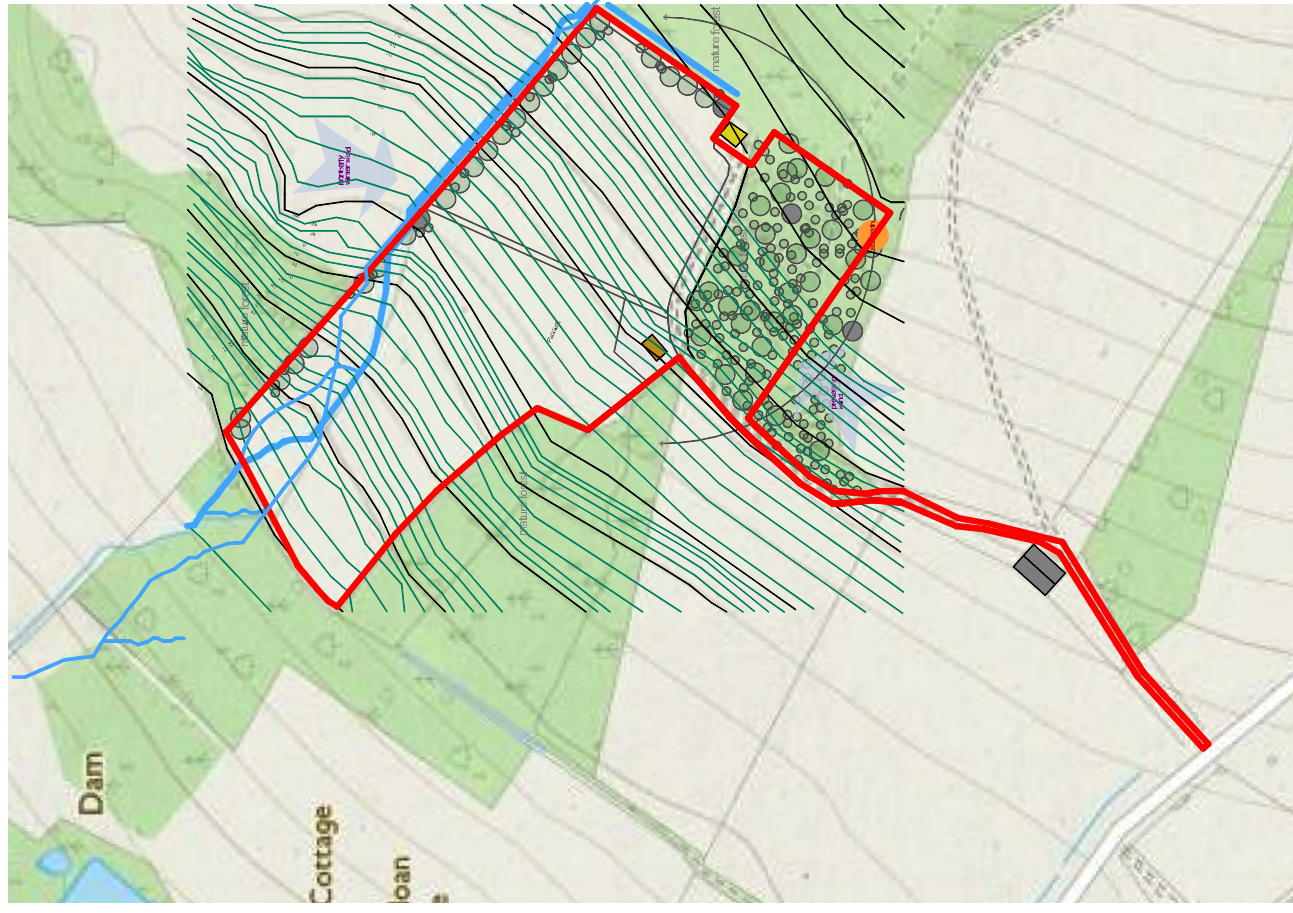
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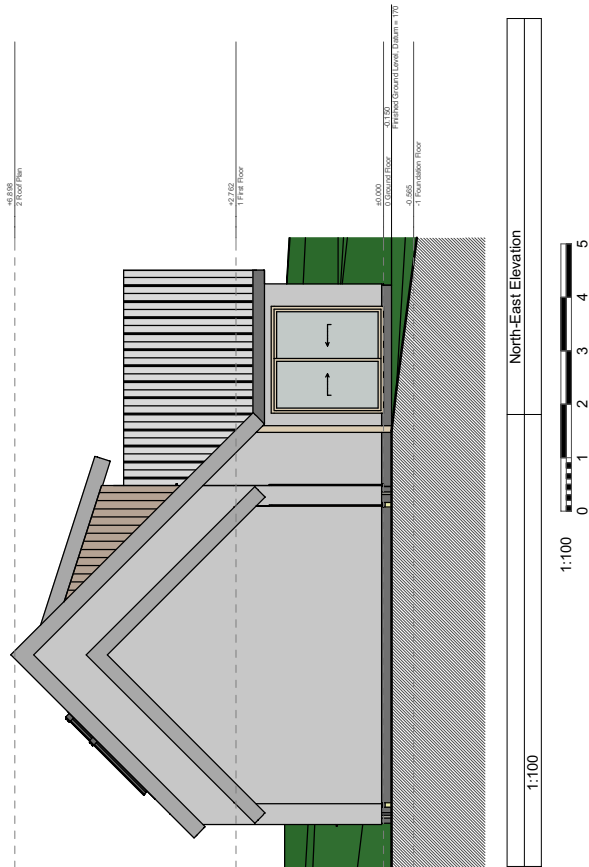
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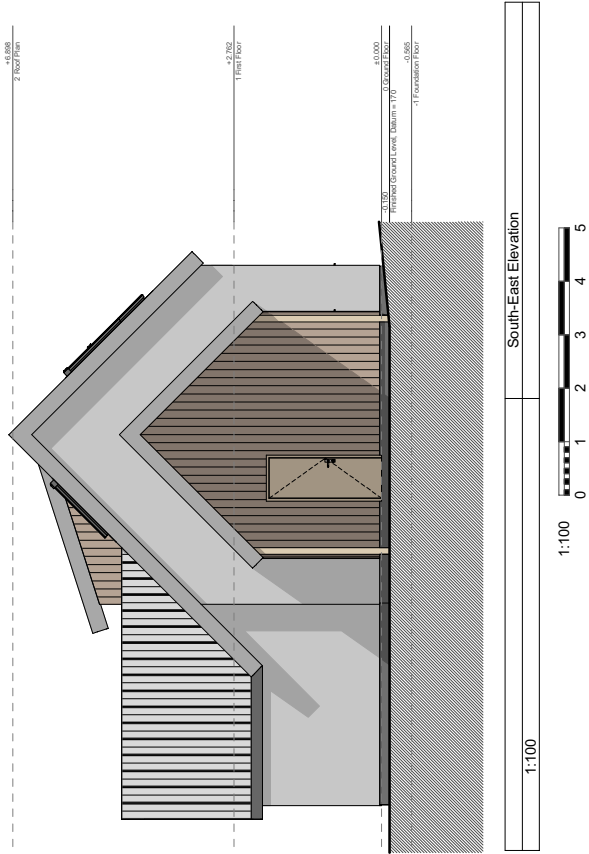
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Date of Report 18.10.17





Notes Copyright ARCHITECO 2017 Do not scale construction dimensions from this drawing. All dimensions are to be verified prior to construction.	
Revision History Rev A- - Location plans updated for accuracy - Red boundary taken to public road - Floor levels shown on elevations	
Project K Laver, & D Malcolm Upper Cloan, Auterarder, Perth & Kinross, PH3 1PP, Scotland, UK	
Drawing Name Elevations	
Drawing Status In Progress	
Modified by D.W.H	Date 31/08/2017
Checked by	
Drawing Scale 1:100	
Drawing Number 1271-02-05-RevA	Revision -A




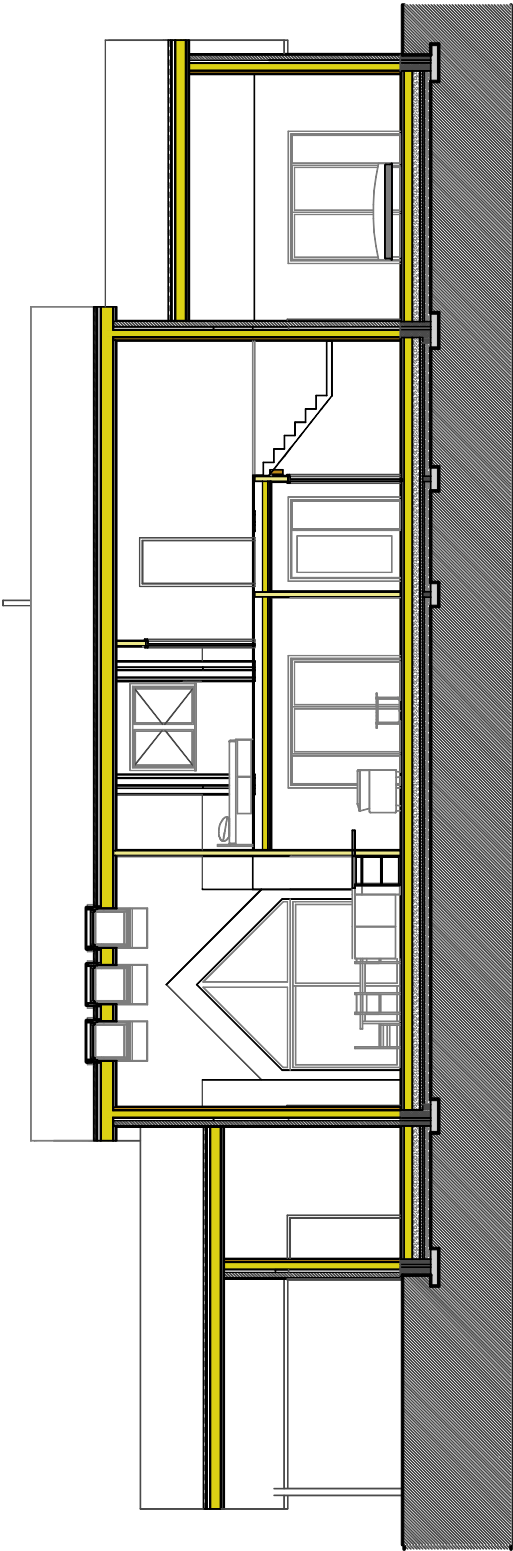
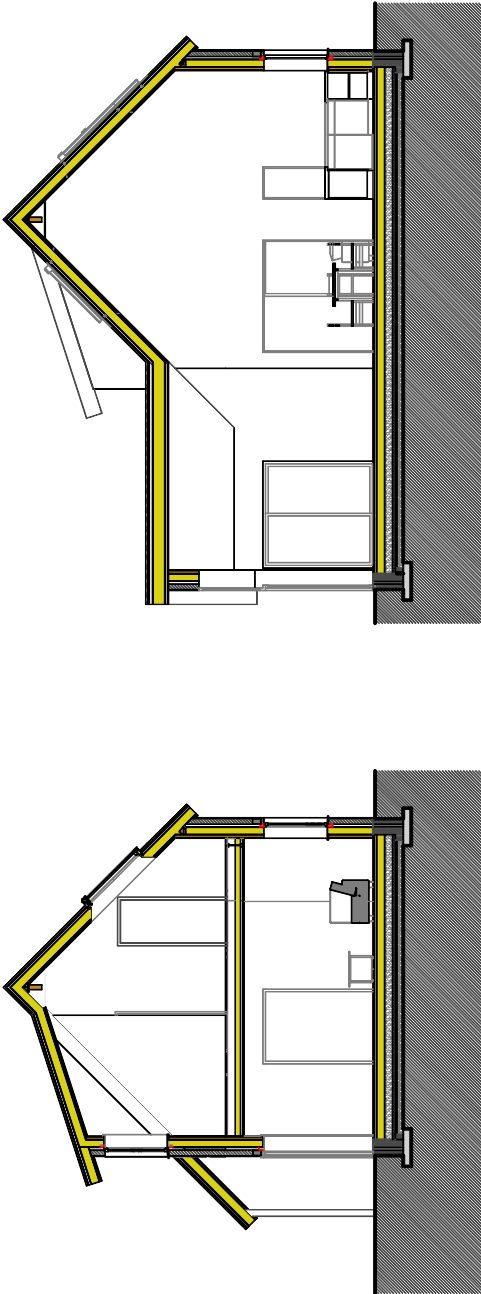
<div>Notes</div> <div>Copyright ARCHITECO 2017</div> <div>Do not scale construction dimensions from this drawing. All dimensions are to be verified prior to construction.</div>	
<div>Revision History</div> <div>Rev A-</div> <div>- Location plans updated for accuracy</div> <div>- Red boundary taken to public road</div> <div>- Floor levels shown on elevations</div>	
<div>Project</div> <div>K Laver, & D Malcolm</div> <div>Upper Cloan, Auterarder, Perth &</div> <div>Kinross, PH3 1PP, Scotland, UK</div>	
<div>Drawing Name</div> <div>Elevations</div>	
<div>Drawing Status</div> <div>In Progress</div>	
<div>Modified by</div> <div>D.W.H</div>	<div>Date</div> <div>31/08/2017</div>
<div>Checked by</div>	
<div>Drawing Scale</div> <div>1:100</div>	
<div>Drawing Number</div> <div>1271-02-06-Rev A</div>	<div>Revision</div> <div>- A</div>

ARCHITECO

SUSTAINABLE DESIGN & LOW ENERGY BUILDING SPECIALISTS

43 Argyll Street, Dunoon PA23 7HG
info@architeco.co.uk 01389 701 986 www.architeco.co.uk

		<div>Roof Plan</div> <div>1:500</div>		<div>Notes</div> <div>Copyright ARCHITECO 2017</div> <div>Do not scale construction dimensions from this drawing. All dimensions are to be verified prior to construction.</div>		<div>Revision History</div> <div></div>		<div>Project</div> <div>K Laver, & D Malcolm</div> <div>Upper Cloan, Auterarder, Perth & Kinross, PH3 1PP, Scotland, UK</div>		<div>Drawing Name</div> <div>Sections</div>		<div>Drawing Status</div> <div>In Progress</div>		<div>Modified by</div> <div>D.W.H</div>		<div>Date</div> <div>31/08/2017</div>		<div>Drawing Scale</div> <div>1:100, 1:500</div>		<div>Drawing Number</div> <div>1271-02-07</div>		<div>Revision</div> <div>-</div>		<div>ARCHITECO</div> <div>SUSTAINABLE DESIGN & LOW ENERGY BUILDING SPECIALISTS</div> <div>43 Argyll Street, Dundee PA23 7HG</div> <div>info@architeco.co.uk 01389 701 986 www.architeco.co.uk</div>	
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		Notes	Copyright ARCHITECO 2017 Do not scale construction dimensions from this drawing. All dimensions are to be verified prior to construction.
		Revision History	
		Project	K Laver, & D Malcolim Upper Cloan, Auterarder, Perth & Kinross, PH3 1PP, Scotland, UK
		Drawing Name	Visualisation
		Drawing Status	In Progress
		Modified by	D.W.H
		Date	22/02/2017
		Checked by	
		Drawing Scale	
		Drawing Number	1271-02-09
		Revision	-
		ARCHITECO SUSTAINABLE DESIGN & LOW ENERGY BUILDING SPECIALISTS 43 Argyll Street, Dunoon PA23 7HG info@architeco.co.uk 01389 701 966 www.architeco.co.uk	



Cloan, Auchterarder,
Perth & Kinross,
PH3 1PP, Scotland.



PLANNING AND DESIGN STATEMENT

43 Argyll Street, Dunoon PA23 7HG
info@architeco.co.uk

01369 701 988
www.architeco.co.uk

Introduction

This proposal is for a new zero carbon dwelling and associated smallholding for sustainable living following the principles of permaculture located at Cloan near Auchterarder.

The site lies 1.5km south of the A9 Motorway and 300m East of Nether Cloan. Access to the site is via an existing track opposite Cloan House. An existing telecommunication mast is in the south corner of the site at the highest point.

This application is a resubmission following refusal of application 17/00329/FLL. We have chosen to resubmit rather than appeal the previous decision since the location of the house has been moved and the nature of the proposal has been clarified to address the reasons for refusal and to respond to some of the comments made in the Report of Handling of the previous application. The previous application was lodged with the assumption that the communications mast on the site was to be relocated. This is no longer the case, with the mast staying in its current location, requiring amendment to the application boundaries.

Planning Policy Context

Pilot projects creating eco-friendly houses

The proposal has been specifically developed to fulfill the Council's desire for pilot projects creating eco-friendly houses expressed in Section 3.5 of its Housing in the Countryside Policy by bringing together a zero carbon house with the use of land for sustainable living which requires a rural setting. The Planning Officer in the previous Report of Handling dismissed this proposal as a 'pilot project' by his own definition, but the Housing in the Countryside Policy offers no definition of 'pilot project' and he was wrong to dismiss it out of hand.

The design of the house and the proposals for sustainable land management are very similar to those approved enthusiastically as fulfilling the terms of this part of the Housing in the Countryside Policy by the planning officer in relation to PKC13/01386/FLL – Erection of a dwellinghouse 130 m north east of Croftness Farmhouse, Aberfeldy in 2013 and if these proposals were so positively received in a rural location in Aberfeldy it is hard to understand why such similar proposals are not acceptable here. In this former case, the proposal was accepted as a pilot project without hesitation.

The proposal also fulfill the Siting Criteria for houses in Category 3 by virtue of the way the entire site nestles into the landscape, with trees and the overall slope of the site containing the small holding which sits well below the skyline. The plot is well defined by woodland to three and a half sides, with a line of mature trees and stream where there is no woodland. In assessing this

application, it needs to be borne in mind that the Siting Criteria refer specifically to a house in the countryside, but this proposal under Section 3.5 is for a house and smallholding, so broader consideration needs to apply as to how the whole site fits into the landscape, which this does well.

As indicated above, this proposal fulfills perfectly the Council's desire to encourage eco-houses with associated sustainable rural living in the countryside. With the exception of the Aberfeldy example, which is still only in the course of construction, we are not aware of any similar proposals within Perth and Kinross for this innovative new way of low carbon, sustainable living and the Council should thus be supporting it.

Landscape Policy Context

LDP Policy ER6 on managing future landscape change is crucial, supplemented by Landscape Supplementary Guidance 2015. The site lies within the Ochil Hills Special landscape Area, however there is nothing in the Supplementary Guidance on the Ochils, and hence this site, which conflicts with this proposal in terms of either the Statement of Significance, its Special Qualities, its Forces for Change or its Objectives for Future Management. Indeed, this proposal for intensification of rural land use and agriculture within this landscape should be welcomed.

Sustainable Design and Zero Carbon Development SG 2014

In terms of the Council's Sustainable Design and Zero Carbon Development SG 2014, this proposal addresses in full the 9 central elements of that guidance and these are addressed in more detail below. It is Council policy that this document be used as a sustainability checklist on applications, but the previous Report of Handling failed to do so.

Zero Carbon Design

The house design of this current application has been the culmination of four years of developing a zero-carbon, low energy house that looks like mainstream housing. This is to serve the specific purpose of bringing low energy housing to the mainstream market and throwing off the 'earth ship' visual expectations of low impact dwellings. It is noteworthy that there were no objections to the house on design grounds in the previous application.

Architeco are leading the way in low energy design and the house, as designed, has all cold-bridging eliminated, with every junction thermally

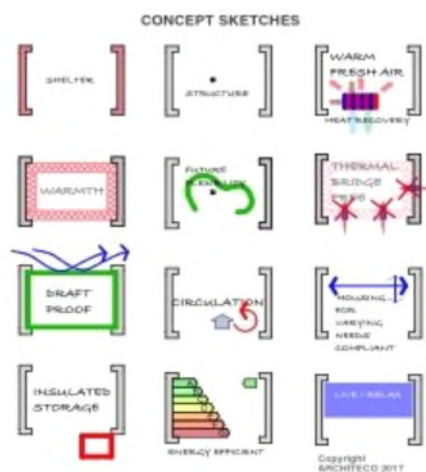


modelled and optimised. The house is, in fact, one of the first houses to be proposed under this rigorously designed solution and is very much a pilot project, with post-occupancy evaluation being proposed to determine exactly how well the house performs in reality which will allow comparison to the extensive energy modeling results, which far surpass the current Regulations' requirements. Furthermore, we are currently using an identical house type in rural locations in four separate regions (including Highland, Moray and the Outer Hebrides) in order to determine that the design is suitable for varying climatic conditions – a prerequisite of the brief in developing this house model, although finishing each house individually to suit the local design context.

This site forms part of this Scotland-wide Pilot Project and the results from the post-occupancy evaluation will be critical in determining the direction of the future model – a zero carbon low cost house suitable for all UK climatic regions. A rural site is required to allow direct comparison with the other dwellings. The applicant and the agent would be delighted to share the results of this post-occupancy evaluation with the planning authority as an input to its sustainable development strategy and in particular to assist the Council in the development of its 'Sustainable Design and Zero Carbon Development Supplementary Guidance' and to fulfill the 'pilot project' objective of the Housing in the Countryside Policy.

This document sets out the considerations required for Sustainable Design & Zero Carbon in Perth & Kinross and this planning application achieves these by:

- Minimizing energy consumption by adopting a fabric first approach
- Realises renewable energy opportunities by including a renewable energy strategy by using wood gasification.
- Encourages the use of passive and inclusive design by using site specific climate data and overshading features in the energy model and locates the house to allow the existing trees to form a shelter belt.
- Promotes efficient use of water and avoids run-off, with all surface and waste water being dealt with on-site as part of a re-oxygenating system.
- Increases the bio-diversity of the site using Permaculture.
- Uses off-site construction to minimise construction waste.
- Implementing on-site composting that feeds directly back into the site.



- Encourages sustainable travel – the site lies less than 2km from Auchterarder Town Centre.

On this last item, Sustrans report, Active Travel, Active Scotland, notes that “the majority of trips less than one mile should be made on foot, however up to 2 miles should be a perfectly acceptable distance for many people to walk. Local journeys between 2 and 5 miles are extremely suitable for cycling.” The site location is therefore within the ideal distance range for encouraging active journeys and reducing car use and also allowing the applicants to enjoy a rural location without the prerequisite of car ownership. With the increasing popularity of electric bicycles, longer and more frequent journeys by cycle are on the increase and these can be charged by the sustainable electrical generation on-site. The permaculture land use also reduces the requirement to travel, with the entire occupants food use being supplied on-site.

The Scottish Government’s Building Regulations Department recommends ‘net zero carbon’ buildings made a requirement by 2016/17, if practical. This is not currently a requirement and the zero carbon target has been repeatedly pushed back. We applaud the recommendation, however, currently it is just that. We are proposing a zero carbon dwelling now, with a building performing, for example, over 16 times better than that required by current regulations on airtightness alone! ([0.6ac/hr@50Pcls](#) to 10). The lack of progress with zero carbon houses at both the Scottish and Perth and Kinross contexts reinforces the need for good pilot projects to demonstrate the feasibility and desirability of this approach.

The house design is one and a half storey, with the house positioned to run parallel with the contours. The topography rises to the South-East of the site, ensuring the skyline will not be broken by the new building. Siting the house to the south of the site allows this elevated position to provide good surveillance over the remaining site to allow monitoring of livestock, other animals, and food vegetation. The dwelling has three bedrooms; one on the ground floor and two in the first floor. A full height dining and kitchen space with a sunroom facing North-West to the planted area of the plot.

The house will be Zero Carbon, the building uses sympathetic design and materials and it will be super-insulated to Passivhaus standards, including high performance, triple glazed doors and windows. An extremely high level of air tightness is aimed for. A heat recovery ventilation system will be installed. The house will have coppicing rights to the adjacent woodland, which will provide all of the required heating and hot water energy. Preliminary energy modeling indicates that the design could have a heat load of just 4.5kW. This ensures the coppice will be able to fully meet the requirements for hot water and heating demand.

In keeping with the sustainable living, a simple palette of materials is proposed. Walls will be finished in render to the gables, with timber cladding to the North & South elevations. The roof proposal is for profile metal sheet to be in keeping with the rural context. This material has a high recycled content and is fully recyclable at the end of its life.

Land Management

This is not just an application for a zero carbon house, but for a small holding proposing sustainable rural living and land management for which a rural location is essential. The site has an area of 3.8 ha. The land will all be used for sustainable rural living, including the growing of food crops and animal husbandry. The site has been zoned using Permaculture principles. It is divided into 5 zones, which reflect the frequency of maintenance of the areas with the highest intensity areas being in closer proximity to the dwelling. By situating the most often used or serviced elements in a design closest to the home, it makes it easier to access them. This means less energy is expended to access them, making for a more energy efficient design. The irrigation uses water from ponds linked to the existing stream. The diversity of the trees and plants aims to maintain the composition of the soil and return it to its natural levels. Being based on forest gardening, the overall visual impact of permaculture is an increase in tree canopies, which will compliment this site with it being surrounded by woodland.

Permaculture, in its very nature, is taken over a long period of time. The land needs careful observation over at least four seasons, with every detail noted, to see what naturally grows and works. This information is then developed into a site-specific strategy. The permaculture brief was noted as 'vague' in the Report of Handling from the previous application; however, the whole idea behind permaculture is not land management by force but by using a holistic approach to enhance the existing eco-system to provide sustenance. The management plan which forms part of this application nonetheless indicates broadly how the various parts of the small holding will be used in land use terms and is sufficiently detailed to grant a planning consent. In any event, details of crops etc are not a matter to be dealt with by a planning permission. We cannot dictate how the permaculture scheme will look as this is a site-specific system of land management developed over years of following permaculture principles. The suitability of the water feature, for example, is sited where it is as the area is already waterlogged and there is a stream passing the area. The proposal enhances what is already there, rather than requiring extensive "land engineering". We have not provided detail on the polytunnel as this is a very straightforward way of extending the growing season.

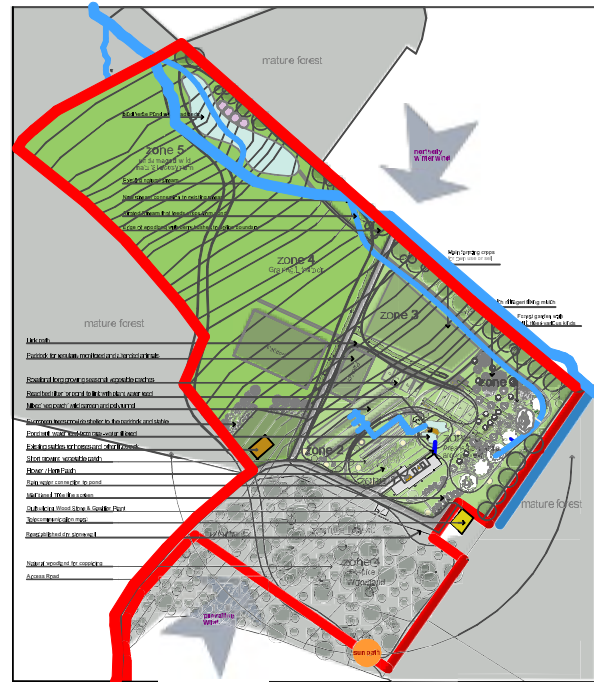
Zone 0 is the house itself, with the remaining zoning being dependent on input required and frequency of tending.

Zone 1 is nearest to the house and includes the kitchen garden with short growing season vegetables. Wild flowers and herbs are spread in front of the house while two rainwater-harvesting ponds allow for irrigation of the allotments. A herb spiral creates the optimum conditions and aspect, from dry and sunny to shaded and damp, in a small area.

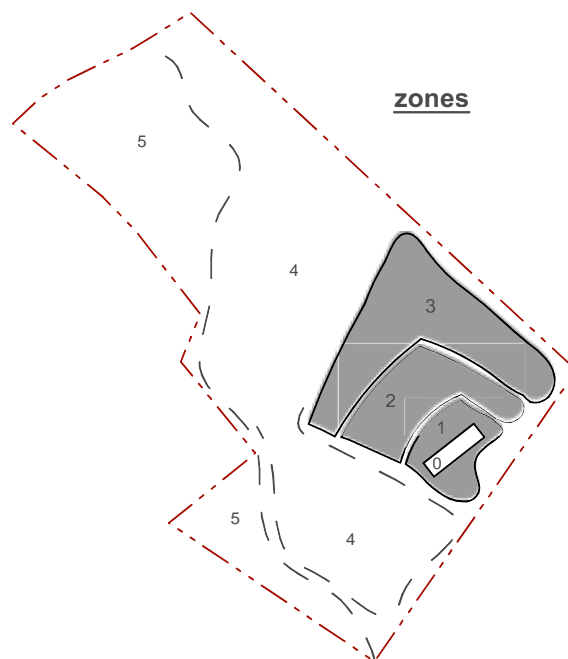
Zone 2 consists mainly of two areas: the crop rotation beds of long growing season vegetables and the fruit trees. Between the lines of fruit trees, an organic mixed fruit orchard, living nitrogen-fixing mulch grows between to

naturally suppress weeds, feed the tree fruit system and provide further food crop. Those two areas should provide the majority of fresh produce for the family using a system of crop rotation to ensure ground fertility is maintained.

Zone 3 includes the main farming crops for use or sale and a paddock for regularly monitored and attended animals. It also includes the existing stables situated south west of the fence, a new larger paddock close to it and evergreen trees to act as a shelterbelt.



Zone 4 includes the grazing field for the family's livestock as well as their horses. Zone 4 also includes part of the existing woodland area, which will be coppiced to supply the heat and hot water fuel requirements for the house. The coppicing will manage the woodland for the future. The management of the woodland will use only 10% of coppice annually for the heating requirements. This allows a 10-year regeneration and maintains the woodland ad infinitum.



A pond with reed bed acts as the final on-site water treatment is located in the North-West end of the site, fed by an aerating stream and with an uneven edge to promote a variety of water plants and aquatic life. This can provide a sustainable watering hole for the animals.

Zone 5 is an unmanaged wild natural ecosystem, as it exists in its natural form – an essential area for sustainable living. Beyond the site, a mature forest provides wind protection from the northerly winter winds. The boundaries of this zone extend beyond the plot and connect this undamaged ecosystem to the surrounding forest.

The zones are separated by traditional laid hedges and connected by informal paths laid in loops, allowing for the whole area to be attended on a single walk round.

One of the reasons for refusal of the previous application was to do with the lack of a mechanism for ensuring that the site was occupied and operated in an ecologically sustainable manner. This is not accepted as a legitimate reason for refusal since the Council's policy on such pilot projects clearly assumes this is not an issue and it is merely necessary to grant consent for both the house and the small holding as an integrated package.

Summary

It is submitted that this proposal for a zero carbon house and associated small holding allowing sustainable rural living is in accordance with Section 3.5 of the Council's housing in the Countryside Policy and is an entirely appropriate pilot project for both a zero carbon house and sustainable rural living which the Council supports in policy terms, but where there few if any examples within Perth and Kinross. The proposal should therefore be supported as the planning authority supported the similar Croftness proposal in 2013.



TCP/11/16(509) – 17/01524/FLL – Erection of a dwellinghouse and outbuilding, land 150 metres north west of Upper Cloan telecommunications mast, Auchterarder

REPRESENTATIONS

Comments to the Development Quality Manager on a Planning Application

Planning Application ref.	17/01524/FLL	Comments provided by	Euan McLaughlin
Service/Section	Strategy & Policy	Contact Details	Development Negotiations Officer: Euan McLaughlin [REDACTED]
Description of Proposal	Erection of a dwellinghouse and outbuilding		
Address of site	Land 150 Metres North West Of Upper Cloan Telecommunications Mast Auchterarder		
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 Community School of Auchterarder Primary School.</p> <p>Auchterarder A9 Junction</p> <p>With reference to the above planning application the Council Developer Contributions Supplementary Guidance requires contributions from developments within the Auchterarder and wider Strathearn housing market area towards meeting the cost of delivering the A9 junction improvements which are required in the interests of safety.</p>		
Recommended planning condition(s)	<p>Summary of Requirements</p> <p>Education: £6,460 A9 Junction: £3,450</p> <p>Total: £9,910</p>		

	<p>Phasing</p> <p>It is advised that payment of the contribution should be made up front of release of planning permission. The additional costs to the applicants and time for processing legal agreements for single dwelling applications is not considered to be cost effective to either the Council or applicant.</p> <p>The contribution may be secured by way of a Section 75 Agreement. Please be aware the applicant is liable for the Council's legal expense in addition to their own legal agreement option and the process may take months to complete.</p> <p>If a Section 75 Agreement is entered into the full contribution should be received 10 days after occupation.</p>
<p>Recommended informative(s) for applicant</p>	<p>Payment</p> <p>Before remitting funds the applicant should satisfy themselves that the payment of the Development Contributions is the only outstanding matter relating to the issuing of the Planning Decision Notice.</p> <p>Methods of Payment</p> <p>On no account should cash be remitted.</p> <p>Scheduled within a legal agreement</p> <p>This will normally take the course of a Section 75 Agreement where either there is a requirement for Affordable Housing on site which will necessitate a Section 75 Agreement being put in place and into which a Development Contribution payment schedule can be incorporated, and/or the amount of Development Contribution is such that an upfront payment may be considered prohibitive. The signed Agreement must be in place prior to the issuing of the Planning Decision Notice.</p> <p>NB: The applicant is cautioned that the costs of preparing a Section 75 agreement from the applicant's own Legal Agents may in some instances be in excess of the total amount of contributions required. As well as their own legal agents fees, Applicants will be liable for payment of the Council's legal fees and outlays in connection with the preparation of the Section 75 Agreement. The applicant is therefore encouraged to contact their own Legal Agent who will liaise with the Council's Legal Service to advise on this issue.</p> <p>Other methods of payment</p> <p>Providing that there is no requirement to enter into a Section 75 Legal Agreement, eg: for the provision of Affordable Housing on or off site and or other Planning matters, as advised by the Planning Service the developer/applicant may opt to contribute the full amount prior to the release of the Planning Decision Notice.</p> <p>Remittance by Cheque</p> <p>The Planning Officer will be informed that payment has been made when a cheque is received. However this may require a period of 14 days from date</p>

	<p>of receipt before the Planning Officer will be informed that the Planning Decision Notice may be issued.</p> <p>Cheques should be addressed to 'Perth and Kinross Council' and forwarded with a covering letter to the following: Perth and Kinross Council Pullar House 35 Kinnoull Street Perth PH15GD</p> <p>Bank Transfers All Bank Transfers should use the following account details; Sort Code: 834700 Account Number: 11571138</p> <p>Please quote the planning application reference.</p> <p>Direct Debit The Council operate an electronic direct debit system whereby payments may be made over the phone. To make such a payment please call 01738 475300 in the first instance. When calling please remember to have to hand:</p> <ul style="list-style-type: none"> a) Your card details. b) Whether it is a Debit or Credit card. c) The full amount due. d) The planning application to which the payment relates. e) If you are the applicant or paying on behalf of the applicant. f) Your e-mail address so that a receipt may be issued directly. <p>Education Contributions For Education contributions please quote the following ledger code: 1-30-0060-0001-859136</p> <p>A9 Junction For A9 Junction contributions please quote the following ledger code: 1-30-0060-0002-859136</p> <p>Indexation</p> <p>All contributions agreed through a Section 75 Legal Agreement will be linked to the RICS Building Cost Information Service building Index.</p> <p>Accounting Procedures</p> <p>Contributions from individual sites will be accountable through separate accounts and a public record will be kept to identify how each contribution is spent. Contributions will be recorded by the applicant's name, the site address and planning application reference number to ensure the individual commuted sums can be accounted for.</p>
Date comments returned	07 September 2017



By email to:

Developmentmanagement@pkc.gov.uk

Perth and Kinross Council
Pullar House
35 Kinnoull Street
Perth
PH1 5GD

Longmore House
Salisbury Place
Edinburgh
EH9 1SH

Enquiry Line: 0131-668-8716
HMConsultations@hes.scot

Our ref: AMH/3073/10
Our case ID: 300023250
Your ref: 17/01524/FLL

08 September 2017

Dear Sir/Madam

Town and Country Planning (Development Management Procedure) (Scotland)
Regulations 2013

Land 150 Metres North West Of Upper Cloan Telecommunications Mast Auchterarder -
Erection of a dwellinghouse and outbuilding

Thank you for your consultation which we received on 05 September 2017. We have assessed it for our historic environment interests and consider that the proposals have the potential to affect the following:

Ref	Name	Designation Type
SM3073	Ogle Hill,fort	Scheduled Monument

You should also seek advice from your archaeology and conservation service for matters including unscheduled archaeology and category B and C-listed buildings.

Our Advice

We have considered the information received and do not have any comments to make on the proposals. Our decision not to provide comments should not be taken as our support for the proposals. This application should be determined in accordance with national and local policy on development affecting the historic environment, together with related policy guidance.

Further Information

This response applies to the application currently proposed. An amended scheme may require another consultation with us.

Guidance about national policy can be found in our 'Managing Change in the Historic Environment' series available online at www.historicenvironment.scot/advice-and-support/planning-and-guidance/legislation-and-guidance/managing-change-in-the-



HISTORIC
ENVIRONMENT
SCOTLAND

ÀRAINNEACHD
EACHDRAIDHEIL
ALBA

[historic-environment-guidance-notes/](https://www.historic-environment-scotland.gov.uk/historic-environment-guidance-notes/). Technical advice is available through our Technical Conservation website at www.englished.org.

Please contact us if you have any questions about this response. The officer managing this case is Mary Macleod who can be contacted by phone on 0131 668 8688 or by email on mary.macleod@hes.scot.

Yours faithfully

Historic Environment Scotland

Comments for Planning Application 17/01524/FLL

Application Summary

Application Number: 17/01524/FLL

Address: Land 150 Metres North West Of Upper Cloan Telecommunications Mast Auchterarder

Proposal: Erection of a dwellinghouse and outbuilding

Case Officer: John Russell

Customer Details

Name: Mr robert sinclair

Address: 49 Athollbank Drive, Perth, Perth And Kinross PH1 1NF

Comment Details

Commenter Type: Member of Public

Stance: Customer objects to the Planning Application

Comment Reasons:

- Adverse Affect on Visual Amenity
- Inappropriate Land Use
- Out of Character with the Area

Comment: This is a prominent construction in a highly visible position in open countryside and should therefore be denied permission.

The proposed layout drawing shows the formation of a pond on a slope without showing the civil works necessary to retain water. These would require to be of considerable height due to the steep slope.

18/09/2017

Perth & Kinross Council
Pullar House 35 Kinnoull Street
Perth
PH1 5GD



Development Operations
The Bridge
Buchanan Gate Business Park
Cumbernauld Road
Stepps
Glasgow
G33 6FB

Development Operations
Freephone Number - 0800 3890379
E-Mail - DevelopmentOperations@scottishwater.co.uk
www.scottishwater.co.uk

Dear Local Planner

PH3 Auchterarder Upper Cloan Ld 150 Mt Nth West of
PLANNING APPLICATION NUMBER: 17/01524/FLL
OUR REFERENCE: 750478
PROPOSAL: Erection of a dwellinghouse and outbuilding

Please quote our reference in all future correspondence

Scottish Water has no objection to this planning application; however, the applicant should be aware that this does not confirm that the proposed development can currently be serviced and would advise the following:

Water

- There is currently sufficient capacity in the Turret Water Treatment Works. However, please note that further investigations may be required to be carried out once a formal application has been submitted to us. The nearest main is approx. 800m from the proposed site.

Foul

- Unfortunately, according to our records there is no public Scottish Water, Waste Water infrastructure within the vicinity of this proposed development therefore we would advise applicant to investigate private treatment options.

The applicant should be aware that we are unable to reserve capacity at our water and/or waste water treatment works for their proposed development. Once a formal connection application is submitted to Scottish Water after full planning permission

has been granted, we will review the availability of capacity at that time and advise the applicant accordingly.

General notes:

- **Scottish Water asset plans can be obtained from our appointed asset plan providers:**

Site Investigation Services (UK) Ltd

Tel: 0333 123 1223

Email: sw@sisplan.co.uk

www.sisplan.co.uk

- Scottish Water's current minimum level of service for water pressure is 1.0 bar or 10m head at the customer's boundary internal outlet. Any property which cannot be adequately serviced from the available pressure may require private pumping arrangements to be installed, subject to compliance with Water Byelaws. If the developer wishes to enquire about Scottish Water's procedure for checking the water pressure in the area then they should write to the Customer Connections department at the above address.
- If the connection to the public sewer and/or water main requires to be laid through land out-with public ownership, the developer must provide evidence of formal approval from the affected landowner(s) by way of a deed of servitude.
- Scottish Water may only vest new water or waste water infrastructure which is to be laid through land out with public ownership where a Deed of Servitude has been obtained in our favour by the developer.
- The developer should also be aware that Scottish Water requires land title to the area of land where a pumping station and/or SUDS proposed to vest in Scottish Water is constructed.
- **Please find all of our application forms on our website at the following link <https://www.scottishwater.co.uk/business/connections/connecting-your-property/new-development-process-and-applications-forms>**

Next Steps:

- **Single Property/Less than 10 dwellings**

For developments of less than 10 domestic dwellings (or non-domestic equivalent) we will require a formal technical application to be submitted directly to Scottish Water or via the chosen Licensed Provider if non domestic, once full planning permission has been granted. Please note in some instances we will require a Pre-

Development Enquiry Form to be submitted (for example rural location which are deemed to have a significant impact on our infrastructure) however we will make you aware of this if required.

- **10 or more domestic dwellings:**

For developments of 10 or more domestic dwellings (or non-domestic equivalent) we require a Pre-Development Enquiry (PDE) Form to be submitted directly to Scottish Water prior to any formal Technical Application being submitted. This will allow us to fully appraise the proposals.

Where it is confirmed through the PDE process that mitigation works are necessary to support a development, the cost of these works is to be met by the developer, which Scottish Water can contribute towards through Reasonable Cost Contribution regulations.

- **Non Domestic/Commercial Property:**

Since the introduction of the Water Services (Scotland) Act 2005 in April 2008 the water industry in Scotland has opened up to market competition for non-domestic customers. All Non-domestic Household customers now require a Licensed Provider to act on their behalf for new water and waste water connections. Further details can be obtained at www.scotlandontap.gov.uk

- **Trade Effluent Discharge from Non Dom Property:**

Certain discharges from non-domestic premises may constitute a trade effluent in terms of the Sewerage (Scotland) Act 1968. Trade effluent arises from activities including; manufacturing, production and engineering; vehicle, plant and equipment washing, waste and leachate management. It covers both large and small premises, including activities such as car washing and launderettes. Activities not covered include hotels, caravan sites or restaurants.

If you are in any doubt as to whether or not the discharge from your premises is likely to be considered to be trade effluent, please contact us on 0800 778 0778 or email TEQ@scottishwater.co.uk using the subject "Is this Trade Effluent?". Discharges that are deemed to be trade effluent need to apply separately for permission to discharge to the sewerage system. The forms and application guidance notes can be found using the following link <https://www.scottishwater.co.uk/business/our-services/compliance/trade-effluent/trade-effluent-documents/trade-effluent-notice-form-h>

Trade effluent must never be discharged into surface water drainage systems as these are solely for draining rainfall run off.

For food services establishments, Scottish Water recommends a suitably sized grease trap is fitted within the food preparation areas so the development complies with Standard 3.7 a) of the Building Standards Technical Handbook and for best management and housekeeping practices to be followed which prevent food waste, fat oil and grease from being disposed into sinks and drains.

The Waste (Scotland) Regulations which require all non-rural food businesses, producing more than 50kg of food waste per week, to segregate that waste for separate collection. The regulations also ban the use of food waste disposal units that dispose of food waste to the public sewer. Further information can be found at www.resourceefficientscotland.com

If the applicant requires any further assistance or information, please contact our Development Operations Central Support Team on 0800 389 0379 or at planningconsultations@scottishwater.co.uk.

Yours sincerely

Angela Allison

Angela.Allison@scottishwater.co.uk

Comments to the Development Quality Manager on a Planning Application

Planning Application ref.	17/01524/FLL	Comments provided by	Dean Salman Development Engineer
Service/Section	Transport Planning	Contact Details	[REDACTED] [REDACTED]
Description of Proposal	Erection of a dwellinghouse and outbuilding		
Address of site	Land 150 Metres North West Of Upper Cloan Telecommunications Mast, Auchterarder		
Comments on the proposal	Insofar as the Roads matters are concerned I have no objections to this proposal on the following condition.		
Recommended planning condition(s)	Prior to the development hereby approved being completed or brought into use, the vehicular access shall be formed in accordance with Perth & Kinross Council's Road Development Guide Type B access detail Figure 5.6.		
Recommended informative(s) for applicant			
Date comments returned	18 September 2017		

