

Land at Gilfach yr Haidd Farm

Appraisal of

One Planet Development Proposal



terraperma

ECOLOGICAL BUILDING

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1. Summary

1.1.1 Our view is that the One Planet Development (OPD) is supportable.

1.1.2 The application as presented, meets the requirements of the Guidance in the following areas:

- The baseline information is satisfactory
- It is plausible that the applicants can meet their minimum food needs from the site
- The horticulture and business activities proposed would, in all probability, produce the income that the applicants predict
- The income derived from purely land-based businesses, based on the productive capacity of the land, is likely to exceed the minimum income needs of the applicants
- The essential criterion for occupants is satisfied
- The essential criterion that the site will be the applicants' sole residence is satisfied
- The essential criteria for habitats are satisfied
- The essential criteria for landscape are satisfied
- The essential criterion for impact on cultural heritage is satisfied
- The essential criteria for energy and water are satisfied
- The essential criteria for waste are satisfied
- The essential criterion to demonstrate zero carbon in construction and use to the definitions of the WAG is satisfied.
- The essential criterion for Building Regulations is satisfied
- The essential criterion for buildings being capable of removal with low environmental impacts is satisfied
- The essential criteria for community impacts are satisfied
- The essential criteria for transport are satisfied
- The project has the potential to reduce the per capita Ecological Footprint of the applicants to less than 2.4 gha as required in policy.

1.1.3 The applicants' Management Plan (MP) and additional information (Aug 2025) is sufficiently robust in its proposals, and our interview and site visit satisfied us as to the applicants' sincere intentions. The MP contains explicit statements that support a robust statutory undertaking between the Local Planning Authority (LPA) and the applicants, with a draft document provided.

1.1.4 We conclude that it is plausible that this site is of suitable size and nature to support this OPD household.

2. Introduction

2.1. The Task

- 2.1.1 Simon and Leigh Cometson have commissioned TerraPermaGeo (TPG) to conduct an independent appraisal of their application for an Open Countryside One Planet Development (OCOPD) at Gilfach yr Haidd Farm . Specifically, this includes the appraisal of the applicants' Management Plan (MP) and additional information provided by the applicants in June 2025.
- 2.1.2 James Shorten is a geographer and qualified planner, who was the project manager for the development of the Open Countryside One Planet Development Practice Guidance (OCOPDPG) for the Welsh Government and as well as the main author. He led the 2002 research for the Countryside Council for Wales (CCW), Low Impact Development – Planning Policy and Practice, and has experience of highly sustainable, rural development, such as that envisaged by OCOPD spanning more than 20 years.
- 2.1.3 He is a Patron of the One Planet Council (OPC), a body supporting One Planet Developments in Wales.
- 2.1.4 Bill Knight holds a civil engineering degree, has been an organic farmer since 1997, and is a sustainability consultant. He also contributed to the Guidance, providing input on food growing and designing the Environmental Footprint Assessment (EFA) calculator and writing the separate guidance for it.

2.2. Approach

- 2.2.1 OCOPD is a relatively unusual form of development, supported by detailed policy and Guidance. Whereas planning policy discourages most sorts of development in the open countryside, OCOPD is an exception based on the low or positive environmental impacts inherent in this type of development, and the fact that it must have a countryside location in order to be possible.
- 2.2.2 The essential characteristics of OCOPD are laid out in paragraph 1.9 of the Guidance, that OPD's must:
 - Have a light touch on the environment – positively enhancing the environment wherever possible through activities on the site
 - Be land-based– the development must provide for the minimum needs of residents in terms of food, income, energy and waste assimilation in no more than five years
 - Have a low ecological footprint – the development must have an initial ecological footprint of 2.4 global hectares per person, or less with a clear potential to move to 1.88 global hectares per person over time – these are the Ecological Footprint Analysis benchmarks for all One Planet Development (para 2.11)
 - Have very low carbon buildings – these are stringent requirements, stipulating that buildings are low in carbon in both construction and use
 - Be defined and controlled by a binding Management Plan (MP), which is reviewed and updated every five years
 - Be bound by a clear statement that the development will be the sole residence for the proposed occupants.
- 2.2.3 Paragraph 1.10 of the Guidance goes on to explain:

To meet these essential characteristics residents of One Planet Developments have to live quite differently (much more sustainably) than is the norm in the 21st century. One Planet Development therefore is not just describing a physical development. It is describing a way of living differently where there is a symbiotic relationship between people and land, making a reduction in environmental impacts possible. The management plan for a One Planet Development, therefore, describes both the nature of development and the way of life that will be pursued in association with that development.

2.2.4 Because of the need to guard against abuse of this type of policy, the Guidance is therefore very detailed and effectively lays out a comprehensive set of requirements for OCOPD. Paragraphs 2.19 and 2.20 of the Guidance lays out how to assess OCOPD applications.

2.2.5 2.19 states that:

- *The critical elements in this decision will be:*
 - *The overall character of the development, taking account of the current nature of the site and the proposer's objectives for the site.*
 - *Whether all essential criteria for One Planet Developments have been met and what additional OPD credentials are shown under the contributory criteria (para 2.7) Development can meet these criteria in a variety of ways and where they are particularly strong, in terms of performance, affordability, innovation, or wider benefit, this should be taken into account.*
 - *Whether the proposals pass the EFA test for One Planet Development. The data identified through the management plan will make up the overall EFA, and so produce the final EFA figure, which is a central test of One Planet Development in the open countryside.*
 - *The effect that the proposals are having on 'other footprints' including those of OPD businesses and those of the wider community.*
 - *An itemised programme for the delivery of the management plan over the coming five years.*
 - *A clearly identified programme of monitoring that will monitor whether the ambitions for the site are being delivered.*

2.2.6 2.20 states that:

Overall, One Planet Development in the open countryside should fulfil the essential characteristics of One Planet Development (para 1.9) in ways that benefit rural Wales. The final decision will be a matter of whether the proposed development clearly meets the essential criteria for OPD. The contributory criteria can provide further support to the overall case for an OPD proposal.

2.2.7 It is on this basis that the Gylfach yr Haid Farm OPD MP and associated documents are to be appraised.

2.2.8 James Shorten and Bill Knight have interviewed the applicants and carried out a site visit in February 2025.

3. Gilfach yr Haidd Farm OPD Management Plan

3.1. Background

- 3.1.1 The Guidance stresses the importance of early engagement with the LPA and the pre-application process. The applicants have undertaken formal pre-application discussions with Neith Port Talbot Council (ref Q2022/0169) in August 2022 and submitted a full application (ref P2024/0786) which was subsequently withdrawn due principally a misunderstanding regarding the size of the site area which had led the LPA to start to assess it as a major application. The requirements that the OPD provide for the minimum needs of the applicants by year 5 can be delivered by land based activities within land controlled by the applicants (within the blue line) as described within the MP for the project conditioned by any approval, otherwise all OPD's would risk being major developments which they are not. The appraised Management Plan includes amendments reflecting the feedback from both the pre-application and the withdrawn application.
- 3.1.2 There has also been good communication with the local community following the purchase of the site and the applicants starting to work on the land, improving the public right of way and the boundaries. There is local support evidenced by the help given by local farmers with business planning, preorders for some produce and an invitation to grow Christmas trees for the community.
- 3.1.3 The Ystalyfera Community Council have been consulted about the application. The applicants have attended a July 25 meeting of the Community Council where they laid out their plans and invited questions. The Community Council members and any interested local community members were invited to visit the site and discuss the application with the applicants.
- 3.1.4 The MP is the core of any OCOPD application. The purpose of the first MP for the site is to describe the condition of the site now, the proposed site strategy / design, and how it will be implemented.
- 3.1.5 The MP for Gilfach yr Haidd Farm OPD (Aug 2025) with its appendices is comprehensive and will be appraised section by section.

3.2. Baseline Information

- 3.2.1 The baseline information provided addresses all the land in the ownership of the applicants (blue line)
- 3.2.2 The OPD (red line) dwelling development site is contained within two fields, forming part of the land in the applicant's ownership. The wider landscape and environmental gains will be delivered both within the site and across the rest of the land in the applicant's ownership (blue line).
- 3.2.3 The baseline information provided to enable future changes on the site to be assessed over time is of sufficient depth and quality. The baseline information for this site is contained in the relevant sections (Section 2, Section 7.2; ecology, Section 11; transport) within the body and appendices of the MP (Appendix B PEA, Appendix C landscape inc photos)
- 3.2.4 The MP shows the site to vary between 205-270m (AOD). Figure 3 and Figure 4 give sufficient detail of the topology of the site and detail of the surrounding area.
- 3.2.5 The OPD site (red line) is two fields of low ecological value, with existing hedge lines on three sides and a small area of scrub to the northeast. The Preliminary Ecological

Assessment (PEA) also addresses other land owned by the applicants across the farm. site survey details species and habitats in the location, which is an important baseline. The PEA identifies the majority of the site to be poor quality, semi-improved acid grassland with low value. The features of the site with greater ecological value are noted. The ecological baseline is summarised clearly in Section 7.2 of the MP.

- 3.2.6 Section 2 also details the existing and proposed access point, which both lead onto an existing lane (PRofVV), then to the adjacent main road, via the existing junction.
- 3.2.7 Existing travel impacts relating to the site are laid out. Baseline travel information for the applicants is presented within the MP document (Section 11) and the EFA (Appendix I).
- 3.2.8 The EFA calculation is satisfactory. We are aware of errors within the published EFA calculator, so have verified the data input and reviewed it making an assessment utilising an amended calculator (results presented in Appendix I) and find that it is plausible that the applicants can reduce their ecological footprint to comply with the requirements of policy. The applicants have assessed the poultry and animal feeds and domestic seeds required which contribute to their domestic food requirement for the year and have included this figure in the EFA.

Landscape and views

- 3.2.9 The Guidance states baseline information should address: key views into the site from public vantage points, roads, lanes and public rights of way (RoW). The MP lays out the relationship between the proposed buildings, the land, and roads adjacent to the site. Appendix C 'Landscape_Statement_20250606' contains photos taken from footpaths and the public highway outside the site and others taken from within the site which present a satisfactory baseline.
- 3.2.10 The whole site lies within in the National Landscape Character Area 37 – South Wales Valleys and within Special Landscape Area EN2/1 Mynydd y Garth as identified by the Neath Port Talbot Local Development Plan. The MP satisfactorily identifies and addresses all the constraints to development due to its location.
- 3.2.11 The dwelling design and location responds to its SLA setting.
- 3.2.12 The development has been sited in a natural bowl in the land which reduces its visual impact in line with the Guidance.

3.3. Design Strategy

- 3.3.1 The Guidance states:

This introductory 'Design / Strategy' section of the management plan should paint a picture of the overall proposals for the site, their defining features and characteristics, responding to the baseline character / condition of the site.

- 3.3.2 The design / strategy section of this MP meets the requirements of the Guidance in that it:
 - Lays out the individual elements that will be key to production on the site
 - Lays out then interactions between these elements
 - Describes that this OPD will support a single household of two individuals
 - Links to the programme for implementation with a detailed development timeline in Section 13.
- 3.3.3 Section 7 of the MP goes on to describe how the proposal sits within a land management plan addressing and enhancing the key ecological and landscape features of the site.

3.3.4 The OPD development site (red line) is 2108 m² set within 34 acres of farm land in the applicant's ownership (blue line). The land available to support the development is relatively large by OPD standards. This is an important issue to note, as the availability of the land in the blue line affects (improves) the ability of the site to meet the required needs of the household within the five year period described in policy. We address this in section 4 below. We conclude that it is plausible for this site to support this OPD household.

4. Business and Improvement Plan

- 4.1.1 The Guidance describes how the Business and Improvement Plan is essentially the core of the overall MP. It sets out the integrated system by which people and land will combine, to make it possible to reduce environmental impact. It therefore provides the fundamental justification for the development. It should describe how people living on the site are able to reduce their environmental impact by meeting their everyday needs from the site, while at the same time enhancing the environmental capital of the site by their activities.

4.2. Land-based Activity and Minimum Needs

- 4.2.1 TAN 6 requires that:

Planning applications for One Planet Developments in the open countryside must justify the need to live on the site and quantify how the inhabitants' requirements in terms of income, food, energy and waste assimilation can be obtained directly from the site. The land use activities proposed must be capable of supporting the needs of the occupants, even on a low income or subsistence basis, within a reasonable period of time (no more than 5 years). It will also be necessary to identify a clear relationship between the use of the land and projects proposed and the number of occupants to be sustained on the site in terms of the need for them to work the land or ensure the smooth running of the venture and the return that is gained. The business plan should include a statement that the development will be the sole residence for the proposed occupants. (4.17.1)

- 4.2.2 What this means is expanded upon in the Guidance, but the Guidance is ambiguous and has not been interpreted consistently as TPG's Position Statement at Appendix A of this appraisal explains. This has led to two different interpretations as follows, explained in more detail in the Position Statement.

65% Interpretation

- the first of 30% of food is grown or reared on site
- next 35% has to be bartered using other produce grown or reared on site or bought from the proceeds of sales of the same
- the final 35% can be bought from any income source.

100% Interpretation

- the first of 30% of food is grown or reared on site
- the next 35% has to be bartered using other produce grown or reared on site or bought from the proceeds of sales of the same
- the final 35% has to be bought from other income streams derived from the productive and regenerative capacity of the site, such as from training and education courses, or consultancy directly linked to land based activities on the site.

- 4.2.3 Although we believe the 100% interpretation to more accurately reflect the Guidance, we have also laid out the reasons why and circumstances in which the 65% interpretation may also be acceptable and has been accepted in many applications and appeals.

- 4.2.4 The other minimum needs which require funding from the productive capacity of the site are:

- clothes
- travel

- IT / communications
 - Council Tax.
- 4.2.5 The applicants have laid out the items that comprise their minimum financial needs in table 3 section 4.2.13 of the MP. The source of these figures is described by the applicants in their table 2. The applicants conclude that their minimum needs income figure is £3,942, based upon the 65% interpretation.
- 4.2.6 Alcoholic drinks and eating out do not form part of the minimum food needs as they are luxury items.
- 4.2.7 The applicants have made allowance for the costs of feeds required for their domestic animals, which we agree will require supplementary feeding. The costs of domestic food production have also been included. These costs total £351.
- 4.2.8 We checked the calculation of the minimum needs income figure and the likely income from land-based business proposals (see Section 4.3 of this appraisal, below). We conclude that the land-based business activities proposed, will in all probability, produce a surplus significantly in excess of this.
- 4.2.9 Under our worst case scenario for profit and loss the business will generate a profit of £4,519 exceeding the minimum income figure required.
- 4.2.10 We also consider that the total land-based income from the site including any ancillary income will plausibly exceed the £5,556 which would be required to meet all of the minimum financial needs laid out above including the remaining last 35% of food purchases. IE the 100% interpretation. We consider this to be good practice for a robust management plan.
- 4.2.11 Note that the financial minimum needs figure for the project, once implemented, will vary from year to year. It will be calculated from the information provided to the LPA for monitoring purposes, and compared to the income generated from the enterprise.
- 4.2.12 These minimum income figures do not include other income that may be available to the household, which is not precluded by the Guidance.

Minimum Food Needs

- 4.2.13 The Guidance requires that the applicants lay out what their minimum food needs are likely to be. This is best illustrated by an examination of:
- What foods the household currently consumes in a year
 - How this pattern may change when resident on the site
 - What is likely to be consumed that is able to be produced on the site, and the value of this
 - The value of the balance of the food needs that will be purchased, which forms the food contribution to the minimum financial needs.
- 4.2.14 There is a detailed breakdown of the applicants' current food needs in table 1 of the MP and the ecological footprint analysis data. The MP then gives a projection of food consumption (at year 5) in table 2. Costs previously incurred for eating out and takeaway foods are compensated for by an increased value allocated to meat, poultry, fruit and vegetables from the site. We note that it is perfectly acceptable for the applicants to eat out and drink alcohol provided it is fully accounted for in the EFA and the total EFA does not exceed the target footprint, as is the case here.

- 4.2.15 The figures stated in table 2 appear reasonable and plausible based upon comparison with Office of National Statistics average household spend on food categories, while allowing for adjustments and considerations to account for differing diets and the quality of food purchased.
- 4.2.16 Table 2 shows the broad range of foodstuffs that the applicants assume they can produce on the site by year five. This information is expanded on in the written statements on pages 12 and 13 of the MP and within the business planning narrative. Table 5 indicates the sorts of vegetables that can be produced throughout the year. The applicants acknowledge the differences of their site and the challenges the altitude and exposure might present and have strategies for addressing this.
- 4.2.17 The applicants have some experience in vegetable growing at a previous property and have already planted fruit trees and bushes on the site. They have a close neighbour to this site at a similar altitude who has described growing a range of vegetables and fruits successfully for many years, though within a site with more established shelter. Their plans recognise this and have included significant shelter planting and production within a polytunnel. They describe the production of vegetables using minimum dig systems. There is also a contingency to provide for additional space both with additional outdoor beds and with a second polytunnel if required
- 4.2.18 We have explored the plausibility of the future food production of the household in a number of ways:
1. Table 5 of the MP is an outline crop planning tables for the vegetables they hope to produce on the site.
 2. We have considered the potential yields plausible for an intensive horticultural system, adjusted to reflect the site conditions.
 3. The applicants describe their proposed systems for preserving foods through times of lower or no production.
 4. Using the figures entered into Table 2 and the EFA, the (100% interpretation) food purchase requirements of the household are likely to be around £1,884
 5. In addition to the business production on site, the value of food to be produced or purchased with income generated by the site is estimated to be £2,510 (63% of total) which is acceptable.
- 4.2.19 The applicants propose a commercial livestock enterprise producing beef, free range pork, eggs, honey and Christmas turkeys from the site with sales of surplus fruits and vegetables anticipated. This will provide a buffer for meat-based foodstuffs for domestic use as production will greatly exceed domestic requirements.
- 4.2.20 The site is relatively high with the vegetable growing areas at around 260 to 270 m A.O.D. In these circumstances it is possible to produce vegetables but the season length is shorter than at lower altitudes and the yields expected will be reduced. Protected/sheltered cropping will help to extend the season and provide some protection to crops from the elements providing some mitigation. There is no commercial vegetable production system proposed on this site which might buffer any domestic production problems.
- 4.2.21 The applicant's domestic food production proposals have considered that the yields of vegetables and fruit will be reduced from that on less exposed sites and have

compensated for it by increasing the area under production and providing a polytunnel, allowing for unexpected problems which might occur.

- 4.2.22 The Guidance (paragraph 3.25 and 3.27) allows for up to 35% of the total costs of an applicant's total annual food needs to be met from purchasing it with the income from sale or barter of land-based products from the site (35%).
- 4.2.23 We examine the proposed production system below and consider it could meet the household food need described, or in a worst-case scenario, allow a sufficient range of foods to be purchased to supplement those produced on the site from the proceeds of sales of products from the site. Therefore, it is plausible that they can provide for their minimum food needs from the site.

Horticulture

- 4.2.24 The applicants' aim is to produce sufficient vegetables, herbs and fruit to feed themselves.
- 4.2.25 They propose 200 m² of productive minimum dig outdoor beds and 47 m² of sheltered cropping. They have allowed sufficient space to double this production if it proves necessary. In addition to this will be substantial areas of orchard crops and soft fruits.
- 4.2.26 The World Health Organisation recommends a of consumption of 400 g of fruit or vegetables per day on a '5-a-day' diet (WHO, 2003¹). Potatoes are not included as part of the 400 g fruit and vegetable consumption target outlined by the WHO. In the UK, people typically buy 35.1 kg of fresh or prepared potatoes annually (Defra, 2017²), and we can use this value as a proxy for a single person's requirement of starchy tubers. Thus, a family of two would require between 365 kg to 725 kg of fruit vegetables and potatoes annually depending upon diet.
- 4.2.27 Research from allotments in Leicester³ show that an average harvest of 1.8 kg/m² of fruit, vegetables and potatoes were achieved, noting that for many, but not all, crop's yields exceeded published DEFRA commercial figures. Given the range of skills across allotment growers this would represent a lower end expected figure for horticulture. The lowest yields from the Leicester research were 1.6 kg/m².
- 4.2.28 The 2014 research⁴ for the 'A Matter of Scale' report examining 59 small horticulture ventures, showed average yields across a range of 17 vegetables, from which we calculated the average yield to be 2.33kg/m², excluding potatoes and tomatoes (the figure was 2.39 kg/m² if paths were excluded). The better growers considerably exceeded these figures.
- 4.2.29 Charles Dowding, a renowned proponent of no dig horticulture with a successful business, has run a continuous experiment over 14 year's harvests looking at yields from dig and no

¹ Joint WHO/FAO Expert Consultation on Diet, Nutrition and the Prevention of Chronic Diseases WHO Technical report Series, 916 (2003) (Geneva)

² Defra Family Food 2015, Defra, London, UK (2017)

³ Feeding a city – Leicester as a case study of the importance of allotments for horticultural production in the UK. Science of The Total Environment Volume 705, 25 February 2020, 135930
<https://www.sciencedirect.com/science/article/pii/S004896971935925X>

⁴ Laughton, R. (2017) A Matter of Scale: A study of the productivity, financial viability and multifunctional benefits of small farms (20 ha and less). Landworkers' Alliance and Centre for Agroecology, Coventry University.

dig systems⁵, and has published on the economics of growing by hand. This proves the incomes that can be generated and maintained over time from small areas of intensive growing. 14 years of trials utilising this system demonstrate that on average 89 kg of produce across a large range of vegetable types can be harvested from 7.5m² of production spec set in 10.25 m² of land (to allow for paths). These yields taking paths into account are 8.6 kg/m². These figures would represent the high end of skilled intensive horticultural production in the UK.

- 4.2.30 An average of these three yield figures would be 4.25 kg/m² which based upon our experience of intensive growing systems is a plausible mid-range yield. However, due to the exposure of the site and the lack of any production records on it to date we consider that conservatively until proven otherwise the lowest yield of 1.6 kg/m² should be utilised to test the applicant's figures.
- 4.2.31 Yields vary across different systems and different crops and different crops contribute differently to overall nutrition. Sheltered cropping can often have higher yields than these averages. However, we consider these figures can be used as a rough guide to assess production against the Guidance.
- 4.2.32 Based on the yield figures described above the 247 m² of domestic production would therefore plausibly yield between 395 kg to 577 kg of mixed vegetable produce per year. The fruit production would be in addition to this increasing the total yield. A family of two may require between 365 and 725 kg of mixed fruit and vegetable produce annually depending upon diet. The household consumes a higher meat diet than average and this would suggest the lower end of the target production is appropriate. There is clearly capacity to more than double production if required, space is not a constraint on the applicant's land.
- 4.2.33 This would, in all probability, have the potential to generate the quantities of vegetables that the applicants predict. The applicants recognise that yields can vary and crops fail and have allowed variety and additional planting quantity to allow for this. Thus, we consider their projections in these areas are plausible.

Fruit Production

- 4.2.34 The applicants' also aim to produce fruit to feed themselves, with fruits also being produced to create an additional income stream. Surpluses would feed the household. Some orchard fruits are already establishing on the land and a substantial area in a sheltered part of the land is allocated to fruit production.
- 4.2.35 The soft fruit production proposed is indicated in section 7 of the MP. Yields of soft fruits can vary substantially from year to year and can fail entirely. It is also highly seasonal leaving long periods of the year without fruits. There is a reasonable variety of fruits and various methods of preservation proposed, which would assist in mitigating against and buffering crop failures and to store the produce.
- 4.2.36 Once the orchard and fruit production are established there is a reasonable probability that soft fruit will be available for the peak summer months, with top fruits achievable later in the year and preserved fruits available.

⁵

<http://www.charlesdowding.co.uk/no-dig-growing/homeacres/>

Beef

- 4.2.37 The applicants propose to run a small herd of six Blue Grey cattle. The animals will be raised for commercial meat sales but the bi-products and any offcuts and unsold meat will provide food to the household.

Pork

- 4.2.38 Welsh pigs will be bought as weaners in batches of six, fattened and sold as half pig boxes.
- 4.2.39 . The animals will be raised for commercial meat sales but the bi-products and any offcuts and unsold meat will provide food to the household.
- 4.2.40 **Domestic animal feeds:** The applicants indicate that they anticipate spending £324 per year on feeds, mostly for the pigs, for domestic consumption in their minimum needs calculation. We consider this is an appropriate figure.

Chickens and Turkeys

- 4.2.41 A flock of mixed breed 45 chickens will be kept for small scale commercial egg production with surplus eggs available to feed the household and the birds available as meat at the end of their productive life contributing to the bulk of the household's domestic meat needs.
- 4.2.42 50 bronze turkeys will be raised to be sold as dressed birds at Christmas, surplus birds will be available for the household to eat, however it is not anticipated that they will provide much meat to the household as most will be sold.
- 4.2.43 **Domestic poultry feeds.** There is a need to consider the external inputs to any animal-based enterprise to determine how much of it can be said to have derived from land-based activities. TPG have a position paper on this issue included with the appraisal as Appendix B. For some animals, large proportions of their feeds can be met from many OPD sites. For chickens / poultry it is considerably more difficult. Free range poultry forage for protein and vegetable matter on sites, which supplements the pelleted feeds that form the bulk of their diet. Evidence suggests 5 - 20 % of the feed requirements of ranging commercial poultry are met by foraging⁶. Other systems have been developed internationally that exceed this. OPD applicants should be expected to maximise the proportion of feed needs met directly from site, even for domestic use, and therefore minimise the proportion needing to be imported, and justify this in their Management Plan.
- 4.2.44 This position paper concludes it is reasonable for OPD enterprises to meet 65 % of the food needs of poultry from the site or from the proceeds of other products grown or reared on site and therefore this can be included as part of the minimum income needs to be generated from the purely land based enterprise.
- 4.2.45 The applicants indicate that they anticipate spending £50 per year on feeds for the poultry in their minimum need's calculation. We consider this is an appropriate figure. We would still urge them to consider how this might be reduced further.

Honey

- 4.2.46 Honey bees will provide honey, wax and propolis for sale. Surplus from this production will contribute towards the domestic food requirements.

⁶ Pastured-Raised Poultry Nutrition. Jeff Mattocks 2002

4.3. Appraisal of the Components of the Business Plan

Overall Assessment of Land-based Income Proposals

- 4.3.1 The principal income-generating activity proposed from this site is producing meats for direct sales to customers:
- Beef
 - Pork
 - Turkey
- 4.3.2 This will be supplemented by sales of eggs and honey.
- 4.3.3 Surplus soft fruits, orchard fruits and vegetables will also be sold and if these sales prove successful the applicants will expand the growing in a sustainable manner. However this potential additional income stream is not included within the business planning beyond a notional £840 per year for farm gates sales of fruit.
- 4.3.4 In the applicant's anticipated scenario for profit and loss, which we consider to be plausible, the net profit is estimated as £14,112.
- 4.3.5 We consider the applicants anticipated incomes and costs and hence projected profits to be plausible and find that under a range of worse case scenarios as described below the business would likely be resilient enough to meet the requirement that profits cover the minimum needs of the applicants as laid out in the OPD Guidance.

Sensitivity analysis

- 4.3.6 The anticipated figures presented by the applicant were subjected to three different sensitivity analyses as follows:
- Scenario 1: Pig sales and costs as per anticipated, beef carcass weight down to 200Kg, egg sales and costs as per anticipated, turkeys, bees and fruit all fail. Costs still incurred as anticipated in all products.
 - Scenario 2: Pig sales reduced by 28%, beef carcass weight down to 200Kg and sales reduced by 10%, egg sales reduced by 10%, turkey sales reduced by 10%, bees fail. Costs still incurred on all products and rise by 5%.
 - Scenario 3: Pig, beef honey and fruit sales as anticipated. All poultry fails, Costs still incurred on all products and rise by 5%.
- 4.3.7 This found that under three different worst-case scenarios the net profits from the activities proposed might drop to £6,287, £7,778 and £4,519. We consider this to have a low probability of occurring due to the mixture of activities proposed which gives greater resilience to the overall income
- 4.3.8 The applicants have also stated that sales can be pre-ordered to suit slaughter timing and demonstrated that there is capacity to suitably store unsold animal products in freezers off site such that sales can be spread through the year increasing the likelihood of maximising the income per animal.
- 4.3.9 Therefore, we consider that the purely land-based enterprises proposed by the applicants can plausibly support their minimum financial needs and that it is likely that the income from all activities will exceed this.

Detailed Appraisal of the Business Plan Components (year 5)

Beef Yr 5

- 4.3.10 Blue grey cattle are known for being hardy and well-suited to the Welsh climate without the need for extensive housing. They can thrive in rough pasture conditions and tolerate extremes of temperature and terrain. Their ability to browse and graze on poorer land makes them ideal for conservation grazing and for withstanding harsh conditions, such as those found in the Welsh hills. Though, this means they will grow slower as reflected in the applicant's financial planning. The applicants intend to buy in and fatten three beef cattle each year by year five, maintaining a herd of six.
- 4.3.11 They recognise that the grass fed cattle will grow more slowly than intensively grow animals and have allowed two years of expenses for each animal before slaughter.
- 4.3.12 The average weight of a beef carcass of 200- 250 Kg is plausible. The income in the projections is based on an assorted 10 Kg boxes of beef selling @ £15 per Kg. The average weight of 225 Kg carcass is assumed @ £15 per Kg = £3,375 income per animal in the applicant's anticipated projections. The average of six online retailers of 10 Kg beef boxes showed a price of £150, via direct sales similar to the applicant's product. We consider it is plausible that the anticipated price can be achieved.
- 4.3.13 We have considered a lower carcass weight of 200 Kg in our sensitivity scenarios 1, 2 and 3. And a lower sales price of £135 per box in our sensitivity scenario 2.
- 4.3.14 The costs presented (£1170/animal) are plausible and based upon information from farmers in the local area. They may be slightly low based upon a comparison with published figures⁷ (£312 plus purchase, slaughter and butchery costs). We increased costs to £1230 per animal in our sensitivity scenarios 2 and 3.

Pastured Pigs Yr 5

- 4.3.15 The applicants intend to buy in and fatten thirty weaners each year in batches of six using a system of strip pens to encourage the pigs to graze with this supplemented by vegetable wastes and purchased feeds. The provision of feeds from site and reclaimed foods will reduce the costs of purchased feed and is plausible.
- 4.3.16 The pigs will be butchered in batches of six and sold direct. The applicant think they can achieve £210 for a half pig box, estimated at 31 kg butchered and packed. With additional income from sausages. A total anticipated income of £480 per pig. The average of ten online retailers of half pigs showed a price of £216 for a half pig box. The weight of the boxes researched vary and higher prices were achieved for free range pigs, direct sales similar to the applicant's product. Organic free range pigs commanded a higher price. We consider it is plausible that the anticipated price can be achieved, but we have considered a lower sales price of £189 per half pig in our sensitivity scenario 2. The costs presented (£256/pig) are plausible based upon a comparison with published figures⁸ (£167 plus slaughter and butchery costs). We increased costs to £270 per pig in our sensitivity scenarios 2 and 3
- 4.3.17 The applicants have laid out how amounts of feed for animals will come from site and reclaimed food waste reducing the costs of feeds and improving the health of the livestock.

⁷ 2023 Organic Farm Management Handbook

⁸ 2023 Organic Farm Management Handbook

Pasture fed chicken eggs

- 4.3.18 A flock of 45-50 chickens will be kept and follow the pigs and cattle to benefit from the additional feed this should provide. This technique is a good management system to reduce the parasite load in pasture benefiting the pigs and cows and reducing the need for chicken feeds and maximise beneficial interactions to increase yields from the system.
- 4.3.19 The impacts from the production of feeds for pigs and chickens are one of the largest from agriculture and every effort should be made to reduce them and to source more sustainably produced feeds where ever possible.
- 4.3.20 There is a need to consider the external inputs to any animal-based enterprise to determine how much of it can be said to be derived from land based-activities. TPG have a position paper on this issue included with the appraisal at Appendix B. For some animals, large proportions of their feeds can be met from many OPD sites. For pigs / chickens / poultry it is considerably more difficult. Free range poultry forage for protein and vegetable matter on sites, which supplements the pelleted feeds that form the bulk of their diet. Evidence suggests 5 - 20 % of the feed requirements of ranging commercial poultry are met by foraging⁹. Other systems have been developed internationally that exceed this. OPD applicants should be expected to maximise the proportion of feed needs met directly from site, even for domestic use and therefore minimise the proportion needing to be imported, and justify this in their Management Plan.
- 4.3.21 The position paper concludes it is reasonable for OPD enterprises to meet 65 % of the food needs of pigs and poultry from the site or from the proceeds of other products grown or reared on site and therefore this can be included as part of the minimum income needs to be generated from the purely land-based enterprise.
- 4.3.22 We consider that the income from the grass-fed beef is entirely land based and therefore the profits can contribute to the 65% of the cost of the imported feeds for the chickens and pigs. The income from the chickens and pigs can therefore be reasonably presented as a valid OPD income.
- 4.3.23 The costs and margin projected from this are plausible. The costs presented are plausible based upon a comparison with published figures. The applicants have budgeted for 100% replacement of birds every three years and sales of 90% of the eggs based on 280 eggs per bird. They assume that the pasturing will not reduce the cost of the feed requirement, which is conservative. Selling at £1.50 per six eggs is a lower end but plausible sales price this would produce a net profit of £787
- 4.3.24 Pastured free range chickens can produce fewer eggs annually. We considered scenario 3 where all poultry income fails entirely due to disease, resulting in a loss of -£1373 in the year from this strand. The applicants propose to keep the birds in mobile chicken tractors which are considered a form of undercover housing in relation to bird flu and hence the probability of a complete failure of egg production in a year is very low.
- 4.3.25 In our scenario 2 the birds produce 225 eggs per year and costs rise 5% which would yield a gross profit of £502.

Turkeys

- 4.3.26 A flock of around 50 turkeys will be raised from eggs and fattened for sales at Christmas.

⁹ Pastured-Raised Poultry Nutrition. Jeff Mattocks 2002

- 4.3.27 The average of eight online retailers of turkeys showed a price of £109.75 for a 6 kg bird. Prices were higher for direct sales similar to the applicant's product. Organic and free range birds commanded a higher price. We consider it is plausible that the anticipated price of £109 can be achieved, but we have considered a lower sales price of £98 per bird in our sensitivity scenario 2. The costs presented (£20/bird) are plausible with the slaughter and preparation costs covered by the applicants. We increased costs to £21 per bird in our sensitivity scenarios 2 and 3
- 4.3.28 We considered scenario 3 where all poultry income fails entirely due to disease, resulting in a loss of -£1015 in the year from this strand. The birds will be kept in turkey tractors which are considered a form of undercover housing in relation to bird flu and hence the probability of a complete failure of production in a year is very low.

Soft fruits

- 4.3.29 It is intended to sell soft fruit in punnets. The anticipated sales are 70 punnets a month for four months with a range of soft fruits suited to the altitude being produced. Punnets would sell for £3.
- 4.3.30 The yields, prices and costs projected are plausible. In our scenario 1 we consider it is possible that the sales may not be achieved and we reduce the income to £0.
- 4.3.31 In our experience of many OPD projects and small farms it is unusual for these sorts of small additional income strands to fail entirely as the diversity of produce mitigates against complete crop failure.

Vegetables

- 4.3.32 It is likely that there will be surplus vegetable production. This will be sold via the farm gate or subscription to existing customers. The applicants have not assumed any income from this in their projections which is conservative.

Orchard Products

- 4.3.33 Once the orchard trees are established there is a reasonable probability that soft fruit will be available for the peak summer months with top fruits achievable later in the year.
- 4.3.34 The applicants have not included income from the orchard crops in their year five projections. If they succeed to produce crops this will therefore strengthen their profitability. If they do not succeed this would not put the enterprise at risk of failure.

5. Requirement for Occupants

5.1.1 The essential criterion for occupants is that:

The number of occupants is directly related to the ability of the site to support their minimum food and income needs and the number of people needed to run the site effectively.

5.1.2 This is a single household OCOPD. The minimum needs appraisal and business planning suggests that the plot is of sufficient size to support both the domestic production and the requirements of the OPD businesses proposed.

5.1.3 The tasks to be attended to manage the OPD effectively are laid out in Table 8 in Section 5 of the MP. This suggests a labour input of around 3300 hours per year. Based upon our experience of similar projects we consider that the labour input to successfully manage this project will be in excess of one person's full-time input but will not exceed the capacity of two people to deliver.

5.1.4 The criterion is therefore satisfied.

6. Sole Residence

6.1.1 The applicants confirm that the site will be their sole residence.

6.1.2 The criterion is therefore satisfied.

7. Land Management

7.1.1 In tandem with living mainly from the land it is also required that OCOPD should conserve, and wherever possible, enhance the local environment. This includes biodiversity, cultural heritage and landscape.

7.2. Habitats

7.2.1 A Preliminary Ecological Appraisal and Ecological Impact Assessment has been undertaken by Acer Ecology, and submitted with the application. It contains detailed commentary on the potential impacts of the proposed OCOPD. There are protected and priority species noted as likely to be present in the land around the site – badgers, bats and dormice some distance to the north.

7.2.2 The PEA states:

'The development will not result in any adverse impacts to statutory or non-statutory nature conservation sites.

The development may result in adverse impacts to the following habitats and/or species:

- *Habitats of value – No parts of the site are currently considered to be of international, national, regional, district or high local value or local value for wildlife. Whilst the loss of the on-site habitats would be unlikely to have a significant impact outside of the context of the site, it would nevertheless be desirable that the impacts be either minimised or appropriately mitigated where possible; and*
- *The proposed development will involve the clearance of an area of acid grassland within Area 1. However, the grassland did not meet the criteria of seven indicator species to be considered a 'good' example of this type of grassland. It only*

contained five species at the time of the survey: sheep's sorrel, sheep's fescue, heath bedstraw, tormentil and pignut.

Provided appropriate precautionary, mitigation and compensation measures detailed in Section 4 (of the PEA) are implemented, the development is not anticipated to result in adverse impacts to any protected sites, habitats and species.'

7.2.3 The essential criterion for habitats is that:

All existing semi-natural and other important habitats on the site are conserved and enhanced through appropriate traditional management.

7.2.4 The priority habitats present are the hedgerows and some areas of the grassland, both which the report states will not be negatively impacted by the proposals.

7.2.5 Habitats within and close to the OPD site:

- Species poor semi-improved acid grassland
- Scattered trees
- Defunct species-poor hedge (hazel, hawthorn, birch, backthorn, ash and oak)
- Intact species poor hedge (south of the OPD site, species as above)

7.2.6 Habitats on the remaining land in the applicant's ownership:

- Conifer Plantation (diseased larch)
- Broadleaf woodland
- Newly planted broadleaf woodland
- Species poor semi-improved acid grassland
- Dense bracken
- Bracken scrub
- Scattered trees
- Defunct species-poor hedge
- Intact species poor hedge

7.2.7 To the north, west and east of the site within the rest of the farm land there is further semi-improved grasslands, bracken and more defunct species-poor hedge and a large area of new woodland planting.

7.2.8 The PEA noted that there is the potential for protected species to be present on areas outside of the OPD site within the wider farm as follows:

- Badger sets on eastern boundary of the dense bracken area
- Isolated trees that may support bats, linked to the surrounding woodland which may also support bats.
- Possibility of dormice within the plantation woodland to the north of the land

7.2.9 The PEA reported no signs of any invasive non-native species.

7.2.10 Predominantly the site area has been found to be of relatively low ecological value.

- 7.2.11 Sections 7.2.7 to 7.2.9 of the MP and the Green Infrastructure statement clearly lay out how the existing habitats will be conserved and how the enhancements of habitats (hedgerows, woodlands, grassland) and the addition of new habitat (new woodland, ponds, reedbeds) will mitigate the small losses of low quality habitat to deliver the development.
- 7.2.12 Overall, the conservation and enhancement of habitats has been addressed in the MP, the green infrastructure statement and in the PEA report, and the criterion is therefore satisfied.

7.3. Landscape

- 7.3.1 OCOPD is expected to have a positive landscape impact.
- 7.3.2 The applicants have submitted a proportionate Landscape and Visual Assessment document prepared by TerraPerma accompanying the MP as Appendix C. We considered the landscape impacts during our site visit
- 7.3.3 Traditional features such as woodlands, hedges and the existing poor quality grassland will be conserved and enhanced significantly. Orchards and woodland/coppice will be introduced.
- 7.3.4 The buildings have been located where they are screened from most views from without excepting very distant views.
- 7.3.5 The essential criteria for landscape are that:
- The landscape of the site is enhanced by the addition and traditional management of characteristic or once characteristic local landscape features that, amongst other things, may be used to screen and filter views to built elements of the proposals and to provide shelter and screening to horticultural areas.*
- Buildings and other structures and access tracks are located where they can be recessed into the landscape and do not stand out in views from public vantage points.*
- 7.3.6 The criteria are therefore satisfied.

7.4. Cultural Heritage

- 7.4.1 There are no historic assets identified directly in relation to the proposed development, nor within the site. A search on the Cadw records reveals the following Listed Buildings close to the site:
- Wern Independent Chapel - Grade II listed building - 750m East of site
- It is considered the proposal will not impact the setting of the listed buildings.
- 7.4.2 The essential criterion for cultural heritage is that:
- All cultural heritage features (e.g. archaeology) on the site are conserved and enhanced through appropriate management.*
- 7.4.3 The criterion is therefore satisfied.

8. Low Impact Analysis

8.1. Energy and Water

- 8.1.1 It is an essential characteristic of OCOPD that use of energy and water is minimised, and that renewable sources are used.

Energy

- 8.1.2 The applicants will build a well designed highly insulated cabin dwelling that complies with the Caravan Act and therefore is not required to comply with Building Regulations. Hence, no buildings on the site will be required to comply with the regulations. The Guidance variously states regarding the relationship between Building Regulations and Zero Carbon Buildings:

For One Planet Development the zero carbon requirements relate to both domestic and ancillary buildings subject to Building Regulations control. (3.82)

It is possible for One Planet applicants to propose dwellings and other structures in forms that do not require Building Regulations approval, such as those complying with the definition of a caravan or other temporary structure. The types of structure should be justified in terms of their fitness for purpose and minimisation of environmental impacts. (3.93)

- 8.1.3 The applicants describe how they will reduce energy and water demand as much as possible. The Applicants have presented a SAP calculation for their proposed home which forms part of Appendix F of the MP 'Zero-Carbon-Energy Report'. This combined with the assessments of domestic and enterprise electrical demand shown in Section 8 of the MP provides a clear and detailed assessment of total energy needs.
- 8.1.4 This shows the anticipated total energy requirement to be 6,712 kWh per year for heat and hot water. Part of this demand will be provided by the surplus from the solar PV during the summer months. The balance of the energy can be provided from the land from the 0.1590 ha of willow coppice and from other woodland on the land.
- 8.1.5 We are satisfied that these calculations give sufficient confidence in the likely energy needs of the building design presented – for space heating, hot water and for cooking during the winter
- 8.1.6 Having established the requirement for heating and hot water, the potential of the site to produce sufficient biomass to meet this need can be assessed.
- 8.1.7 The MP shows there is already a considerable number of mature trees on the site including 400m of mature hedge and 2.25 ha of existing mature woodland
- 8.1.8 The MP shows 0.159 ha of new SRC coppice planting is to be provided on the site in Field 4 and Field 7 as two areas of five year short rotation cycle. This exceeds the 0.146 ha required in the longer term. When combined with the much larger areas of woodland already on the land it is clear the energy need can be met from the land.
- 8.1.9 The MP contains an assessment of the electrical energy needs of the applicants' household as a range between 3.00 kWh (winter) and 3.92 kWh (summer) daily. The lower figure is due to the use of biomass for space heating water heating and cooking during the winter low sun season. In summer an electric hob will provide for cooking.
- 8.1.10 Business activities will have a seasonal requirement which the applicants have estimated as 2.26 kWh in total. They point out that the large part of this is electric fencing which

will not be needed to be provided at peak times and which will be supplemented by solar panels on the battery packs. We agree with the applicant's calculations that this will create a peak demand of between 3.78 kWh (winter) and 4.52 kWh (summer) daily.

- 8.1.11 A 6 kWp PV array is proposed. The European Commission's Photovoltaic Geographical Information System off grid PV simulation tool has been used to demonstrate the performance of the array and battery storage through the year. The assessment is given in Appendix G of the MP.
- 8.1.12 The simulation shows that the array should generate well in excess of the need from March to September dropping to a potential; low of 2.65 kWh / day in winter.
- 8.1.13 The shortfall of energy from the PV array during the worst of winter periods is proposed to be compensated for by a small 600w wind turbine. Both these systems when combined with the 9.84 kWh of battery storage proposed will provide adequate generation and storage for the need.
- 8.1.14 The calculations and projections are robust and demonstrate the energy needs can be met 100% from renewable sources on site.
- 8.1.15 The essential criteria for energy are that:
- The energy needs of the site will be minimised through suitable design and use of technology, including that which enables re-use.*
- All the energy needs of all activities shall be met from sources of renewable energy on site, with the exception of small amounts of non-renewable fuel for particular uses for which they are best suited and justifiable (para 3.60).*
- 8.1.16 The information provided demonstrates that the first criterion is satisfied.
- 8.1.17 The information provided demonstrates that the second criterion is satisfied.

Water

- 8.1.18 The essential criteria for water are that:
- The water needs of the site will be minimised through suitable design and use of technology, including that which enables re-use.*
- Rainwater harvesting from buildings and structures must be maximised.*
- All of the water needs of all activities should be met from water available on site, unless there is a more environmentally sustainable alternative. Abstraction from water bodies (including groundwater sources) must be at levels that do not cause environmental harm. Harm would result from the lowering of surface and ground water levels.*
- 8.1.19 The MP describes how water needs will be minimised. All roof water will be collected and channelled to harvesting tanks for storage. The MP states water for domestic, horticultural, and business activities will utilise harvested water. An existing reliable spring is also available on the land and will be utilised as required. This complies with the Guidance.
- 8.1.20 The MP includes an assessment of the demand for water against the likely rainfall, and hence the supply. Based upon this, the applicants propose 10,000 litres of storage to provide for their domestic water needs and a separate further 15,000 litres of storage for the livestock and horticultural needs. In addition two ponds on the land will provide 71,400 Litres of storage.
- 8.1.21 We agree that there is sufficient rainfall to potentially supply the water needs of all activities on the site and that sufficient storage is in place.

8.1.22 The criteria are therefore satisfied.

8.2. Waste

8.2.1 It is required that OCOPD assimilates its wastes on site in sustainable ways, unless they are small amounts of unavoidable non-biodegradable and hazardous wastes.

8.2.2 The essential criteria for waste are that:

All biodegradable waste produced on site is assimilated on site in environmentally sustainable ways.

The only exception to this is occasional off-site disposal of small non- biodegradable amounts of waste, which cannot be assimilated on site which arise from things used on site wearing out or breaking irreparably.

All waste handling and assimilation on site must comply with Environment Agency guidelines.¹⁰

8.2.3 The MP describes how the applicants aim to minimise the quantity of materials coming onto the site and therefore reduce the wastes to be managed to a minimum.

8.2.4 The MP summarises how organic business waste, domestic food waste, and human waste are all able to be processed on site via a number of composting systems.

8.2.5 Human waste will be processed via a composting toilet system, with separated urine addressed appropriately. The nutrients from this will be used to improve the growth of tree crops.

8.2.6 Grey water from the house will be subject to treatment via a chain reed beds system with final storage within a pond which will also receive any exceedance from the roof water. The practices proposed are in line with the advice of the Guidance and the MP includes a statement about compliance with guidelines and legislation.

8.2.7 Wastes not able to be dealt with on site, will, if appropriate, enter the local municipal recycling and disposal stream.

8.2.8 The applicants state, in the monitoring section of the MP, that they will report on whether all waste handling and assimilation on site has complied with NRW guidelines.

8.2.9 The criteria are satisfied.

8.3. Zero Carbon Buildings

8.3.1 The MP follows the approach set out in the Guidance by demonstrating that the dwelling will meet the requirement of zero carbon in construction as described by the Code for Sustainable Homes, Category 3, which examines the materials utilised for five key building elements; roofs, external walls, internal walls, floors and windows. To achieve the OPD zero carbon in construction criteria at least four of these elements should achieve a rating of A+ or A6, using the assessments of materials published in the BRE Green Guide to Specification or clearly demonstrating similar attributes for materials without a recognised published rating, as is the case of this application.

8.3.2 The CfSH materials assessment which forms Appendix H of the MP demonstrates that the proposed dwelling meets this requirement.

¹⁰ Now Natural Resources Wales (NRW)

- 8.3.3 The Applicants have presented an SAP calculation and zero carbon report for their proposed home in Appendix F of the MP. The results of the report are summarised below:
- The primary energy demand of the building will be 39.1 kWh/m²/annum
 - The net carbon emissions will be -0.02 T CO₂e per year.
- 8.3.4 Based upon this we have confidence that the design chosen will achieve the zero carbon status required in policy.
- 8.3.5 There are four ancillary buildings proposed:
- A polytunnels
 - A wood store and storage shed with PV array on the roof
 - A small processing barn
 - Two containers with a tent cover between them forming a barn space
- 8.3.6 These small buildings will either be agricultural or be constructed from locally sourced and reclaimed materials, and will be unheated. We consider them to meet the zero-carbon requirement of policy.
- 8.3.7 The essential criterion for 'zero-carbon' in construction and use is that:
- Domestic and ancillary buildings will be 'zero carbon' in construction and use as explained in this guidance and using the up-to-date Welsh definition of zero carbon*
- 8.3.8 The SAP assessment, CfSH materials assessment and information above demonstrates that this criterion is therefore satisfied.

Building Regulations

- 8.3.9 The essential criterion for Building Regulations is that:
- Proposals will identify which structures require Building Regulations approval and that this approval is obtained either before or during construction.*
- 8.3.10 The MP identifies that the home will not require Building Regulations approval.
- 8.3.11 Formal Building Regulations will not apply to the small detached ancillary building structures or the agricultural structures on site.
- 8.3.12 The criterion is therefore satisfied in that all structures are identified as not being subject to approval.

Capable of Removal with Low Environmental Impacts

- 8.3.13 The essential criterion for buildings being capable of removal with low environmental impacts is that:
- All structures identified for removal in the Exit Strategy are capable of removal with low environmental impact.*
- 8.3.14 The exit strategy for structures is addressed in Table 16 within Section 13 of the MP.
- 8.3.15 The applicants propose that the woodstore/PV shed, decking and house will be removed within 12 months and the land beneath them reinstated to pasture.
- 8.3.16 The applicants propose that all the other structures would remain on the site and be reused as agricultural buildings. The compost toilet would be re-sited in the hardstanding area as an agricultural welfare facility.
- 8.3.17 Paragraph 5.13 of the Guidance states

new agricultural buildings and tracks may benefit the land if restored to its previous use and therefore may be suitable for retention (seek the advice of the planning authority on this matter).

8.3.18 We consider that should the LPA be minded to not allow the continued agricultural use of the buildings indicated, that their components could be removed from the site with low environmental impact.

8.3.19 The criterion is therefore satisfied, subject to LPA consent.

8.4. Community Impact

8.4.1 The Guidance requires that all likely impacts of OCOPD on the local community should be assessed, and that OCOPD should not impact negatively on neighbouring communities. Positive impacts should be encouraged and negative impacts mitigated.

8.4.2 The essential criteria for community impacts are that:

There is a thorough assessment of all impacts of the proposals on neighbouring communities. One Planet Development in the open countryside should not impact negatively on neighbouring communities.

Any negative impacts are mitigated.

8.4.3 Section 10 of the MP examines the potential impacts of the domestic and business activities of the residents.

8.4.4 The applicants identify the potential impacts from visitor traffic to and from the site and small increases in wastes leaving the site to the municipal waste stream as a negative impact and offer mitigations (see travel). They detail how they will support a vibrant community and local culture, and support the local economy.

8.4.5 The applicants have demonstrated willingness to engage with the local community since buying the land.

8.4.6 From the information before us we would consider the criterion is satisfied.

8.5. Transport

8.5.1 A simple Transport Assessment and Travel Plan is presented within Section 11 of the MP. This is not a formal independent assessment but it is transparent. It gives the detail of the calculation of journey numbers and an indication of the breakdown of journey types anticipated. Table 14 of the MP separate trips for domestic purposes, trips for business purposes and trips made by visitors to the site.

8.5.2 The applicants will aim to combine monthly shopping trips with business deliveries. They suggest that they may be undertaking weekly business trips to deliver some produce on ebikes. They detail how they will reduce the need to travel and when there is a need, active travel (zero carbon) methods and public transport will be prioritised.

8.5.3 The assessment notes the local public transport connections, bus routes and train stations.

8.5.4 The appraisal has examined the detail of the trips proposed and summarized the anticipated modes and patterns of travel as detailed in below.

8.5.5 The applicants present their assessment of trips as a single one way journey. This is in line with national statistics which define a trip as a one-way journey, hence a return journey is two trips.

- 8.5.6 The applicants consider that the OPD will generate 244 trips, 122 per capita annually for domestic and business purposes.
- 8.5.7 The WAG publishes the Transport (National Survey for Wales): last issue covering April 2022 to March 2023. However, this does not give us useful comparator figures. Therefore UK wide figures are the best comparison. The 2023 DfT statistics show the average number of vehicle trips per capita as 555¹¹, so the OPD is likely to generate 22% of the average number of car trips based upon the applicants anticipated journeys.
- 8.5.8 The applicant's assessment considers all travel to and from the site including guests.
- 8.5.9 Car travel by the applicants for domestic purposes is stated to be 1580 miles (790 miles per capita) per year. We have adjusted this upwards to 2000 miles (1000 per capita) per year as a worst case.
- 8.5.10 DfT statistics 2023¹² compiled for the National Travel Survey state that citizens travelled an average of 4,783 miles each per year by vehicle (car, motor bike and other private) as drivers and passengers.
- 8.5.11 This compares to the ONS average reported mileage per person per year in Wales (2022)¹³ of 5,755 miles driven per person. Hence at their most impactful the OPD will generate 14% of the average car mileage. Much of the difference to the average is accounted for by the applicants' proposed reduction in travel due to working on the site and use of public transport, walking or bicycle.
- 8.5.12 We consider that it is probable that the proposals will generate significantly lower than average transport impacts.
- 8.5.13 The MP states that there will be monitoring of trip numbers, mileage, for the family's domestic travel. The guidance states:
There should be detailed monitoring of all trips to and from the site in terms of purposes, distances, modes, and any transport sharing.
- 8.5.14 The applicants state that the monitoring statement will include travel to and from the site for all purposes including business and any visitors.
- 8.5.15 The essential criteria for transport are that:
The management plan must be accompanied by a Transport Assessment and Travel Plan (which may be combined).
Overall, the development should achieve a significant reduction in transport impacts from all activities on site (residents, enterprises and visitors) in comparison to what would be the 'norm' for such activities.
There should be detailed monitoring of all trips to and from the site in terms of purposes, distances, modes, and any transport sharing.
- 8.5.16 The criteria are therefore satisfied.

¹¹ National Transport Survey sheet NTS0409a (car or van driver/passenger plus other private) public transport, walk, cycle excluded)

¹² National Transport Survey sheet NTS0409b (car or van driver/passenger plus other private) public transport, walk, cycle excluded)

¹³ <https://www.gov.wales/road-traffic-2022>

8.6. Ecological Footprint Analysis (EFA)

- 8.6.1 The household has utilised the OPD EFA tool (amended V2) to examine their probable ecological footprint upon first habitation on the site. The applicants have submitted data for their current consumption and this helps to strengthen the plausibility of the figures then assumed for first habitation as the factors that change can be clearly determined.
- 8.6.2 TPG provided the applicants with an updated version of the OPD EFA tool¹⁴ to analyse the figures provided by the applicants. The applicants have included this analysis in their application.
- 8.6.3 The applicants have included an allowance for the costs of poultry and animal feeds and other costs for the production of food for domestic use.
- 8.6.4 The results of the TPG analysis show the current per capita Ecological Footprint of the household living off site to be 3.57 gha. This is lower than average for UK household utilising this tool. The estimated footprint on first habitation to be reduced at 2.27 gha and the estimated footprint at year five to be 1.96 gha.
- 8.6.5 Overall, we consider it is plausible from the data provided throughout the MP and the figures used in the assessment that the project will result in a per capita Ecological Footprint of less than 2.4 gha as required.
- 8.6.6 The acknowledging of other footprints is reasonable. Impacts from social visitors, volunteers and impacts from the business activities have been identified, examined and mitigation measures explored. Business travel is considered and is low. The provision of local produce and products is a valid benefit.
- 8.6.7 The requirements of the Guidance are therefore satisfied.

9. Other Matters

9.1. Implementation

- 9.1.1 Section 13 of the MP shows a programme for implementing the OPD on the site. The applicant's additional information states that the 'OPD will be fully established' by year 5 and that all of the essential criteria for OPD will be achieved by this time.
- 9.1.2 The requirements of the Guidance are therefore satisfied.

9.2. Monitoring

- 9.2.1 The MP contains sufficient baseline data and information which should aid on-going monitoring.
- 9.2.2 The outline time line for implementation of the project is sufficiently clear.
- 9.2.3 Section 9.2 of the MP states that 'We will submit annual monitoring reports according to the OPD Practice Guidance.' and that 'An EFA will be submitted to cover Years 3 and 5, along with a management plan in Year 5 for the following five years'.
- 9.2.4 This is in accordance with the guidance.

¹⁴ There were minor errors in the original tool which we have corrected but this version has yet to be released by the Welsh Government

- 9.2.5 A monitoring template is submitted in Appendix J. Whilst this is common practice with many OPD applications it is not required by the guidance but is welcome.
- 9.2.6 The monitoring proposed is satisfactory.

9.3. Exit Strategy

- 9.3.1 Section 13.3 of the MP addresses the exit strategy. It is clear and defines project failure as two consecutive red cards for the same problem. It also references the definition in the Guidance as '*a failure to achieve one or more of the essential characteristics of One Planet Development in the open countryside over a period of two years without instituting clear and effective measures to address the identified problems.*'
- 9.3.2 Details of how the dwelling and the ancillary structures on site could be removed is laid out in sections 13.3 of the MP. The applicants are proposing that some of the ancillary structures would remain on the site as agricultural buildings.
- 9.3.3 The Guidance states:
- The management plan will need to identify what would constitute a failure of the site as a whole. This would be a failure to achieve one or more of the essential characteristics of One Planet Development in the open countryside (para 1.9) over a period of two years without instituting clear and effective measures to address the identified problems.*
- The Exit Strategy should lay out how the development and associated land use changes would be removed such that the use of the site is restored to its previous use.*
- 9.3.4 Under the proposals for this OPD, it is likely the site would include increased tree cover, additional hedgerows and features in line with the ecologist's recommendations, improved biodiversity and improved areas of soils. Thus, it is likely that the site would be in better condition than before the development.
- 9.3.5 The exit strategy proposing retention of some of the structures associated with the development for agricultural use, require agreement with the LPA before approval, in line with the Guidance.

Minimum Needs – Food and Income in One Planet Development (OPD)

TPG Position Statement

The matter of minimum needs for food for OPD Management Plans both an important and complex part of OPD projects. There is ambiguity in the OPD Practice Guidance and variation in the handling of this matter in OPD Management Plans and appeal decisions. This position statement has been produced to reflect TPG's understanding of these matters and states how we will approach them in our work for applicants and Local Planning Authorities (LPAs).

This discusses just food and income to buy food, not the other minimum needs aspects of OPD.

Policy & Guidance

Planning Policy Wales

PPW introduces the notion of provision of minimum needs for income, food, energy and waste assimilation:

4.2.39 OPD located in the open countryside should provide for the minimum needs of the inhabitants in terms of income, food, energy and waste assimilation over a period of no more than five years from the commencement of work on the site.

TAN6

TAN6 repeats the requirement in PPW and then also requires that inhabitants' requirements in terms of income, food, energy and waste assimilation can be obtained directly from the site, and land use activities proposed must be capable of supporting the needs of the occupants.

4.15.2 One Planet Developments located in the open countryside should, over a reasonable length of time (no more than 5 years), provide for the minimum needs of the inhabitants' in terms of income, food, energy and waste assimilation.

4.17.1 Planning applications for One Planet Developments in the open countryside must justify the need to live on the site and quantify how the inhabitants' requirements in terms of income, food, energy and waste assimilation can be obtained directly from the site. The land use activities proposed must be capable of supporting the needs of the occupants, even on a low income or subsistence basis, within a reasonable period of time (no more than 5 years).

Practice Guidance

The Guidance takes on the notion of minimum needs and defines four categories: for food, income, and energy and waste. The requirements for food are split across 1) Food and 2) Income in paragraph 1.12 of the Guidance.

1.12 Minimum needs mean slightly different things for each of food, income, energy and waste assimilation.

1) For food it means that most of the food needs of all the residents on the site should come from the site (grown and reared) or be purchased using income derived from other products grown (such as timber) or reared on the site. This is discussed further in paras 3.24 – 3.26.

2) For income it means that the site needs to generate enough income to pay for the basic requirements of all the residents on the site which the site is unable to provide directly. These are clothes, travel, IT / communications, Council Tax and the food needs not covered by (1) above. This is discussed further in paras 3.27 – 3.28.

3.24 sets the requirement that 'an OPD site should be able to produce at least 65% of basic food needs.' 3.25 expands upon this requiring that either:

- 65% of all food needs of all occupants of the site are grown and /or reared on the site; or that
- A minimum of 30% of basic food needs of all occupants are grown and /or reared on the site, with the remaining 35% of food needs purchased or bartered using the income or surplus produce from other produce grown and /or reared on the site (such as timber or biomass or a surplus of particular products)

3.27 states:

Even if a site is able to support the majority of the occupants' basic food needs, they will still have certain basic needs which cannot be met from the site and for which a monetary income is required to enable their purchase. These minimum needs are:

- clothes
- travel
- IT / communications
- Council Tax
- the remaining 35% of food needs (or less) that cannot be grown/reared on the site or gained through bartering (para 3.25).

The 65% and 100% Interpretations of the Guidance

There are two interpretations in circulation of what the requirement for minimum needs for food are for OPD. For clarity we will refer to the following components of the total food consumed on site, but it needs to be remembered that these figures are set as a minimum and two maximums, and rarely occur exactly as that in Management Plans:

- the first 30% of all food needs
- the next 35% of food needs
- the final 35% of food needs.

65% Interpretation

This interpretation is that the requirements that:

- the first of 30% of food is grown or reared on site
- next 35% has to be bartered using other produce grown or reared on site or bought from the proceeds of sales of the same
- the final 35% can be bought from any income source.

100% Interpretation

- the first of 30% of food is grown or reared on site
- the next 35% has to be bartered using other produce grown or reared on site or bought from the proceeds of sales of the same
- the final 35% has to be bought from other income streams derived from the productive and regenerative capacity of the site, such as from training and education courses, or consultancy directly linked to land based activities on the site.

Our view is that the Guidance is ambiguous and can be read to support either interpretation.

In our view the full contents of the Guidance favour the 100% interpretation, as 1.12 2), requires that the site also needs to pay for the food not covered by 1). 1.12 1) refers to 3.24 and 3.25 and 3.25 addresses the first 30% and the next 35%, and 1.12 2) refers to 3.27 where we understand the final 35% is addressed in the final bullet point. We feel that if 3.24 and 3.25 entirely dealt with all food need matters there would be no reason for 3.27 to address food and that there is a need to read the Guidance in full, and not to quote selectively from it.

However, the final bullet point of 3.27 is ambiguous in that although it refers back to 3.25 it is not specified which 35% it is referring to and only addresses bartering not purchasing food. This, therefore, also can be read to support the 65% interpretation.

The essential criteria in the Guidance referring to minimum needs are also ambiguous as they are more general than the detail of the Guidance above them.

Interpretations in Use

Appeals

We have looked at nine OPD appeal decisions, some of which we were involved in. The 65% interpretation is more commonly used, but the 100% interpretation is also addressed in two appeals, though the figures then considered are from a 65% interpretation analysis. Some appeals do not address this detail at all.

We therefore conclude that to date appeal decisions offer no definitive view.

OPD Management Plans

The OPD Management Plans TPG has worked on also vary in which interpretation they have used. TPG have used both interpretations in our work, but have settled on the 100% interpretation since 2018, having considered the Guidance more carefully, which is reflected in the Management Plans we have been associated with since then.

One Planet Council

The One Planet Council (OPC) is an organisation of OPD practitioners. We have discussed this matter with them and they provided the following statement:

The One Planet Council takes the position that the requirement as laid out in the Practice Guidance is that:

- the first 30% of food (by value at comparable retail prices) must be grown or reared on site*
- the next 35% may be grown or reared on site or bought using land-based income*
- the final 35% may be grown or reared on site or bought using income derived from any source.*

As such, the directly 'land-based' requirement is 65% of food. In practice, 2021 evidence shows that most OPDs produce well over 30% of food on site and some over 65%.

We recommend, however, that applicants propose a management plan which allows some contingency for seasonal harvest failures and the normal fluctuations of business and personal circumstances, to ensure that their ability to meet the 65% target is robust to unexpected challenges.

Analysis

Our conclusion is that the policy and the Guidance can reasonably read in both ways. Their application in Management Plans approved with or without appeal, and in Inspectors decisions, is mixed, often not digging into these matters to provide a clear view either way.

Overall, the requirements relating to food are complex, and inter-related. There is not a single section, paragraph, or graphical representation giving readers all they need to know. Terms are interchanged - needs, minimum needs, basic needs and requirements are all used in PPW, TAN6 and the Guidance.

The most important question for us is what these various ambiguities mean for the integrity of the OPD policy. To better understand this we turn to the 10 years of experience we now have of OPD and the remainder of the policy and the Guidance.

Across a sample of nine OPD Management Plans we have been involved with although the minimum requirement is for 30% of food to be directly grown and reared on site the average figure is actually 54%. This indicates to us that in any case there is a strong incentive to grow more food than the Guidance requires. Additional food being bought averaged 32% of the Ecological Footprint, showing that food is a major part of Footprint and so a very effective way to reduce this is to grow food on site.

Also, all nine would have been able to provide enough income to meet the 100% interpretation even though some adopted the 65% interpretation. On-site income sources are favoured, probably because of the focus on the site OPD requires, and also that any travelling off-site to work will also impact Footprint.

It also needs to be noted that the essential criteria relating to essential needs are only two of 31 in total.

This is an imperfect situation, principally arising from ambiguity in the Guidance and its variable application. In these circumstances we conclude that the integrity of OPD Management Plans has not been compromised to a harmful degree by the adoption of the 65% interpretation. The question of fairness to current applicants also arises.

In this light, when working for LPAs and assessing OPD Management Plans we do not think it would be fair to insist on the 100% interpretation. When working for OPD clients we will recommend that a significant contingency around income is built in, and understand other consultants also do this, as does the OPC. This is because Management Plans are a prediction of what is hoped will happen, and such contingency is wise so that applicants are protected from unforeseen circumstances. We suggest a 20% contingency for the income from income from produce grown and /or reared on the site and other income streams derived from the productive and regenerative capacity of the site.

OPD Management Plans address whole land use systems, which are complex, and the breadth of the essential criteria reflects this. In our experience the soundness of a Management Plan is found in such breadth rather than in a few issues. Therefore, if we consider that a Management Plan is marginal in many regards, and so the ambiguity of the Guidance is not compensated for by other factors in the Management Plan, we would consider it reasonable to conclude that it did not meet the requirements of the Guidance.

Last, this issue is one of several we are aware of where, with hindsight, the Guidance could be improved to provide greater clarity and effectiveness. This is not a criticism of the authors of the Guidance, which includes us, the steering group which supervised our work, or the Welsh Government who adopted it. It is a reflection that in the Guidance we were taking an outline of a highly innovative policy and trying to give it full form, despite it not fully existing in the real world, and also seeking to proof the policy and Guidance against abuse. With 10 years' experience of OPD we feel improvements could definitely be made to the Guidance, and hope that the Welsh Government may take the opportunity to do so, not least because of the importance of the policy to the climate and ecological emergencies, and the future of the rural areas which make up so much of Wales.

TPG May 2022

Open Countryside OPC (OCOPD) Livestock Feed Issue

The OCOPD Guidance has a potential blind spot, which is that the acceptability (or otherwise) of buying in feed for livestock is not directly addressed. The basic issue under consideration here is that it is theoretically possible for all or nearly all of the food needs of livestock (particularly chickens) to be imported and for the produce from the livestock (eggs, meat...) to be regarded as 'grown and reared' on site - which is the requirement of the Guidance.

However the Guidance also requires that essential needs income (which can include a proportion of food) is derived from the 'productive and regenerative capacity of the site', which imported feed is not.

It is also recognized, though, that not all of the food which residents need to eat can be grown or reared on site, and the same is therefore likely to be the case for certain livestock, particularly chickens.

What the Guidance does not address, and what this note attempts to, is in what circumstances, and what proportion of livestock feed may be imported without the ethos and principles of OCOPD being breached.

Minimum Needs Derived From Site

The Guidance requires that 65% of all food needs of residents is met from the site, a minimum of 30% of which must be grown or reared on site, the remaining percentage (up to 35%) being bought from the proceeds of other products grown or reared on site. The minimum income needs of residents should also be gained from the site, with a wider range of activities such as courses and consultancy also able to contribute provided that they are based on the productive and regenerative capacity of the site and subsidiary to growing and rearing activities.

The Guidance does not specify that growing and rearing on site should be based on the productive and regenerative capacity of the site, but for OCOPD this is clearly intended to be the case, and this is the assumption this note is based on¹.

It therefore follows for the minimum food needs, both the directly grown and reared proportion and the bought from the proceeds of other products grown or reared, and the minimum income needs are all required to be derived from the productive and regenerative capacity of the site. This means that livestock reared either for the consumption of residents or for sale to purchase food making up the minimum food needs or to provide the minimum income needs should be fed from the productive and regenerative capacity of the site.

Again, this could be fed directly from fodder or food waste, or by using other income derived from the productive and regenerative capacity of the site to buy feed. Feed cannot be bought from other income streams as this would break the link of all minimum needs being met from site.

These requirements will raise considerable challenges for OCOPD's intending to rely on larger scale keeping of livestock for income as there is a need to maximize grazing and foraging on site, and also for other income generating activities based on the productive and regenerative capacity of the site to pay for any imported feed.

Mitigating Factors

Ideally OPD should be exemplars able to demonstrate how they will implement innovative and cutting edge systems of production, with suitable stocking levels and nutrient cycling such that the proportional imported feed requirements are low and reduce over time and are feeds from site are maximised. Exactly what is feasible and possible will vary from site to site and the nature of OPD activities undertaken.

It appears that for certain animals such as sheep, cows and horses, in suitable numbers, it is relatively easy to meet large proportions of their dietary needs from the resources of the site with them receiving supplement feeds during lambing etc. and extreme poor weather.

For chickens/ poultry its is considerably more difficult. Free range poultry forage for protein and vegetable matter on sites, which supplements the pelleted feeds which form the bulk of their diet. Evidence suggests 5-20% of the feed requirements of ranging **commercial** poultry are met by foraging² other systems have been developed internationally that exceed this³. It is unlikely that most of the dietary requirements of larger numbers of chickens producing commercially will be met from small sites. OCOPD applicants should be expected to maximise the proportion of feed needs met directly from site, and therefore the proportion needing to be imported, and justify this in their Management Plan.

In relation to food requirements of the OPD household the Guidance recognises that 'It is not feasible for all the food needs of occupants to be produced on site for two reasons: (a) it is difficult to produce

¹ It would be nonsense for the minimum food needs of residents not to be required to be derived from the productive and regenerative capacity of the site but for their minimum income needs to be

² Pastured-Raised Poultry Nutrition. Jeff Mattocks 2002

³ <http://geofflawton.com/?s=feeding+chickens+without+grain&submit=Go>

and process all of the food types which are needed for a healthy diet from a single site in Wales, especially cereals; and (b) there will be times of the year during which food production will be too low to meet all of the needs of occupants.'. Thus the figure of meeting 65% of foods needs for occupants was set, and it seems reasonable to do the same for poultry for the reasons stated above. This would push OCOPD enterprises to meet 65% of the food needs of poultry from the site or from the proceeds of other products grown or reared on site. This could also be regarded as adding value to the proceeds of other products grown or reared on site via poultry enterprises.

Another mitigating factor could be the benefits that livestock can bring to a site, such as nutrient cycling and other aspects of land management, though for disproportionately large enterprises this will not apply.

Conclusions

From the analysis above it appears:

- necessary and reasonable that the foods needs of livestock reared either for residents' consumption or for sale to contribute to buying minimum food needs or minimum income should be met from the productive and regenerative capacity of the site, either directly or from the proceeds of other produce derived from the productive and regenerative capacity of the site
- for poultry (and other livestock as may be justified) not all of their food needs can be expected to be met from site and therefore only a proportion should be required to be – in the absence of any other justification we suggest 65% - as for residents – with the proportion met directly from site justified in the Management Plan
- benefits that livestock can bring to a site many also possibly be justifications for reducing the proportion of their food required to be met from site.

Other influencing factors are the other OCOPD requirements relating to land management, water and waste where too large or the wrong sort of livestock enterprise would cause conflicts.

These factors define in what circumstances, and what proportion of livestock feed may be imported without the ethos and principles of OCOPD being breached, and ultimately how many livestock can be kept of site and what they will be fed will be a matter for the Management Plan to justify in the round, based on the particulars of the site and of the livestock enterprise.

What is clear, though, is that it should not be possible for an OCOPD to include larger scale livestock enterprises where a high proportion of food is imported feed, paid for from the income of the enterprise but not derived from the productive and regenerative capacity of the site.

Geo will appraise OCOPD Management Plans on this basis.

James Shorten, Bill Knight

April 2016