Ecological
Land
Cooperative

For a living, working countryside

Furzehill Planning Statement v.2

Re. Planning application for a One Planet Development comprising one dwelling and associated ecological land based enterprises and ancillary works at land south of Furzehill Green, Furzehill, Willoxton Cross, Ilston, Swansea, SA2 7LQ. X: 254603 , Y:190435.

Please find below a planning statement in support of an application for a One Planet Development comprising 1 plots, and an associated dwelling and land-based enterprise.

The application includes the following supporting documents, which have also been attached:

- FHa.01: Completed application form and ownership certificates
- FHa.02: Planning Statement (this document)
- FHa.03: Site Location Plan
- FHa.04: Block Plan
- FHa.05: Dwelling elevations
- FHa.06: Zero carbon statement
- FHa.07: Preliminary Ecological Appraisal and Extended Phase 1 Habitat Survey
- FHa.08: Soil Analysis Report
- FHa.09: Rainwater Harvesting Calculations
- FHa.10: Community Meeting Write Up and Public Consultation Report.
- FHa.11: Tree Planting Flyer
- FHa.12: Monitoring Form Template
- FHa.13: Greenham Reach Year 4 Monitoring Report
- FHa.14: Small Farm Profits
- FHa.15: ELC Social Impact Report
- FHa.16: Appeal DL ref: 3209724

A separate application for the approval of SuDs is also being made.

CONTENTS

CONTENTS **2**

Introduction **4**

The ELC 4

Choosing OPD 4

Proposal 4

Pre-application advice 4

The site 5

Services and facilities 5

Access 5

Community Engagement 5

Policy 6

Local Development Plan 6

National Policy 7

Main Issues **7**

Development in the countryside 8

Visual impact 9

Climate Emergency 11

Furzehill Green Plot 2 Management Plan **12**

OVERVIEW 12

SUMMARY 12

BASELINE 14

DESIGN/STRATEGY 16

BUSINESS AND IMPROVEMENT PLAN 19

LANDBASED ACTIVITY 19

Plot 2 minimum need 19

Plot 2 Business Plan Summary 21

SUSTAINABLE LANDSCAPE MANAGEMENT 29

Plot 2 Landscape Design / Layout Plan (not to scale) 30

ENERGY AND WATER 39

WASTE 43
ZERO CARBON BUILDINGS 44
COMMUNITY IMPACT ASSESSMENT 49
TRANSPORT ASSESSMENT 51
ECOLOGICAL FOOTPRINT ANALYSIS 55
TIMELINE, MONITORING AND EXIT STRATEGY 56
Plot 2 Timeline 56
Monitoring 57
Exit Strategy 58
CONCLUSION 59
APPENDIX **60**

Introduction

The ELC

The Ecological Land Cooperative is a not-for-profit community benefit society founded to support the creation of sustainable land-based livelihoods in the UK. To this end we purchase sites and secure planning permission for low impact rural enterprises and associated dwellings. The sites are kept affordable and their use tied to ecological farming enterprises in perpetuity. This is secured through a section 106 agreement and a detailed management plan which tenants are bound to through the terms of their lease. The ELC is a cooperatively run member organisation with its directors elected by the membership each year.

In addition to their many ecological benefits, the ELC's small farm developments increase access to local fresh food, benefit the local economy and help to address a lack of affordable rural housing and an aging rural population. Our developments promote local resilience and community engagement with food growing and sustainability.

To-date the ELC has established two developments, both of which have proven successful, one at Greenham Reach, Mid-Devon and the other at Arlington, East Sussex (Wealdon District Council). 2 further applications are currently under consideration for our sites at Sparkford, South Somerset and Orchard Park, Cornwall.

Greenham Reach is the most established of our sites and has recently (2019) been awarded permanent permission following a 5 year temporary permission whilst the rural enterprises became established.

The ELC is also actively involved in communications, publications and research to support and promote low-impact agro-ecological endeavours. An example, Small Farm Profits, has been attached (attachment ref: FHa.14)

For further details on our organisation please see our website https://ecologicalland.coop

Choosing OPD

OPD's focus on low impact lifestyles and environmental benefits mean that the objectives of the policy are inline with our own and the ELC model therefore fits well with OPD. Small scale agro-ecological enterprises often require the farmers to live on site and with a degree of self-sufficiency in order to be viable. The OPD guidance is clear that the policy is suitable for land based enterprises, which are included in the list of basic types of OPD (see page 5 of the guidance).

Proposal

This application is for a One Planet Development comprising 1 residential dwelling and associated land-based business, which will support the tenant's basic needs and ancillary structures.

A previous application which included both plots and a shared barn has been withdrawn and 3 separate applications are now being submitted, 1 for each plot and 1 for the shared barn.

Pre-application advice

An application for pre-application advice (ref:2019/2291/PRE) was validated on the 10th October 2019 and an in-person meeting held at Swansea Civic Centre on 3rd February 2020 with Swansea LPA Officers Lisa Tucker and Ruth Henderson. Following this meeting the application has been altered in the following ways:

- Specific management plans are being included

- Our farm start project has been separated from the OPD application

The site

Site description

The ELC site is located to the north of Lunnon and the west of Ilston and comprises four fields c. 17.82 acres in total. The site is divided into 3 plots and a shared area (retained by the ELC). The site is bounded on all sides by mature hedgerows. Directly north of the site is an existing residential bungalow, on all other sides are agricultural fields.

Plot 2 is the subject of this application and has an area of c. 6.18. The redline area is c.6.68 acres Already onsite (authorised development, subject of application ref: 2020/2060/PNA) are a polytunnel and packing shed.

Plot 3, predominantly in the south west field, is leased to Cae tan CSA, and has an area of c. 5 acres.

Plot 1 comprises the north east field and an area of the north west field and has an area of c. 5.88 acres. A separate OPD application is being made for plot 1.

The plot boundaries are illustrated on the block plan (see attachment ref. FHa.04)

The retained area includes a shared barn which is the subject of a seperate application and has an area of c. 0.76 acres.

The site is located in the AONB, it is not subject to any other relevant designations.

Services and facilities

Parkmill is located less than a mile south of the site and is easily accessible on foot or bicycle. Basic services are available in Parkmill including a small local shop, bakery, coffee shop and pub. From Parkmill public transport services are available (approximately hourly buses) to the Mumbles and Swansea where a full range of services and facilities can be found. The closest primary school is in Pennard, 1.3 miles walk / cycle or 3.3 miles drive from the site.

Access

The application site benefits from an existing access located in the west boundary of the site. Improvements to the existing access are proposed as shown on the block plan (attachment ref: FHa.04). Cae Tan utilise a separate existing access directly into the field they lease.

Community Engagement

A preliminary community meeting was held at the Barham Centre, Parkmill on 17th July which was attended by 42 members of the local community and other stakeholders. Where possible, the proposed scheme incorporates details to address all legitimate concerns that were raised. Further details are provided below.

Further to our decision to submit an OPD application and our tenants being identified, an additional public consultation was held from 4th August to 20th September 2020. A report condensing all consultation responses received to date and our response has been attached (please see attachment ref: FHa.10). The application to which the public consultation related included both plots and a shared barn and has now been withdrawn. The fundamental details of the management plan for Plot 2 remain the same as they were for the public consultation.



Fig.1 showing part of Cae Tan's plot, including polytunnel and packing shed

Policy

OPD applications are not assessed against policies which seek to restrict development in the open countryside "It is a justified exception to the strict control of development in the open countryside and is only allowed if the demanding requirements of TAN 6 and this guidance are met".

Local Development Plan

The Development Plan for the area comprises the Swansea Local Development Plan (SLDP), which was adopted in February 2019.

The following policies from the SLDP are of primary importance:

- Policy ER 1 - Climate Change
- Policy CV 2 - Development in the Open Countryside
- Policy EU 2 - Renewable and Low Carbon Energy Technology […]
- Policy ER 4 - Gower Area of Outstanding Natural Beauty (AONB)
- Policy PS 2 - Placemaking and Place Management

The following SLDP policies are also of relevance:

- Policy ER 8 - Habitats and Species
- Policy ER 9 - Ecological Networks and […] Biodiversity
- Policy ER11 - Trees, Hedgerows and Development
- Policy E 2 - Active Travel
- Policy T 5 - Design Principles for Transport Measures and Infrastructure

- Policy T 6 - Parking
- Policy RP 3 - Air and Light Pollution
- Policy RP 4 - Water Pollution and the Protection of Water Resources
- Policy RP 10 - Sustainable Waste Management for New Development

In developing the proposal three supplementary planning guidance documents have also been referred to:

- Gower AONB Management Plan (adopted 2017)
- Gower AONB Design Guide (adopted January 2014) and
- Lighting Scheme Guidance for Gower AONB (adopted 2010)

National Policy

Section 4 of Planning Policy Wales (PPW) sets out the Government's approach to sustainability in planning. Inline with The Wellbeing of Future Generations (Wales) Act, section 4.3 of PPW sets out principles that those involved in planning should adhere to in order to ensure that “the needs of the present are met without compromising the ability of future generations to meet their own needs”. OPD responds directly to these principles.

Policy relating to OPD is set out in Technical Advice Note 6 (TAN 6) section 4.15 - 4.23 and supported by the OPD Practice Guidance (the guidance)

This proposal conforms to the requirements presented in TAN6 sections 4.15 - 4.23 and the guidance. It conforms to Tan 12 in terms of design objectives and adheres to TAN 22 in relation to zero carbon building.

Main Issues

In our view, the main issues in the consideration of this application are as follows:

- Development in the countryside
- Visual impact
- Material considerations: Climate Emergency

Below we discuss these issues and demonstrate that the proposal is compatible with the purposes of the AONB designation and meets the strict requirements of OPD and is therefore in accordance with the development plan.

Development in the countryside

There is a general presumption against development in the countryside. Policy CV2, however, lists potential acceptable exceptions to this rule, which include OPD. The management plan below, demonstrates in detail that the proposal will conform to the definition and requirements of OPD.

In addition, the supporting text to policy CV2 stipulates at paragraph 2.10.10 that the acceptable exceptions "must be implemented in strict accordance with policy PS2 Placemaking and Place Management and the overarching principle of creating more sustainable rural communities". Below we have reproduced policy PS2 and annotated with regards to this proposal:

> Development should enhance the quality of places and spaces, and respond positively to aspects of local context and character that contribute towards a sense of place. The design, layout and orientation of proposed buildings, and the spaces between them, should provide for an attractive, legible, healthy, accessible and safe environment. All proposals should ensure that no significant adverse impacts would be caused to peoples' amenity.

The proposals are consistent with these requirements and have been designed to contribute positively to the local community and the local landscape. No adverse impacts will be caused to the amenity of local residents.

> Depending on the nature, scale and siting of the proposal, development should also:
>
> i. Have regards to important elements of local heritage, culture, landscape, townscape, views and vistas;

Plot 2 is largely screened from public vantage points. The key views into the site were identified in a Landscape Assessment which was undertaken for the original application. These were carefully considered when designing the layout of plot 2. Further, historically the area was home to many market gardens and the proposal is in keeping with this historic land use. We believe that the proposal meets this criterion.

> ii. Ensure neighbourhoods benefit from an appropriate diversity of land uses, community facilities and mix of densities that in combination are capable of sustaining vibrancy;

The proposal contributes to rural diversification, and provides services and facilities for the community, sustaining and encouraging local vibrancy, in accordance with this requirement.

> iii. Create or enhance opportunities for Active Travel and greater use of public transport;

The proposal actively encourages the use of sustainable transport modes including public transport, walking and cycling, by the tenants and visitors to the site.

iv. Integrate effectively with the County's Green Infrastructure network;

The majority of the site remains undeveloped and measures have been incorporated to improve biodiversity and landscape quality of the site and the wider area, thereby contributing to the County's Green Infrastructure network.

v. Enhance public realm quality, incorporating public art where appropriate;

N/A

Visual impact

The site is located in Gower AONB, as such policy is clear that the development must conserve or enhance the natural beauty of the area. Careful consideration has been given to ensure the proposals meet this requirement and the Gower AONB design guide has been adhered to.

It is important to first highlight that the only additional structure proposed by the application is a small-scale low rise timber dwelling, which will be well screened from public vantage points by the existing hedgerows.

The proposed woodland, coppice and orchard will screen the site from the private views of the dwellings to the south of the site.

As such the visual impact of the proposal could be considered negligible at worst. In our view the proposal will, in the long term, have a positive impact on the visual amenity of the area.

A landscape assessment and ecology report were commissioned prior to the original application and their recommendations have been incorporated into the design process. Minimal, small-scale buildings have been proposed to ensure the quantum of development remains low. The height of buildings has also been kept low. Sensitive, locally sourced materials have been chosen and additional planting is already underway to further screen the site from distant and close range views. The Lighting Scheme Guidance for Gower AONB has also been consulted, however, no external lighting is proposed.

Once the proposed landscaping mitigation measures are followed, these will enhance the landscape quality. Accordingly, the proposal ensures the purposes of the AONB designation will be upheld.

It is worth noting that the Gower AONB Management Plan emphasises the importance of sustaining the viability of farming (paragraph 3.16) and facilitating young farmers (paragraph 3.15) in the AONB area. Furthermore, objective 24 of Gower AONB Management Plan is to "increase the area of the AONB under sustainable land management" and Objective 25 is to "support appropriate and sustainable farm and rural diversification and enterprise". All of which are supported by this proposal.

The proposed dwelling and ancillary structures are all screened from public views into the site by the existing hedgerows.

In our view, in the context of the timber framed barn, and the additional agricultural structures on site, the small-scale timber dwellings will not look out of place. Further, the dwelling will not be visible from any public vantage points and private views onto that plot will be minimised once the proposed landscaping has become established.

Policy ER 4: Gower Area of Outstanding Natural Beauty deals directly with this matter. Below we have reproduced the policy and annotated with regards to this proposal:

Within the AONB development must have regards to the purpose of the designation to conserve and enhance the natural beauty of the area. In assessing the likely impact of development proposals on the natural

> beauty of the AONB, cumulative impact will also be taken into consideration.
> Development must:
>
> i. Not have a significant adverse impact on the natural assets of the AONB or the resources and ecosystem services on which the local economy and well-being of the area depends;

A key aim of all ELC development is to contribute to the local economy and to preserve and enhance the ecosystem and other natural assets. The proposal ensures this criterion is met. The application includes a community impact assessment and careful consideration of a phase 1 ecological survey and landscape appraisal.

> ii. Contribute to the social and economic well-being of the local community;

ELC small holdings are designed to contribute to both the social and economic well being of the local community. Annual open days are held on all our sites to encourage involvement and integration with the local community. Further, the land based businesses provide fresh produce for the local market. Community impact assessments and market research have been undertaken to ensure that this is the case.

> iii. Be of a scale, form, design, density and intensity of use that is compatible with the character of the AONB;

The proposed development is of a low density and small scale, with the majority of the land remaining open and undeveloped. Careful consideration has been given to ensure the design, which is predominantly agricultural in nature, is compatible with the character of the AONB.

> iv. Be designed to an appropriately high standard in order to integrate with the existing landscape and where feasible enhance the landscape quality; and

The proposal has been designed to include mitigation measures which will, over time, enhance the landscape quality. This issue will be carefully monitored as the development progresses, to ensure that the proposed landscaping and mitigation measures are successfully implemented.

> v. Demonstrate how it contributes to the conservation and enhancement of the natural beauty of the AONB.

The Landscaping measures and careful design of the plot, ensures that the natural beauty of the AONB will be conserved in the short term and enhanced in the long term.

The supporting text to policy CV 2, Development in the countryside, states at paragraph 2.10.18 that

> [...] In protected landscapes and areas of ecological value, One Planet Development may not be acceptable, unless the special landscape quality, natural beauty and / or ecological value of these areas is conserved or enhanced

It is important first to note that this permits OPD in the AONB as long as it conserves or enhances the natural beauty of the area. Second, it is of relevance that the requirement that ‘the OPD conserves or enhances the natural beauty of the area’ reflects the purpose of designating AONB and is therefore applicable for any development in the AONB.

On the second matter we would suggest that OPD is exactly the type of development that, by virtue of its low intensity and ecological and environmental focus, should preserve or enhance the natural beauty of the area. Moreover, a key aim of OPD is to be embedded in the local landscape, further encouraging the conservation of the beauty of the area.

To conclude, we consider the proposal to be compatible with the purposes of AONB designation and the corresponding development plan policy. As such, if the stringent requirements of OPD have been met, which we believe has been demonstrated below, then the proposal can be considered to be in accordance with the development plan.

Climate Emergency

The proposal, by its very nature and adherence to OPD principles, provides for a low impact lifestyle for the tenants, but it also goes beyond this and enables more sustainable lifestyles in the wider community, facilitates local resilience, and raises awareness of environmental matters thereby significantly addressing many of the issues which have accelerated in importance as a result of climate change. As such the proposal is clearly in accordance with SLDP policy ER1 and the climate change principles within the policy.

In a time of climate emergency the importance of such matters cannot be overstated. In a recent appeal (ref: APP/JH1860/C/18/3209724) the Inspector identified that the declaration of a climate emergency was a material consideration, stating at paragraph 3 of the decision letter (see attachment ref: FHa.15) that:

> "The Council has recently declared a "climate emergency". No written material has been submitted in respect of it, but at the Hearing both parties agreed it was a material consideration. As to what weight should be attached to it, the Council confirmed that the declaration was yet to inform the development of future planning policies. Both parties agreed that it highlighted the importance of local and national planning policies in respect of environmental sustainability. I have taken account of it on that basis."

We would suggest that, in the context of the climate emergency, the environmental and sustainability benefits of this proposal are a significant material consideration in favour of the application which could clearly outweigh any identified harm, should the LPA be in disagreement with us and find conflict with the development plan.

Furzehill Green Plot 2 Management Plan

This management plan demonstrates that the proposed development will meet all of the objectives of the One Planet Development policy within 5 years and states how this will be achieved. In short all of the essential criteria and most of the contributory criteria set out in the guidance will be met. The proposal will also be compliant with other development plan policies.

For convenience the management plan will follow the structure set out in the guidance as summarised below.

OVERVIEW

SUMMARY

In line with the stringent requirements of OPD policy the site will be managed in a sustainable way and provide for at least 65% of our tenants basic food needs. 100% of our tenants council tax, communications, transport and clothing minimum needs will be covered by income derived from a land-based business. Energy will be harvested from renewable sources.

The ELC's tenant selection process is rigorous and ensures that those selected have the experience, dedication and resources to run a successful land based business as well as the aptitude and ethos to live a low impact lifestyle and protect and enhance the land.

The introduction to OPD guidance sets out the definition of OPD. It is noteworthy that the definition and essential characteristics of OPD are all in line with the aims and objectives of the ELC.

OPD is defined as Low Impact Development (LID) that is, "development that through its low impact either enhances or does not significantly diminish environmental quality".

The essential characteristics of OPD as set out at paragraph 1.9 of the guidance are all required of all ELC developments.

All ELC development:

- Has a light touch on the environment
- Is land based
- Has a low ecological footprint
- Has low carbon buildings
- Is defined and controlled by a binding management plan
- Is the sole residence of the Tenants

Furthermore, a key justification for our rural enterprise dwellings in England is the "symbiotic relationship between people (our tenants) and land" which is also a key characteristic of OPD (see paragraph 1.10 of the OPD PG)

Overview:

- **Baseline**: At the outset we set out and assess the baseline characteristics of the site, demonstrating the suitability of the sites characteristics and location for the proposed OPD.

- **Design Strategy**: The baseline necessarily feeds into the design strategy, which identifies the guiding principles behind the proposal and the objectives we aim to achieve.

- **Business and Improvement Plan:**

  - **Minimum need:** OPD requires that the minimum needs of the occupants are met from the land. It is therefore necessary to give a baseline income requirement against which the success of the businesses can be measured. We also demonstrate that it will be possible for our tenants to provide at least 65% of their own food, growing a minimum of 35% on site and purchasing any additional from a land-based income. We anticipate that our tenants' needs will be significantly lower than the national average and that in practice a higher percentage of food will be grown on site. Specific information on the minimum needs of the tenants are provided below.

  - **Business Plan:** The proposed business plan of our Plot 2 tenants have been provided below. The fundamentals of the business have already been set up.

  - **Sustainable Landscape Management:** Drawing from the Preliminary Ecological Appraisal and a Landscape Assessment, we have identified how existing habitats and biodiversity will be enhanced alongside any sustainable business being run from the site. We demonstrate that the OPD will be of benefit to the existing ecosystems, human and non-human inhabitants and the wider countryside. Further, more specific, details are provided below.

- **Energy and water:**

  - **Electricity, heating and cooking:** We demonstrate that the electricity requirements of our tenants will be met using solar photovoltaic panels, which will be provided on the communal barn. This will be supplemented by additional panels on the individual dwellings dependent on the tenants' particular requirements. Wood will be coppiced for heating and cooking in the colder months.

  - **Water:** Water use will be minimised by design. All water will be provided by rainwater harvesting. Potable water will be provided through a gravity fed filtration system. Reed bed grey water systems and compost toilets will be used.

- **Waste:** Consumerism will be minimised by design to ensure that waste is kept to a bare minimum. Where possible all waste will be reused or recycled on site.

- **Zero Carbon Buildings:** The dwelling is the only building which is the subject of this application. It will be zero carbon in construction and use and, where possible, all materials will be natural and locally sourced. The dwelling will be timber framed and clad and designed and constructed to meet the legal definition of a mobile home. Its location, finish and small scale, combined with proposed landscaping will ensure that not only is the dwelling hidden from public view points but it also blends into the surroundings and complement the local landscape.

- **Community Impact Assessment:** The OPD will benefit the community in the following ways: provision of healthy local produce, supporting the local rural economy, promoting low carbon transport methods, education and information sharing, scientific research and documentation and the conservation and enhancement of local biodiversity.

- **Transport Assessment:** Traffic impacts of the development will be minimised by prioritising public transport and other sustainable transport modes. All ELC sites also

have a restriction on multiple vehicle ownership. Incentives will be provided to encourage visitors to arrive by sustainable transport modes. A transport analysis is provided below.

- **Ecological Footprint Analysis.** Our prospective tenants are all environmentally conscious and as such their existing EF will be well below average and already on track to meet the 5 year requirement of 2.4 Gha. Specific calculations have been provided and progress will be monitored annually.

- **Detailed Timeline:** A timeline showing how development of the site and businesses will be phased over 5 years has been provided below.

- **Monitoring and Exit Strategy -** The ELC will provide annual monitoring reports to check progress and identify areas which require improvement. Support and guidance will be provided to the tenants where necessary. A template monitoring report has been attached (attachment ref: FHa.12) and an exit strategy outlined.

BASELINE

Location

The site is located to the north of Lunnon and the west of Ilston and comprises four fields in total, Plot 2 has a total area of !!!!, the application site is c. !!!!

Plot 2 is bounded on all sides by mature hedgerows. On all sides are agricultural fields. To the north and east these are ELC plots.

Land use

The site which is the subject of this application is currently being used by the tenants to establish a cut flower and market garden business.

The site is located in a predominantly agricultural area, comprising small open fields bounded by well established hedgerows, associated agricultural buildings and sporadic residential development. Unnamed roads run along the northern and western boundaries of the wider ELC site.

Tenure

The ELC purchased the land on 19th December 2017. It will be leased to tenants who through the terms of their tenancy agreement will be bound to the terms of their management plan to ensure the site is managed in line with ELC and OPD requirements in perpetuity. Tenants are also steward members of our co-operative and as such play a part in the decision making of the organisation and overall management of our sites through the AGM.

The tenants currently have a short term lease on a smaller area of the plot (1.5 acres) so that they could begin farming the land

Services

The site has a mains water connection. However, it is proposed that all water will be provided by harvesting rainfall. It is not intended that the site will be connected to the national grid.

Access

There is an existing access in the west of the wider site as shown on the site layout plan, some hedgerow will be moved back from the road to improve visibility (see attachment ref: FHa.04).

Landscape and Physical Characteristics

The Landscape Assessment which was submitted with the previous application, describes the site as follows (paragraph 5.2.2):

> The site and its immediate setting are assessed as having a high value. It is within the Gower Area of Outstanding Natural Beauty and is typical of the rolling farmland found over much of the Gower plateau. There is no strong sense of place and views are contained by the mature boundary hedgerow and pockets of woodland. It is relatively unspoilt farmed countryside but does not have the outstanding scenic value of the open uplands or the coast

It goes on to state at paragraph 6.2.2 that:

> The topography of the immediately surrounding area is gently undulating with steeply sided valleys cut into the wider landscape. A number of settlements including Ilston and Parkmill are largely set down in these valleys with very limited views out. There is higher ground set back to the west of the site and there are distant views of parts of the site from the Cefn Bryn ridge to the southwest and from some properties and holiday parks in Penmaen/Northill above Three Cliffs Bay. There is no visibility between the site and the coastline itself.

At section 6.4 the Assessment identifies and analyses 7 public viewpoints into the site, concluding that the magnitude of change caused by the development would be negligible from all of these points.

In our view, the dwelling proposed in this application will not be visible from distant vantage points.

The soil is classified as “freely draining acid loamy soils over rock” with a loamy texture (source: http://www.landis.org.uk/soilscapes/). Soil analysis has been undertaken, the results of which have been attached (see attachment FHa.08). Further research into soil quality is ongoing, in conjunction with Swansea University.

The gov.wales predictive agricultural land classification map identifies the site as Grade 3a: good to moderate quality agricultural land.

Biodiversity

Landmap classifies the area as “dry (relatively) terrestrial habitats / grassland and marsh / improved grassland” and evaluates its value as “moderate”. The landmap report identifies the key features that define the area’s biodiversity as “improved grassland and crops with field boundaries”.

Of note the Landmap report also states that there are clear opportunities to improve the biodiversity of the area by encouraging “farmers to manage their crops in a more ecologically friendly way”.

Further site specific analysis of biodiversity and management recommendations are provided in the attached PEA, which provides a comprehensive baseline of biodiversity at the site (see attachment ref: FHa.07).

In summary the PEA found that “with the exception of the hedgerows (which represent priority habitat, albeit currently in poor condition) the habitats on Site are of low ecological value and do not represent any constraint to the proposals”. The Appraisal also identifies that “the Site has good potential for ecological enhancements, further details of which are provided in the report”.

Cultural Heritage

Landmap describes the key historic patterns of the areas as follows: “complex fieldscape, evolved from open field system, but with elements derived from encroachments and reclamation; settlement predominantly nucleated; areas of woodland; small-scale agricultural and maritime activity”. The cultural landscape is defined in relation to the area’s AONB designation. No significant threats to the cultural integrity of the area are identified.

To the best of our knowledge there are no historic or archaeological features on the site, none are identified on the Historic Wales websites.

Designations

The site is located in the AONB, to the best of our knowledge the site is not covered by any other relevant designations.

The closest SSSI (Parkmill Woodlands and Llethrid Valley) and SAC (Gower Ash Woods) are both located 260 meters from the site. The attached Extended Phase 1 Habitat Survey identifies all SSSI and SAC within 2 km of the site, the results are identified in table 2 at p.7 and 8 of the report (attachment ref: FHa07).

Traffic

The site is currently farmed by our tenants who commute to the site daily. As such the total vehicle movements from our tenants average 2 a day. Using accurate records of other vehicle movements to the site from January to August 2021, we have extrapolated that there will be approximately 188 additional movements this year. (deliveries/contractors/specialists - 40, florist collections - 30, volunteers - 54, visitors - 64).

c. an annual total of 918 vehicle movements in 2021.

DESIGN/STRATEGY

In line with the aims and objectives of the ELC, the OPD smallholdings will be designed and managed according to the following principles:

- Maximising the productivity of the site within its ecological limits and adhering to the following:
    - Chemical free growing.
    - Labour-intensive, not fossil-fuel intensive, farming methods.
- Creating a net positive impact on the wider environment and community:
    - Providing fresh, healthy, local produce.
    - Inspiring and facilitating others to make sustainable lifestyle choices.
- Minimising waste by design:
    - Recyclable waste produced by the development will be utilised as a resource.
    - Minimising non-recyclable waste.
    - Conservation of natural resources.
- Being embedded in the landscape through:

- Incorporating existing habitats and ecologies into the design and management of the site.
- Sensitive design and location of dwellings, barn and other ancillary structures.

In addition our tenants will also:

- Create full-time land-based employment on site.
- Provide for their own minimum needs from the land.
- Be tied to running their plots in accordance with the Management Plan through the terms of their lease.

The interests of our tenants in the land and in the ELC cooperative is managed in the following way: The tenants will have a 150 year lease on their plot which requires adherence to the management plan and annual monitoring process. The ELC will retain the freehold of the land. All ELC leaseholders are automatically also Steward members of the Cooperative and play a part in the decision making of the Cooperative through the AGM. They are also eligible to stand for election of the ELC Board of Directors as long as they are not subject to any action plan or breach of the terms of their lease. Through this mechanism the tenants have a joint and cooperative role in the overall management of shared facilities on the site and the overall management of our sites.

Land use distribution

The landscape design is set out in the land management section below. The land uses on site will include:

Coppice woodland: A minimum area of 0.5 acre per plot will be designated for a coppice woodland, to provide for the winter fuel needs of the tenants. Plot 2 proposes 1 acre of coppice and 1 acre of woodland.

Domestic horticulture: Allotment areas will be managed for vegetable and fruit production for onsite consumption, including polytunnels / greenhouses for season extension and care of winter salads and tender crops.

Hedgerows: All hedgerows will be re-stocked, thickened and traditionally managed.

Fallow and/or wild flower areas: uncultivated areas will be incorporated into the site design.

Ponds: 3 ponds are proposed. Please see the attached block plan (ref: FHa.04) and the management section for more details.

Buildings: 1 dwelling is proposed, all other ancillary structures are already authorised and on site. All buildings are designed to be zero carbon in construction and use. Their proposed location, scale and finish, along with proposed additional planting, will ensure they will be embedded in the landscape and look at home in the locality. The dwelling will be single storey, small in scale and the sole residence of the tenants. Please see the attached elevations (FHa.05) and the zero carbon statement below.

Ancillary Structures: The ancillary structures already authorised and on site are as follows

- Polytunnel (7.3m x 25.6m),
- shed (5m x 5m)

Also related, but not subject to the application:

ELC retained Land: This will include an approx 3087㎡ area of the north west field, within which will be the shared infrastructure comprising a barn with a 10kw PV system and rain

harvesting infrastructure. Use of the shared facilities is secured through the terms of the lease.

For further details see the attached block plan (ref: FHa.04) and the landscape management plans below.

LANDBASED ACTIVITY

Minimum need

Average annual spending in the UK for basic needs, as set out in the guidance (clothing, transport, communications, council tax and 35 – 65% of food expenditure), was £9,829 - £8,577 per household for the year 2017/8[1]. However, due to the low impact nature of OPD and ELC principles, as would be expected, our tenants have lower expenditure on basic needs than average.

The specific calculations for the Plot 2 tenants been provided below, further details relating to these figures are provided in the appendix (see Appendix 1). The projected income from the business is more than sufficient to cover the projected basic need expenditure for the household. As such there is scope within the proposal for setbacks and unexpected costs without compromising the ability of the tenants to provide for their basic needs.

Plot 2 minimum need

Requirement	Cost at year 1 £	Cost at year 5 £
Growing /rearing food	308	150
Food purchases	2208	143*
Clothing and footwear	300	300
Travel	1090	895
IT/Comms	224	224
Council Tax	1284	1880
TOTAL	**5,380**	**3592**

*of a total predicted food expenditure of £1143. Plot 2 intends to meet a minimum of 60% of food needs on site (£142.88 is therefore the total spend required to combine with home grown products to provide 65% of food).

The business plan for plot 2 projects that by year 3 the business will be paying a wage of £4750 per resident (£9500 in total) set to increase to £6000 per resident (£1200 in total) by year 5, more than sufficient to cover their identified basic needs..

Subsistence

We anticipate that our tenants will consume an environmentally conscious diet predominantly based on fruit and vegetables, grains, dairy products and a small amount of good quality locally reared meat. With the exception of cereals and dairy, which are less viable on a subsistence level, the majority of these food requirements will be produced on site.

All of our tenants will be experienced growers and will therefore not find the idea of self-reliance in fresh produce to be a daunting task, particularly given the mild local climate. The success of Cae Tan CSA on the south east field demonstrates that the soil and aspect are well suited to horticulture. Further details on the success of Cae Tan CSA are available in the attached ELC publication “Small Farm Profits” (attachment ref: FHa.14)

[1] Source - ONS family spending in the UK

Historically it was considered that the vegetable needs of a family of four in the UK could be met from a garden of 300 - 400 square meters. This figure is reflected by the Local Government Association's recommendations for allotment sizing[2], in which a full plot of 250 square metres is stated to "enable full self-sufficiency in fruit and vegetables".

There is a wide range of seasonal vegetables and fruits that are suited to the British climate, facilitating basic food requirements being met with relative ease from midsummer to late winter. Storage and the use of protected growing spaces, (poly tunnels and / or greenhouses) will be used to provide during the lean time of the year (spring), but nonetheless a 12 month productive season should be achievable most years.

Subsistence will be achieved in close-harmony with the land-based business and may be in some cases inseparable and as such accurate representations of the hours required are somewhat difficult. However, In-line with previous successful OPD applications which have drawn from the traditional figure of 150 hours per year to work an allotment sized home garden, it is estimated that if a total of 3 hours per working day are spent on subsistence growing, the policy target should be easily met.

The work load presented from subsistence farming can be minimised by employing the following techniques:

- The use of covering and layering to control weeds
- The use of no dig beds to minimise cultivation (and soil disturbance)
- Planting a wide-range of perennial crops
- The use of self-seeding and cut-and-come-again crops
- Good rotation to build up fertility

The tenants for Plot 2 have previously met over 65% of their basic food needs, from produce grown by them on 2 allotments.

Land based business plan

We are confident that The Rowan Tree has been soundly planned and will prove to be a successful enterprise, easily providing a level of income to cover expenditure for their basic needs as detailed above. The business has already begun producing and trading and a significant personal investment of both time and money has already been made by Trevor and Bettina.

The business will also be managed in an environmentally conscious way and enhance the biodiversity and ecological value of the land.

As noted above, our tenant selection process is rigorous and ensures that those selected have the determination, horticultural experience and enthusiasm for low-impact living necessary to manage a successful OPD smallholding. Trevor and Bettina have detailed their experience below.

The ELC is experienced in assessing business plans for agro-ecological enterprises from prospective tenants to identify their viability and to instruct and advise on ways in which plans can be improved. Further, we continue to offer guidance and mentoring to our tenants once they are on site to help assist in the setting up of their business and to address any unforeseen circumstances that may arise.

[2] A Place to Grow, Local Government Association, February 2010, page 7.

The terms of the ELC's lease will require the tenants to meet all essential requirements and to aspire to meet all contributory criteria of the OPD policy.

Plot 2 Business Plan Summary

(full business plan provided in the Appendix, see appendix 2)

The Rowan Tree

by Trevor and Bettina

Our aim is to establish a beautiful and productive smallholding, producing cut flowers, vegetables, top and soft fruit, herbs and honey for the local market.

Building on our extensive experience of cut flower growing, we will create a total flower growing area of 1 ½ acres to produce a wide range of seasonal flowers and foliages. These will be sold wholesale to local florists and direct to local customers via local shops and potentially with Cae Tan, the neighbouring CSA and box scheme on the Furzehill site.

We will also supply wholesale vegetables and set up a small scale CSA veg box scheme (10 to 12 households).

Since beginning our short term lease in June 2020, we have already made substantial progress in setting up our business. We have established the following in terms of land management:

1. Two blocks of perennial and annual flowerbeds (each 16Mx30M = 960m2 in total) now planted and producing, to be extended to 1440m2 next spring.
2. One block (480m2) of beds planted primarily of soft fruit bushes, but including some beds of perennial flowers.
3. 960m2 of vegetable beds, planted and producing.
4. A windbreak of timber and fabric on the West and South sides of the flower block to protect crops from prevailing winds.
5. Erection of one commercial scale polytunnel (84' in length) allowed under 'permitted development'.
6. Permitted development status granted for a 25 square meter wooden shed for shelter, storage and food/flower preparation (not yet constructed).

In terms of sales we have already achieved the following:

1. Providing mixed flower bunches weekly to Pobbles Pantry, an organic food shop in Southgate and to FarmCo, a Swansea-based online organic box scheme.
2. Providing flowers to local farmers for their holiday cottage lets.
3. Providing direct retail sales of flowers locally.
4. Providing a limited bespoke retail wedding flower service

5. Supplying wholesale flowers to local professional florists including: Blooming Belles, Sharon Dower, DLuxeBloom and Simone Robbins.

6. Selling wholesale vegetables weekly to Pobbles Pantry and FarmCo.

We intend to build on our current flower sales by:

1. Increasing the number of local florists using our produce.

2. Offering a weekly/monthly flower subscription to private customers.

3. Increasing our sales of mixed bunches through Pobbles Pantry and FarmCo.

4. Introducing sales of buckets of mixed flowers for DIY weddings

Our Experience

Bettina:

After a successful career as a contemporary dancer, choreographer and community dance teacher I decided to re-train in horticulture.

In 2013, I obtained a Level 2 Extended Certificate from Capel Manor College, London (the focus of this course was on fruit and vegetable cultivation.) At the same time, I gained experience of salad leaf production and small scale market gardening as a regular volunteer (1-2 days/week) at Calabaza Growers in Sutton, South London. I also regularly volunteered at Sunnyside Rural Trust in Berkhamsted, a horticultural charity offering training to adults with learning difficulties. Here, my duties included plant propagation, planting, growing of polytunnel crops and orchard maintenance.

In 2014 Trevor and I set up Gillyflower, our cut flower growing business, initially on ¼ acre. Over the past years our activity has increased to an area of just over ½ acre on two sites, where we grow an extensive range of cut flowers and foliage during a season spanning March-October. Through many hours of home study and practice I have learnt sufficient floristry skills to be able to offer a full wedding floristry service. To date, we have supplied flowers for over 70 weddings, many funerals and events. We also sell wholesale to florists, provide weekly subscription flowers for local businesses and sell bunches via an upmarket antiques emporium. We have been members of Flowers from the Farm since 2015.[3]

As part of our lease agreement with one of our landlords, I have managed a small orchard of apples, pears, cherries and gages. At the same site we have also planted a native hedgerow and brought our landlord's 300 metre hedgerow back to health after some years of neglect.

I was also involved in the local Transition Town group and together with Trevor, initiated a community growing project, resulting in a small group of Berkhamsted residents growing vegetables and cut flowers for their own use in a polytunnel and adjacent allotment plot.

In 2013-2015 Trevor and I cultivated our own allotment on a municipal site. During this time we managed to be entirely self-sufficient in veg and soft fruit year round, from the produce grown on the allotment plot plus our share from the community growing site mentioned above.

I continue to attend various short courses to further my knowledge of aspects of horticulture, past courses include a 'no-dig' course with Charles Dowding, 'Setting up a Community Orchard' with the East of England Apples and Orchard Project and cut-flower production with Georgie Newbery at Common Farm Flowers.

[3] http://www.flowersfromthefarm.co.uk

Trevor:

I hold a Bachelor of Music degree (1974) from Brandon University (Canada), and a Licentiate Diploma in acting from the Welsh College of Music and Drama (1977). I'm also a certified teacher of the Alexander Technique (1991) having completed a three year full time training course in London.

I've worked as a freelance actor, musician writer and composer and Alexander teacher for most of my life apart from a stint as a Royal Mail postman in the early 2000's. Employers include BBC Radio and Television, ITV, Channel 5, The National Theatre, The Royal Shakespeare Company, The Chichester Festival, many rep and fringe theatre companies, and films and television. As our horticultural business has grown, I've limited my performing work to 2-3 weeks per year in film, television and commercials.

Between 1985 and 1992 I was co-owner and co-director of 'Brother Louis Productions', writing, composing and co-directing musical theatre events at the NEC, the SEC, the Belgrade Theater in Coventry, and the Arts Theatre in the West End of London.

Apart from living in Cardiff (1976-1981) I've also lived and worked in Milford Haven and Penarth. My paternal family hailed from Aberdare, and I have many family connections in South Wales.

With my wife Bettina I've spent most of my working hours over the last 6 years setting up and developing our cut flower growing business, in Hertfordshire. Together we volunteered with the Sunnyside Rural Trust and also grew our own food on our municipal allotment. We were active members of our local Transition Town group, and through them instigated a community growing project on the Sunnyside site.

As part of the business, I've further developed relevant skills and taken up new ones as needs arose. My working hours are spent digging, weeding and planting; in building/construction (polytunnel, cold frames, raised beds, gates and fencing, managing the composting, irrigation/plumbing, etc); in custom making of wooden flower boxes, wedding arches, etc; and doing basic land maintenance.

While the internet has had a decreasing importance in our work, we have continued to maintain a website and a social media presence. Though all of the design work on the website was collaborative, I took responsibility for its technical creation and maintenance, as well as dealing with our web hosts. Both Bettina and I took most of the photographs, with a few contributions from visitors and customers.

I took up the scythe in the earliest days of Gillyflower, and after an initial training with Beth Tilston, have enjoyed honing both my blades and my technique on our fields.

Recently I attended a course in round wood timber framing with Dylan Walker and Paddy Cox at the Sustainability Centre near Petersfield, where we constructed a frame in 4 days. I now look forward to further construction projects, including our timber framed dwelling and water harvesting stations serving specific crop areas removed from the dwelling/polytunnel.

I'm currently waiting to attend a natural beekeeping course, and in the meantime I'm building a horizontal top bar hive. The aim is to keep healthy bees in a natural symbiosis with our flower beds and orchard, while encouraging other pollinators and a broad range of pollinating plants.

I've been interested in environmental issues and low impact living since my teens. I first read John Seymour in the 70's, and have continued to digest the new developments in energy conservation and environmental thinking. I'm particularly interested in the principle of symbiosis as explored by the permaculture movement, and look forward to exploring it more extensively when we have access to more land and our own dwelling place.

Financial Summary

Please note that as we are already working on the land, The Rowan Tree will be ahead of these projections. As only a scaled back version of the business can be operated without living on site, and the length of the planning process is an unknown, it is difficult to accurately predict where the business will be in these projections should permission be granted.

However, assuming that permission is granted in Spring 2022, it is anticipated that the business will be 1 year ahead of these projections (i.e. the first year OPD income will be equivalent to the yr 2 income etc).

General Crop Income year 1 to year 5

Direct Income	Yr1 income	Yr2 income	Yr3 income	Yr4 income	Yr5 income	total income over 5 years
Cut Flowers *	£11,194	£16,153	£23,113	£27,376	£32,683	
Fruit	0	0	£1,050	£1,830	£3,925	
Herbs	0	£267	£482	£837	£1,195	
Honey	0	£270	£540	£765	£1,080	
Total Direct Income	**£11,19**	**£16,690**	**£25,185**	**£30,808**	**£38,883**	**£112,685**

*Figures based on a 29- week season

General Crop Costs year 1 to year 5

Direct Costs (Whole)	Yr1 cost	Yr2 cost	Yr3 cost	Yr4 cost	Yr5cost	TOTAL COST OVER 5 YEARS
Seeds	£320	£180	£120	£100	£100	
Plants & Bulbs	£0	£600	£600	£400	£400	
Green waste compost/manure	£450	£225	£225	£225	£225	
Seed compost	£270	£180	£135	£135	£135	
Materials (e.g. wood for beehive construction etc.)	£120	£120	£120	£0*	£0*	
Woodchip mulch	£400	£400	£400	£0**	£0**	
Natural pest control	£50	£50	£50	£50	£50	
Total Direct Cost	**£1,610**	**£1,755**	**£1,650**	**£910**	**£910**	**£6,835**

*We anticipate being able to construct hives entirely from salvaged timber by Year 3 (further details given in appendix (see Appendix 3)

**Woodchip mulch produced on site from Year 3.

Overhead Costs

		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Wages		£0	£2,500	£9,500	£11,000	£12,000
Land rent ELC	Interest only payment Yr 1-3	£3,213	£3,213	£3,213	£5,110	£5,110
Monitoring Fee ELC		£1,200	£1,200	£1,200	£1,200	£1,200
Maintenance	Painting, structural repairs	£220	£220	£220	£270	£270
Tools	New hand tools	£50	£50	£50	£50	£50
Horticulture equipment	Weed fabric, stakes, fleece etc.	£0*	£0*	£490	£390	£390
Machine hire & maintenance		£340	£100	£100	£150	£150
Vehicle costs	Insurance, Tax & Maintenance	£930	£830	£830	£930	£930
	Diesel	£490	£490	£470	£470	£450
Timber	Small building projects	£100	£150	£150	£250	£250
Other Costs	Packaging	£50	£140	£280	£350	£450
	Membership fees	£75	£75	£75	£75	£75
	Telephone/ Internet	£180	£180	£180	£180	£180
	Website/ Marketing	£605	£405	£350	£350	£350
	Computer costs	£200	£200	£150	£150	£100
	Insurance	£230	£230	£230	£230	£230
	Sundries	£170	£120	£170	£100	£150
	Volunteer Lunches**	£180	£180	£180	£180	£180
Total Costs		**£8,233**	**£10,283**	**£17,838**	**£21,435**	**£22,515**

* Initial cost listed under Investment

** Volunteer lunches, for the most part, will be provided from food produced on site. This cost represents a combination of the value of crop used and additional goods purchased, such as coffee, tea and cheese.

Depreciation

Investment costs - protected cropping	Costs	Area	Years to spread cost	Cost per year	Notes
Total protected area	£3,000	1 x polytunnel	15	£30	
*Only cover depreciates	(Cost of cover = £450)				
	£3,000			£30	

Investments in the field	Costs		Years to Spread Cost	Cost per year	
Delivery Vehicle	£9,000		15	£600	
Irrigation	£2,400		20	£120	
Weed fabric & plant stakes	£2,340		15	£156	
Tools	£775		12	£64	
Plants/Bulbs	£3,000		-	-	
Fruit Trees	£1,100		30	£37	
Soft fruit bushes	£400		25	£15	
Trees	£400		-	-	
TOTAL COST	**£22,415**			**£1,022**	

5 Year Summary

	YR 1	YR 2	YR 3	YR 4	YR 5
Capital	£25,000	£2,914	£6,544	£11,959	£19,400
Crop Sales	£11,194	16,690	£25,185	£30,808	£38,883
Total	**£36,194**	**£19,604**	**£31,729**	**£42,767**	**£58,283**
General Crop Costs	£1,610	£1,755	£910	£910	£910
Overheads	£8,233	£10,283	£17,838	£21,435	£22,515
Depreciation	£1,022	£1,022	£1,022	£1,022	£1,022
Field investments	£22,415				
Total	**£33,280**	**£13,060**	**£19,770**	**£23,367**	**£24,447**
Margin	**£2,914**	**£6,544**	**£11,959**	**£19,400**	**£33,836**

NOTE: Capital

The capital of £25,000 we bring to our land based business (in the form of existing savings) enables us to set up the enterprise without bank loans.

NOTE: Additional Income

Trevor will still be working part-time during the first 2 years of us setting up our enterprise. He also receives regular royalties from past media work and a pension. This additional income will enable us to cover our living expenses while we establish our business.

All the essential criteria and relevant contributory criteria, as set out below, will therefore be met.

Para 3.31 (p.21) of the practice guidance states the essential criteria with regards to landbased activity are as follows:

- The minimum food needs of all households are met from produce grown and / or reared on the site or purchased using income derived from other products grown and reared on the site. ✓

- The basic domestic needs of all households are met from income derived from produce grown and reared on the site, including processing and adding value, ✓ and 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. These latter activities should be clearly subsidiary to the primary activity of growing and rearing produce. ✓
- 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. ✓

The contributory criteria are:

- The land based enterprise provides food and other products to local markets, reducing local footprints. ✓
- Facilities for processing produce are made available to other local producers. If applicable
- Training / courses / consultancy are offered as components of the land based enterprise to share best practice of One Planet Development. ✓

SUSTAINABLE LANDSCAPE MANAGEMENT

The baseline for each of the landscape management elements (biodiversity, cultural heritage and landscape) has been set out above.

We will ensure that the original recommendations of the PEA and the LA are followed. To summarise PEA recommends the following measures to enhance biodiversity:

- Hedgerow management
- Strengthen south eastern boundary
- Planting new native hedgerows
- Field margin creation
- Pollinator strips
- Bird boxes
- Bat boxes
- Pond creation
- Hugelkultur
- Use of green manures

The Landscape Assessment recommended increasing the height of the hedges and incorporating additional tree planting to further improve screening of the proposed development.

Additionally we will ensure that the following management techniques will be employed:

- No use of pesticides or herbicides
- Minimal digging or tilling
- Minimal use of heavy machines
- Maintaining a constant ground cover of diverse species
- Planting and maintaining shelter belts
- Recycling and returning all nutrients back to the soil
- Inclusion of wildflower and / or fallow areas

The landscape design of Plot 2 is illustrated below and the full Land Management Plan is also provided.

Plot 2 Landscape Design / Layout Plan (not to scale)



Land Management Plan, Plot 2, ELC Furzehill Site

By Trevor and Bettina

Below we set out our plan for the management of Plot 2 of the Ecological Land Co-operative property at Furzehill, Ilston. Plot 2 is the long rectangular field on the right (East) of the aerial photograph below.



As we are already working the land we have experienced the site under weather conditions ranging from high winds and torrential rain to bright sunshine.

As such we have also observed soil conditions and topography, current vegetation patterns, drainage and prevailing winds, and begun to assess the potential for the conservation, development and enhancement of the site. This plan should be seen in the context of our long term future relationships with the ELC and Swansea County Council (involving significant

monitoring of our fulfilment of OPD requirements), the other smallholder on the site, and Cae Tan CSA, who lease the third plot.

According to the ecological survey conducted in January of this year by BSG Ecology (27/01/2020), the site currently exhibits a marked lack of biodiversity. The report indicates low biodiversity, poor management of existing hedgerows, and heavily agriculturally improved soil of “negligible ecological value”.

We will apply both permaculture principles and organic cultivation to restore, develop and enhance the site. The more intensively cultivated areas will be fully integrated with the wilder, less intensively managed areas, so as to create a harmonious ecosystem humming with life.

We will achieve this through:

- Soil improvement – recycling all organic waste from the site and reapplying it to the growing areas as mulch /fertiliser
- Careful restoration and maintenance of existing hedgerows and the planting of new ones
- Establishment of an orchard on 1 acre comprising top fruit, soft fruit and herbs
- Establishment of a 1 ½ acre cut flower garden
- Establishment of a domestic vegetable garden of ¼ acre
- Establishment of an apiary
- Planting a coppice and small woodland
- Establishing wild flower areas to attract pollinating insects
- Building a small carbon neutral dwelling using Welsh round timber and employing Welsh tradespeople.

Our goals are

- a land-based enterprise focusing on the cultivation of cut flowers, top and soft fruit, and herbs and honey for sale to the local community.
- to fulfil the requirements of the One Planet policies of the Welsh Assembly
- through our business and personal lives to contribute to the environmental, social, and economic life of the Gower Peninsula .

The perimeter hedgerow surrounding Plot 2

The Ecological survey noted that the existing hedgerow has been poorly maintained. A Gower-based hedgerow craftsman recently estimated that the hedgerow on the West side of the field hadn't received proper maintenance since the end of WWII. Our program will involve:

- improving the old hedgerow with a variety of new native plants (beech, dogwoods, hawthorn, bird cherry, crab apple etc.).
- repairing and training using traditional hedge-laying methods.
- allowing the hedgerow to recover via a traditional 7 year laying cycle

- The improved hedgerow will ultimately provide wildlife habitat for birds and small mammals, wind shelter, edible berries and fruit as well as some wood for domestic heating, cooking and garden mulch.





New Hedgerows

We will create new hedgerows in the field to shelter our flower and vegetable gardens and orchard and provide new wildlife corridors that will link up with the existing hedgerows. In order to distract birds from eating our fruit crop we'll plant small-berried bushes and climbers such as rowan and honeysuckle within the new hedgerows, which will act as a decoy and as an additional food source for birds.

Both new and revitalised perimeter hedgerows will also attract wildlife from the hillside below. There is much more biodiversity a short distance down the hill, on both designated and undesignated sites. Our new planting will encourage birds, insects, plants, and mammals to inhabit our holding.

Hedgerow management

We will allow all hedges to grow taller than their current height to provide masking of the field from public view and from local dwellings. We'll allow some selected trees (some planted for the purpose) to grow to full height where buildings or structures on the field require further masking.

All hedgerows will be traditionally managed on a seven year cycle. Trimming will only be done in Autumn and Winter to protect and encourage nesting birds. We will leave 1 metre wide field margins of vegetation to grow tall, to provide further shelter and food sources for animals. These areas are currently dominated by bracken, nettle, creeping buttercup and a variety of coarse grasses. In keeping with the creation of wild flower areas elsewhere on site we aim to

introduce further plant species to the field margins (especially nectar-rich species) in order to increase biodiversity there.

Wild Flower and Hay Meadow

We will create areas of wild flower meadow through the field as wildlife habitat, as pollinator strips and as borders along our orchard, coppice and woodland edges.

They will be scythed yearly for hay in July. The hay will supply air-permeable cover for ripening compost in our aerobic composting system.

Permaculture Orchard

The orchard will be designed following the permaculture principle of layering. Rows of top fruit will be underplanted with soft fruit bushes and a variety of herbs will provide ground cover below. This method ensures maximum output from any given amount of land and greater variety and biodiversity than more traditional systems, thus lessening the danger of infections and pests spreading unchecked through the entire orchard.

Our top fruit will include local heritage varieties of apples, pears, cherries, medlars, & plums. These will be interplanted with nitrogen fixing shrubs and ground cover (e.g. Oleaster, broom, and white clover) creating a self-sustaining cycle of nutrients.

The soft fruit layer will include raspberry, gooseberry, red currant, blackcurrant, tayberries and Japanese wineberries.

The herb layer will include sage, rosemary, mint, thyme, hyssop, comfrey, borage, fennel, calendula, nasturtiums and many more.

The orchard will be mulched annually with home-made compost and with broad-leaf woodchip to activate mycorrhyzal fungi in the soil, which in turn improve the trees' ability to access and absorb nutrients. Our chickens will be able to free-range across the entire area, helping with pest control and their droppings will further enrich the soil.

Short Rotation Coppice

We will plant a mixed 1 acre coppice in close proximity to the South East corner of the field – primarily willow and hazel, with some poplar. The coppice will be managed in a five year rotation, providing a modest amount of young growth for craft materials in the first five years, then coming into full use for firewood, craft materials, and timber.

Deciduous Woodland

We will plant a 1 acre mixed deciduous woodland as a shelter belt and wildlife habitat. In the long term this will also provide some timber and firewood and an amenity area for us and visitors to the site. It will also enhance the visual aspect for the public and for local residents, extending the mature wooded landscape already established to the East beyond our development and at the same elevation.

Ponds and Swales

After recent heavy rains we observed very little puddling. This suggests we will need to line ponds (if possible, with clay) which will function as habitat for reptiles, amphibians, insects and birds.

We envisage three:

- one in the low-lying South East corner of the field within the short rotation coppice;

- a second above the woodland, bordered by willow and a variety of reeds which we'll harvest as mulch and biomass and for use in the aerobic composting process;
- a third adjacent to the flower and vegetable gardens to encourage toads, frogs and other predators of insect pests, slugs, and snails.

Wherever appropriate we will use shallow swales between rows of orchard trees and coppice/woodland plantings both to conserve water and to prevent soil erosion.

Reed Bed

A 6x4 m horizontal flow subsurface reed bed will be created adjacent to the dwelling to process grey water. Further details are provided in the Appendix (see Appendix 4). .

Vegetable Garden

960m2 of vegetable garden has already been established. The vegetable gardens will be cultivated following the 'no dig' method. This means establishing permanent beds that will be mulched yearly with a thick layer of home-made compost. There is no need to dig, as first worms and then smaller organisms naturally incorporate this layer of organic matter into the soil, creating a well aerated structure, which is ideal for plant establishment and health. The vegetable garden will be located close to the dwelling house, following the old proverb: “The best fertiliser is the gardener's shadow!” As our primary source of vegetables for our own consumption the garden will need careful monitoring and care.

We intend to only use organic growing practices, which are more labour intensive than those involving synthetic chemicals but avoid harm to pollinators and other beneficial insects and animals.

These practices will include:

Organic pest control consisting of manual removal of pests such as slugs and aphids, encouraging natural predators (birds, lacewings, ladybugs, ground beetles, toads and frogs) through appropriate habitat creation and overwintering sites. Early season application of compost teas to our crops will increase resilience against fungal infections.

No-dig growing naturally results in fewer weeds, with the thick layer of compost ensuring that even persistent perennial weeds such as dandelion and creeping buttercup are gradually weakened because they’re starved of sunlight. Any weeding, when necessary, will be done by hand.

Cut Flower Growing Areas

Our cut flower growing area will comprise a total of 1 ½ acres, divided into separate areas for annuals, perennials and foliage and flowering shrubs. All areas will be laid out as permanent ‘no-dig’ beds, divided by narrow paths covered with woodchip. c. 0.25 acres of flower beds have already been established..

Judging from our experience of growing cut flowers over the past six years, our organically managed flower plots have the potential to attract a wealth of insects. Over the years we have counted many species of hoverflies, bees, flies, beetles and butterflies. (Including, last year, a lovely specimen of the very rare Purple Emperor!)



As on our vegetable plot, we aim to foster soil health by regular applications of compost and mulches, to provide overwintering sites for insects by leaving spent plants in situ until the Spring and by choosing cut flower crops that provide nectar as well as ornamental beauty.

Bees

We will host colonies of honey bees housed in 'bee friendly' top bar hives (which we will build on site from local timber).

Beginning with two hives, we will aim to have six to eight in total by the end of our fifth year. They will be distributed throughout the site.

The bees will be significant pollinators throughout the surrounding area up to a two mile radius.

Only honey and wax surplus to the needs of each colony will be harvested. This will be for domestic use plus limited sales of comb honey and wax products.

Use of sugar feeds will be limited to emergencies only.

The final number of colonies/hives will be contingent on the success of the initial hives and the monitoring of populations of pollinators in general (wild bees et al). The honey bees should be part of a diverse population pollinators, not disproportionately dominant

We have provided additional information on bees in the appendix (see appendix 3).

Landscape, Neighbours and Sight Lines

We are very aware of the [potential sensitivities of local residents and organisations to new development. We are also committed to enhancing the extraordinary beauty of Gower through our land stewardship and horticultural production. We are aware of Gower's designation as the first AONB in the UK and will give high priority and commitment to restoring and conserving Gower's historical character and habitat within our holding, and thereby to contribute to Gower's natural beauty.





Complementary to the land management ethos described above, we will make our visual presence at Furzehill as benign and unobtrusive as possible to both public and private views:

1) All buildings (our dwelling, shed, water storage and aerobic composting facilities) will be designed and placed so as not to impinge on public site lines, and will blend with the environment by using appropriate natural materials

2) In addition, strategic planting of new hedgerows, standard trees, coppice and woodland will provide suitable screening.

All the essential criteria and relevant contributory criteria, as set out below, will therefore be met.

Para 3.51 (p.26) of the practice guidance states the essential criteria with regards to landscape management are as follows:

- All existing semi-natural and other important habitats on the site are conserved and enhanced through appropriate traditional management. ✓
- All cultural heritage features (eg. archaeology) on the site are conserved and enhanced through appropriate management. (N/a)
- 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. ✓

The contributory criteria are that:

- Existing semi-natural habitats are extended or once characteristic habitats are recreated, ideally creating wildlife corridors across the site, linking to other habitats beyond the site. ✓
- Populations of once characteristic farmland birds of the local area are increased through appropriate habitat creation. ✓
- Soil organic matter is increased. ✓
- Populations of pollinating insects are increased. ✓

Meeting the above criteria ensures that the proposal is also consistent with SLDP policies ER8: Habitats and Species, ER9: Ecological Networks and [...] Biodiversity and ER11: Trees, Hedgerows and Development.

ENERGY AND WATER

In line with OPD practice guidance electricity, cooking and space and water heating requirements will be met using zero-carbon renewable energy. This will be provided by solar photovoltaics, biomass and solar thermal.

The practice guidance states that small amounts of non-renewable energy are acceptable where justified by need and suitability. Examples given include bottled gas for cooking in the summer and specific agricultural, horticultural, woodland management and processing tasks. Any use of non-renewables on site will be minimal and will be accounted for in the EFA monitoring.

Electricity

The average UK household uses 3,300 kWh for electricity and 16,500 kWh for gas.[4] Due to the design of the site and the environmentally minded nature of the tenants, energy use will be minimised and as such we anticipate that the electricity consumption of the household will be less than half the national average.

Energy use on site will be minimised in the following ways:

- Labour intensive farming practices, with minimal use of machinery.
- Efficient buildings:
    - Maximising natural lighting.
    - Maximising passive solar gain.
    - Super-insulated.
- Conscious energy use, including:
    - Minimal appliances - low usage of efficient appliances.
    - Ensuring appliances are not left on stand by.
    - Ensuring lights are only used as necessary.

Reduced electricity use will be relatively self-regulating as the site will not be connected to the mains and, as such, a finite amount of electricity will be available. In the winter months this may need to be carefully managed depending on the requirements of the tenants.

A 10kw solar array will be installed on the shared barn. We anticipate that this should comfortably exceed electricity demand for plots 1 and 2 in both winter and summer, providing flexibility in times of low solar gain. A study of previously successful OPD applications shows that the most common (mode average) PV installation is 4kw per single OPD unit.

It is generally advised that a 4 kw solar array will provide sufficient energy for a family home. The renewable energy hub uk[5], for example, states that:

> Generally speaking, a 3kw or 4kw solar panel array will be able to produce enough energy to power a home containing a family of four or

[4] OFGEM Household energy bills explained: https://www.ofgem.gov.uk/ofgem-.publications/64006/householdenergybillsexplainedudjuly2013web.pdf

[5] Renewable energy hub https://www.renewableenergyhub.co.uk/main/solar-panels/how-much-electricity-does-a-solar-panel-produce/

five people. A 2kw or 3kw array, on the other hand, will be able to supply enough energy to power a smaller home.

As such it is clear that a 10kw array should provide adequate electricity for 2 modest, energy efficient, OPD homes and their associated land management and business needs.

Heating and cooking

Dwellings will be heated by passive solar gain and biomass, in the form of wood-burning stoves, these will also be used for cooking during the winter months and for heating water for domestic needs. As the dwellings will be small in scale and highly insulated, heating requirements will be minimal. In our experience, lighting the burner for cooking will be adequate to heat the dwelling and provide hot water. Induction hobs, which provide highly efficient use of electricity for heating food, will be used for cooking in the summer months when electricity generated by the PV will be relatively abundant and lighting the burner impractical.

The year 3 OPD monitoring plan report for plot 1 at Rhiw Las (allowed at appeal ref: APP/M6825/A/15/319036) records that the one and half storey 9x13m straw bale family home used 2 tonnes of biomass in that year. Given that the proposed dwellings will have a similar footprint (no larger than 140m2) will be shorter in height, and will be insulated to the same level, we would suggest that this figure provides a realistic estimate for biomass use for each plot.

The table below demonstrates the biomass yield for short rotation willow coppice[6]

OPD year	Coppice stage	Tonnes per hectare	Tonnes per acre
1	1st cut year 1	3 - 6	1.2 - 2.4
2	1st cut year 2	6 - 12	2.4 - 4.8
3	1st cut year 3	9 - 18	3.6 - 7.3
4	2nd cut year 1	9 - 12	3.6 - 4.8
5	2nd cut year 2	12 - 18	4.8 - 7.3
6	2nd cut year 3	18 - 27	7.3 - 10.9

Using the conservative estimate of 20t/ha by year 6 the figures in the table above demonstrate that 0.124 acres of coppice for each tonne of biomass needed per year in the long term. As such, approx 0.25 acre area of willow coppice is required for each plot to provide 2 tonnes of biomass in the long term.

It is important to note that assuming biomass is dried for a year and harvested in winter, the biomass used will be approx 2 years behind that which is grown (ie in year 5 biomass harvested in year 3 will be in use). Further, a margin of error should be included in order to account for personal variations in biomass use, extended cold seasons, inadequate growth etc. As such, we require eachOPD plot to create a minimum of 0.5 acre coppice area. If a mixed coppice is proposed a larger area will be required. This will ensure that the coppices will comfortably meet biomass needs by year 5 and account for variations in biomass use in the long term. Excess biomass will be exchanged or sold.

Plot 2 proposes 1 acre of short rotation coppice (predominantly hazel and willow) and 1 acre of deciduous woodland. As such they will comfortably be able to provide biomass for their cooking and heating requirements.

[6] Figures sourced from the biomass energy centre

All the essential criteria and relevant contributory criteria, as set out below, will therefore be met.

Para 3.62 (p.34) of the practice guidance states the essential criteria with regards to energy are as follows:

- The energy needs of the site will be **minimised** through suitable design and use of technology, including that which enables re-use. ✓
- All of 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). ✓

The contributory criteria are:

- The embodied energy of renewable energy equipment should not outweigh its benefits from energy generation. ✓
- Human and animal labour should replace the use of non-renewable energy whenever possible and practical. ✓

The proposal's adherence to OPD criteria regarding energy ensures it is consistent with SLDP policy EU2.

Water

Rainwater will be harvested from the roofs of all suitable structures. This will provide water for animals and irrigation. Any water pumping where required will be renewably powered.

In order to ensure the efficient use of water – where applicable crops will be watered at appropriate times to minimise evaporation.

Rainwater harvesting calculations (see attachment ref. FHa.09) demonstrate that annually c.93,960 litres of rainwater could be harvested from the roof of the barn[7], equating to an average of 258.13 litres a day. Clearly water for irrigation will not be required uniformly throughout the year, although the use of undercover growing space will necessitate some irrigation year round. British Standards suggest an optimum tank size of 5% of estimated annual rain harvest total, if water is used daily. However, in order to provide a suitably reliable buffer in times of drought, oversized tanks will be installed, capable of storing 20% of the annual rainfall harvest. This equates to two c. 10,000 litre tanks.

Optimum sized tanks (to suit catchment, demand and available space) will be installed on the dwelling.

The site already has a mains water connection. However, the revised site layout means that due to a significant increase in the distance from the mains connection point the most efficient and environmentally sustainable source of domestic water will now be from collecting rainwater. The dwelling will install rain harvesting and gravity fed water filtration systems for potable water.

Domestic water use will be minimised in the following ways:

[7] Annual rainfall figures have been taken from Met office records 1961 -1990.

- On average conventional toilets account for 30% of domestic water use.[8] As such a significant reduction in water usage is accounted for by the use of compost toilets rather than flushing systems.

- Showering rather than bathing.

- Use of efficient washing machines. Specific to this application, plot 2 will have a manual washing machine.

Water used for irrigation will be minimised by ensuring evapotranspiration and unnecessary water loss is kept to a minimum. This will be achieved through manual, weather responsive (only when necessary and at appropriate times of day) irrigation and the use of mulching where appropriate.

All the essential criteria and relevant contributory criteria, as set out below, will therefore be met.

As such the proposal is also in accordance with SLDP policy RP4: Water pollution and the protection of water resources.

Para 3.62 (p.34) of the practice guidance states the essential criteria with regards to water are as follows:

- 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. **(emphasis added)** ✓

The contributory criteria are:

- Any water pumping should be renewably powered. ✓
- Any ponds / lakes created should maximise habitat creation and should not destroy important existing habitats. ✓

[8] Waterwise http://www.waterwise.org.uk/pages/indoors.html

WASTE

Our sites will be managed in such a way as to ensure that any waste products are kept to the very minimum. To this end waste will be managed in the following ways:

- Domestic food waste will be composted and reused around the site increasing site fertility and productivity.

- Grey water from bathrooms and kitchens will be purified using a horizontal flow reed bed system. Non biodegradable and / or toxic products will not be used. The centre for alternative technology states that “A horizontal flow reed bed requires about 1 square metre per person, with a minimum of 6 square metres.” All reed beds will be for grey water only and will be sized in accordance with Environment Agency minimum standards requirements. Further details of the reed bed proposed for plot 2 are given in the appendix (see appendix 4).

- Human waste will be processed through composting toilets. Plot 2 will use high temperature aerobic composting with a 2 year composting/curing cycle as per Joseph Jenkins' Humanure handbook.

  Once fully processed, composted faecal matter will then be reused around trees or non-food crops, increasing soil fertility and productivity.

- Waste paper will be burnt, composted or placed under plants as a moisture retainer, improving efficient irrigation.

- Packaging will be minimized. Achieving near self-sufficiency in food, will in itself greatly reduce unnecessary packaging. Where products need to be purchased, tenants will aim to avoid purchasing those with unnecessary packaging, where this is not possible, products with recyclable / reusable packaging will be prioritized over those with packaging that would end up in landfill.

The quantity of landfill waste produced will be recorded and included in the annual monitoring report. It should be noted that for the year the dwellings are being constructed it is likely that non-recyclable / re-usable waste produced will be disproportionately high.

All the essential criteria and relevant contributory criteria, as set out below, will therefore be met.

Para 3.75 (p.38) of the practice guidance states the essential criteria with regards to waste are as follows:

- 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. ✓

The contributory criteria are:

- The re-use of organic waste on site should increase overall site fertility and productivity so long as this is not at the expense of important semi-natural habitats dependent on low soil fertility. ✓

In creating a sustainable waste management system as detailed above, the requirements of SLDP policy RP10 will also be met.

ZERO CARBON BUILDINGS

Zero carbon in construction

To ensure that all buildings will be zero carbon in construction and that their environmental impact is minimised the following construction principles will be adhered to:

- All construction materials will be natural, degradable and locally sourced wherever possible.
- Where practical construction will be by hand, using hand tools and small power tools in preference to large machinery, minimising carbon dioxide emissions and noise.
- The use of heavy machinery will be minimal. Where unavoidable this will take place outside of wet periods and when the soil is not water logged, to minimise soil compaction.
- Work will be flexible and seasonal to accommodate particular landscape / habitat sensitivities.
- Windows, doors, fixtures and fittings will be reclaimed wherever possible
- Waste produced by the development will be minimised and incorporated into the site where possible.
- Bulk orders of small items will be well coordinated to minimise deliveries.

Zero carbon in use

Zero carbon in use has yet to be defined by the Welsh Government, however, the dwellings will be super insulated and located / designed to maximise passive solar gain (passive solar heating from south facing windows). As detailed in the previous sections all power and heating will come from renewable energy and the pro-active behaviour of the tenants will ensure that all resources are used efficiently.

Dwelling

The only new building proposed as part of this application is the dwelling. The permanent dwelling will be a timber framed, timber clad structure which will also comply with the Caravan Sites and Control of Development Act 1960 (as amended). The OPD practice guidance is clear that this is an acceptable and viable option for the permanent dwellings. As noted in box 11 of the guidance, such structures also “allow the proposal to have a significantly lighter impact on the site”.

Elevations for the dwelling have been attached (see attachments ref: FHa.05).

The dwelling will meet the standards of CfSH, in respect of category 3: Materials, as required by the OPD guidance. Details of the materials that will be used and how they meet this standard is set out in detail in the zero carbon statement below

As the dwelling will meet the legal definition of a mobile home they will, by their very nature, be removable should this be necessary.

Embedded in the landscape

It is also crucial to ensure that any proposed buildings are embedded in the landscape. The dwelling will meet this requirement by virtue of its natural construction materials and low rise, small-scale design. Further the location of the dwelling ensures that it is screened by mature existing hedgerows.

Additional landscaping will ensure that with time the dwelling becomes a natural and positive part of the landscape. It is also crucial to note that close range and long distance public vantage points into the site are minimal.

Zero Carbon Statement

By Trevor and Bettina

The requirements placed on dwellings by the One Planet Development policy are set out in the Practice Guidance (3.79-3.109). They are:

OPDs should be exemplars of Welsh Government's zero carbon aspiration and achieve zero carbon status in terms of construction and use of the development.

The construction of One Planet Development buildings in the open countryside is only required to meet the standards of CSH in respect of Category 3 – Materials. The five elements of the building covered by Category 3 are:

• roofs• external walls• internal walls• floors• windows

1. Zero carbon in construction

The CSH assesses materials in 3 parts:

1. Specification of materials
2. Sourcing of materials in the structural elements
3. Sourcing of materials in the finishing elements

Specification and sourcing of structural elements

Our dwelling will use materials that are non-standard (as acknowledged by the OPD Practice Guidance) and therefore not found in the Green Guide. Sourcing is indicated in and below each table.

Roofs

Materials	Comment	Rating
Tata steel roofing panels on battens on roofing felt on sarking board on battens over timber rafters. Thermafleece insulation 75% British wool / 25% reclaimed polyester. Locally sourced interior wood cladding.	Similar to Green Guide ref 812410012, rating A+: "Timber trussed rafters and joists with insulation, roofing underlay, counterbattens, battens and reclaimed slates"	A+

- Roundwood timber sourced locally from Welsh company Ty Pren
- Thermafleece insulation sourced from 'Ty Mawr' in Brecon, Powys
- Tata steel insulated roofing panels manufactured and sourced in Port Talbot.
- Roofing timber sourced from local builders' merchants.
- Interior wood cladding locally sourced.

External walls

Materials	Comment	Rating

Roundwood timber-framed structure with sawn timber stud walls and waney edge wood cladding	Roundwood timber structure (larch or Douglas fir) locally sourced. All sawn timber locally sourced.	A+

Sourcing: Roundwood timber frame, square timber for studs, larch cladding locally sourced.

Internal walls

Materials	Comment	Rating
Square timber stud walls Wood cladding.	Timber locally sourced Cladding locally sourced	A+

Sourcing:

Small diameter timber sourced locally.

Larch timber cladding locally sourced.

Ground & internal floors

Materials	Comment	Rating
Raised floor constructed of reclaimed floorboards on square timber joists. Thermafleece insulation 75% British wool / 25% reclaimed polyester.	Similar to Green Guide 80728001, rating A+: “Chipboard decking on timber joists”. !!!!!!!!!!!!!!!!!!	A+

Sourcing:

Timber sourced locally.

Floor insulation sourced from local builders’ merchants

Note: The UK Radon map published by Public Health England[1] suggests that there is a very low risk of radon in this area. However a test will be conducted before building begins and a radon barrier incorporated into all foundations if necessary.

[1] Online here: http://www.ukradon.org/information/ukmaps/englandwales#

Windows

Materials	Comment	Rating
Durable double-glazed. Reclaimed wood frames to the required standard will be used in preference.	Similar to Green Guide ref 813100005, “Durable hardwood window, double-glazed, water-based stain”, rating A+	A+

Sourcing: Reclaimed materials where possible, locally made/sourced otherwise.

Materials: finishing elements

Where available to the required standard, reclaimed and recycled materials will be used by preference.

Where reclaimed materials are unavailable the finishing elements will be made from locally sourced timber.

- Windows
- Internal and external doors
- Skirting
- Panelling
- Fascias

Other fixtures, fittings and furniture (kitchen units, bathroom units, white goods, etc.), not already owned by us will be made in situ from locally sourced materials (reclaimed where possible) or sourced from second-hand shops and online 'freecycle' groups.

Note on sustainability of materials The main construction material is timber and this will be sourced locally from known, sustainable suppliers. Timber is a renewable resource where it is replanted, and also takes in and sequesters carbon dioxide over the lifetime of the building.

Some proprietary materials are used which have been chosen for ecological credentials: e.g, Thermafleece insulation and Tata steel roofing (manufactured in Wales). The insulation is biodegradable when the building comes to its end. The steel roofing includes 25% recycled steel and is engineered to be completely recyclable (including all non-steel elements).

Further details about these materials are available from the manufacturer.

2. Zero carbon in use

No definitive standard of "Zero Carbon in use" is currently published.

Our dwelling will be zero carbon in use, for the following reasons:

- The development will use electricity from solar panels on the Ecological Land Co-operative's shared barn on the adjacent development area.
- We will use a wood-fired range for cooking and space heating in winter. Wood stoves are carbon neutral. We will utilise a temporary covered outdoor kitchen for summer use each year. By year 5 all firewood will be sourced on site from a one acre willow and hazel coppice and from judicious harvesting of the one acre deciduous woodland (both self-renewing). This will represent negative carbon status.[9*] There is no mains gas supply on site.*
- Water and space heating will make use of the wood burning range with integral boiler. This will be supported by generous glazing on the South face of the dwelling and above standard thicknesses of roof and wall insulation.
- All ongoing maintenance requirements will utilise the same materials detailed in the above construction materials.
- All energy and materials will be sourced and used in compliance with One Planet Development requirements and ethos. The basis of any One Planet Development is low ecological impact and social justice and these are our primary motives and ambitions in making this application.**

* Some bottled gas will be used until the main dwelling is habitable.

9*

**Regular compulsory monitoring via the Energy Footprint Analysis will highlight any anomalies that may arise, and corrective measures will be compulsory.

All the essential criteria and relevant contributory criteria, as set out below, will therefore be met.

Para 3.105 (p.44) of the practice guidance states the essential criteria with regards to zero carbon buildings are as follows:

- 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. ✓
- Proposals will identify which structures require Building Regulations approval and that this approval is obtained either before or during construction. ✓
- All structures identified for removal in the Exit Strategy are capable of removal with low environmental impact. ✓

The contributory criteria are that:

- The construction of buildings should make as much use of recycled materials as possible so long as this does not affect their ability to satisfy the essential criteria. ✓
- Existing buildings are re-used where this would have an overall lower environmental impact than new buildings, or where they are of particular value in landscape or heritage terms, but provided that they are not unsightly or have a negative impact on the surrounding landscape. (N/a)

Building regulations

The dwelling falls under the legal definition of a mobile home and is therefore exempt from building regulations.

COMMUNITY IMPACT ASSESSMENT

All our sites are outward looking and aim to be embedded in the local community as well as the landscape. Prior to the application being submitted the local community has been consulted and invited to engage in initial development of the site. The ELC has also been working closely with Cae Tan CSA, who lease the south west field. Cae Tan already have many positive connections with the local community and are able to provide valuable insights into local markets. The site will also facilitate research into the benefits of agro-ecological practices and low-impact living. Further details of all these aspects are provided below.

- Community Engagement - A preliminary community meeting was held at the Barham Centre, Parkmill on 17th July which was attended by 42 members of the local community and other stakeholders. Where possible, the proposed scheme incorporates details to address all legitimate concerns that were raised. A write up of the meeting, which summarised the issues raised and our response to them, was published on our website, a copy has been attached (see attachment ref: FHa.10)

- Pre-Application Consultation - A further consultation was held between Aug 4th and September 20th 2020. The report has been attached (see attachment ref: FHa10)

- Tree Planting - A tree planting event was held on 29th Feb - 01 March 2020, where members of the local community were invited to join us in planting additional trees and hedgerow on the site (attachment ref: FHa.11). The event was successful, over 30 people attended and over 1000 trees were planted.

- A tea and cake open morning is to be held on Saturday 2nd October for local residents and other interested parties to look round the site, meet members of the ELC and The Rowan Tree

- Biodiversity and Soil Research – We are collaborating with Swansea University to facilitate research into the impact of agro-ecological farming on soil quality and biodiversity. Surveys have been, and will continue to be, conducted by Swansea University in support of this research.

As Trevor and Bettina are working on the site the impact on the local community already includes the following:

- Provision of fresh, healthy, local produce, reducing the EF of the local community.
    - provision of weekly bunches of flowers to a local holiday let.
    - sale of flowers and veg to other local customers and businesses
- Shared knowledge - There has been a local volunteer from Swansea during the Spring and Summer (who will hopefully return in the autumn after travelling).
- Opening up communication and welcoming visits from interested local residents.
- Vicky Thomson from Swansea Food Partnership visited the plot in March and discussed ways for them to get involved in the organisation.

Furthermore, in the long term the community benefits will include the following:

- Improved biodiversity / increased number of pollinators in the area.

- Environmental education as recommended in PEA.

- Increased provision of flowers, fruit and vegetables.

Our prospective tenants have undertaken careful market research to ensure that their enterprises avoid any harmful direct competition with local businesses. Specific details are included in each business plan. It is noteworthy that Cae Tan CSA has a waiting list for vegetable-boxes of over 100 households, demonstrating a high demand for fresh local produce in the area.

Additionally, as an environmentally and socially focused organisation we require all our sites to host annual open days where the local community (and beyond) can come and engage with the farmers on-site, with the aim of promoting inspiration and support for agro-ecology and low impact land-based living.

It is noted that the OPD development may create a small negative impact in the form of additional traffic generation. However, this will be kept to a minimum (see transport section below), and mitigated by the community benefits it provides as detailed above.

Broader insight into the community benefits of our cooperative and our existing sites in England is provided in the ELC 2019 Social Impact Report which has also been attached (attachment ref: FHa.15).

All the essential criteria and relevant contributory criteria, as set out below, will therefore be met.

Para 3.113 (p.49) of the practice guidance states the essential criteria with regards to community impact assessments are as follows:

- 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. ✓

The contributory criteria:

- OPD children attend local schools and residents support local groups, clubs and events. ✓ where applicable
- There are open days, permissive footpaths and other access, as well as the hosting of local events on-site. ✓
- Residents shop locally and use other local businesses. ✓
- Residents sell food and other produce locally ✓

Predicted vehicle movements will be, to a certain extent, specific to the land based businesses and as such a full transport assessment has been provided below.

However, some aspects of the transport assessment are less plot specific. Living and working on site and providing for basic needs from the site as required by OPD policy will in itself help to minimise vehicle movements and ensure that they are lower than would be the norm for a residential development.

Where transport is required, low or zero carbon options will be prioritised. The site is walking distance from Parkmill where a regular bus service operates to Swansea and The Mumbles. Lift sharing between both sets of tenants and Cae Tan CSA on the neighbouring plot will also be a realistic and feasible option.

Further, ELC sites have a restriction on vehicle ownership to help ensure that traffic movements are kept to a minimum. Traffic monitoring at our site at Greenham Reach demonstrated that our tenants have significantly lower vehicle movements than average, approx 4 vehicle movements per holding per day, which is significantly lower than the national standard used per single family household which is 10 vehicle movements per day[10].

When courses or open days are run, incentives will be offered to those attending to travel by public transport or other sustainable transport modes.

Plot 2 Transport Assessment

By Trevor and Bettina

Existing travel options in the area:

-Footpaths: There are many footpaths nearby that link to neighbouring villages and hamlets (OS Explorer map 164). The site is a 15mins walk to both the nearest bus stops at Parkmill and Lunnon Turn.

-Buses: The 118 bus connects Parkmill to Swansea and Rhossili. 8 buses per day, Monday – Saturday. This is the service that we will be using most frequently for trips to Swansea and beyond. The 119 runs from Swansea to Rhossili via Killay and the B4271. It stops once a day at Lunnon Turn.

-Trains: Swansea train station (approx. 8.5 miles from the site) with frequent services to Cardiff, Bath, Swindon, Reading and London. Gowerton station (approx. 5.5miles from the site) for frequent trains to Carmarthen and stations to Milford Haven.

-Private vehicle: We own a Citroen Berlingo van, 3 years old, with a total mileage of 19’300. This is our only vehicle, which we use almost exclusively for business purposes (see details below).

Future projection

Domestic travel pattern:

We intend to travel by foot, bike and public transport for private (non-business) journeys. For shopping of food or other domestic items (those items we can’t grow or manufacture on site), we’ll combine shopping trips with business deliveries, in order to avoid many separate journeys.

[10] (round numbers based on ITE Trip Generation Report, 10th Edition) http://www.mikeontraffic.com/numbers-every-traffic-engineer-should-know/

Monthly shopping journeys: 2 return trips to Swansea, by car

Visiting friends and family:

-2 return trips to London per year, by train

-2 return trips to Cardiff per year, by train

-1 return trip to Switzerland per year, by train

Our estimated annual domestic mileage is 403 miles by car and 1288 miles by train.

The estimated total number of domestic vehicle movements from the site is **48 per year**, which represents very low vehicle use.

Land based enterprise travel pattern:

We intend to sell all our produce within 10 miles of our site. We will undertake carefully planned weekly deliveries, which will combine several drop-off points as part of the same journey. Occasionally, where there are one-off orders or where we can't organise several drop-offs we'll ask our customers to collect from us instead.

Deliveries: 2 deliveries to local florists/shops per week, 30 weeks per year, average of 20 miles per trip, total 1200 miles per year

Other local deliveries of our produce (to hotels, restaurants, collection points), estimated an additional 1000 miles per year, but within the above trips.

Our estimated annual mileage for deliveries is 2200 miles.

The total number of vehicle movements for deliveries is estimated to be **120 per year**

Collection by customers: Estimated 2 collections per month. Here, the mileage is difficult to give because we don't know where our customers will travel from. However, we will only supply florists and private customers who are based within a 10 mile radius from our site.

The total number of vehicle movements for collections is estimated to be **48 per year**

Deliveries of goods to our site: Especially during the first 5 years of establishing our holding we will receive occasional deliveries of goods to the site that are needed to build infrastructure (timber, roofing, water harvesting equipment etc.) and bulk deliveries of manure, compost and woodchip. We intend to only use suppliers who are based within a 25 mile radius of the site. These kinds of deliveries will become much more rare or will cease altogether once our holding is established and we are able to produce most of these supplies on site.

For smaller items we will use Royal Mail deliveries whenever possible.

Volunteers: We intend to recruit a small pool of local volunteers to help with our land-based enterprise. We'll actively encourage them to use public transport and to share cars whenever possible. We anticipate 2 volunteer visits per week, for 45 weeks of the year. We will only consider volunteers who live within a 10 mile radius of the site.

Assuming direct journeys, for two volunteers living a maximum 10 miles from the site, this would result in 1800 miles/year (40 miles/week x 45 weeks).

The total number of vehicle movements for volunteers is estimated to be a max of 180 (4x45, assuming the volunteers car share) and a min of 0 (assuming public transport is used) per year. Realistically we anticipate the total number of trips generated by volunteers will fall

between the two, and as such have included a total of **95** vehicle movements from volunteers in our calculations.

The impact of the 'volunteer traffic' will be mitigated by the fact that this will be an opportunity for our volunteers to learn about and become proficient at the many land-based activities we're undertaking throughout the year, in fact their involvement will be akin to informal 'apprenticeships'. Therefore enabling them to significantly reduce their own EF. We have done this successfully at our current site, where a long-term volunteer now feels sufficiently knowledgeable (after 4 years of part-time volunteering) to start her own ecological flower-growing enterprise.

Private Visitors: We will encourage visitors to travel by public transport and/or to share vehicles wherever possible. We estimate that we will have about 10-15 visits per year (we have used a total of 13 for our overall calculations) from friends and family travelling from Wales and England.

The total number of vehicle movements from private visitors is estimated to be **26 per year**.

Total vehicle movements

The total number of vehicle movements generated by the site, but excluding one off deliveries for infrastructure, is therefore estimated to be **337 per year (**26+95+48+120+48). This equates to less than 1 vehicle movement a day, significantly less than the average for a single family household, which is 10 vehicle movements per day.

All the essential criteria and relevant contributory criteria, as set out below, will therefore be met.

Para 3.131 (p.55) of the practice guidance states the essential criteria with regards to the transport assessment and travel plan are as follows:

- 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. ✓

The contributory criteria are:

- The use of low and zero carbon modes of transport should be maximised. ✓
- On site vehicle numbers should be controlled and vehicle pools used for One Planet Developments of more than one household. ✓
- Connections between the site and local suppliers and customers for goods and services requiring travel, should be maximised opposed to those at a greater distance. ✓
- Visitor travel should be the subject of proactive management to reduce transport impacts. ✓

In meeting these criteria the proposal also complies with SLDP policies E2: Active Travel and T5: Design Principles for Transport Measures and Infrastructure.

ECOLOGICAL FOOTPRINT ANALYSIS

The current Ecological Footprint of our plot 2 tenants and their projected footprints at year 1 and year 5 are provided in the Appendix (see Appendix 5)

As our tenants are environmentally conscious and ecologically minded, their footprints are significantly below the national average and already on track to achieve a footprint of well below 2.4 gHa by year 5.

The progress of our tenants in reducing their EF will be monitored annually.

As mentioned above, the proposed land based businesses will also contribute to reducing the EF of the wider community through the provision of fresh local products.

TIMELINE, MONITORING AND EXIT STRATEGY

Plot 2 Timeline

Year 1

- Move on to the land in temporary dwelling
- Continue to establish 1 acre of cut flower growing area
- Continue to establish 1/4 acre of 'no dig' vegetable area for domestic food
- Install 4 bay aerobic composting system for 2 to 3 year rotation (to handle all domestic and commercial compostable materials including human waste)
- Install rain water harvesting stations for flower and vegetable growing areas
    - Harvest via guttering on both sides of the polytunnel (60M of guttering)
- Begin planting fruit trees and bushes in orchard area
- Begin planting new hedgerows around orchard and flower areas
- Begin planting short rotation coppice

Year 2

- Commence construction of dwelling –
    - Carbon neutral house
    - Round wood Welsh timber frame
    - Welsh wool insulation
    - Foundations – hardcore-filled recycled stacked tyres sunk in 3cu.meter holes
    - Welsh timber cladding
    - Insulated steel roof panels
    - Wood-fired cooker with hot water boiler
    - Wood framed double glazing (reclaimed if possible)
    - Lathe and lime plaster/Welsh wood inner cladding
    - Reclaimed wood kitchen work surfaces, shelves and cupboards
    - Set up basic domestic water supply from rainwater collection with filtration
        - External waste collection toilet
- Consolidate cut flower growing area
- Consolidate vegetable growing area
- Continue planting orchard area, including herb layer
- Continue planting hedgerows to create shelter around orchard and cut flower areas
- Install rainwater irrigation system for orchard area
- Install chickens in moveable 'tractor' and electric fence system
- Install 2 beehives
- Continue planting short rotation coppice
- Begin planting woodland

Year 3

- Continue interior fitting and decorating of dwelling
- Expand cut flower growing area to 1.5 acres
- Establish sunflower area for oil production
- Plant further ¼ acre of permaculture orchard, including herb layer
- Add further 2 beehives
- Expand/add more composting bays as needed
- Continue planting hedgerows
- Dig first pond
- Begin planting comfrey and biomass growing areas

Year 4

- Plant more top and soft fruit and herbs in orchard area
- Expand sunflower planting area
- Build solar drier for larger volume drying of fruit and herbs
- Dig second pond
- Continue planting comfrey and biomass growing areas
- Continue planting woodland
- Add 2 more beehives
- Establish wildflower areas

Year 5

- Continue planting top and soft fruit and herbs in orchard area
- Establish more wildflower areas
- Continue planting woodland and hedges
- Dig third pond
- Short rotation coppice in full production
- All business aspects fully established

Monitoring

A template monitoring form has been attached (attachment ref: FHa. 12), as has the year 4 monitoring report from Greenham Reach (see attachment ref: FHa.13). We are aware that the details of the monitoring report are not identical to those that are required for OPD sites, however, some of the areas covered are the same and further, it demonstrates the experience and competence of the ELC in monitoring our sites.

The leases on all our sites tie our tenants to the terms of a management plan which also sets out our monitoring framework, failings and action plan. This identifies the procedure to be followed in the case of a tenant falling short of requirements and states as follows:

> "Each year the ELC will produce a report on the site known as an annual audit. This will be made binding on the ELC by way of a Section 106 Agreement. Within each annual audit, the ELC will identify any of the requirements within the management plan which have not been fully complied with.
>
> If a requirement has not been fully complied with, the ELC will agree with the tenant(s) an Action Plan to meet any outstanding requirements within an agreed time-frame. If agreement cannot be reached on any aspect of the Action Plan, then ELC may finalise the Plan. The tenant may appeal by applying to the ELC Board of Directors within 10 working days of the finalised Action Plan being issued; the Board will issue a final decision within one month. Tenants are obliged by their lease to carry out the Action Plan.
>
> In the event that the Tenant does not carry out an Action Plan within the specified timeframe, the ELC may at its discretion:
>
> − Issue further directions that may address any or all of the requirements of the Management Plan, or
>
> − Terminate the lease upon a period of notice of six months. A decision whether to require a Tenant to sell their lease must be taken by a vote of members at a general meeting. As per the rules of the ELC, the meeting must be quorate. Compensation will be paid at 75% of the resale value, provided a final review of the site verifies that no further deterioration has taken place over those six months."

Exit Strategy

Our hope is that the guidance and assistance that the ELC provides to our tenants, in combination with the experience and dedication of our tenants themselves, will ensure that all OPD requirements are met. Annual monitoring and subsequent Action Plans, where necessary, should ensure that any areas of weakness are identified and remedied. As such we should not need to initiate an exit strategy. However, in the unlikely event that an exit is required, the strategy will be as follows:

- Initiate procedure to replace tenants
    - Leave all infrastructure in place
    - Recruit new tenants
    - Resubmit amended management plan to the LPA for approval.

In the unlikely event that the site is no longer used for OPD development, the land will be left with improved biodiversity and soil quality as a result of the land management techniques employed in setting up sustainable, ecological OPD enterprises.

The aim of the exit strategy, to return the land to solely agricultural use, in equal or better condition than it was in originally will therefore be met.

CONCLUSION

As detailed above, we believe our proposals at Furzehill Green fulfil the stringent requirements of OPD policy and therefore represent an acceptable exception to strict restrictions on development in the countryside. Furthermore, we have demonstrated that the proposals will protect the natural beauty of the AONB and in the longer term, once the mitigation measures have been implemented and begun to take effect, the proposals have the potential to enhance the landscape character.

In a time of climate (and other) crisis, the sustainability benefits of the proposal and its specific intention to reduce the ecological footprint the tenants and the wider community represent a significant material consideration in favour of the application, which we believe is capable of outweighing any harm identified, should the LPA be in disagreement with us and find discrepancy with the development plan.

The ELC want to see a living, working countryside where land is valued as a way to enhance the good of the community, countryside and the natural world. We want to see low-impact, land-based livelihoods flourish. The stewardship of land to create healthful, wholesome and ecologically sound food and land based products that benefit people and the biosphere - now, and into the future. We want to help “ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs”. The proposals of this OPD application represent the potential for another positive step towards this vision.

APPENDIX

Appendix 1: Basic needs information

Appendix 2: Full Business Plan

Appendix 3: Additional bee information

Appendix 4: Reed bed details

Appendix 5: EFcalculations