

An Introduction to  
**Baile Dúlra**  
the West Cork Eco-Hamlet Project



An outline of the project working to  
create an intentionally designed  
ecological settlement in West Cork

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Non-Profitmaking Company No.273215, Charitable Status No. 12503

by Rob Hopkins BSc.(Hons), Dip.Perm.Des



“You must be the change you wish to  
see in the world”

Gandhi



## **The Baile Dúlra Advisory Panel**

**Many of the leading names in ecological design, renewable energy systems and green economics in Ireland and beyond have joined our Advisory Panel giving the baile dúlra project access to a wide range of expertise and experience.**

**John Carney** is a Chartered Surveyor with who has been Lecturer in Construction Management at Waterford RTC since 1983. He is particularly interested in the whole area of sustainable development in relation to built environments and the efficient use of renewable natural capital. Among other things, Mr.Carney teaches a module in Environmental Protection and Sustainability at the RTC.

**Audrey Dickson** is the National Co-ordinator of Global Action Plan, a non-profit organisation which empowers individuals to lead increasingly sustainable lifestyles. As a executive member of the National Women's Council in Ireland she founded the Irish Women's Environmental Network in 1990. She is a member of the Advisory Board of the Environmental Protection Agency and is on the committee of the Network of Irish Environment and Development Organisations.

**Richard Douthwaite** obtained a master's degree at the University of the West Indies and went on to work for the Jamaican Ministry of Finance. He was Government economist with the British colony of Monserrat from 1972-1974. In 1974 he moved to Ireland, setting up an exporting business in Westport, until 1985, when he returned to journalism, writing about business and environmental matters largely to do with the West of Ireland. is the author of *"The Growth Illusion"* and *"Short Circuit - Strengthening Local economics for Security in an Unstable World"*, which was launched in Westport last summer.

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**John Jopling** is a retired barrister who founded and is project manager of the Sustainable London Trust, which co-ordinated the publication of the report 'Creating a Sustainable London'. He is working to find ways of strengthening non-governmental activities and 'bottom-up' democracy in London. He has a house at Rossbehy, Co.Kerry where he has begun to hold study courses for arts and ecology.

**Roger Kelly (Dip. Arch.)** is the Director at the Centre for Alternative Technology, in Machynlleth, Wales. After completing his architectural training Roger worked in the public, private and housing association sectors and also taught in several schools of architecture. He became director of the Centre for Alternative Technology in 1988 and has since been the prime catalyst of positive changes in the Centre and its outlook.

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**Prof. Tom Wooley** (B.Arch, PhD) is head of the Department of Architecture at Queen's University Belfast. He is a founder member of the Ecological Design Association and Chair of the UK wide Association of Community Technical Aid Centres, which publishes a Green Building Digest. His current areas of research include straw bale construction and sustainable approaches to rural regeneration.

## Summary

Baile Dúlra, the West Cork Eco-Hamlet, is a largely self-financing project which aims to create an ecological settlement of 15-20 houses on a rural site of between 30 and 70 acres in West Cork. It will be an model of sustainability and Permaculture design in practice, as well as being a tourist attraction and education and research resource. It will be at the cutting edge of ecological building, renewable energy generation, woodland management, biological waste water treatment, intensive food production and small scale economic systems.

It will become an internationally recognised centre of environmental excellence and would create numerous sources of employment, both within the community and beyond. It offers the Local Authority the opportunity to be seen to be supporting and backing major environmental initiatives within its area.

This document represents the first phase of the project, a defining of what the project will entail, how it will function, how it will be established and what it's benefits will be.

## Acknowledgements

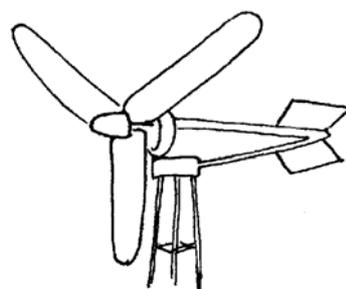
The author would like to acknowledge the following sources of useful information which has been included in this report. Firstly the invaluable groundwork done by the Stroud Sustainable Village project in the practicalities of eco-village development, and the section on village development in Bill Mollison's "Permaculture - a Designer's Manual". Also the Context Institute's "Eco-Villages and Sustainable Communities" report which is the most detailed study of eco-villages to date. We would also like to thank all those involved in this project for their passion and vision as well as all those involved in the Irish Eco-Village Network.

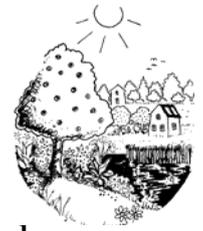


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**Dr. Sean McCarthy** is Managing Director of Hyperion Energy Systems Ltd, a company specialising in Renewable Energy and Energy Conservation, and in electronic monitoring systems.

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**Baile Dúlra**  
the West Cork Eco-Hamlet



# **Baile Dúlra**

## **the West Cork Eco-Hamlet Project**

### **Aims...**

- II to create a model for sustainable 21<sup>st</sup> century living which would serve as an educational, research and service resource for both West Cork and further afield
- II to maximise the potential for earning within the hamlet by increasing self reliance in food, energy and housing
- II to minimise pollution to air, water and land
- II to demonstrate a new approach to rural regeneration, showing the potential for agricultural and economic productivity of land through the application of ecological sustainability and Permaculture design
- II to provide for residents' and the surrounding community's non-material needs in a supportive environment.

## The Context of the Project

*“The transition to sustainable development has been identified as the most important global transformation since the agricultural and industrial revolutions. The growth model of the 20<sup>th</sup> Century, characterised by increases in the use of energy and raw materials and leading to over-exploitation of scarce environmental resources, cannot be sustained indefinitely into the 21<sup>st</sup> century”*

*(from Department of the Environment “Sustainable Development - A Strategy for Ireland” 1997*

**B**aile Dúlra, the West Cork Eco-Hamlet, project believes that what is needed as we approach the end of the twentieth century are models of how people can live in harmony with nature. We need models of ecological housing, of biological waste water treatment, of sustainable employment. We need to create a model which not only provides homes for people in such a way as to not impact on global warming, but which also is an educational resource. Unless sustainable development can be seen working in practice it will remain forever a concept, a theory. This document outlines our vision of how this could become a reality in the shape of the West Cork Eco-Hamlet project.

Over the last 20 years it has become increasingly clear that the way we live is having a devastating effect on the planet. Global warming, caused principally by our overuse of fossil fuels, is a reality now recognised by most of the world’s leading scientists. The main ‘greenhouse gas’, carbon dioxide (CO<sub>2</sub>), is generated in almost every area of human activity, and its reduction is now an urgent priority. The European Union has set a goal of stabilising CO<sub>2</sub> emissions at 1990 levels by the year 2000. If this target is to be met then clearly there is a need to re-evaluate our approach to all areas of human activity.

There is also much concern over the loss of biodiversity, the millions and millions of species which make up the ecology of the planet. This is now a very rapid process as has been recognised by many national and international bodies. It has been estimated that 500,000 species are lost per year, and although most of these are in the rainforests, there have been startling losses in Europe too, leading to UN Convention on Biological Diversity, signed at the Rio Earth Summit in 1992.

The list of problems confronting our environment is long and depressingly familiar - pollution of watercourses, land, air, the food chain, loss of greenspace, traffic congestion, loss of rare habitats and so on. There are also the problems facing our communities, loss of the extended family, unemployment, poor housing, poverty, poor diet, poor drinking water to name but a few. The Government recently published its National Sustainable Development Strategy entitled “Sustainable Development - A Strategy for Ireland”, which addresses many of these issues. Although the Government and many other bodies are doing much important work in the field of sustainable development, the work that can be done by individuals and by groups of individuals is, we feel, just as important. The West Cork Eco-Hamlet will become an example of just how effective this work can be.

## What is an Eco-Hamlet?

The name ‘Baile Dúlra’ comes from the Irish meaning ‘ a small village of nature’ or ‘environmental village’. It is what has become known as an ‘eco-village’, or ‘eco-hamlet’. Although a hamlet is traditionally defined as being a small village without a church, the only real difference between an ‘eco-village’ and an ‘eco-hamlet’ is the issue of scale. An eco-hamlet refers to a cluster of 10-40 houses, while an eco-village is on a larger scale. A recent study by the Context Institute of Seattle for Denmark’s Gaia Trust called “Eco-Villages and Sustainable Communities”, defined 5 main elements which are central to both eco-villages and eco-hamlets;

1. human scale
2. full-featured settlement
3. in which human activities are harmlessly integrated into the natural world
4. in a way which can be supportive of healthy human development and
5. can be successfully continued into the indefinite future.

Each of these will now be looked at in terms of how it relates to the project proposed in this document.

### ***Human Scale***

We are proposing a small eco-hamlet of between 15 and 20 homes. At this level of population, everyone is able to feel that their contribution is recognised, and is able to know all the other members. Many people in rural West Cork, particularly those with small children, who live outside of towns and villages often feel isolated. We feel that an ecological settlement of this size will enable people to still live in such areas, but in such a way that they felt part of an immediate and vibrant community.

### ***Full-featured settlement***

At present, most people in rural areas need to travel great distances, usually by car, in order to meet their everyday requirements, be they food, child care, work, visiting friends, entertainment or education. Many people find this undesirable, in terms of expense (fuel and car maintenance), of the amount of time spent driving between places and of the environmental impact of driving a car. Many of the larger towns in West Cork are now beginning to suffer from problems of traffic congestion.

One solution to this is to try, as far as possible, to situate most of the basic requirements of the hamlets residents onsite. Such a project can, if thoughtfully located, support a small shop, a nursery, some leisure pursuits, entertainment, a social life and maybe even a small school (if a local school is not within easy reach). It will also aim to create the maximum amount of employment possible. Clearly a project of this scale cannot support a hospital or a railway station for example, but through thoughtful planning a great deal of needs can be met locally.

***In which human activities are harmlessly integrated into the natural world***

Many people now feel that they want to live 'closer to nature'. It is also becoming clear that this 'nature' they crave is being lost at a frightening rate. The need therefore becomes clear for the creation of settlements which (unlike most current housing developments) create an environment which places housing amongst a diverse 'natural' landscape which is also productive and meets many of the residents' needs. This hamlet will be designed using the approach of Permaculture design, which aims, through taking natural systems as a model, to create sustainable human settlements requiring very few external inputs (for a fuller explanation of Permaculture, see page 4). In Australia there are now half a dozen village scale settlements designed with Permaculture principles and they have been very successful.

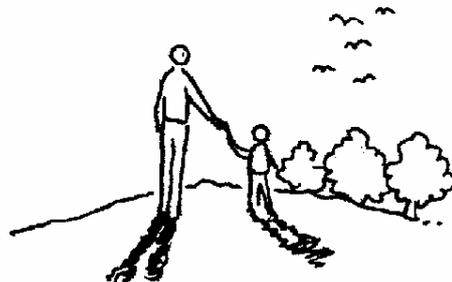
***In a way which can be supportive of healthy human development***

Human health is not just the absence of illness. The Context Institute report defines it as the "balanced and integrated development of all aspects of human life - physical, emotional, mental and spiritual". Being able to live in a clean, healthy environment, with a good diet and in contact with others goes some way to achieving this, achieving the rest will be one of the hamlet's priorities.

***Can be successfully continued into the indefinite future***

By founding the hamlet on the principles of sustainable development, the aim will be to create a settlement which will, over time, become increasingly self reliant. As it grows it will also become more successful in terms of the businesses onsite, and these will then be able to expand outwards into the surrounding communities. Another sense in which the hamlet could be seen as being continued into the indefinite future is through its children. The Farm, an eco-village project in Tennessee, USA, saw the fact that many of the children wanted to stay and work in the village upon reaching maturity as a sign of success, rather than is the usual pattern in rural areas where children leave as soon as they can.

To create an environment in which the next generation feels it has a stake and in which they feel they would like to stay is a very important model for an area like West Cork which suffers from a steady loss of its youth to cities within Ireland as well as further afield.



## Permaculture

**B**aile Dúlra will be designed according to the principles of Permaculture, so it would be useful at this stage to outline what is meant by the term. Permaculture is essentially a design system for the creation of sustainable human habitats. It originated in the mid-1970s when Australian ecologist Bill Mollison, having spent many years observing the Tasmanian rainforests, began to develop a new approach to agriculture. He reasoned that if a society didn't have a sustainable agricultural system as its base it was doomed to disaster, as many failed civilisations throughout history have illustrated.

The rainforests, he felt, were a model for an agricultural system which he termed a 'permanent agriculture' (or 'Permaculture' for short). Such forests were hugely complex ecosystems requiring no external inputs of fertilisers or human labour, surviving solely on sunlight, rainwater and bedrock. They produced massive amounts of biomass on a huge range of levels, their soils were stable and fertile, they generated their own streams and weather patterns, they coped with disease by being so species diverse that any disease affected only one or two species and they had stood for many thousands of years.

Mollison and a student of his, David Holmgren, began to develop the system which they called Permaculture. At first it was a purely agricultural system, focusing away from intensive chemically fed monocultures and towards an approach which favoured good design, the use of perennial crops, particularly tree crops, which integrated people into the landscape and created diverse 'edible landscapes modelled on



natural woodlands. As the concept evolved however, it became clear that a sustainable and just future required the application of these principles not just to agriculture but also to economics, housing, energy production, trade, water, waste disposal, new settlements and urban regeneration. Permaculture became redefined as an abbreviation of "Permanent Culture".

Permaculture is now a huge international movement, with projects happening in almost every country in the world. There are now whole villages and housing estates designed using Permaculture principles, as well as alternative economic systems, community energy programs and a whole range of other positive projects at work around the world. The driving force behind these projects is that we are in the midst of a grave environmental and social crisis, and unless communities take responsibility for creating their own solutions to these problems no-one else will do it.

In terms of Baile Dúlra, Permaculture offers an approach to the design of not just the landscape, but also the housing, the economic systems, the energy systems and the approach to waste disposal which maximises the efficiency of each element and integrates them into a whole system. In practice this would result in housing being carefully and thoughtfully positioned in the landscape and being designed to maximise solar gain and energy efficiency. There will also be an emphasis on local building materials and water conservation. All organic wastes will be recycled onsite and people will be encouraged to grow their own food via intensive small scale gardens. There will be an emphasis on tree planting, mostly of productive species, planted so as to serve as many other functions as possible, i.e. windbreaks, erosion control, biomass etc. In short, the hamlet will seek to vastly increase the site's biodiversity, its productivity, its soils, its water-holding capacity and its beauty, while at the same time much reducing its impacts on the environment, all through the utilisation of sensible design.

## How Will the Project be Financed?

The Baile Dúlra project is a non-profitmaking company with charitable status (Charity number 12503), any profits it makes going back into the development of the project. It already has some funds for the purchasing of the land. The intention is then, on top of that money, to secure a loan and other investors for the development of the site. It is hoped that money will be available from the LEADER II grant (which aims to encourage “*innovative, demonstrative and transferable measures which illustrate the new directions that rural development can take*”) to part-fund the green business units element of the central building complex. We believe this project fits the LEADER II criteria very well. We are also investigating a range of other possible grants as well as sources of private funding.

The project will make training a very important part of its work. During the implementation phase, we are hopeful that European money will be available to fund a training program which will offer training in ecological building, sustainable design and land-use, forestry and so on. This will not only be a major help to the project during this phase but will also offer people skills for which very little training exists at present.

Although clearly to talk about a budget for the project at this stage is going to be a very inexact science, it may be useful to provide some tentative figure to give an idea about how the project intends to support itself. The current prices for land in our search area appear to be around £130,000 for 50 acres. Clearly this is highly dependent on where we are looking, the quality of the land and so on. If the site has a river, a small-scale hydro scheme could cost around £15,000. Installing a reed bed waste water treatment system for the site would cost about the same again, and although it is clearly impossible to quote a figure for installing roads as the amount needed depends on the site, one could tentatively pencil in a figure of around £100,000. Grants would be available for the tree planting. Grants of up to £39,000 are also available for building housing for those on the council housing list. Making use of this funding would allow us to make housing available to those on lower incomes. For the community building and other Trust-built buildings, much of the labour will come from the training scheme, and the buildings themselves would be striving to be models of low-cost ecological building, so we would set a budget of around £200,000. This sets the (highly provisional) budget at around £½ million.

This will be paid for firstly through the revenue raised by selling the plots. These would be marketed at the current market price for building plots, presently around £20,000 for an acre with planning permission. 15 plots would raise £300,000. The project will initially be advertised locally and then in Ireland and then beyond, via. magazines and newspapers and also on the Internet. Members of the public who were interested in the project will be able to become “Friends of the Eco-Hamlet” for an annual fee in exchange for which they will receive a quarterly newsletter keeping them informed of developments. There will also be scope for fundraising via. this network as well as via. the Internet, which many existing eco-village projects have found a very useful fund-raising tool. We know from our own experience that there are individuals and bodies willing and enthusiastic to invest in such projects, we would be aiming to reach them via. word of mouth as well as by advertising in a number of ‘green’ publications, i.e. The Ecologist, Positive News, Earthwatch and Resurgence. We would also approach members of the business community.

The money we would be applying for from the EU would make up the shortfall and provide excess funds to assist in the establishment of services and on-site businesses essential to the project, as well as on-going maintenance. There would also be the possibility to pay people who work on the project during phases 1-7 in ‘sweat equity’, their being paid in land rather than cash, thus reducing the cost of their plot.

This whole financial aspect of the project will be examined in much greater detail in the business plan we will be preparing once we have identified a suitable site.

## **Elements of the project**

### **Environment**

#### **Energy**



The hamlet will seek, in the long term, to be autonomous in terms of energy provision. This could be done through use of wind turbines, photovoltaic cells or a small hydro scheme. Residents will be required to use energy efficient appliances and housing will be very energy efficient. Any surplus energy generated could be sold back to ESB. There could also be a possibility of a biogas system being feasible, collecting slurry (conventionally seen as being a problem needing getting rid of) and converting it to heat and power. Much research in this area has been carried out by the Skibbereen biogas swimming pool/ice rink project, which has proved this technology to be feasible in this climate. It is intended that at the outset the site will be connected to the grid, but that over time it will move steadily towards autonomy.

#### **Trees.**



A very high level of tree cover will be established on the site. Trees have numerous benefits, providing shelter, shade, timber and fruits and nuts as well as encouraging wildlife, preventing soil erosion, increasing biodiversity and locking up CO<sub>2</sub> (the principal cause of global warming). Plantings nearest housing areas will consist mainly of fruit trees, while further from the houses more broad-leaved trees will be planted.

#### **Common ground**



About one-third of the land will be designated common land and will be administered by a Trust. It will be open to all and will be planted up with trees and orchards for community use. Some of it will be rented out to those wishing to use it for market gardens, forestry or other business propositions.

#### **Food Production**



The hamlet will aim to be as productive in terms of food produced on-site as possible. Clearly it is not possible to ensure that all residents will have an interest in food growing, at least into the long term. Food growing will be encouraged in a number of ways. Firstly, plots will be designed to maximise the land's south-facing aspect and the areas of good soil will be allocated for gardens. Those buying plots will receive some training as part of the Permaculture course included in the plot price. It is hoped that the hamlet will create an atmosphere in which people feel enthused and inspired to grow as much of their own food as possible, with some of the shortfall being made up made up by other residents who choose to grow more, either to supplement their income or to be their full time occupation.

#### **Water**



The site will be designed so as to maximise the amount of water held onsite, through the use of ponds, lakes and dams. These will then be used productively for the production of edible aquatic plants as well as conventional vegetables. Ideally the site selected will have a spring, if not then each house will have the option of connecting itself to the mains or harvesting rainwater.

## Productive Landscaping



Through the application of Permaculture design to the landscape as a whole, the resultant landscape will be very varied and attractive. There will be a strong emphasis on the landscape being productive, through the use of perennial plantings, principally trees, and it will also contain ponds, lakes, wilderness areas, coppice woods, orchards, food forests and a range of walk routes and attractive resting places. The design of such a landscape will, we feel, add to the ability of the hamlet to support itself as it offers a wide range of potential harvests and resources.

There will also be substantial plantings of broadleaf trees, something which West Cork is in urgent need of. A recent survey of West Cork's woodlands by An Taisce West Cork revealed broadleaf trees cover just 1.1% of the county's total area, whereas conifer plantations cover 5.4%. Broadleaf trees would be selected both to replenish the indigenous tree cover as well as to provide windbreaks, check soil erosion and generate a number of yields.

## Biological waste water treatment



Each house will either have a composting toilet or will be connected to a reedbed sewage treatment system which will purify both sewage and grey water. There are many operating examples of these around the world. They not only treat contaminated water, they also provide wildlife habitats, a useful supply of composting materials and a very attractive landscape feature. Much work on developing biological waste water treatment has been done by the Ark Permaculture Project in Clones, Co.Monaghan.

## Transport



Much effort will be made to reduce the amount of private car use people will require. A car pool model could be used, which will remove the need for each resident to own a car. There will also be the possibility for powering electric cars with surplus electricity. Ideally a site will be found which was on or near to a bus route.

## **Community**

### Services



Clearly, a settlement of this size cannot support a wide range of facilities, but some could be supported. A small shop could probably do well selling produce grown onsite to both residents and visitors. There will also be sufficient numbers to support a nursery for small children.

### Employment



The aim at the initial stages will be to attract a number of people with small businesses to the project. The Trust will also aim to build a number of workshop spaces for rent or sale. It is intended that a small number of loans will be made available to assist in the establishment of on-site businesses. The site itself, a fully functioning model of sustainable living and Permaculture design will offer many opportunities for running courses, publishing books, guided tours for schoolchildren and others and a hostel for tourists and guests.

## Children

The site design will strive to create an environment which is safe for children as well as being stimulating and educational. If the chosen site was not near an existing school, then there will be the potential for an on-site school, modelled on the 'Small School' model. As mentioned previously, the involvement and education of the hamlet's children will be seen as a priority.

## Make-up

The hamlet will aim to attract people of all ages and incomes. A small percentage of the plots will be offered at a concessionary price to those who could prove financial hardship. It is also hoped that some form of mortgage system could be devised to help in such cases.

## The Community Centre/Environmental Education Centre

The focal point of the project will be a building combining a community centre and an educational resource for visitors, as well as some accommodation for guests. It will serve as a focus for residents, offering space for meetings, parties, courses, as well as including spaces for the shop and for communal facilities. It will be the first point of reference for visitors, hosting day visitors, groups and also longer courses. The building will be surrounded by Permaculture gardens and will provide the public face of the project.

## **Economy**

### Small businesses

The hamlet will seek to encourage small businesses to relocate to the site and will also aim to assist in the establishment of businesses on-site which are seen as essential to the project. Businesses will be expected to be ethical and to comply with the principles of the project.

### LETS

LETS (Local Employment Trading Scheme) is a system wherein people trade in skills and resources rather than cash, using units of exchange only valid within the local area. This keeps wealth within the local community and creates local employment for the good of all. The project will aim to be an active member of the local LETS scheme in its area.

### Ethical Investment

The Trust will strive to ensure that its funds were invested ethically with organisations sympathetic to the projects aims. It will also make extensive use of the local credit union.

## **Housing**



Each plot will be privately owned, although a small number will be held by the Trust for houses for rent. A range of different styles of ecological building will be encouraged, including rammed earth, timber frame, strawbale and earth-sheltered. It is hoped that for the more unconventional approaches, such as strawbale building, the project will be viewed as useful research and that these buildings will be monitored by the local authorities with the aim of obtaining acceptance of them in the building regulations. Each house will be allocated a certain proportion of the power generated onsite and will be expected to be designed according to this. Certain minimum levels of insulation, glazing standards and passive solar capacity will be specified. The use of fossil fuels (coal, oil and anthracite) for home heating will not be permitted. Instead the use of very efficient ceramic stoves which burn very small quantities of coppice wood (which could be grown onsite) will be encouraged.

## **Community Integration**



The project will aim to integrate as much as possible with the local community. Such a project will have beneficial impacts on local shops, pubs and other facilities. It is hoped that local people will be employed both during the construction phase and thereafter. The feasibility study phase of the project will examine in detail the surrounding community and explore ways in which the project can be of maximum benefit to it.

## **Waste and Recycling**



The hamlet will take the minimisation of waste as one of its priorities. People will be encouraged, via. the on-site shop, to consume the minimum of packaging in their family shopping. Paper, glass, aluminium and metal will be collected onsite for recycling. Organic waste composting will be encouraged on each plot and each house will be connected to a reed bed biological waste water treatment system. Any businesses operating from the site which produced polluted water will be required to install its own reed bed system and will be encouraged to source more environmentally friendly materials.

## Phases of Development

Clearly such a project is not going to happen overnight. We have identified 7 phases in the development of the eco-hamlet.

### **Phase 1. Establishing Feasibility.**



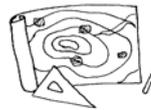
This is the current phase. It involves consulting the local authority as to how they would view such an application, as well as research into the feasibility of the project's many different elements. It also involves looking into funding, potential sources of grants, the project's various legal aspects and issues revolving around planning. This document is part of this first phase.

### **Phase 2. Obtaining planning permission**



Once an undertaking was obtained from the Local Authority that they would be sympathetic to such an application the search for land would begin. Once a suitable site is found the first step would be the obtaining of definite outline planning permission for the project prior to an option to buy being taken out on the land.

### **Phase 3. A full Permaculture site design**



The third step would be the site design process which would look at;

- II The site - it's resources and potential, creating detailed maps and surveys,
- II The surrounding community - what its resources are, what facilities it has, what it needs, what can this site provide

This would lead, via. the running of a series of workshops bringing in experts in various areas (energy, water, forestry etc.), to the drawing up of a full design for the site, identifying strategies for the sustainable management of water, sewage, power generation, food production and forestry. It would identify the individual housing plots (maximising solar potential), the siting of community facilities, any new access, new tree plantings and so on. This design would be fully costed, a full business plan with a timetable of implementation would be prepared and then the site would actually be purchased.

### **Phase 4. Preparing the Site**



Before the plots are sold, there are a number of jobs which need to be done to the site. These include the installation of access roads, planting of woodlands, the marking out of plots, creation of the reed bed system, installation of the renewable energy source. During this phase buyers could identify and repurchase their plots. Much of the labour needed at this stage would be provided via. a training scheme, possibly run in association with FAS, which would train participants in ecological life skills (building, design, land use etc.). There would also be a number of volunteers.

## **Phase 5. Marketing**



Once the individual plots have been identified and all the legal framework has been put into place, the process of marketing them would begin. A range of plots would be available, ranging in size from  $\frac{1}{4}$  acre to 2 acres and would be advertised initially just in the local media for a period of say 6 months and then further afield, both within Ireland and also beyond. These would be sold on a 999 year leasehold with planning permission for a house, although the Trust would lay down, in the covenants, conditions relating to the design and the materials used in the construction of the house, so as to minimise environmental impact and maximise energy efficiency. The title deeds for each plot would also include:

- II road access to each plot
- II access to common land (managed as nut forests, lakes, play spaces etc)
- II connection to a renewable energy source and to a biological waste water treatment system (a reed bed)
- II use of community facilities (laundrette and community building)
- II a free 2 week Permaculture Design course
- II an “owners manual”

Buyers would be subject to some restrictive covenants drafted to ensure behaviour consistent with the environmental aims of the projects. These would prohibit the use of biocides, place restrictions on pets likely to upset the balance of nature and restrict any developments or activities contravening the ethics of the hamlet.

It is our belief that such a project would prove very popular and we feel confident that all the plots would be sold within a relatively short period of time.

## **Phase 6. Building phase**



The actual building of the houses would be fairly rapid. Covenants would state that building work must commence on a plot within 2 years of purchase. People could either build their own houses, employ other residents to do so or employ outside builders (preferably local people). A certain number of the houses would be built by Baile Dúlra Teoranta for sale, the profits from which would go back into the company. Private plot owners would be responsible for building their own houses, while the community building and other buildings to be owned by the Trust (i.e. workshops for rent, hostel space, offices) will be built as part of a training scheme offering training in ecological building.

## **Phase 7. ‘Up-and-running’**



The various businesses become operational and, ultimately, self supporting. The houses are all built and the residents themselves take control of many of the responsibilities previously overseen by the Trust.

## Baile Dúlra in the Context of Local Policy

**T**he Cork County Development Plan defines its aims as *“to make the best sustainable use of the area’s assets to reverse declining employment and static population in West Cork”*. Decline in employment is a major problem, particularly in the field of agriculture. The Plan states that in 1971 9,100 people were employed in agriculture, but that by the year 2001 this will have declined to just 4,200.

There is clearly a need to explore new approaches to rural land-based employment. Baile Dúlra offers potential for some of the sources of employment recommended in the Development Plan, i.e tele-working, organic farming, “vertically linked vegetable growing-processing-marketing operations (albeit on a smaller scale), “processing of seasonally available food products” and “agritourism”, as well as pioneering and developing some new ones. The plan recognises that *“some diversion of housing demand to more remote areas would help sustain services there...”* which echoes what we have argued in this document.

Although the development plan uses the word “sustainable”, nowhere does it define what it believes this to mean, nor does it go into any detail about how this sustainability could be achieved in practice. Baile Dúlra offers the Council the opportunity to encourage a project which is designed from the outset with sustainability as its guiding principle. It will evolve into an internationally recognised model of ecological development. It will be a step towards the Authority meeting its obligations under Agenda 21 and will give Cork County Council an international reputation for supporting innovative sustainable developments. It will provide the Council with the opportunity to observe many approaches to sustainable development in practice which will then be of help when drawing up new strategies in this area.

## How attractive/viable is such a project?

**T**here is much interest in Eco-Villages at the moment. In October 1995 at Findhorn in Scotland, an international conference entitled “Eco-Villages and Sustainable Communities” attracted over 400 delegates and almost the same number again were turned away due to lack of places. There is now a Global Eco-Village Network, a European Eco-Village Network and the Eco-Village Network (UK). The subject commands a lot of interest in many circles, and there are, at present, numerous groups throughout Ireland and the UK trying to establish them. Many people are now seeking ecological lifestyles but are often unable to realise them due to either unaccommodating local planning authorities or unwilling lending institutions. We feel that the best approach to sustainable development is a bottom-up approach, utilising peoples’ skills and allowing the scope for that creativity to blossom. We are sure that the possibility to live in an Europe’s first consciously designed rural ecological settlement will prove very popular.

## Physical Criteria for the Site

**W**e are currently looking for a site of between 40 and 100 acres which will contain some or, ideally, all of the following elements;

- II Good Access
- II Own water supply
- II Mature woodland
- II Predominantly south-facing
- II A small number of existing buildings
- II Some protection from winds
- II A river (potential for power generation)
- II Within easy reach of existing town or village
- II A high proportion of good soils
- II No contamination from previous use
- II Good Drainage

We will be focusing specifically on the West Cork area as it offers many benefits in terms of climate and of the possibility of connecting into the tourist market. The Cork County Development Plan (1996) states that *“away from the coast there will not be an objection in principle to single rural houses more than 3 miles from the nearest main town - some diversion of housing demand to more remote areas would help sustain services there”*. It is our aim to focus a land search on such areas. We would also like to be situated within reasonable vicinity of Cork city so as to be accessible to school parties and other groups.

The site will also probably have some buildings already onsite, these will be repaired and integrated into the design. By incorporating existing buildings, the project will not only serve as a model of excellence in new ecological buildings but also show how existing buildings can be retrofitted for the minimum environmental impact, thus creating a very important model for education purposes.

## The Position of the Local Authority

Cork County Council have stated that they are “interested and supportive” of the Baile Dúlra project. They have said that they agree in principle to our dividing agricultural land, to our using biological waste water treatment and have given some general outlines of the areas that would be best to focus our land search on. They have also said that they would be fine with people building houses which would usually fall outside of the building regulations, but that for materials which they feel are untested, planning permissions would be given on a 10-year renewable basis, with an inspection every 10 years before the permission is renewed.

## **Case Studies**

Baile Dúlra is inspired by and has learned much from other ecological projects around the world. In order to illustrate that this project is not based on untested ideas and is not without precedent, there now follow some examples of eco-hamlets and eco-villages which have already been established.

### **In Ireland...**

#### **1. Ark Permaculture Project, Burdautien, Clones, Co.Monaghan, Ireland.**

The Ark Permaculture Project was set up 3 years ago and has rapidly become the best demonstration site for Permaculture design in Ireland. It is centred around a barn which was retrofitted for maximum energy efficiency and modified to include a masonry stove, a compost toilet and a conservatory. The project is also breaking new ground in Ireland in the development of reedbed pond and wetland systems for purifying water. For the last 2 years they have been supplying local municipal authorities with plants and advice and have established a very good reputation with the local authority.

They have set up a plant nursery which specialises in unusual plants which are of use in an Agroforestry/Permaculture system. As an educational resource they run a number of courses on Permaculture and related topics which attract people from the whole of Ireland. They are also involved with Queen's College Belfast in research into straw bale housing with the eventual aim of getting strawbale building accepted by the building regulations, both in the north and the south of Ireland. This summer, together with QCB they will be building 2 bale structures for this purpose.

The Ark Permaculture Project is an illustration that Permaculture can and does work in Ireland, and as it grows its influence will be felt further and further afield. It also indicates the level of interest in Permaculture here, Ark has many visitors as well as running a number of well-attended courses on a range of subjects.

#### **2. Sonairte, the Ninch, Laytown, Co.Meath.**

Sonairte, "The National Ecology Centre", has been open for 10 years in which time it has successfully demonstrated the benefits of sustainable living. Focused around an old Georgian house with 2½ acres of organic vegetable garden and another 2½ acres of nature trail, Sonairte, originally inspired by the Centre for Alternative Technology in Wales (see below), now hosts 7-10,000 school children per year as well as around 2,000 other visitors.

The centre comprises demonstrations of solar and wind power, renovated energy efficient farm buildings, a highly successful organic, a coffee shop, a lecture hall and, currently under construction, an 'energy courtyard'. The bulk of the centre's work involves education programmes for school parties. They run courses for school children between the ages of 5 and 17 and this is the bulk of their work. They also run courses for adults, one every 2 or 3 weeks, covering a range of topics, from 'Green Building Design' to 'Summer Vegetarian Cookery', which are often fully booked.

The staff at Sonairte are, with the exception of a managing director, all employed by FAS. The establishment of the project has been the result of a successful FAS scheme and determined resourcefulness, and shows that such a project is possible even without large amounts of external funding.

**...the UK...**

**3. Centre for Alternative Technology, Machynlleth, Wales.**

From its beginnings as a disused slate quarry, the Centre for Alternative Technology has, over the last 25 years, evolved to become the an internationally renowned environmental demonstration site, attracting 80,000 day visitors a year and has an annual turnover of more than £1 million. Originally conceived as an ‘ecological community’ it has pioneered the cutting edge of alternative technology and is now very successful as an educational resource and international consultancy.

As well as being self-sufficient in energy, the site now also features a number of ecological buildings (with energy consumption around 10% of typical levels), an extensive organic/permaculture demonstration garden, a restaurant, a shop, a reedbed water treatment system, a multi-media ‘visitors’ centre’, a water-powered cliff railway, a number of energy-related exhibits, the ‘eco-cabins’ in which school children stay for a week and have to make do on a limited amount of water and energy, and the ‘Mole Hole’, an underground tunnel ‘in which humans are reduced to the size of insects’, which aims to show children how soil is a living organism.

The Centre has also led to a number of ‘spin-off’ businesses, as people from the Centre used their expertise to set up businesses. Among these are Dulas Engineering, a renewable energy consultancy, Equilibrium, a consultancy which campaigns on forestry and farming issues, ‘Green Teacher’ magazine, Ecogen, one of the biggest wind farm companies in the UK, and the recently opened ‘green business park’ in Machynlleth, the world’s first.

It now communicates its work and its activities through a number of media. It runs many courses throughout the year, from day courses to much longer hands-on volunteer opportunities. It has a much visited site on the Internet. It has published over 80 publications focusing on detailed information and practical solutions . It publishes a quarterly magazine, ‘Clean Slate’ and has produced videos of its work.

The Centre for Alternative Technology has proven to be very successful and has many plans for continued growth. It shows clearly that there is massive public interest in visiting a project of this sort if it is well presented and it also shows the value of such a project in terms of creating employment and income in an area of high rural unemployment.

**..and beyond...**

**4. Crystal Waters, Queensland, Australia.**

The first eco-village designed specifically using Permaculture principles is Crystal Waters in Australia. Crystal Waters prides itself on being “the world’s first community designed from inception according to the principles and concepts of Permaculture”. It was founded on land in a rural area suffering the effects of a decline in agricultural and economic activity and set out to revitalise the local economy. It has 83 plots on 260 hectares. Its designers, Max Lindeggar and Robert Tap state that their aim was to

*“develop ... a village community that aims for a diversity of food and energy sources, economic enterprise, and social activity that will lead to more stability - less susceptible to severe changes, be they environmental, political, economic or social”*

Crystal Waters is now home to around 130 people (eventually it will house 300) and a number of businesses are now run from the site, among which are consultancies, catering businesses, craftspeople, market gardeners, publishers and educational courses. 80% of the land is owned in common, 15% is owned privately as plots and the remaining 5% is owned by cooperatives. A set of bylaws relating to residents’ behaviour cover such areas as ensuring behaviour remains true to the hamlet’s ecological principles.

Great care was taken at Crystal Waters over planning for water. Water was considered as “perhaps the most important design criterion” according to designer Max Lindeggar. The site features many dams which serve a number of functions, recreational use, flood mitigation and positive microclimatic effects.

Residents are allowed to build whatever houses they want, although extensive guidance is outlined in the ‘owners manual’ given to each resident about how to design energy efficient housing. This has resulted in a wide range of different building styles in a range of different materials.

Crystal Waters is an excellent example of Permaculture design on a village scale, and also attests to the kind of rural renaissance that such a project can lead to. It was recently awarded a UN award for having created such a diverse habitat.

**5. Kookaburra Park Eco-Village, nr. Nimbin, Queensland, Australia.**



The Kookaburra Park Eco-Village is situated on 485 acres of diverse, undulating bushland. It contains 124 one acre building plots which have been placed onto the landscape using Permaculture principles. The remaining land is held in common by all the residents. The hub of the village is a 2.5 acre site known as “the Village Lot”, which is owned by the community. Here a Community Hall will be built which will provide facilities for lectures, courses and social gatherings.

## **6. Jarlanbah, Nr. Nimbin, New South Wales, Australia.**

**T**his was one of the first of the second ‘wave’ of eco-villages in Australia and was designed by Permaculture designer Robyn Francis. It comprises 43 lots of around three-quarters of an acre each, set among 30 acres of community land. Over 5,000 trees have been planted, both for wildlife value and for to create future employment.

Each plot comes with planning permission for a single dwelling which must be built to be energy efficient and passive solar. Residents can decide whether they want to generate their own electricity or take from the grid, thanks to a unique system developed by the local energy company. They have installed an underground electrical system which provides grid power, but which can also be interfaced with renewable energy sources if required.

Purchase of a lot at Jarlanbah also includes;

- sealed road access to all lots
- underground services
- small housing clusters with 60% of the site left as greenspace
- co-ownership of extensive rainforest and woodlot areas
- drought insurance with 5 dams and a bore
- 5 sustainable agriculture areas suitable for organic market gardening
- a Permaculture design certificate course
- an extensive “owners manual”
- by-laws which protect the Permaculture theme

At present 30 of the 43 plots have been sold and the developers are very pleased with the progress so far.

## Further reading on Eco-Villages/Hamlets

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