

## Permaculture

### A taster

based on  
“Permaculture in a Nutshell”  
&  
“The Earth Care Manual”  
by  
Patrick Whitefield  
who runs a Permaculture Design Course

## Perma Culture

- Originally **Permanent Agriculture**
- Now **Permanent Culture**
- Sustainable
- Principle for the whole of life, eg:
  - organic growing (especially no-dig)
  - building
  - town planning
  - water supply & purification

## Permaculture addresses CC & PO

- Fossil fuel use:
  - Climate Change: “should reduce now”
  - Peak Oil: “forced to reduce soon”
  - Permaculture: “here’s how to reduce”
- Rob Hopkins:
  - permaculture designer
  - founder Transition Town Totnes
  - wrote The Transition Handbook
- recommended Transition Initiative criteria

## Permaculture Aims

- Using design to replace:
  - Use of energy
  - Pollution
- Assembling components for max benefit
- Framework for coherent pattern of diverse ‘green’ ideas
- Big picture with detail

## Permaculture Ethics

- Doing what we believe to be right
- Being part of the solution, not problem
- 3 parts:
  - Earth Care
  - People Care
  - Fair Shares

## Ethics: Earth Care

- Enlightened self-interest
- Earth is our home
- Earth depends on diversity
- Diversity depends on wildlife

## Ethics: People Care

- Intelligent design rather than:
  - Drudgery of peasant life
  - Fossil fuel intensive modern life
- Addressing human emotions
  - eg. fear and greed, which stand in the way of sustainability
  - communication & listening skills
  - cities which care for human needs

## Ethics: Fair Shares

- Finite Earth
  - Exhausting non-renewable resources.
  - Using renewables faster than renewal rate.
  - Cash economy disconnects from local resources
- Matching consumption to need not greed.
- What makes life worth living?
  - Obsessive consumption of material things?
  - Renewable love & friendship?

## Principles: Wild soil

- No-till:
  - Saves energy.
  - Retains natural fertility.
- Covered soil:
  - Avoids surface compaction by rain.
  - Avoids wind and water erosion.
- Perennials:
  - Avoids tilling.
  - Avoids energy of planting.

## Principles: Diversity

- Web of useful connections.
- Types:
  - Species: polyculture, not monoculture.
  - Genetic: adaptability to climate change, seed banks.
  - Ecological: different niches, avoiding competition.
  - Cultural: multiple sources give security.

## Principles: Multi-dimensional

- Stacking:
  - Multi-layer growing, overall higher yield.
- Succession:
  - Inter-planting/cropping: slow crops with faster ones.
  - Natural sequence:
    - annuals, perennials, shrubs, pioneer trees, mature woodland.
- Edge:
  - Where eco-systems meet is often most productive, eg. Water's edge, woodland edge.

## Principles: Relative location

- Creating a network of beneficial relationships.
- Examples:
  - Waste heat from chickens heating greenhouse.
  - Fruit trees against south facing wall cool it.
  - Growing food near to where it is eaten:
    - less land, less energy-intensive mechanised farming, less processing & additives, less packaging, less transport, less waste food.
    - more control, local composting, fresher.

## Principles: Planning

- Zoning:
  - House, garden, farmland, rough grazing & woodland, wilderness.
- Networking:
  - Flows between centres of human activity, trading.
- Sectoring:
  - Wind, sun, water, pollution, neighbours, views.
- Elevation:
  - Exposure, water storage/flow/drainage, erosion, frost.

## Principles: Input <- output

- Linking
  - Unused outputs are pollution.
  - Using outputs as inputs.
  - More links means less external inputs.
  - Compost can be waste or an input...
- Multiple outputs:
  - Component simultaneously serving multiple functions.
  - Roof gives shelter and water collection.
  - False Acacia tree: attractive, bee fodder, animal grazing, timber, nitrogen fixation.

## Principles: Energy flows

- Embodied energy:
  - The energy used in manufacturing, eg. houses & cars.
- Energy In-use:
  - Home lighting & heating.
  - Domestic petrol use.
- Total life-time energy

## Organic food production choices

- Conventional modern agriculture:
  - uses more energy than it produces.
- Simple peasant agriculture:
  - ten calories produced for one expended.
- Permaculture:
  - middle option
  - minimum input & maximum output
  - basic idea = designing edible eco-systems

## Modern methods v. nature

- Conventional wheat field:
  - 1 productive layer (no stacking)
  - Ploughing, cultivation, seeding, manuring, weed control.
- Forest:
  - Multiple productive stacked layers: high tree canopy, smaller trees, large & small shrubs, herbs, ground layers, below ground plants & climbers
  - Effort?.

## Examples: Forest garden

- Traditional method.
- Sustaining people around the world.
- Fruit trees, bushes, herbs & veg together.
- Plants, animals, insects, fungi, bacteria:
  - Not all competing, but co-operating.
  - Extracting nutrients from their ecological niche.
  - Contributing: pollination, manuring, control of pests, decomposition.

### Examples: Productive conservatory

- Conservatory/greenhouse.
- Attached to south side of house.
- Warms house during the day.
- Warmed by house at night.
- Linking of inputs & outputs
- Zoning, ie. Gardener's Shadow

### Examples: Passive solar houses

- Sectoring: sun & wind.
- Life-time energy calculations:
  - Small additional embodied energy (cost).
  - Much less on-going energy use.
- PassivHaus

### Examples: Transport

- Spatial layout of economy
- Depends on private motor transport (energy)
- Challenge is recreating local communities
- Co-locating activities to reduce need:
  - home, work, education, shopping & entertainment.
- Sharing, delivery services, tele-working?

### Examples: Co-housing

- Private accommodation.
- Shared facilities, more community, less cost
- Web of useful connections.
- More home-working/tele-working.
- Less travel, more shared transport.
- More renewable energy options.
- District heating option.

### Further reading

- "Permaculture in a Nutshell"
  - Patrick Whitefield
- "The Earth Care Manual"
  - Patrick Whitefield
- "Introduction to Permaculture"
  - Bill Mollison & Reny Mia Slay
- Permaculture Magazine
  - <http://www.permaculture.co.uk>
- Permaculture UK forum
  - <http://www.permaculture.org.uk>

### Courses

- Introductory Course:
  - weekend
- Permaculture Design Course:
  - 2 weeks.
  - fast week.
- Land Use Course
  - 10 weeks.