

Quinta do Vale da Lama Outline Design

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Site Report Quinta do Vale da Lama

The project

Quinta do Vale da Lama (VDL) is owned by Nita and Walt, who bought the property in 2 lots some 10 years ago. At this time part of the site is used to provide a campsite for Burgau based PND, a project for young people. For the future it is proposed to further develop the site as a resource base both for the local community and other sections of society. This may be achieved in various ways but as the owners (with their 2 young children aged 11 and 5) currently have no plans to live on the site the project must be low maintenance (for them) and self supporting once the initial investment has been made.

The site

VDL is a 32 Hectare site, situated on the Eastern boundary of the Município of Lagos, Algarve, between the towns of Odiáxere and Alvor. The site borders on the River Odiáxere, close to the Alvor estuary and comprises two separate plots, each with their attendant houses and barns. The property slopes gently up from the river frontage on the East to a low rise on the South Western boundary.

Include VDL aerial photograph(s)

The whole area has been intensively farmed in the past but the pattern is changing with the construction of more infrastructure in support of the local tourist Industry. However VDL falls on the edge of the protected area surrounding the estuarine flats, an area rich in biodiversity of both marine and birdlife.

Access is good with a single track tarmac road from Odiáxere.

Structures already existing on the site include a ruined farm house on one plot with various other buildings in need of extensive repair. A new project for a six bedroom villa has been approved here and construction has started. On the second plot,

the existing buildings have been renovated to provide facilities (kitchen, showers and activity space) for camping (permissions here under negotiation).

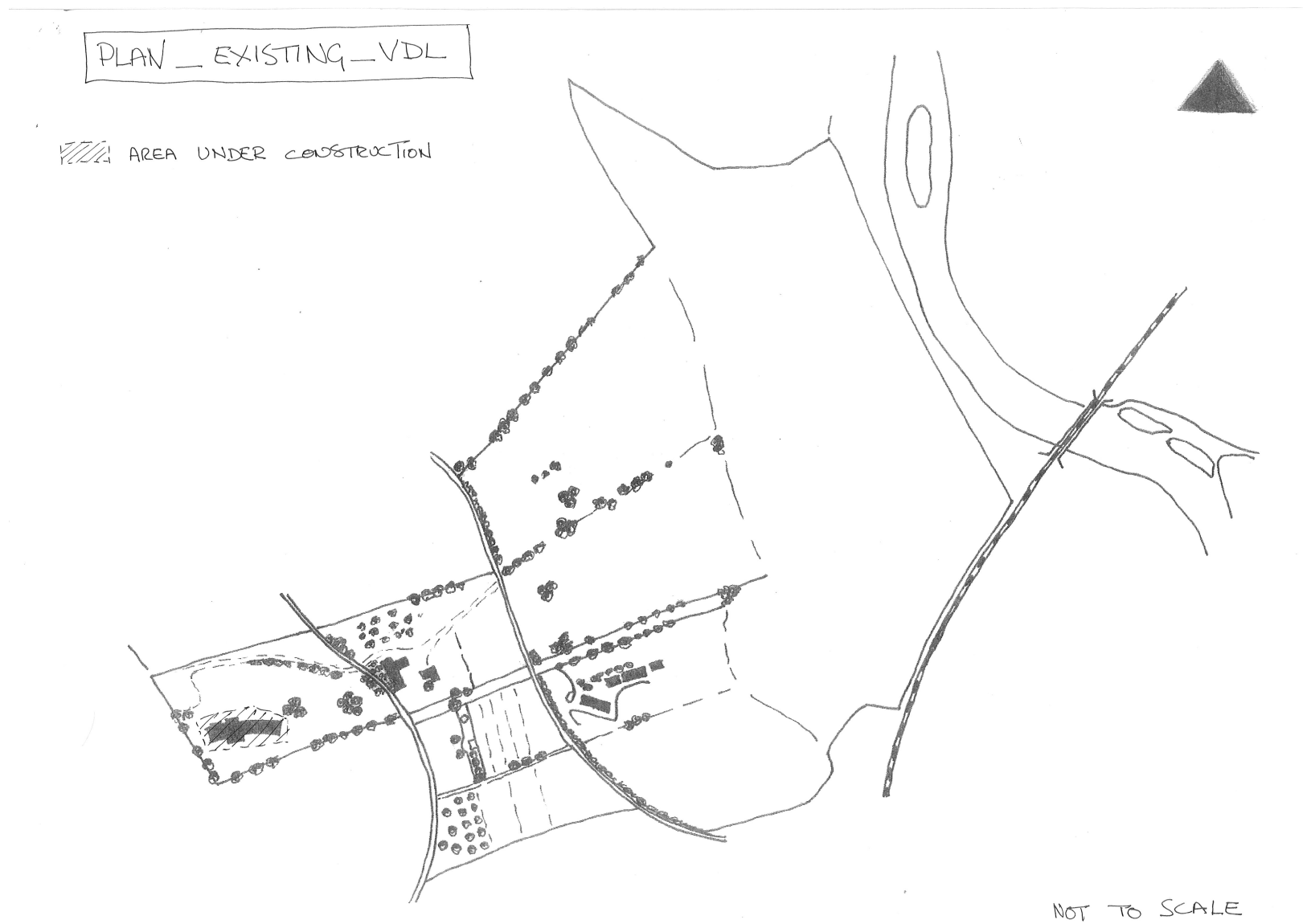
Energy. At the moment energy comes from off site in the form of the electric grid, and bottled propane.

Soils are fairly rich alluvial calcareous soils though satellite photographs indicate some salting in the areas closest to the river (and poor tree health elsewhere on the site might indicate that salting is more widespread). This particular area would have originally been salt marsh but for many decades the land has been drained to grow rice and other cereal crops. The water table here is high.

Vegetation is fairly sparse on the whole of the site as the land usage has been largely arable. The vegetation is concentrated on field boundaries or in small orchards (figs and citrus). Apart from the orchards the trees include almond, carob and olive. By the road ditch cutting through the middle of the site there is a thick hedge of canes.

Water is plentiful on the site and comes from three sources. An irrigation canal (for the rights to which the owners pay an annual charge) brings water to the site from the dam at Bravura. An old gravity fed system of sluices and drainage channels would have taken water to all of the site below the canal. The high ground above this point has no natural water and the house will be connected to the municipal supply.. In addition there are two wells with tanks, one of which is in full working order, with both manual and automatic lifting gear. The tank is currently being used as a swimming pool. Public water is connected to the kitchen, toilets and showers at the Camp site.

Rainfall is low at approximately 500 - 600mm per annum.



Pollution from neighbouring properties is not too big a problem as there is no major cultivation on the boundaries excepting perhaps a medium size citrus orchard (spray drift) adjacent to the site of the proposed new building. There are major fish farms on the opposite bank of the river so there is a possibility of accidental pollution of the river if their environmental controls should break down.

Erosion is slight as the inclination of the site is small. Flooding however could be a problem.

Incidence of frost is slight due to the proximity of the sea, (though not unknown), and more likely in the lower lying areas by the river.

Winds tend to come in off the sea in the summer months, though there will be more northerly winds in the winter.

Fire risk is fairly minimal as the surrounding land is highly cultivated with no large areas of forest or scrub.

Legal Constraints. As well as the normal Planning restrictions there will be others to do with the proximity of a major water course and an area of environmental significance. Additionally, a 20 meter strip of land virtually bisecting the site is in other ownership. Access to this area should be restricted by providing alternative routes from one part of the site to the other.

Onsite resources include one large new house (under construction) as well as a well equipped campsite for visitor accommodation complete with solar water heating. An existing old irrigation system could be restored to provide water from the canal to the lower part of the site. One well has been restored and water can be pumped automatically or lifted using the traditional Nora. The tanque here has been converted into a filtered swimming pool. There is a second well that could also be restored, with its associated tanque, to provide additional water

resources. There are a number of old houses and barns on site, as well as old fruit trees in need of attention. On the edge of main access road there is an abundance of canes and there are many rocks and stones on site for small building projects. Finance is available for development.

Offsite resources. These include the proximity of the coast and the fine sandy beaches by the Alvor estuary. There are excellent roads and railway access and 2 major towns with all normal facilities within 10 km. A number of interesting organisations, such as "A Rocha" specialising in wetland conservation, exist in the immediate area. There are a number of likeminded people in this part of the Algarve. Friendly neighbours are available for advice and labour, as well as a large agricultural holding which can supply the larger machinery and manures. A local horse riding establishment could also be a source of manure for the site. Good garden and building centres exist within only a few kilometers of the site.



VDL Clients Brief

Assignment and background

During the design phase of the house, clients felt a need for an overall landscape design to connect different parts and functions of VDL. The expectation of the clients is that the design principles of Permaculture would provide a more satisfying future vision than a conventional project, hence Perma-D was consulted.

The basic brief is to

"Develop an Outline Design for Quinta do Vale da Lama reflecting the owner's commitment to environment & community. After initial investments, the site needs to be self sustaining."

Client requirements

The following elements need to be included in the design:

- Retrofit solutions for the house: prepare possibilities for more sustainable solutions during construction for later implementation.
- Outline design for a garden in front of the house to make it a green, delightful place immediately after construction.
- Improvements to existing camp site, main requirement: providing shade.

All proposals need to be maintenance friendly.

The purpose of an Outline Design

An Outline Design is made to study various paths for further development of a site. By exploring the "whole picture", designers can help their clients in several ways:

By exploring future possibilities in rough outline at an early stage, possibilities & relations can be found that were not discovered yet. In this way, the final result will be richer in all senses while at the same time saving money on unwanted detail. Working from an overall picture facilitates prioritising at all stages of implementation.

Solutions for implementation can be designed in such a way that future options are not blocked.

Due to various reasons, most projects are "chunked" during their implementation. By starting from an overall picture, decisions on details can be made without losing the overall objectives.

An Outline Design should have just enough detail for decision making. Too much detail would blur the overall picture. Putting effort in later abandoned solutions is a waste of money & time.

The Perma-D approach

A permaculture design is made with implementation in mind. As it is recognised that everything is constantly adapting (changing), the main aim of a permaculture design is giving the people who will be involved in implementation tools and methods to structure their permaculture development. For that reason, we start with a short introduction on permaculture design.

By doing an observation of the current situation examining its positive points and opportunities for improvement, we create a basis for a three-step proposal to develop VDL's full potential over the years.

We think that VDL has far more potential than being self sustaining having its current functions in mind. For this reason, some examples are worked out in more detail to illustrate ways in which future developments can be induced and financed building on existing infrastructure.

As the Outline Design is just the beginning of an ongoing process of design and implementation, we propose some options for next steps in the final discussion.

About Permaculture

Definition

Permaculture is a word coined by pioneer Bill Mollison to describe a design system that can be used to create sustainable human habitat in harmony with nature. The word itself derives from both Permanent Agriculture and Permanent Culture.

One significant difference between Permaculture and other design systems is that Permaculture design is firmly based on the 3 ethics of: Earth Care, People Care and Surplus Share (and limits to consumption) and is governed by a set of Design Principles.

It is an energy efficient system, which can enable mankind to supply their many needs in a highly intensive form, whilst releasing many areas of this planet for natural regeneration. Permaculture not only covers usage of natural resources, but can be applied to all areas of human interest such as Human Interaction, Resources and Technologies, Economy and Water, as well as Food and Health (see figure Permaculture definition).

Design

A Permaculture Design is based on basic principles derived from careful observation of natural processes. As each situation is different, a Permaculture design will rather be a vision on how a given situation can evolve over time than a precooked solution (see figure Design Guidelines).

Terminology

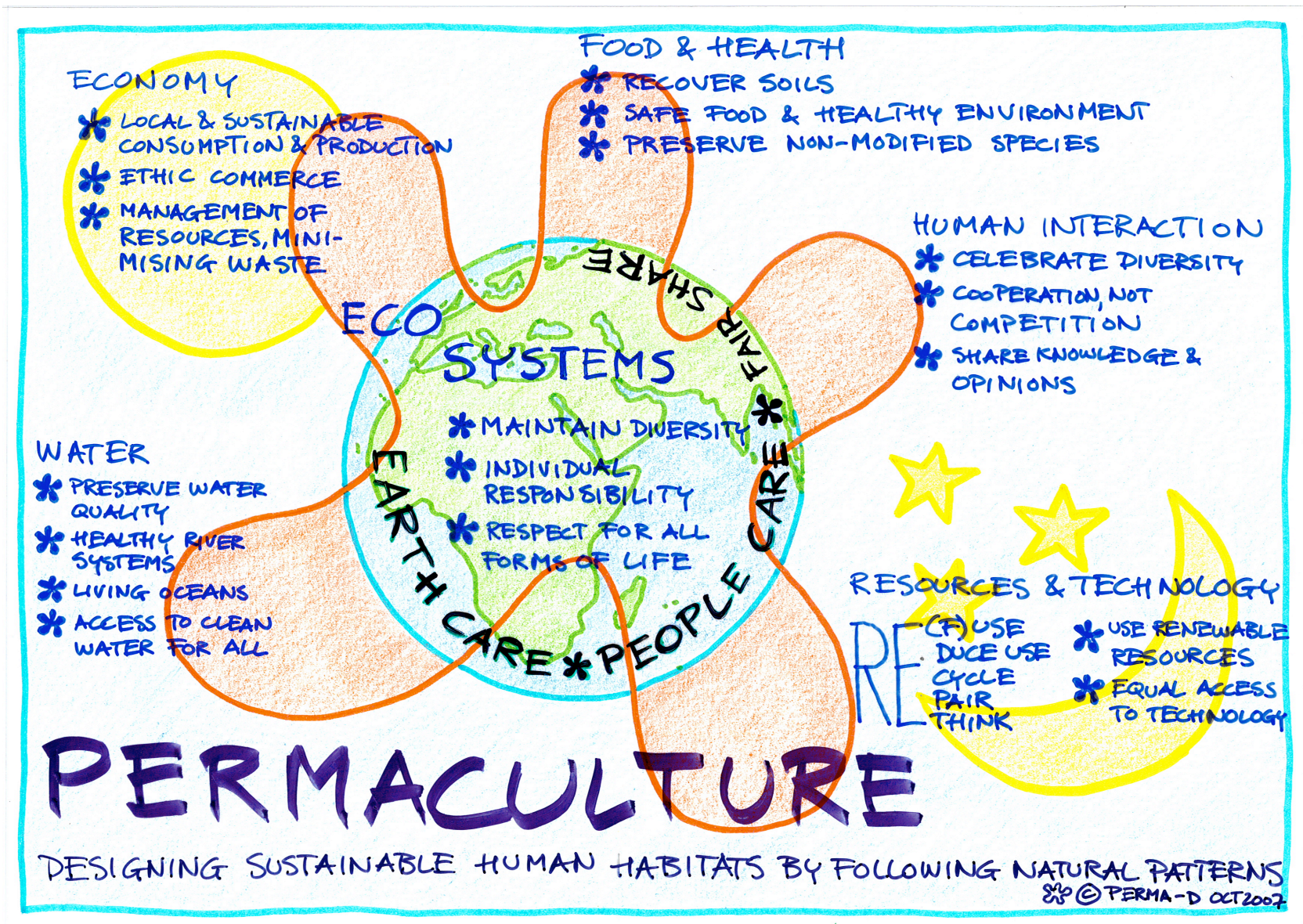
In this report we use some specific terms. A glossary is included at the end of this report to explain them. The following terms are vital to the understanding of the Outline Design:

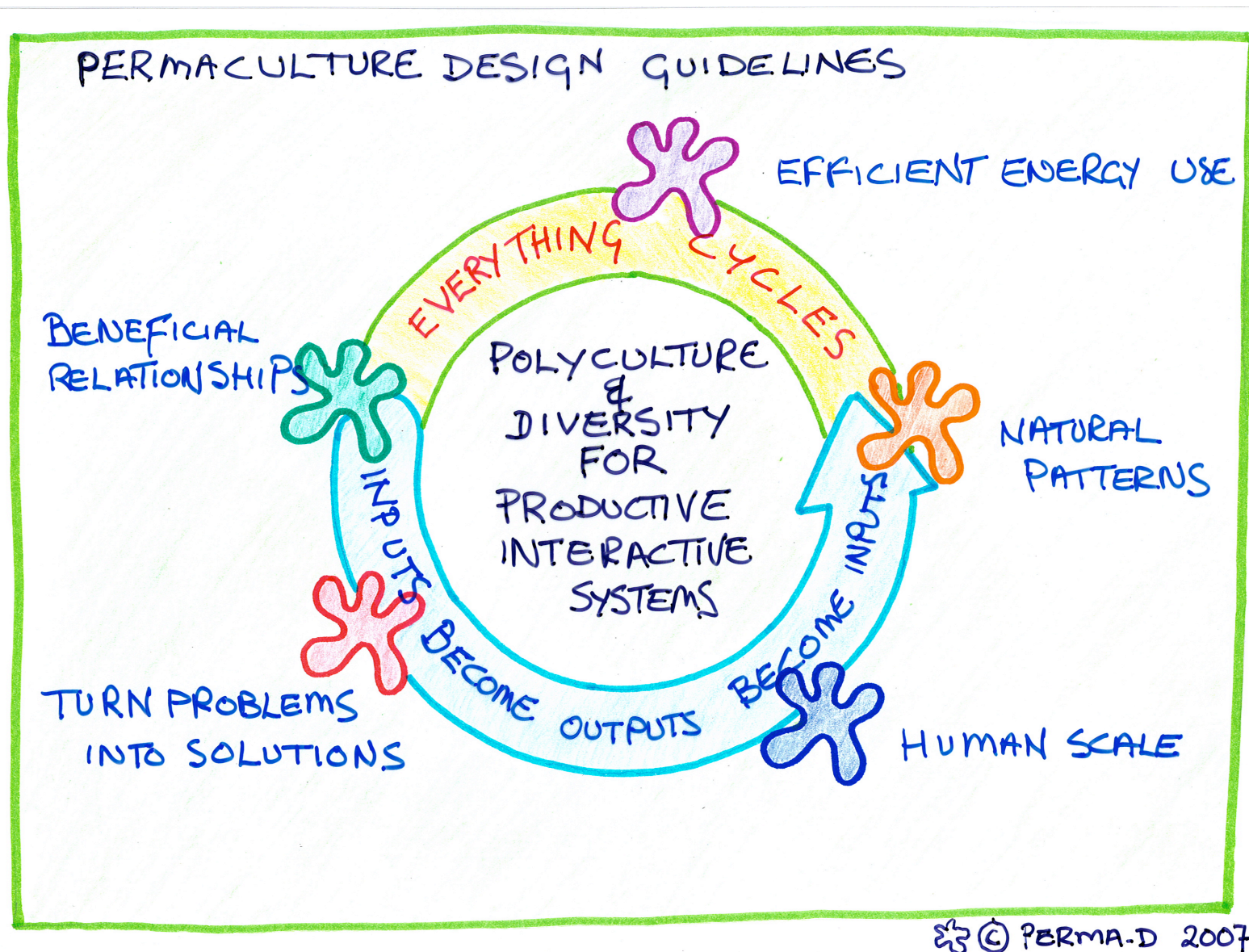
Zoning is a tool which governs the management of energies within the site, and in Permaculture design each project may consist of up to 6 zones (0-5) with zone zero representing the centre of activity. Zone 1, closest to the centre, is then the area

requiring most attention, with each successive zone requiring less up to zone 5 which requires no attention at all.

Sectors govern the energies which originate off site and that might require site modification to control the effects on site, such as wind, sun, water, visitors etc.

Definition, application areas & design guidelines of Permaculture are illustrated on the next pages.





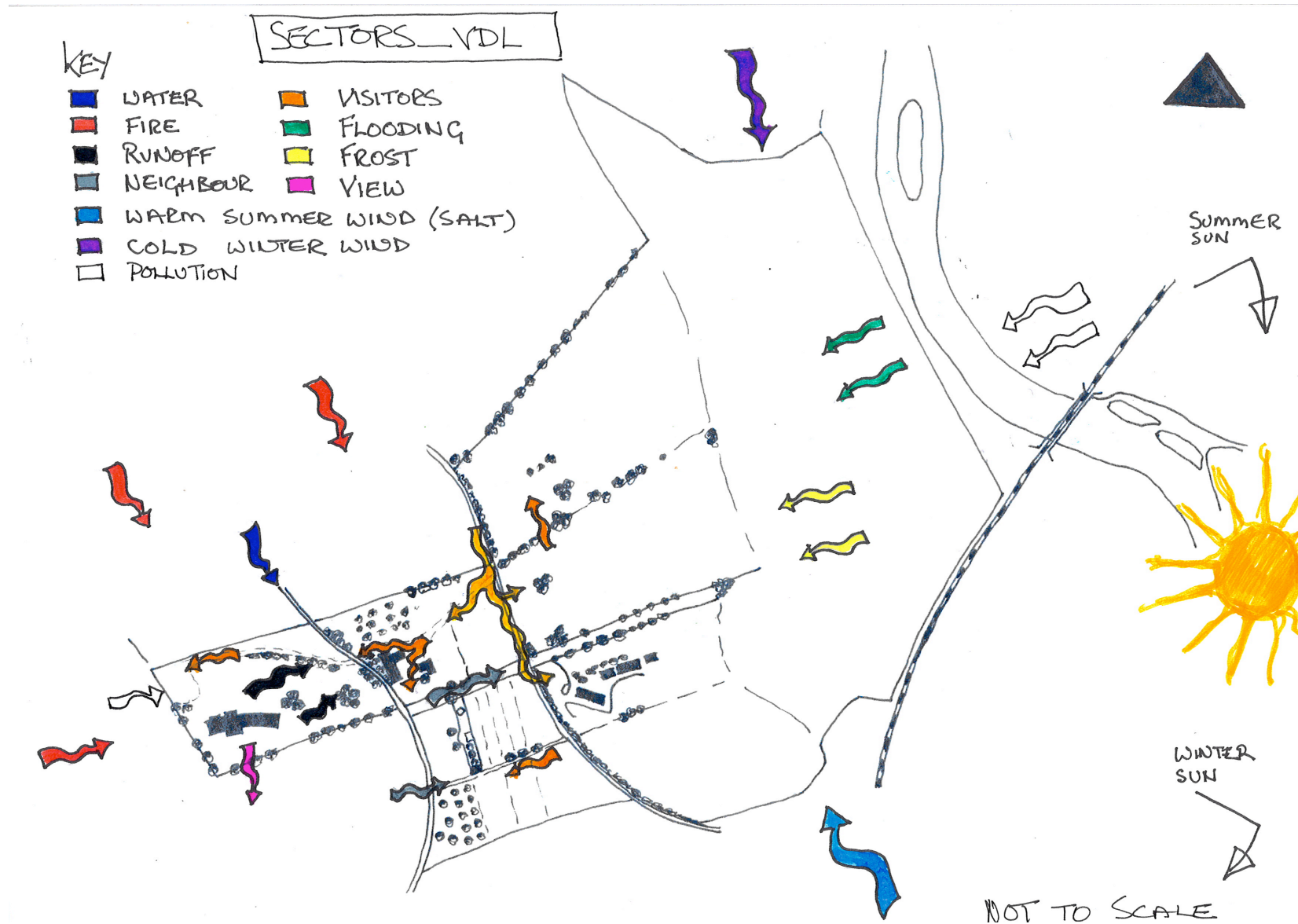
Site observations from a Permaculture Perspective

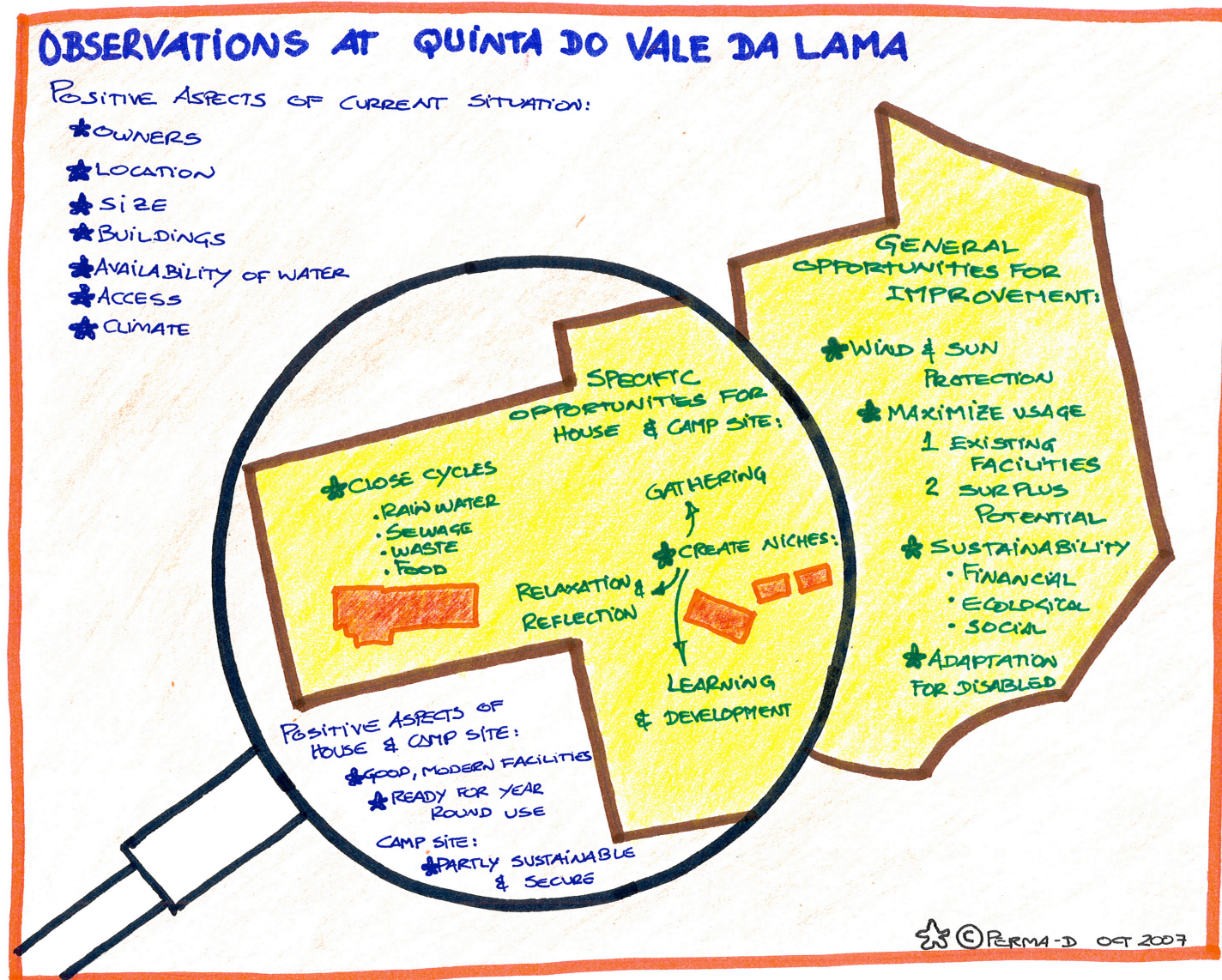
At the moment VDL comprises of three separate areas of Zone 0 status: the new house currently under construction, the camp site (in summer use for the months of July and August only) and the ruins of the old farm house complex. In addition there exists zone 2 (intensive agriculture) and zone 3 (field or more extensive agriculture), both of which are in a neglected state after some years of non use.

The conditions on site present the opportunity of maximising the use and output of existing structures and resources, with the potential (using a carefully phased strategy) to develop the currently under utilised portions of the site. More detailing of the positive aspects and opportunities presented by this site can be seen on the following drawing.

On the next page, a map is included with all important sector information (Sectors_VDL)

An overview of positive points and opportunities for improvement can be found after this figure (Observations at Quinta do Vale da Lama).





Outline Design Proposal

Rolling Permaculture

One of the main design requirements for the Outline Design proposal is that the site will be self-financing after initial investment. To achieve this, we propose to apply a "Rolling Permaculture" strategy. This is a strategy that allows for organic growth and adaptation. One or more nuclei are chosen as a starting point for implementation of Permaculture solutions. In this way, the site can be developed step by step, every next step being generated from the benefits of the preceding one. Next to the financial advantages, the advantage of this strategy is that, from the growing experience & insight, better solutions can be developed over time.

For a rolling Permaculture approach to be successful, it should start from an overall vision on functions and placements of elements within the whole site.

Quinta do Vale da Lama Centre for Change

In our view, VDL has the potential to grow out as a "Centre for Change", a demonstration, activity and training centre for personal and community development based on Permaculture principles. This is a concept that will be developed over the years. We propose the following steps:

Step 1: Maximise use of current accommodation structures

The camp site is up and running and underused. An ideal first nucleus to start from. The primary goal then would be to design all elements needed to accomplish full time occupation. This would provide part of the financial basis for further development. When the construction of the house is finished, its functions need to be exploited to support this strategy.

The camp site is not publicly accessible. In order to increase its usage, multiple days activities and events need to be planned. By choosing activities that fit into the centre for change vision,

connections with user groups can be established that have a potential to grow into long term relationships.

Step 2: Closing cycles and increase level of activity

The more activity is going on at VDL and the more its function is growing as a demonstration centre, the more important it is to close energy, water, food and waste cycles. There are more than financial and logistic reasons to design site and activity development hand in hand: By setting up activities with a participative approach, hands-on learning experiences can be used to accomplish site improvements. This will save costs while at the same time enriching learning.

In this phase, all major landscaping will be done. Somewhere during this development process, there will be a need for full time workers in the areas of agriculture/landscaping and hosting/activity administration. Permanent presence of at least one person will be feasible and required by then. People involved at this stage should be good developers.

As the quantity of visitors and participants will grow, and activities do not necessarily have connection with the existing accommodation structures anymore, the necessity will grow to start developing another nucleus for visitors and participants that do not stay on site. The area of the old farmhouse seems to be very suitable for this.

Step 3: VDL Centre for Change: Maintenance and possible spin-offs.

There will come a time when VDL has become fully "Permaculturised": major landscaping is done, cycles are closed, and the full potential is reached on an activity and occupation level. Self sufficiency levels are high in many senses. By this time, the focus will shift from development towards constantly monitoring of and experimenting with new concepts and ideas. People involved at this stage will be good scouts, content providers and/or "concept transformers": able to "translate"

concepts into learning strategies, easy applicable methods and solutions.

There will be such a wealth of experience and knowledge accumulated over time, that VDL can act as a model for similar developments elsewhere.

Possible activities to be developed

Just to give you some idea of the kind of activities that could be developed to give shape to the "Centre of Change" concept, we made a mind map (Centre for Change).

We propose to prioritise activities that will require accommodation and do not need investment in further infrastructure. An example of such an activity would be a camp for bird watchers during bird migration in autumn and spring. Most attractive are activities that next to meeting these requirements contribute to site development. An example of such an activity is a tree planting workshop. More ideas on activities to be developed in early and later stages can be found in the annex

Quinta do Vale da Lama Master Plan

Translated into zones, we propose to structure the site in the following way (Figure Proposed Zones_VDL):

Zones 0, centres of activity: The three nuclei, house, camp site buildings and farm house.

Zones 1, areas requiring frequent attention: The areas surrounding the house, the camp site buildings and the farm house.

Zone 2, horticultural area: the orchards and the terraced areas close to the farm house.

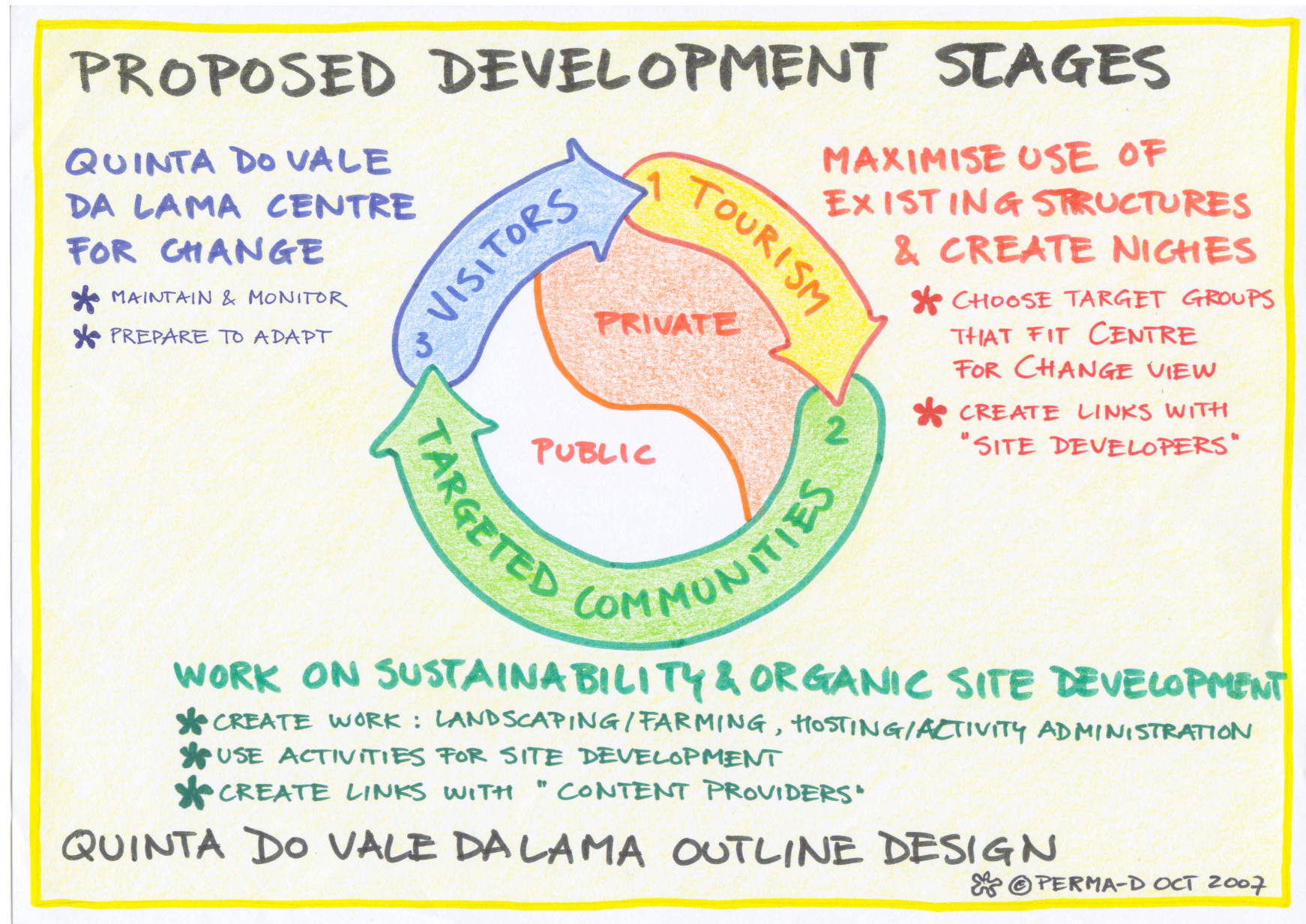
Zone 3, extensive, field scale agriculture: Part of the arable land next to the camp site.

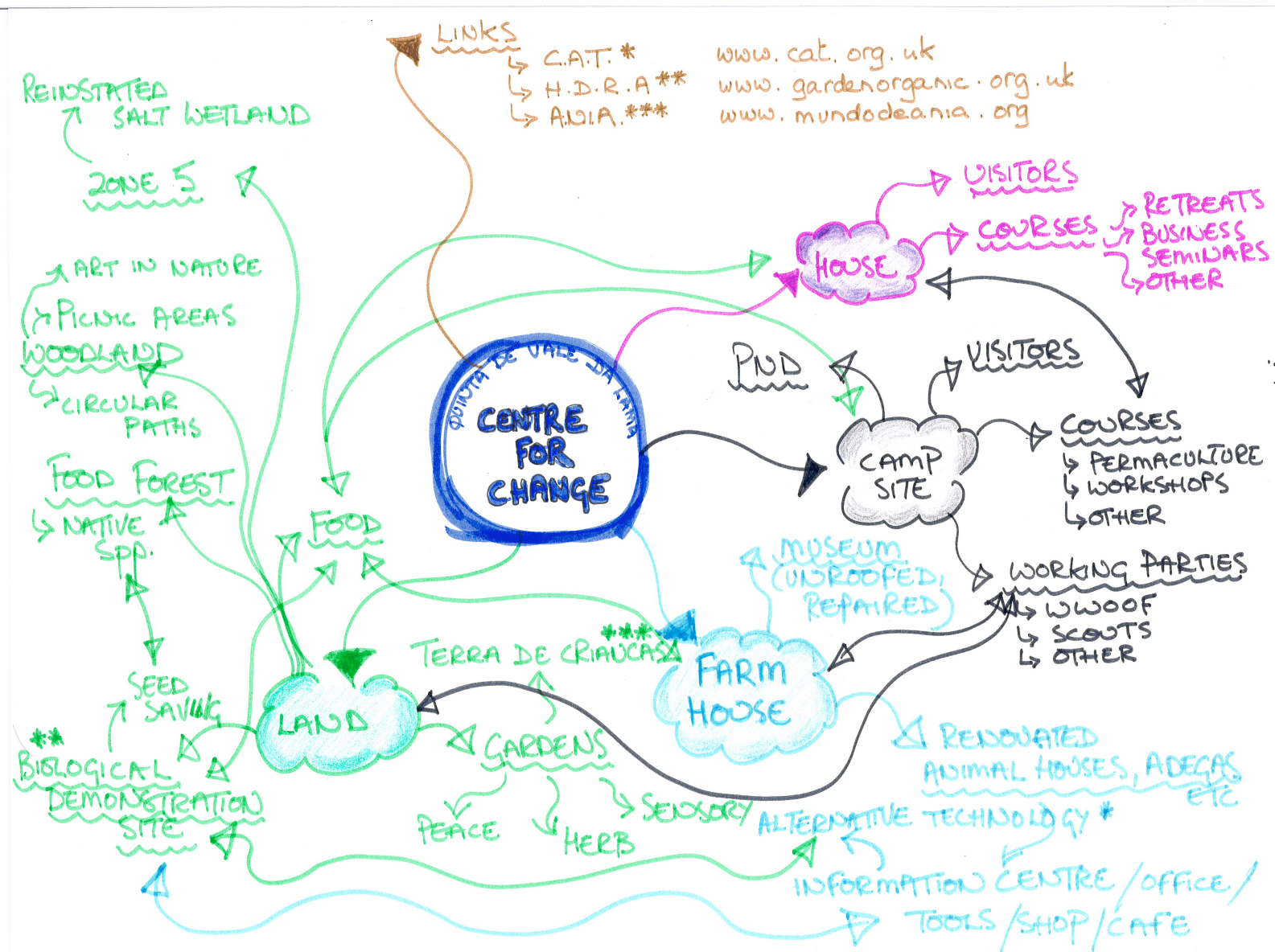
Zone 4, managed woodland: Two main areas immediately below the house, the other bordering the wetland.

Zone 5, wilderness: The wetland area.

In the base map (Overall Plan of Outline Design Proposals), we propose possible functions and its location. The first areas to be developed are around the house (B) and the camp site (J).

The figures on the next pages illustrate the "Centre for Change" idea and show proposed zoning & possible functions.





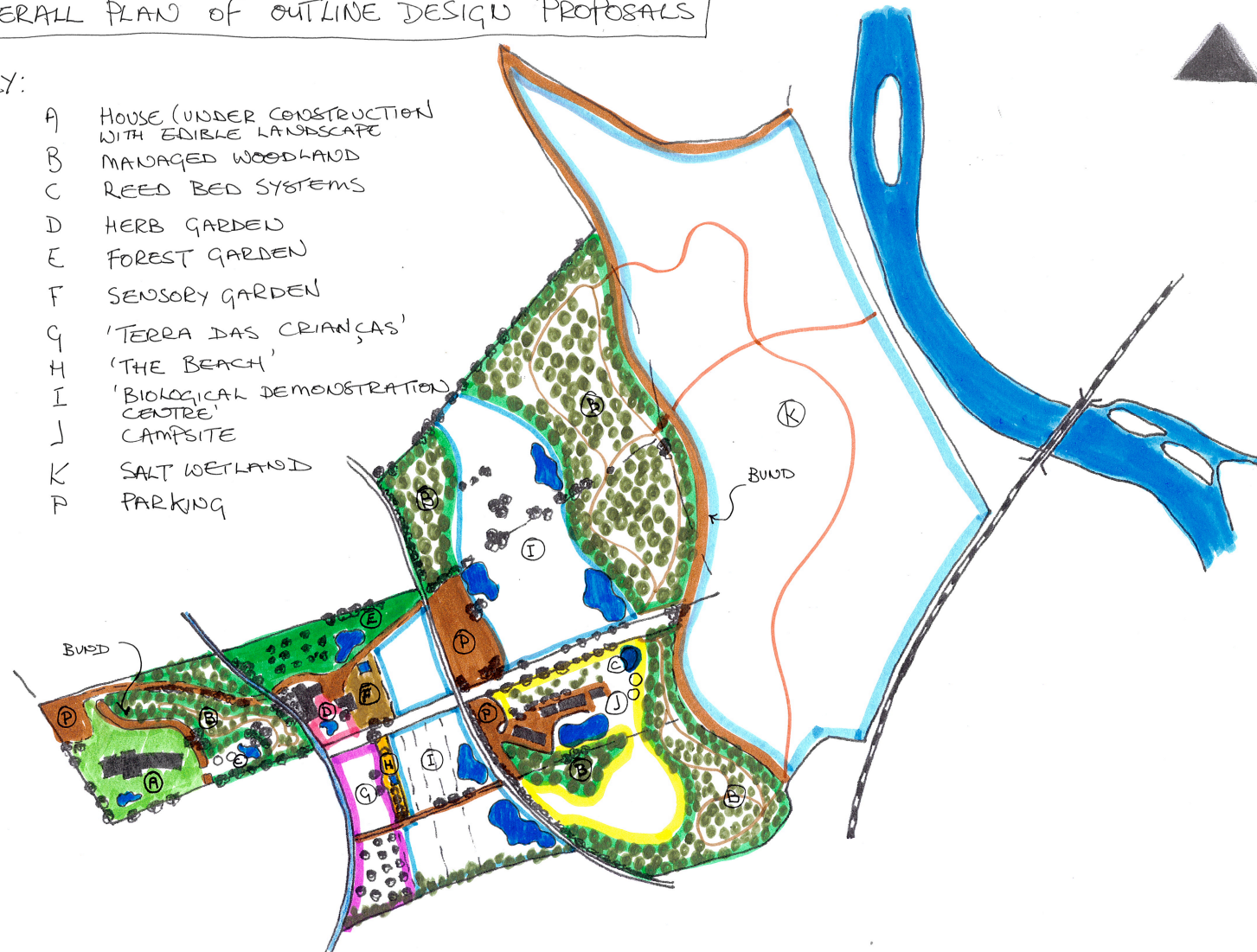


Presented on October 4th, 2007 in Odiáxere at Quinta do Vale da Lama - See details in Annex

OVERALL PLAN OF OUTLINE DESIGN PROPOSALS

KEY:

- A HOUSE (UNDER CONSTRUCTION WITH EDIBLE LANDSCAPE)
- B MANAGED WOODLAND
- C REED BED SYSTEMS
- D HERB GARDEN
- E FOREST GARDEN
- F SENSORY GARDEN
- G 'TERRA DAS CRIANÇAS'
- H 'THE BEACH'
- I 'BIOLOGICAL DEMONSTRATION CENTRE'
- J CAMPSITE
- K SALT WETLAND
- P PARKING



NOT TO SCALE

Camp site

Shade for the camping area

In the hot summer months experienced in the Algarve shade will be an important element in the overall design for VDL. This can be provided largely using biological resources, such as tree planting, building pergolas and similar structures for supporting climbing plants such as grape, passion fruit, kiwi etc.

However, one urgent priority is to provide shade for the camp site by the summer of 2008. Trees will be planted to provide shade in years to come, whilst simple temporary shade structures can be erected over the tent site to provide shade for the coming season. Illustrations of some ideas for temporary structures follow (Temporary Shading Systems and Shade Structures).

The proposed ideas can also be used on other locations in a later stage.

Maximise use

There are several ways to maximise use of the camp site. One way is to facilitate year round occupation. Based on the ideas on activities that will generate lodging, multiple function elements can be designed to promote gathering, learning and development for a wide range of future users.

Another way is to accommodate several groups of users at the same time. This would require some adaptations as to duplicate sanitary and kitchen facilities and to provide privacy. An idea to do this in a very simple way is to establish a full function scout camp in cooperation with local scout groups. An additional advantage of this approach would be the demonstration value of another level of comfort, entirely made with organic materials.

Workshops can be set up which will lead to the installation of comfortable, temporary structures, such as yurts and straw bale

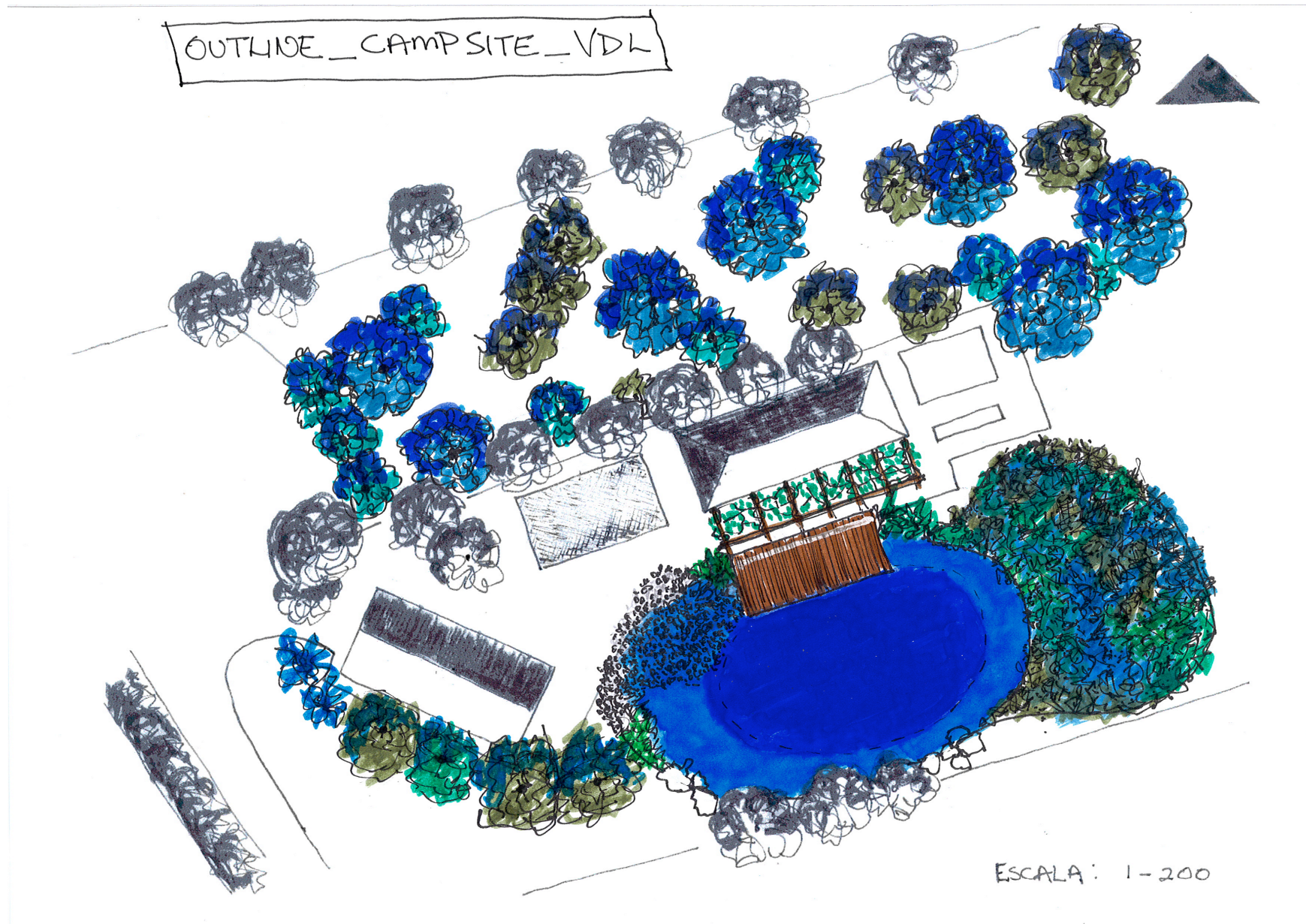
cabins, which will add to the accommodation stock (see figure Temporary Structures in Annex).

Woodland area

We included a woodland area in the camp site that serves many purposes. It protects camp site users from possible strong sea winds, it will provide the children participating in the Projecto Novas Descobertas and other user groups with innumerable possibilities to learn in and from nature, it provides shade for activities and relaxation and the planting can be used to provide for privacy between separate groups. On top of this, the fruits from the trees can be eaten.

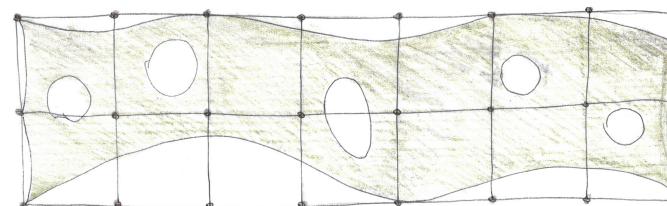
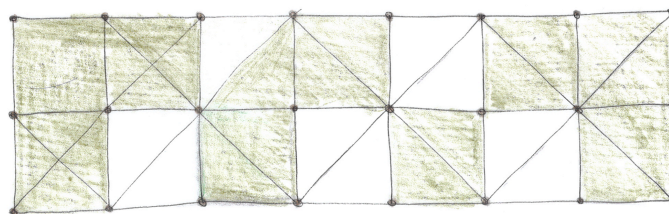
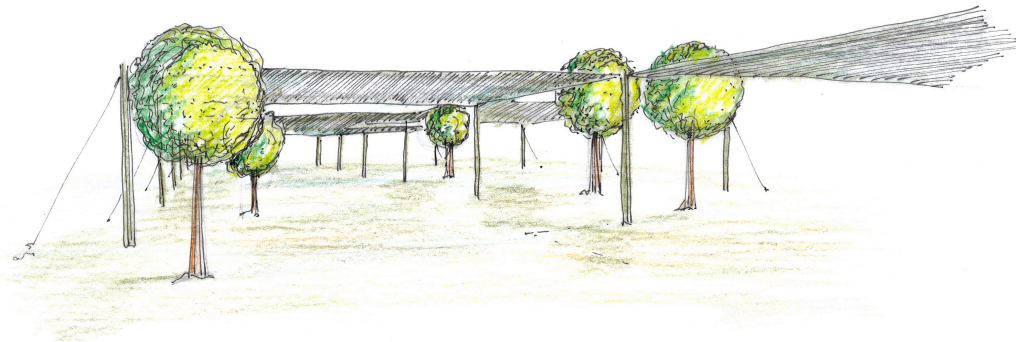
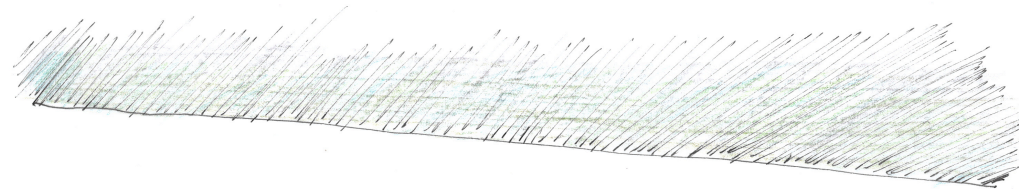
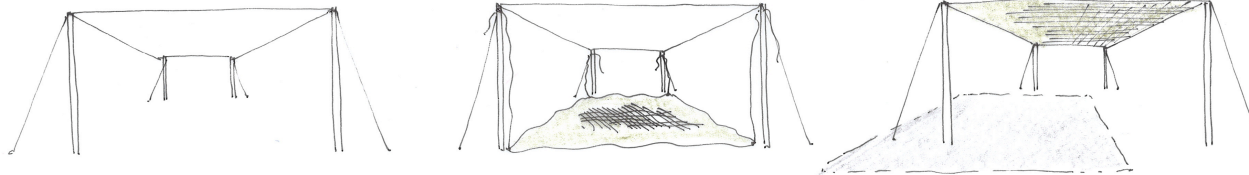
At a later stage, a natural swimming pool will be added to serve a recreational and educational function at the same time (See figure Outline_Campsite_VDL).

Good protected car parking is already available.



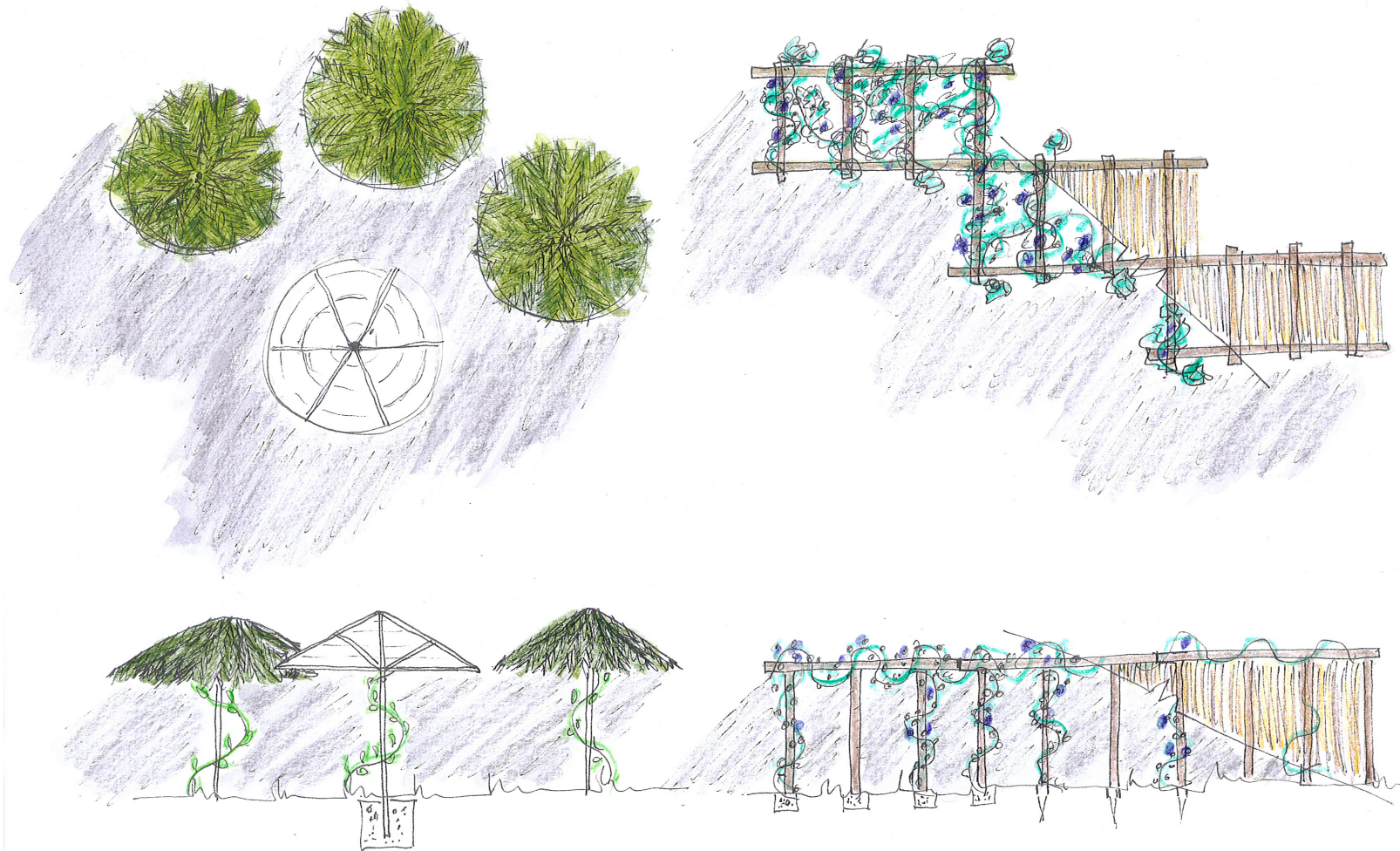
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TEMPORARY SHADING SYSTEMS



* © PERMA-D Oct 2007

SHADE STRUCTURES



*© PERMAD 2007

House

Retrofit

The construction of the house has already started. It will need a retrofit in terms of water and energy management. At this stage, the only priority is to think of adaptations that need to be made during construction. Except from the soil movement that has already been done, nothing specific can be done at this stage.

Edible Landscape and Managed Woodland

Many edible plants are very attractive in their own right and in accordance with one of the Permaculture principles, that each element should fulfill multiple functions, it is proposed to create the garden at the new house as an Edible Landscape. The many and varied edible plants available can be used in combination to provide a dramatic and sculptural vista from the house. A plants list on species to use is included as an annex.

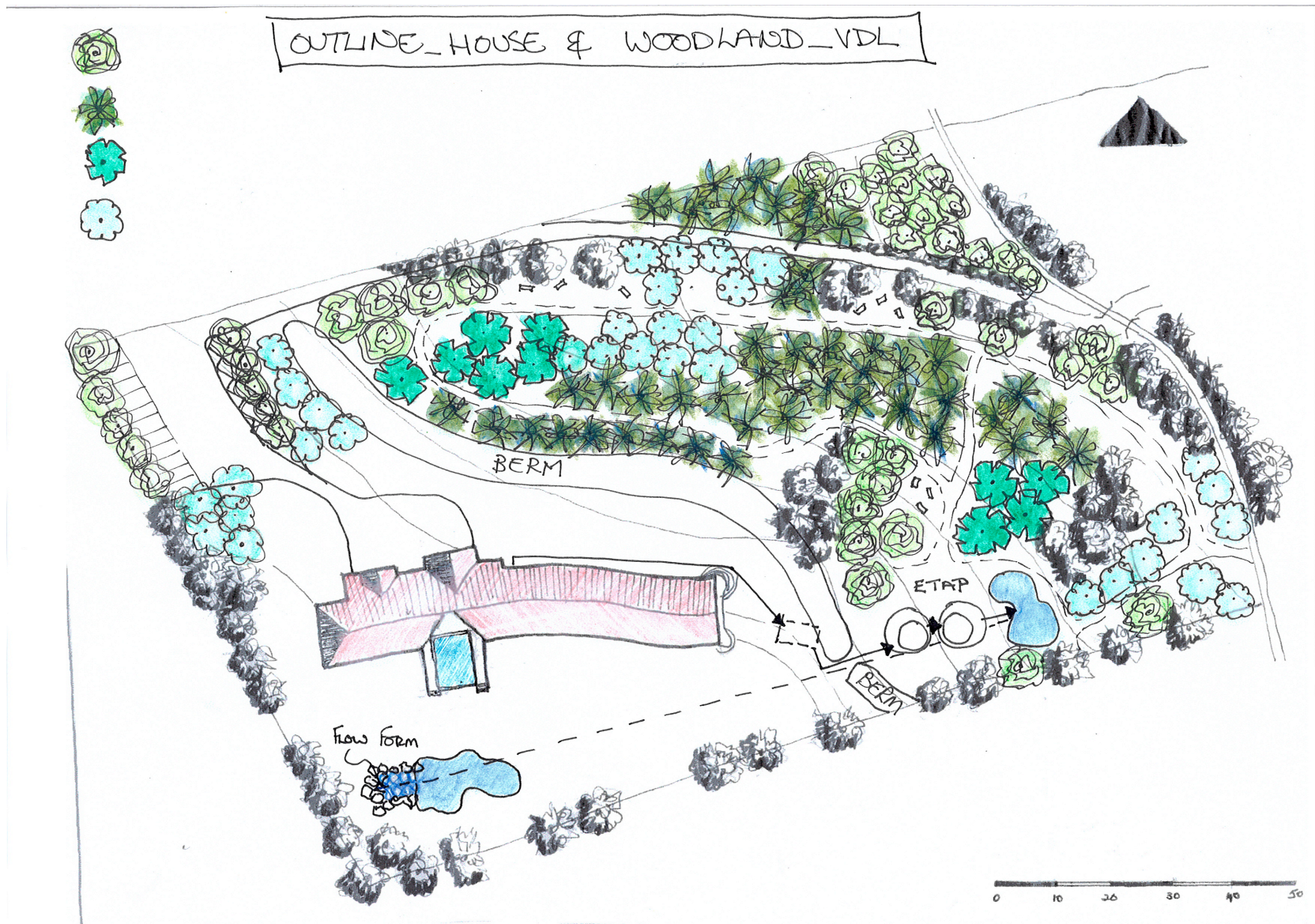
A managed woodland with a circular walk, picnic areas and glades will serve as a refreshing recreational area (see Outline_House & Woodland_VDL). Both in the edible landscape and the managed woodland, niches for relaxation and reflection will add to the comfort and well being of the entire household. Examples are a viewpoint overlooking the sea and a soothing water feature including a flow form and pond, as the last stage of the reed bed water treatment system for the house. a pond with flow forms (see figure).

As soon as possible after the construction of the house is finished, the edible landscape will be established at the south facing side of the house.

With the development of the visitor centre at a later stage in mind, we propose to use the excavated earth to build a bund to the east of the house site to ensure privacy. From this point of view, the possibility of changing the access to the house from the

road that leads to the camp site to western side of the property is a bonus. Whatever the access however, the house will remain secluded and peaceful. In either case, car parking will be in front of the main house entrance in the north west corner.





Proposed Visitor Centre and surrounding functions

Visitor centre and zone 2

In the third stage of the development of VDL it is proposed to create a visitor centre around the area of the old farmhouse. The animal housing in this area would be renovated to provide tools storage facilities, staff room, toilets (dry?), an office and shop. The workers cottage and adjacent area would be renovated as a cafe for visitors, staff and volunteers. In this area too there will be two themed gardens, a Herb Garden by the old farm house and a Sensory Garden below the cafe area.

Most of the terraced area on this side of the road will provide the basis for the Biological Demonstration Centre, which will demonstrate and experiment with many different horticultural techniques. Above "The Beach," the Zone 2 area is to be dedicated to "Terra das Crianças" (see annex). To the north of the farmhouse will be a Forest Garden hosting a collection of traditional native fruit trees.

Zone 3

Across the road, beyond the large car parking area (capable of accommodating coaches) will be an extension of the Biological Demonstration Centre, where various experiments in the growing of field crops can be undertaken.

Zone 4

Zone 4 will be managed woodland, and will include species providing edible fruit and nut crops. It will be managed both for its produce and as an amenity for the whole site, with its glades, picnic areas and circular woodland walks. In addition it will provide an educational resource for its users.

Restoring wetland as zone 5

The proposal here is to restore the estuarine salt wetland, encouraging biodiversity, providing an educational resource and

creating an area of wilderness. Once established there will be no management of this zone.

Restricted access to this area will be provided by the construction of a wooden causeway which will also give access to the river bank. Before beginning to implement this part of the design we propose to consult with "A Rocha", or similar experts in the field of estuarine ecology, as to the correct way to initiate the regeneration.

Closing cycles: Management of resources

Next to energy efficiency and financial savings, one of the main reasons to work on closing cycles is to assure that we do not produce waste contaminating soil or water. Some basic explanations on possible water, energy and soil strategies are included in the annex. They can serve as ingredients for detail in later stages of the design process.

Future Projects

Projects that could be tackled at a point when major site development is underway are as follows:

Creation of a museum of rural traditions using the basic structure of the old farm house. The roof would be removed and the walls repaired. A large shade structure could be constructed (see shade structures) to cover the whole like a marquee with the interior being laid out as an old farmhouse from a century ago. Outside old farm equipment would complete the display. Together with the Demonstration centre, this museum could provide a draw for daily visitors.

The addition of a shop and cafe associated with the old farm house site could provide work and income within the project as a whole. Such a visitor attraction may well draw people not familiar with the Permaculture concepts and act as an introduction to the main activities of VDL.

A project involving schools with the accent on Art in Nature. This should involve young people of all ages and could attract funding. More temporary structures. Workshops could be set up for building straw bale chalets, Yurts and teepees which, in addition to instructing the participants, will provide additional comfortable accommodation on the camp site (see annex)



Land art in the woodland

Conclusion and next proposed step

This report has concentrated on the clients' main priorities as far as possible. These include some retrofit suggestions as regards to the new building in the areas of rainwater collection and waste management. It also includes an outline shading strategy to prepare the campsite for the season of 2008.

The development of the camp site is discussed in more detail to make proposals for the maximising of this valuable existing resource.

In addition, it sketches some outlines for the development of the site as whole, including both draft design and associated financial strategies, in accordance with the clients request that the site should benefit the community as a whole and also should be self maintaining. The three phases blend naturally with each other to provide a vision of a unified but diverse whole.

The Next Step

The next step, after client agreement on the general principles as outlined in the report, would be to produce a detailed design for the priority areas. Implementation of this phase of the design would follow immediately, particularly any proposals to begin tree planting on the site.

Glossary

Sustainable	When applied to a process or action: Not requiring external input while at the same time not producing inorganic output. We avoid using this term because it is a concept that has too many different meanings.	Mind map	A drawing method to “grab” the essence of information in a glance by showing key issues and the relation between them. By adding shapes, colour, figures and drawings, the speed and quality of understanding can be improved dramatically.
Permaculture	This is a term coined by Bill Mollison to describe a system of design for sustainable human habitats.	Edible Landscape	Edible landscaping is a technique of growing vegetable crops together with ornamentals.
Rolling permaculture	In cases where it is not feasible to implement a full Permaculture design at one time, it may be possible to start by implementing Permaculture on one part of the site (say 10%). After a period another 10 or 15% can be added to the original area and so on. Eventually the entire site will have been converted.	Edge	Known also as an ecotone, edge is a zone between two adjacent areas and is particularly rich in species
Zones	Zones govern the onsite energies and are numbered from 0-5 to indicate levels of intervention required with most attention needed for the areas with the lower numbers.	Forest Garden	This is a garden whose design mimics that of a natural forest, with a minimum of 8 different layers. Unlike the natural forest a forest garden consists solely of species directly useful to man.
Sectors	Sectors govern offsite energies that originate off and pass through the site, such as wind, fire, sun etc	Keyhole bed	Semicircular planting zones around circular access areas, which in turn lead off the main pathway, creating more edge.
Stacking	This involves the growing of species on many different levels and is a technique employed in the creation of Forest Gardens.	Retrofit	To modify some element at a later to enable it to function more effectively.
Flow form	A series of water basins constructed in such a way that the water flowing through them is optimally oxygenated. Besides this functional aspect, flow forms have an attractive aesthetic & relaxational element.		
Input/Output analysis	A tool to examine all inputs and outputs of a given system with the purpose of closing cycles.		
Eco system	A system formed by the interaction of a community of organisms with their environment		

Plataforma Perma-D

Plataforma Perma-D is a personal initiative of 4 enthusiastic permaculture designers. We feel we can deliver better PERMA-Designs by combining our individual skills & mindsets. As Permaculture is very much about sharing & building community, we want to encourage participation of others who want to make their personal life more sustainable.

The authors of this Perma-D report are:

Jorge Crespo – Permaculture Designer, Perma-D energy expert, has buried himself in the Alentejo countryside near Mora to reinvent himself as post industrial man.

Candida Loureiro – Permaculture Designer and Therapist, represents our city branch, living as she does in the capital Lisbon.

Lesley Martin - Permaculture teacher and Designer, lives in a mud hut in the middle of nowhere (quite near Monchique actually) with her partner and a small black dog. She makes very good soap.

Annelieke van der Sluijs – Permaculture Designer, has big sheep and makes cheese (and wine and olive oil and preserves....) and lives in the Serra da Estrela.

With guest appearance from Nuno Tourita, who rescued us on the day.

