

John Hargraves Planning Appeal

Green Apple Cross Farm

Autumn/ winter 2010



Site location plan (Cosh Weston, South Pembrokeshire) and aerial photo (before development began)

This document is designed to give an overview of John Hargraves' planning application. It is essentially a compilation of the application's core documents. It has been compiled with the sole purpose of providing guidance for others considering submitting an application of this kind.

This application was the subject of an appeal (by public hearing) to the Welsh Assembly Government.

It was the first application to be considered under the new 'one-planet development' policy (TAN6).

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Green Apple Cross



“Green Apple Cross” is a proposal for a holistic, low-impact development comprising an orchard, fruit tree nursery, vegetable garden and wildlife area.

It will be available as a schools and community resource and as a positive response to climate change.

Management Plan for Cosheston Nursery



Management objectives.

- To propagate and grow fruit trees for sale.
- To grow vegetables for sale.
- To further plant and extend the existing orchard.
- To establish a broad-leaf coppice as a source of heating fuel.
- The project as a whole to provide the young especially with a practical example of an ecologically sound lifestyle through direct "hands on" experience and specially designed art days.

The site is freehold, owned solely by myself, and comprises 4.3 acres. The site has been previously used as a commercial nursery, with a large polytunnel, another smaller polytunnel, steel barn and reservoir, car-park and large area of hard standing for potted plants.

Environmental benefits - bio-diversity and habitat.

The existing orchard has been considerably extended with a wide variety of apples and pears, not usually available from supermarket shelves. The surrounding area will benefit from the planting of 1 hectare of broadleaf coppice already approved and funded by the Welsh Forestry Commission.

A meadow of traditional mixed grasses, flowers and re-generating trees lies behind the nursery development. The entire site is bordered on all sides by mature trees and tall hedges. It is neither overlooked by the public or neighbours.

The barn owl is of particular note, finding the tussocky meadow its preferred hunting ground. Its decline over the last fifty years is directly attributed to intensive agricultural practice. The short-tailed or field vole, which accounts for 90% of the diet of the barn owl is abundant here, due to the dense ground cover provided by overgrown grasses, especially cocksfoot.

This is a deep-rooted variety of grass that allows water to penetrate more deeply, reducing run-off, and provides a reserve of moisture in drier times. This valuable habitat will be maintained as part of the plan.

Transport, Social and Economic Benefits.

The plan introduces an orchard into a location close to centres of relatively high population dependent on imported fruit. There will be public open days to promote locally produced food, and regular school visits where children can cultivate their own plots of land.



The internationally recognised artist Raul Speak from Solva will run art workshops for children to heighten awareness of environmental issues.

Public transport is available by the No 361 bus service where the road to the nursery meets the A477 main road. Pembroke Dock railway station is 3 miles away.

The road access is sufficient for two cars to comfortably pass each other at any point.

Additional essential structures.

The proposal is to build one timber cabin dwelling from locally sourced materials to passive solar house insulation standards. This will almost halve the heating energy requirements compared to a conventional house. A wood-fired stove with back boiler and cooking facility will be augmented with solar water heating and a 12v photo-voltaic lighting installation. The cabin will include an office space within the structure. A green roof will blend the visual aspect into the surrounding landscape. A compost toilet will be constructed to disabled standards near the entrance to the site for use by schools and visitors. The compost from this will sustain trees on the site.

Sustainable management of resources.

- A managed coppice to supply heating fuel, amounting to 1 hectare.
- A photo-voltaic installation to supply electricity for lighting.
- The existing water reservoir will meet the general demand for irrigation water, while the existing mains water supply provides safe drinking water.
- The existing outside compost toilet will also be the point of disposal for human waste from the dwelling.
- When well matured, the compost will provide nutrients for the orchard.
- Composting is central to the waste minimisation strategy for the project where materials are returned to the land as part of the natural cycle.



The land is free draining, deep, fertile loam.

There is an existing car park for 4 cars, and provision for cycles in the barn.

The significant effects on the landscape will be the planting of an orchard and copse, both of which will be beneficial. The considerable area presently covered with gravel and plastic is being reclaimed as cultivable land.

The proposed development is not overlooked, and is viewed from adjoining public roads only through tall hedges. The dwelling will be sited in a particularly secluded area.

As the land is level, no disturbance to the land is necessary to build the dwelling.

The scale of the proposal is the minimum called for to meet the needs of the development.

I intend to carry out the construction work myself and therefore vehicle movements during this phase should be minimal.

The change in use of the land from a nursery to an orchard will result in a lowering of environmental impact. The requirement for mains water will be very greatly reduced. There will be less traffic.

Household annual expenses for one family (one adult and one child):-

Food at £30 per week	£ 2418
Clothing £5 per week	£ 250
Phone	£ 240
Maintenance of dwelling	£ 250
Vehicle	£ 1700
Other overheads £30 per week, including council tax of £554	£ 919
Total	----- £ 5777 =====

Produce from the land:-

Vegetables, fruit, fuel, water, electricity £2205 p.a.

Source of income:-

The sale of trees, fruit and vegetables (see business plan)	£3355 p.a. =====
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Total	£5560 p.a.
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I am confident that a combination of self-sufficiency and small land-based business will enable me to substantially support my family from the land.

A grant from UnLtd (the foundation for social entrepreneurs) was received in January and further greatly increased awards are available and anticipated, pending planning acceptance.

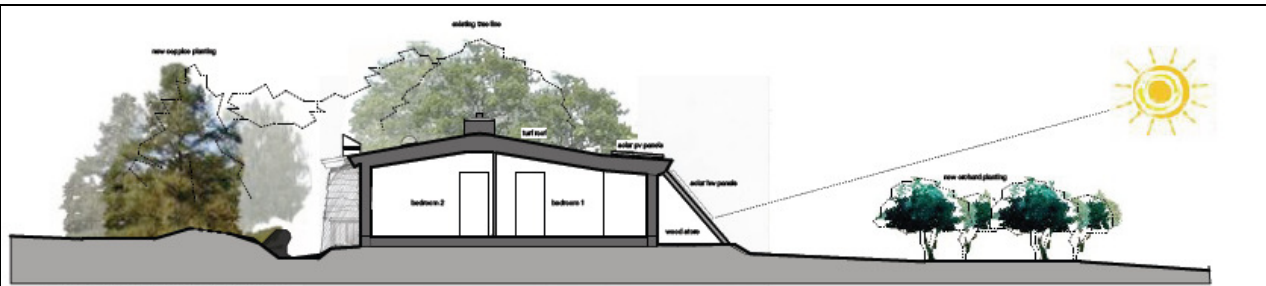
Postscript.

The unique site was chosen as a safe, clearly bordered venue for visiting school groups, with adequate vehicle parking. The large polytunnel serves the vital use of a covered classroom area as well as a growing environment. The project fulfils the current

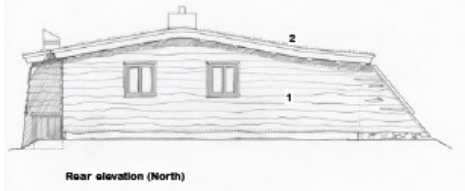
educational directions both for the junior foundation phase and later years. Schools have given an enthusiastic response to participation in a garden where the problem of care during the holiday periods is overcome.

DRAWINGS: site plan and dwelling design

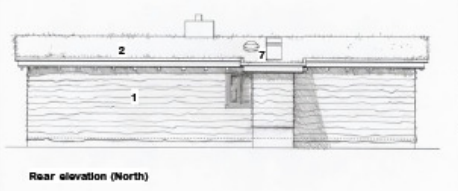




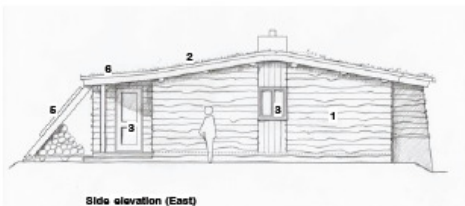
Site section through dwelling and landscaping



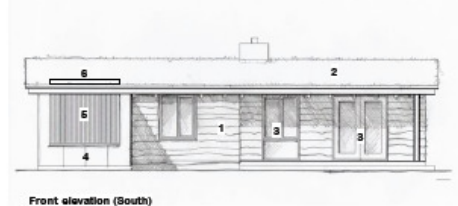
Rear elevation (North)



Rear elevation (North)



Side elevation (East)



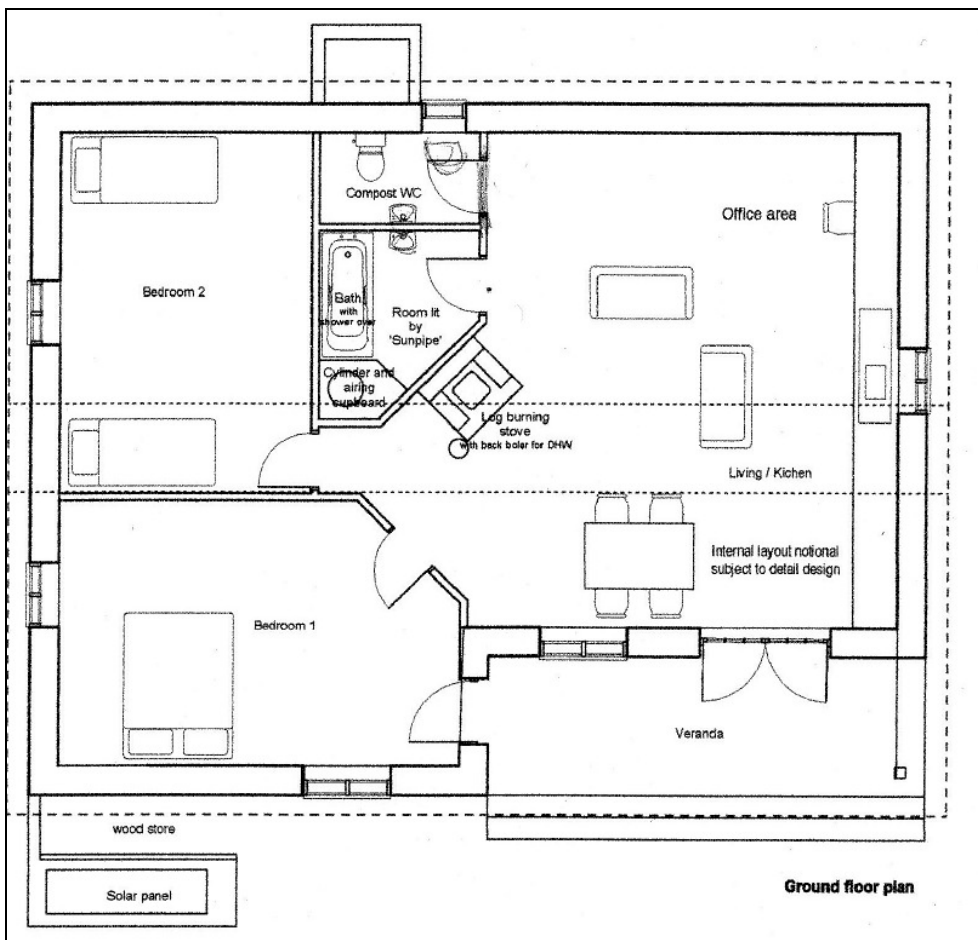
Front elevation (South)

Key to materials

- 1 Larch board cladding
- 2 Soft roof
- 3 Timber doors and windows
- 4 Dark grey waterproof membrane on ply
- 5 Solar hotwater panel
- 6 Photovoltaic panels
- 7 Solar powered vent unit and sunpipe

Architect	Client	MR JOHN HUNGATE
Designer	Project	Green Apple cross
Builder	Builder	Progress one second @ 20000000
Copyright	Drawn	LACONAS Design (BAIRN/C/S) June 2018

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Ground floor plan

DOCUMENT 2 BUSINESS PLAN

Green Apple Cross Business Plan

John Hargraves. June 2010.

Fruit trees (grafted); Welsh Apples, Pears and Plums

There is a growing demand for food crop trees that currently outstrips supply. The transition initiatives, alongside with a resurgence in the smallholding culture (especially in West Wales), are requiring supplies of tree stock that are both reliable and suitable for the bioregion.

To propagate fruit trees, cuttings are taken from an adult tree's twigs and grafted onto a rootstock. The rootstock will determine the tree's rate of growth and eventual size. I can source topstock freely from my own trees as well as those of friends and colleagues (in the locality). I will need to buy in rootstocks at a cost of approximately £1.50 per rootstock. Grafting wax, Micro-rhizal fungi compound (to assist root growth) will be bought in and any stakes will be sourced from the hedgerows surrounding the project.



The grafting, along with the first year of the trees life will take place in the small polytunnel. Here the trees will be protected during their most vulnerable stage. After 12 months the trees will be transplanted to the nursery area, where they will spend 12 – 15 months being acclimatised in a sheltered setting, before being transported to the nurseries for retail.

The majority of the trees will be sold wholesale (bare-root) to tree nurseries at a profit of approximately £6 per tree (£2 going towards rootstock and other incidental costs). I have already negotiated an arrangement with Ty Rhos trees to supply 300 trees a year. This will bring in an annual income of approximately £1800.

Some trees will be potted on and sold at the farm-gate. These will retail at £12 each and bring in a profit of approximately £8 each (with £4 going towards pot, compost, rootstock and other incidental costs). I would expect to sell approximately 20 trees a year in this manner, bringing in a profit of £160pa

Fruit Trees (own rootstock); Bullace, Damson and Crab

In addition to propagated fruit trees I plan to plant and grow Wild Damsons, Wild Crab Apples and Bullaces. I have arrangements with a number of existing landowners (for example, Penquiot farm, Cressely) with a range of such trees on their land whereby I can collect seedstock freely. The trees will be sold at 2 - 3 years old for approximately £8 each. Clients include Ty Rhos trees along with other nurseries.



The methods for planting and raising the trees are similar to those used for the grafted fruit trees. The trees are planted in the small polytunnel and after 12 months transplanted into the nursery area.

I am confident to be able to supply 100 trees a year wholesale, selling for £8 each and bringing in an income of approximately £750 pa (allowing for any incidental costs).

Similarly I am expected to sell some trees at the farm gate. These would retail at £12 each and bring in a profit of £9.50 each. I estimate that I will sell 10 trees a year in this manner, bringing in an income of £95pa

Native trees

I also plan to grow native trees using seed of local provenance. The plans for growing these trees are a little bit more adaptive than the methods I will use for the fruit trees. This is because of the fluctuations in the availability of tree seed coupled with some of the delay factors involved (for example Hawthorn seeds can take up to two years to germinate and require stratification in

sand during their dormancy period). I will create seed beds in the Nursery area where the native seed will either be sown direct (for example with oak) or stratified in sand before sowing into beds. Trees will be sold on at 2 years old and will be planted at such a density so that no thinning is required. I will keep the beds weed-free by hand.



It is difficult to tie down specific numbers to this aspect of the business plan because it will respond to natural levels of supply. I am expecting to be able to supply something in the region of 1000 trees (oak, ash, rowan, hazel, hawthorn, blackthorn) a year bringing in an income of between £90 and £300 (averaging at £200pa)

These will be sold direct (wholesale) to Ty Rhos Trees

Should there be a need to increase the income attained through the business, this aspect has significant room for expansion.

Wild Flowers

I plan to grow wildflowers from seed for sale at the farm gate. I have already had success establishing such species on the land at Green Apple Cross. I will focus in particular upon Harebells, Cowslips and Ragged Robin. I collect seed for these plants myself from my own stock.



These will be cultivated in the large polytunnels directly in pots and sold on when established.

The plants will sell for £3 each, bringing in a profit of approximately £2.50 allowing 50p for compost and pots. I anticipate selling approximately 60 plants a year in this way bringing in an income of £150

Fruit and Vegetables

I am aiming to provide myself with 90% of my fruit and vegetables, and indeed am well on the way to doing so. As a family we eat seasonally available fruit and vegetables and I deliberately choose varieties that span the seasons and store well.

To achieve this I will simply grow more than I need and sell the surplus at the farm gate/ in local shops. In addition I will inevitably have gluts in certain crops at certain times of the year. These too will be sold on at the farm gate/ in local shops. I expect to turnover approximately £400 a year in this way. I estimate that I will be spending £200 a year on vegetable seed and so I would plan to offset these costs with this income stream. Thus I am expecting to bring in an income of around £200 a year in this way.

Responsivity

As with any business enterprise, Green Apple Cross will evolve over the years in response to growing and marketing opportunities and challenges that present themselves. I personally am wholly committed to providing quality plant and tree stock that has a vital role to play as food production relocates itself (in accordance with Government Directives such as One Wales: One Planet). Currently Wales imports 97% of its fruit and 93% of its vegetables. A low-carbon society simply cannot sustain bulk transportation of this kind.

Conclusion

Table overview of annual income streams Green Apple Cross:

Aspect	Market	Income (£)
Fruit Trees (propagated)	Wholesale	1800
	Farm gate	160
Fruit trees (own root)	Wholesale	750
	Farm gate	95
Native trees	Wholesale	200
Wild flowers	Farm gate	150
Fruit and Vegetables	Farm gate	200
Total		3355

Green Apple Cross is a viable business with a key role to play in the transition towards a low-carbon society.

DOCUMENT 3 – LOW-IMPACT DEVELOPMENT

**Green Apple Cross (The Nursery site, Mount Pleasant Cross) Cosheton
July 2010**

Proposal for a Low impact development making a positive contribution

To be read in conjunction with applicant's management plan updated (July 2010), business plan (July 2010)

This document is intended to provide information required in relation to TAN 6 (one-planet development), TAN 12 (Design and Access statement) and Policy 52 (JUDP) Criteria 1 to 8

Proposal Summary

The proposal is to change the previous wholesale nursery site into a low-impact exemplar of sustainable living by creating a carbon-neutral, self-sufficient, organic smallholding. This will provide local schools with a valuable rural teaching resource, and a suitable live/work base for the applicant, Mr John Hargraves, and his two year old daughter who lives with him on a part-time basis. This is a climate responsive project consistent with Welsh Assembly objectives

Existing Site

The southern part of the existing site, as shown on drawing GACE/D/Ex, was formerly a commercial nursery, supplying wholesale fruit trees and potted plants. The site contains a steel storage barn which is not suitable for conversion, single and double polytunnel structures, and a water reservoir for the collection of rainwater. To the north of this area is a meadow/pasture. The whole site is bounded by mature trees and hedgelines, (see aerial photo) and the contours and elevation of the site mean that it is not overlooked by any neighbouring sites or buildings. The previous owner covered the nursery area with a black sheet material which is gradually being removed as new fruit trees are planted.

Proposed Site layout

The site will comprise the following (refer to site layout plan D/12):

- Planting native trees to enhance boundary tree belt
- Planting a mixed broadleaf coppice to provide a renewable fuel source and wildlife habitat
- Creating a pond and several wild flower habitats
- Planting a new apple and pear orchard with a range of varieties
- Creating a number of vegetable plots to produce a wide range of vegetables
- Designated planting beds for school/community use
- Re-using polytunnels for growing fruit and vegetables, propagation of seeds, raising of trees and wildflower plants and as indoor teaching space in wet weather
- Re-using the steel barn as secure tool/ workshop area, cycle storage and timber seasoning area.
- A new off grid, demountable, carbon-neutral, timber frame dwelling integrated into the existing and enhanced landscape features, so that it fits well on the site, is visually unobtrusive within the site, and is not visible from outside of the site.
- Improved parking, turning and access routes
- Accessible solar composting toilets near the entrance for school/community visitors

POLICY 52 CRITERIA

1 **Environmental benefits and bio-diversity:**

The project will have positive environmental benefits as follows:

- Planting of native species boundary and hedgerow trees will enhance the landscape and improve available habitats for wildlife eg. Barn owls
- Planting of approximately 1.5 acres of broadleaf coppice will clean the air by absorbing harmful carbon dioxide produced by polluting businesses and lifestyles. Each tree planted takes about 1 tonne of CO₂ from the atmosphere over its lifetime of 100 years
- Planting 1.5 acres of trees will produce enough oxygen for the lives of 27 people
- No artificial fertilizers or herbicides will be used. All produce will be organic
- Wild flower copses will encourage butterflies and bees, which are vital for pollination
- The extension of the existing orchard will allow for the protection of rarer varieties of apples and pears suited to the locality
- The creation of a pond will provide a natural habitat for dragonflies, damselflies, frogs, toads and newts etc.
- The project will provide on-site employment for Mr Hargraves in a business enterprise which is based on growing fruit trees suitable for the bioregion, native trees of local provenance and wildflowers using local seed.

Social and economic benefits:

The project will have positive social benefits as follows:

- The site will provide a community resource for local schools to engage pupils in educational aspects of horticulture, nature study, wildlife and sustainability.
- The project will offer pupils hands-on experience of planting and growing organic fruit, vegetables, herbs and trees in the context of a carbon-neutral and healthy lifestyle.
- The fruit and vegetables produced on the school allotments can be prepared and consumed by the school or used in a number of lessons (eg. cookery, science, art).
- Surplus organic fruit and vegetables will be sold at the farm gate.
- Outdoor teaching opportunities such as this do not exist within school sites and any vegetable plots on school site usually suffer because they are not able to be maintained through the summer holidays. This project would resolve this problem.
- The project would allow the applicant to continue working as a self-employed worker on the horticultural smallholding and become self-sufficient in food and fuel (It should be noted that public liability insurance required for visiting school parties is not obtainable if the site is not occupied)

2 **All activities and structures on site have low impact in terms of the environment and use of resources**

Dwelling (refer to drawing D/13)

The dwelling will be off- grid and carbon-neutral, an essential element in the creation of a sustainable, low-impact project. The main construction material is timber which is renewable, has very low embodied energy and has captured carbon during its growing cycle. The proposed cabin would not require mains gas or electricity supplies, or drainage connections. The design aims to achieve Level 5/6 under the Code for Sustainable Homes and will include the following:

- natural locally sourced materials, recycled where possible

- low pitch turf roof
- timber frame and breathing wall construction details
- 300mm Warmcell insulation (recycled newsprint)
- timber cladding to walls eg. Larch
- suspended floor construction
- minimal groundworks eg. Helical piles, railway sleepers
- no concrete or cement, steel or aluminium
- reversible construction
- solar panels for summer hot water
- passive solar gain to south elevation
- sunpipe for natural daylight to bathroom
- solar powered extract ventilation to wc
- * photovoltaic panels for low energy lighting
- wood burning stove with backboiler for winter space heating and hot water
- composting wc eg. EKOLET
- rainwater harvesting for washing, bathing and irrigation
- greywater recycling for irrigation

Water

The existing rainwater harvesting system directs water from the roofs of the steel barn and polytunnels to collect in the reservoir to the north of the barn (see plan D/12) This system will be extended to supply the new dwelling. The existing water-main to the barn will be retained for drinking water only. There is also a spring to the north of the polytunnels, the viability of which is currently being explored.

Sewage

A connection to a mains sewer is **not** required. Toilets will be composting type such as Ekolet (see attached technical information). Compost will be returned to the land as natural fertiliser and the biologically pre-cleansed liquid can be piped with household grey water to the site irrigation network.

Unisex COMPUS toilet for school/community use (COMPosting Urine Separating)

This will be located near the entrance next to the steel barn, with similar construction to the cabin and passive solar assisted ventilation. Urine will be directed to a chamber adjacent to the water reservoir for dilution at least 6:1 with rainwater before use as irrigation water.

Energy

A mains electrical connection will **not** be required. Power for LED lighting will be produced by photovoltaic panels and hot water will be provided primarily by solar hot water panels. A small wood-burning stove will provide space heating and hot water in the winter. The high levels of insulation in walls, floor and roof will result in a u-value of 0.1-0.15 and this will minimise heat loss and the amount of wood fuel required. The dwelling is also orientated to maximize passive solar gain to the living space.

Traffic

Commuting to a low-impact carbon neutral development is a contradiction. Living on site at the place of work will reduce mileage by at least 3000 miles per year, based on a notional trip from Pembroke Dock (10mils round trip). This makes economic sense as well as environmental sense and equates to 2.3 tons of CO2 saved per year.

It is anticipated that educational visits to the site from up to 12 local schools would produce 1-2 minibus trips each week with a total estimated mileage of 350 – 700 miles per year.

Accessibility

- Car parking: One car space will be provided, large enough for wheelchair users, with grass protection mesh to preserve existing grass finish.
- External circulation: Grass protection mesh will also be provided for a dedicated route over grass to the school/community planting beds.
- Toilet facilities: Ramped access will be provided to the unisex COMPUS toilet, which will be made large enough for wheelchair users.
- Eco-dwelling: Ramped access will be provided and a level threshold for visitors
- Herb tables and seed sowing tables at heights suitable for small children and wheelchair users will be provided under cover in the polytunnels.

Reversibility

The dwelling is designed with a suspended floor and minimal foundations to be easily dismantled, if required, in the future, to allow the land to be easily restored to its former condition. Timber boarding is proposed as the wall finish because it is also easily removable and reusable as well as renewable. There are many examples of timber boarding used for agricultural buildings. Rendered, brick or stone finishes would not be easily reversible and masonry wall construction would require concrete foundations.

3 Opportunities to reuse existing buildings have been investigated

The existing steel barn currently provides secure storage of tools and equipment essential to the smooth running of the holding. In addition it houses fruit and vegetables in storage, cycles and also provides a dry sheltered area for seasoning of firewood. The barn is currently used as an office/ admin centre, though it is planned that this function will in time move to the cabin. The barn will increasingly be used in the future to provide shelter for tasks associated with the business plan such as:

- Storage of pots/ compost/ tree grafting equipment.
- Production of labels and stakes for trees.
- Storage of containers for the transportation of seeds, plants and trees.

The barn is ideally located for all of these tasks.

The existing polytunnels will continue to be used for food production, propagation of seeds and the raising of trees and plants (see business plan). In addition the polytunnels provide an indoor teaching space in wet weather. Work tables and a herb table will be provided at heights to suit school pupils and wheelchair users.

4 The proposed dwelling is well integrated into the landscape and does not have adverse visual effects

There is a natural landscape boundary between the southern (horticultural) part of the site, and the northern (pasture and woodland coppice) part of the site (see plan no. D/11). The siting of the dwelling follows the advice of the planning officer and is integrated into this existing landscape feature, with additional tree planting to reinforce this, forming a visual screen to the rear and sides of the building. The front of the dwelling requires a southerly orientation

to maximise passive solar gain, and new fruit trees to the south of the dwelling will form a natural screen without compromising the winter sun angle (see dwelling/site section on drawing no. D/13)

The siting of the dwelling in this location, with the new landscaping proposals will ensure that the proposal has no adverse visual effects on views from public routes or neighbouring properties.

5 The proposal requires a countryside location and is tied directly to the land on which it is located and involves horticulture and forestry

This statement is self explanatory. The horticultural use of this site has been established since 1993 or before. Sites such as this do not exist within urban or suburban development boundaries and therefore schools do not have opportunities for outdoor teaching where such a variety of habitats and ecological practices can be experienced first hand. This site, however, is within 10 miles of 15-20 schools, many of which are in built-up areas. The site also offers easy access to the Cleddau estuary, a site of special scientific interest, which schools could include in their visits.

6 The proposal will provide sufficient livelihood for and substantially meet the needs of the residents

Food

The aim is to be largely self sufficient in organic fruit, vegetables and free-range eggs, with a surplus to sell in boxes locally or at markets. This will provide an income, together with the sale of fruit trees, native trees and wildflower plants to buy other provisions such as bread, milk, clothing etc.

Wood for fuel

A variety of native broad-leaf trees will be planted for coppicing to provide a source of wood for fuel in the long term. At least 1.5 acres will be planted, including species such as Hazel, Sweet Chestnut, Oak, Ash, Rowan, Sycamore and Willow. The coppice will take up to 5 to 8 years to establish. In the short term, toppings are available from a local farmer managed woodland, together with fallen branches and thinnings from the mature site trees and hedges.

Ultimately the coppice could produce 5-8 tonnes of seasoned logs and timber. The amount needed to provide heating and hot water in winter is estimated at 1 tonne per year for the Code 5 dwelling

Water

All water for irrigation, washing and cooking etc. will be collected from the existing polytunnel and shed roofs, via the existing reservoir, which will provide a piped supply to the new dwelling (see also section 2)

Energy

Solar panels will provide approximately 70% of hot water needs, with the rest supplied by the wood stove back boiler in winter. 2 or 3 small photovoltaic panels will provide power for low energy lighting to the dwelling, supplemented by candles when necessary. No petrol or diesel driven vehicles or tools will be used on the land. Hand tools will be used for coppicing and wood cutting. There will be regular car use from the site (estimated as 20 vehicle trips per week), largely associated with childcare/ school provision. Occasional journeys will be required to take produce for sale and collect provisions. For other journeys cycles and the 361 bus service will be used, south of Cosheston.

Some cooking, in winter, will be done on the wood stove, but most will be on a cylinder gas stove.

The table below summarises the annual household needs of Mr Hargraves and his daughter:

HOUSEHOLD NEED	QUANTITY	VALUE (£)
Irrigation water	Approx 60,000 litres per year	600
Domestic Water	£30 per quarter	120
Electricity	£5 pcm	60
Heating fuel (firewood)	1 tonne	85
Cooking fuel (calor gas)	3 bottles	54
Clothing		250
Phone	£60 per quarter	240
Maintenance		250
Food:	Vegetables (£17pw)	884
	Fruit (£10 pw)	520
	Dairy (£6 pw)	390
	Eggs	78
	Grains/ pulses (£3 pw)	156
	Meat (£3.50 pw)	182
	Misc (£4 pw)	208
Vehicle	Tax/ins/mot	450
	fuel	1250
TOTAL		5777

This table quantifies the current and projected produce harvested from the land:

Description	Current		Year 1		Year 2		Year 3	
	QUANTITY	VALUE (£)	QUANTITY	VALUE (£)	QUANTITY	VALUE (£)	QUANTITY	VALUE (£)
Irrigation water	Approx 60,000 litres	600	Approx 60,000 litres	600	Approx 60,000 litres	600	Approx 60,000 litres	600
Electricity (PV installation)		0		0		0	800kWhr	80
Solar Water		0		0		0	800kWhr	80
Heating fuel (firewood)	1 tonne	85	1 tonne	85	1 tonne	85	1 tonne	85
Food: Vegetables	50%	442	75%	663	85%	751	95%	840
Fruit	30%	156	60%	312	75%	390	85%	442

Eggs	100%	78	100%	78	100%	78	100%	78
TOTAL		1361		1738		1904		2205

This table calculates the household needs met from land-based activity:

	Current	Year 1	Year 2	Year 3
Household needs	5777	5777	5777	5777
Land-based produce	1361	1738	1904	2205
Business Income*	0	200	1500	3355
Total land based productivity	1361	1938	3404	5560
Percentage	24%	30%	59%	96%

- For business income, please refer to Business Plan – attached separately.

Thus within three years the project

will be generating more than 75% of its basic needs from land-based activity.

7 The number of adult residents (1) is directly related to the functional requirements of the enterprise

- The nature of the tasks required on site are labour intensive and will provide full time work for Mr Hargraves. These tasks include the following:

- plant and tree propagation
- planting of apple trees, woodland trees and seedlings
- water collection and conservation
- maintenance and adaptation of irrigation system
- weeding and maintaining fruit and vegetable plots
- protection of seeds and plants from frost, insects and birds
- composting for use in planting areas
- harvesting and seasoning timber from coppiced woodland for fuel
- creating a pond, associated landscaping and planting wildflower areas
- feeding and maintaining free range hens
- providing access to meadow for grazing of horses
- harvesting fruit and vegetables at all times during the year
- occasional selling of surplus fruit, vegetables, plants and fruit trees at farm gate

- Other tasks which relate to the use of the site as an educational resource include the following:

- developing contacts with local schools
- developing educational material to demonstrate organic horticulture and sustainability
- creating plans and planting programmes for school visits and dedicated school plots

- building accessible solar composting toilets for school parties and visitors
- creating a nature walk route around the site and information on carbon-neutral dwelling construction

8 Developments involving more than one family

As this project involves only one single parent family, this aspect of the Section 52 criteria is not applicable

POLICY

As well as Policy 52, the aims of this climate responsive project also fit with the following Welsh Assembly and JUDP policies:

- TAN 22 – Planning for sustainable buildings
- TAN 6 – one planet development
- Para 5.1.1 of the JUDP which states that diverse and sustainable employment which maintains and improves environmental quality will be supported
- JUDP Policy 62 – This project will incorporate renewable energy which will help, not harm, the environment, and will have no visual impact on the surroundings

DOCUMENT 4 – ONE PLANET DEVELOPMENT

Green Apple Cross, A One Planet Development

*Written by Paul Wimbush in consultation with John Hargraves
August 2010*

The new One-Planet Development provision within TAN 6 allows for developments such as Green Apple Cross on the basis that they will provide a key role in the transition towards a one planet nation¹. John Hargraves has lived the life of a sustainability pioneer for many years and in many ways is ahead of his time.

The policy requires 6 aspects to be demonstrated and these are listed below, using the same referencing numbers as employed in the TAN 6 policy itself.

4.17 Business and improvement Plan

Please refer to the Updated Green Apple Cross Management Plan July 2010, the updated GACE low-impact statement July 2010 and the Green Apple Cross Business Plan.

Whilst the GACE low-impact statement does not explicitly prove that 100% of Mr Hargraves needs (in terms of income, food, energy and waste assimilation) will be met within 5 years, it is totally clear that such is the direction of travel (with 96% of household needs being met in year 3).

The development will be the sole residence of John Hargraves.

4.18 Ecological Footprint Analysis

Please refer to report from Bill Knight of 4th World Ecological Design.

4.19 Zero Carbon Analysis

Please refer to statement from Kevin S Thompson (Architect)

4.20 Biodiversity and Landscape Assessment

Please refer to the Biodiversity statement of 17th October 2009 and the Updated Green Apple Cross Management Plan 2010

4.21 Community Impact Assessment

This issue has been discussed throughout the application in detail.
To summarise:

¹ One Wales, One Planet, (WAG, 2009) declares that Wales will be a one-planet nation within a generation

Positive Impacts:

Action	Detail	Benefit
Engagement with local schools	<ul style="list-style-type: none"> The site will provide a community resource for local schools to engage pupils in educational aspects of horticulture, nature study, wildlife and sustainability. The project will offer pupils hands-on experience of planting and growing organic fruit, vegetables, herbs and trees in the context of a carbon-neutral and healthy lifestyle. The fruit and vegetables produced on the school allotments can be prepared and consumed by the school or used in a number of lessons (eg. cookery, science, art). The twin-span polytunnel offers all-year round provision for visiting groups. 	Education benefit
Food Production	Provision of local, organic fruit and vegetables	<ul style="list-style-type: none"> Increases resilience of local economy Health benefits Service benefits
Wildflower Cultivation	Increases and promotes Biodiversity	<ul style="list-style-type: none"> Environmental benefit Heritage/ Cultural benefit
Native tree planting	<ul style="list-style-type: none"> Carbon sequestration Biodiversity Increase Landscape value increase Increasing environmental resilience Improving the viability of local gene-pool (trees of local provenance) 	Environmental benefit
Orchard	Protects, safeguards and promotes local fruit varieties Wildlife habitat	<ul style="list-style-type: none"> Environmental benefit Heritage/ Cultural benefit
Pond Creation	<ul style="list-style-type: none"> Habitat creation 	Environmental benefit

Negative Impacts:

Action	Negative Impact	Mitigation
Creation of a dwelling	<ul style="list-style-type: none"> Visual 	<ul style="list-style-type: none"> Sensitive Design (low profile, natural materials) Careful location (within existing hedgerow line), no view from public footpath/ highway

		<ul style="list-style-type: none"> • Enables low-impact lifestyle • Promotes principals of one-planet development
Retention of polytunnels	<ul style="list-style-type: none"> • Visual 	<ul style="list-style-type: none"> • Planting schemes already underway to screen visual impact from entranceway. • Hedgerows that define the boundary are managed in such a way that the polytunnels are permanently screened. • Enables land-based livelihood to be attained from the site. • Enables production of environmentally valuable stock (trees, wildflowers) and socially/ economically valuable produce (fruit and veg). • The removal of the structures would be a waste of a good and valuable resource

4.22 Transport Assessment and Travel Plan:

Mr Hargraves is committed to minimising fossil-fuel dependence and for 7 of the past 10 years has been dependent on a cycle and trains for transport with no car ownership.

The average rural household generates 3650 vehicle trips a year². Mr Hargraves currently owns a car and estimates that he generates less than 1100 vehicle trips a year. The majority of these revolve around social and educational provision for his daughter. He anticipates that family journeys will continue in the present format in the short-term, while reducing the regular weekly use of the car next year as Laura becomes 3 years old, and the cycle path currently under construction to Pembroke Dock is completed. A small proportion of these journeys are business-related (for example buying horticulture provisions and delivering produce for sale). He uses the **361** bus service, south of Cosheston, to travel to Pembroke Dock when appropriate.

It is anticipated that educational visits to the site from up to 12 local schools would produce 1-2 minibus trips each week, (equating to an additional 104 vehicle trips per year).

4.23 Planning Obligations and Conditions

Mr Hargraves is willing to enter into a s106 agreement. Please refer to the document GACE Monitoring Proposals.

² Stephen Benger, Highways, Pembrokeshire County Council (Lammas planning application 2007)

OTHER KEY DOCUMENTS

Letter from Ty Rhos Trees confirming demand for fruit trees and native trees

Report from 4th world ecological design on John Hargraves ecological footprint – 2.37 gHa/cap

Report from Kevin Thompson (architect) on carbon neutrality of development

Letters of support and interest from 4 local schools

Design and Access statement

Proposal outlining ongoing monitoring of development