Australia Felix Permaculture

Sustainable Property Design

Education

Project Development

PERMACULTURE DESIGN CERTIFICATE COURSE OUTLINE

PREPARED FOR:

Tony Watkins, Assessor,
The Permaculture Institute,
Sisters Creek, Tasmania, Australia

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Produced by:
Darren J. Doherty
Dip. Pc. Des. (1995)
Cert. Whole Farm Planning (1995)

Australia Felix Permaculture
103-105 CASEY ST. EAST BENDIGO, VICTORIA, AUSTRALIA 3550
PHONE: 613 5444 1068 FAX: 613 5444 0621
INTERNATIONAL MOBILE: 61 418 254 605
EMAIL darren@permaculture.biz
WEB www.permaculture.biz
ABN 65 110 845 209

ALL YOUR LAND NEEDS

contents:

1. INTRODUCTION

In response to the requirements of The Permaculture Institute, Darren Doherty has produced this application document as an outline of his delivery of the 72 hour Permaculture Design Certificate Course (PDC). This application is to gain approval as a Registered Teacher of the PDC by The Permaculture Institute (TPI) as per the criteria listed at http://www.tagari.com/?page_id=18 . This document is also intended for prospective convenors of PDC's where Darren Doherty is invited to be the TPI Registered Teacher, by means of expanding on the course content and usual requirements of convening a course in most situations.

2. PERMACULTURE DESIGN CERTIFICATE COURSE PROGRAM

2.1 Target Audience

Local and regional partner convenors are the best judges of the local market for a PDC. That said we anticipate that targeted participants will primarily be those people working in the Permaculture-aligned industries that have an interest in or are working in sustainable project development. Urban fringe and rural landholders wanting to buffer their properties against the vagaries of climate change and on-going land degradation through drought-proofing, soil renovation and crop diversification are also a likely market. Urban participants wishing to understand, design and develop the more intensive production systems needed in cityscapes are also target, as are students, teachers, professionals and activists wishing to broaden their minds and vocational horizons for the betterment of earth systems and the habitats of humans.

There are no minimum education requirements to attend a PDC, though some previous reading or knowledge, traditional or scholastic, is an advantage. My preference is to limit class sizes to 25 people, with learning, assessment and participatory difficulties faced more often than not where numbers above this are encountered. Certainly the operational cost of catering for larger groups becomes less sustainable. See **4.5 Sample Permaculture Design Certificate Course Profit & Loss** for more information.

2.2 Outcomes

Our clear intention in delivering PDC's is to facilitate to all students the understanding of the design concepts and themes that are Permaculture Design and to provide them with the best opportunity to manifest these into sustained on-ground action as Permaculture Design teachers and/or developers.

Furthermore our intention is to enable future local and regional Permaculture Designers to broaden and strengthen their business opportunities by free access to our pioneering business model which has been very successful and identified as such by many a Permaculture luminary[1] [2].

Participants attending our PDC's will gain the following outcomes/products. The first of these is a minimum requirement of a PDC delivered by a Registered Teacher of TPI. All others are available to accelerate the ability of participants to develop, consult and teach Permaculture Design:

- Demonstrated understanding of Permaculture Design according to the criteria laid out in Permaculture: A Designers Manual[3]
- Basic understanding of Geographic Information Systems (GIS) applications in developing Permaculture Designs
- Provision of Microsoft Excel-based Worksheet package for Client & Project Management, Development and Management processes
- Complete digital photo library catalogued according to subjects
- Base understanding of design and development principles involved with Broadacre Permaculture applications including:
    - Whole Farm Planning/Property Management Planning
    - Land Component identification and classification
    - Earthworks & Soil Renovation techniques and machinery applications
    - Use and development of land system-based standard designs
    - Farm Forestry & Tree Crop ground preparation, management & processing techniques
    - Water Harvesting & Drought-proofing methods and applications

[1] Holmgren, D., *Permaculture Principles & Pathways Beyond Sustainability*, pp. 154Holmgren Design Services, Hepburn, Victoria, Australia, 2002
[2] Vlaun, S., *Seeds of Change E-Newsletter #26*, http://www.seedsofchange.com/enewsletter/issue_26/issue_26.asp#Mollison, 2002
[3] Mollison, B., *Permaculture: A Designers Manual,* Tagari Publications, Tyalgum, NSW, Australia, 1988 (1st Edition)

2. PROPOSED EDUCATION PROGRAM

2.2 Assessment

Assessment of participants will be based upon full attendance of the 72 hour program, and by completion of the group-based major design exercise. Historically failure of the PDC has been by those who have not fulfilled either of these criteria, but moreso by those who fail to put the knowledge gained to productive use after completion of the PDC.

2.3 Supplies

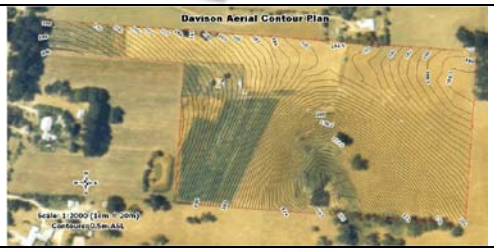
Apart from "solid state" teaching aids, we travel with a variety of portable electronic teaching aids. These include:

- Sony VGN-T250 Notebook Computer (including MapInfo Professional GIS software)
- Apple iPod Video 60Gb (for remote 12V TV based presentations where 220-240V power is unavailable)
- NEC VT470 LCD VGA Projector (220-240V @ 2000 ANSI Lumens)
- Sony DSC-P150 7.2 Megapixel Digital Camera
- Samsung 300Gb Portable USB Hard Drive (data storage & file sharing)
- Garmin Etrex Vista C GPS and Barometric Altimeter

Other requirements will be:

- Medium-Large Whiteboard/Blackboard with coloured markers/chalk
- Topographic, Geology, Soil Map (s) of the Workshop site and catchment area (s)
- Roll of "Butcher's" paper with coloured markers & Bulldog clips

Our *Field Analysis Kit Bag* (valued @ USD$100) is recommended to be supplied to all participants. Generally we have any sponsor/donor (s) logo & workshop name screen printed onto the Cloth Bag/Backpack. This backpack-based kit is listed as an optional extra and contains the following locally supplied items:

ITEM	IMAGE
Cloth Bag/Backpack	
Course Folder & Handbook	
Site Analysis Worksheets (A4 .xls based proformas)	
Plastic coated clipboard	
Grid Transparency for field-based area calculations	
Topographic Aerial Photo Base Map of Workshop Site (used as base map for Design Exercises)	
Bic® 4 colour ballpoint pen	
Graphite Pencil	
Field Compass	

pH Test Kit	
Emerson Dispersivity Test Kit (distilled water, glass jar/lid, gypsum)	
Glad® 1000ml Snap Lock® Bags	
Hand Level	
Scale Rule :100, 1:125, 1:250, 1:500	

A Permaculture Design Course Certificate will be awarded upon successful completion of the course.

2.4 Participant, Support & Teaching Staff Accommodation

Accommodation for non-local participants, support & teaching staff will need to be provided for, preferably on-site. Where on-site accommodation is not available then local lodgings will be required. Alternatively to cater for lower budget participants, camping facilities may need to be provided onsite. This is usually quite feasible on a rural property. Cooking and dining facilities will be also required though the former may be not required where the PDC is externally catered.

2.5 Teaching Venue

An adequately dimensioned & well ventilated teaching room (at least 12m x 6m or 60m2) will be required for the indoor classes. Additional requirements are as follows:

- 220-240V single phase power
- Spill-over area (s) for various warm-up & design exercises
- Chairs & Tables to seat minimum of 20 people
- 5m x 5m Sandpit (creek/river bed or beach will suffice!)

2.6 Support Staff

One support person will be required for the both the lead-up and duration of the workshops. To reduce on-costs this role could also be fulfilled by the convenor (s) and assisted by teaching staff. Responsibilities would include:

- Participant registration & liaison
- Providing day to day support to teaching staff & workshop participants

2. PROPOSED EDUCATION PROGRAM

2.7 Machinery & Equipment

Where possible we will require the following machinery on site for applied field demonstrations in addition to the 4SB model Yeomans Keyline Plow:

- Dumpy/Automatic Level, Self-Levelling Laser Level (both from Hire shop?)
- Local Surveyor to demonstrate Total Station
- 2or4WD 50-80hp Tractor with rear 3 Point Linkage (3PL) and Power Take Off (PTO rated to 540rpm)
- 1.5m rotary hoe or power harrow – preferably with attached bedformer (horticultural bedformer) or disc mounders (see photos below)

Other Equipment:

- Small Grader & 10-15 tonne Excavator
- Picks, Mattocks, Shovels, Scythes/Sickles, Rakes & Forks for various human scale earthworks, landscaping and composting operations
- 200 litre (44 gallon) barrel (cleaned) with open top + fish tank aerator for Compost Tea Preparation

2.8 Course Marketing

Apart from the local and regional marketing efforts undertaken by the workshop convenors we will conduct the following to increase patronage of the workshops:

- Publish online (thru www.permaculture.biz) workshop dates and programs
- Seek publication in any relevant regional and international Permaculture-related journals of editorial and advertisements

Aside from this local convenors should also target any local media for radio interviews, editorial and advertising. In addition strategic brochure & poster placement is recommended.

2.9 Scholarships

Historically many PDC's have, where viable, provided low/no cost scholarships to low income participants or those from developing countries or communities. This ethic is one that we support and recommend is built into the budgetary structure of the course.

3. PERMACULTURE DESIGN CERTIFICATE COURSE OUTLINE

3.1 Session Times

Session Name	Time	Minutes
A	0900 - 1030	90
Break	1030 - 1100	30
B	1100 - 1230	90
Lunch	1230 - 1330	60
C	1330 - 1500	90
Break	1500 - 1530	30
D	1530 - 1700	90
E	AFTER DINNER	

3.2 Education Modules (In Chronological Order)

Date	Session	Lecture
DAY 1		**INTRODUCTION**
	A	Registration/Housekeeping Presentation of Course Kit Property Overview
		INTERACTIVE (15mins) "Hot Football" (per Earthcare Education & Darren Doherty) • What is your name? • What do you like to do? • Write your name card and draw a picture that describes "what you like to do?" INTERACTIVE (20mins) "Mindmap" (per Earthcare Education) Write onto pieces of card – stick onto board What is Permaculture to you? What you'd like to do with what you learn here? PREAMBLE "...You'll never be the same after this...." Bill Mollison, 1995 DISCUSSION Course Overview The Curriculum: Permaculture: A Designers Manual (PDM) 14 Chapters=Link to Course Outline
	B	What is and Why Permaculture? A Brief History of Permaculture A Permaculture Society & Landscape Human Ecology
	C	Ethics of Permaculture Principles of Permaculture – Mollisonian INTERACTIVE: The 12 Permaculture Principles Card Game (per David Holmgren) INTERACTIVE: Place 300 ml of soil into jar, pour in water and shake vigorously then screw on lid and leave for day 7.
	D	INTERACTIVE: Compost Heap Production (per Geoff Lawton)
	E	DISCUSSION: The Role of Ferment in Human Nutrition & Energy Cycling INTERACTIVE: Beer Making (per Frank B. Dole Snr. & Darren Doherty)

DAY 2		CONCEPTS & THEMES IN DESIGN
	A	INTERACTIVE (10mins.) Revision: "Throw, Catch, Remember" (per Earthcare Education) Before throwing the footy to someone: face them, say their name and what they like" PREAMBLE "…You know Dazza, humans are just like yeast – they eat all of the sugar and then drown in their own shit…" Frank B. Dole Snr., (circa 1970's) "…The human race is going to die of its own stupidity…" Bill Mollison (1995) SLIDESHOW "Permaculture Concepts & Themes" Buckminster Fuller the Designer; Chief Seattle Quotes; Action>Reaction; Immutable Rules Vs. Flexible Principles & Directives; Hard Vs. Soft Science; Productive natural systems Vs. Unproductive cultivated systems; Scientific method Vs. Observation; "Perverse Planning" by Disintegrated Disciplines; Integrated Interdisciplinarian Processes
	B	PREAMBLE "…You'd have to be an evil genius to do worse than agriculture…." Bill Mollison SLIDESHOW "Permaculture Concepts & Themes" (continued) Principles Vs. Dogma; Law of Return: Replacement of more than is consumed; Basic Law of Thermodynamics (Watt, 1973): "All energy entering an organism, population or ecosystem can be accounted for as energy which is stored or leaves. Energy can be transferred from one form to another but it cannot disappear, or be destroyed, or created. No energy conversion system is ever completely efficient" Entropy: Bound or dissipated energy, Source to Sink > Waste/Pollution Vs. Nutrient Cycling/Pathways; Principles of Permaculture: Mollisonian, Holmgrenian, Fukuoka, Yeomans – Scales of Permanence; Resource Management – Order Vs. Disorder; Cycles & Yields - Ecosynthesis Vs. Climax; Trophic Theories: Trophic/Albrecht Vs. Soil/Food Web; Omnivorous Vs. Vegetarian; Diversity & Guilds; The Parable of the Utilitarian Cow (or Permaculture Designer!); Kangaroos Vs. Sheep; "..Wasting fuel to damage soil to waste fuel…" David Holmgren, 2006 (re: Corn Ethanol); Rainforest Vs Biofuels/Soya; Succession & Attrition; Accelerated Carbon Cycling; "Emergy" Accounting INTERACTIVE (15mins) Contours Clay Models (per Peter Wade): Major Design Groups assemble and build a landscape from modeling clay/Play dough. Starting at the top, slice horizontally @ 2cm intervals with wire or fishing line and then place on a sheet of paper tracing the respective outlines (topographic contours) SLIDESHOW "Maps, Plans & Designs" Map Scales; Map Projections; Survey Vs. Photogrammetry; Map Layers; Concept Plans, Detail Plans; Isometric Plans; Cross Section Plans; Illustrations; Tools & Equipment
		METHODS OF DESIGN
	C	SLIDESHOW "Permaculture Design in Process": "Why are my ducks sinking?" (Bill Mollison 1995), Element Indexing; Site Observations; Random Assembly; Incremental Design; Zone & Sectors; Succession Paradigms; Master Planning – Pro's & Con's; Landscape Reading – Land Components INTERACTIVE (20mins) Zone & Sector Exercise (per Hugh Gravestein): On the floor or white/blackboard using various props assemble a property layout with the house at the centre. Complete sector analysis then place elements according to Permaculture Design Principles SLIDESHOW Australia Felix Permaculture "Works Pattern" Contact Sheet/Questionnaire; Data Collation,; Site Analysis; Diagnosis & Design; Design Revision (s); Report Development; Statutory Approvals; Development & Management
	D	INTERACTIVE (35mins) Sandpit Exercise (per Lea Harrison) SLIDESHOW Keyline Design: Keypoint Location; Geography of Keyline Planning; Pattern Cultivation; Slope and Aspect INTERACTIVE (10mins) Check Compost (per Geoff Lawton)
	E	CHECK BEER – IS IT BREATHING? GIS Applications in Permaculture: GIS Software, Developing an Topographical Aerial Photo Map, GIS for developing Permaculture Plans

DAY 3		MAJOR DESIGN EXERCISE
	A	INTERACTIVE (15mins.) Revision: "Keypoints" (per Darren Doherty) Nominate a scribe & go around the group getting key points from the day before INTERACTIVE Group Selection – Partner Cards (per Earthcare Education) Major Design Exercise: Presentation Standards Required Design Exercise Resources: Client Questionnaire, Site Analysis Checklists, Land Capability Analysis
		PATTERN UNDERSTANDING
	B	PREAMBLE "…When we abanodoned symbols & songs we abandoned knowledge…." & "…Rap music doesn't contain a lot of data…" Bill Mollison (1995) SLIDESHOW General Pattern Understanding Linking Disciplines Guides to Pattern Application INTERACTIVE: Journey Stick (per Earthcare Education) Take a walk, find natural items that catches their eye and a small stick. Attach the items to the stick then tell the group how these reflect your journey
	C	SLIDESHOW Mnemonic Patterns: Rhythm, Song, Dance, Maps, Symbols (memory beyond words & numbers); General Core Model; Nature Mosaic/Matrix of Patterns; Dendritic Branching; Stream Pattern Variations; Properties of Media; Edges & Surfaces; Harmonic Geometry: Patterns for Production, Timing/Phasing Patterns, Phenology; Boundary & Component Contact; Pulses, Patterns & Events; Flow: Liquids, Gases & Solids; Pattern Generators; Order of Patterns INTERACTIVE: Patterns in Nature Card Game (per Earthcare Education) 1. Radially place 10 Pattern Name Cards on floor 2. (5mins.) Divide the 40 Pattern Picture Cards within group and have them place them to radiate from each of the Pattern Name Cards according to their shape 3. (5mins.) Gather natural objects that match the patterns 4. (10mins.) Develop a design of anything that uses one or more of the patterns (eg. Landscape, Financial System, Pond etc.)
	D	INTERACTIVE (50mins) Field Site Analysis & Survey (per Darren Doherty): With various low/high site analysis & survey equipment/instruments demonstrate their operation and functions. Demonstrate soil field soil testing: ribboning, pH testing, bore hole sampling, soil nutrition test sampling, leaf analysis INTERACTIVE (30mins) "Nearest the Pin" (per Darren Doherty): Drive single datum stake into ground Major Design Groups to in reference to datum: • Place named stake 20m away at same level • Place named stake at position 1m lower level Each group to use a different survey instrument to identify actual position of both contour and elevation stakes INTERACTIVE (10mins) 1st Turn of Compost (per Geoff Lawton)
	E	CHECK BEER: BUBBLING TIMING?/HYDROMETER/WASH AND DRY BOTTLES VIDEO: POWER OF COMMUNITY: HOW CUBA SURVIVED PEAK OIL

DAY 4		CLIMATIC FACTORS
	A	INTERACTIVE (20mins.) Revision:"True or False" (per Darren Doherty): Facilitator reads a card to each student who has to answer a question "True or False" PREAMBLE "Any one site can and usually does display more than one 'climate' with a variety of climate strategies required, though dominated by the prevailing climate" Bill Mollison (PDM 1988) INTERACTIVE (60mins) Climate: Factors & Functions Mind Map (per Darren Doherty after Earthcare Education) Identify (by writing on cards and posting onto board): Macroclimates, Microclimates, Climate Modifiers, Climate Knowledge,Climate Factors
	B	INTERACTIVE: (5mins) "Sequence then Wrap" (per Earthcare Education): Pairing process: All students stand about face – walk along then turn until front of line meets back then stop and about turn. The person facing them is their partner for this next interactive INTERACTIVE: (5mins) "Pick from a hat" (traditional): Pick the note from the hat – this will be your subject for the next interactive INTERACTIVE: (80mins) Minor Landscapes (per Janet Millington) Working with a partner work on one of the minor landscape system responses. You will be asked to report to the class under the following headings: • The soil type/ structure you would most likely be dealing with • The climate you would be dealing with. Especially note the rainfall and how you would use/ store it • The plant species you would select • The planting strategies, discussing any special ways to establish the plants or encourage germination • Nutritional needs (of plants and animals) met and not met. Any strategies that may be used to overcome these deficiencies • The crops/plantings that you would work towards • Identification and dealing with catastophe's that occur • Any animal system that may be introduced at some stage • The style of building you may use and the materials selected for construction • Ways of dealing with grey water, black water or the reuse of any resource from the system
	C	PREAMBLE "…You have the climate but you get the weather…", Traditional SLIDESHOW Köppen-Geiger-Pohl Diagrams, USDA Zones, Holdridge Life Zones, Precipitation Processes **Atmospheric Processes** (per "The Comet Program"): Biosphere, Atmosphere, Planetary Gases, Greenhouse Effect/Carbon Cycle, Global Warming, Radiation, CFC Cycle, Global Air Circulation, Troposphere, Planetary Temperatures, Glaciations; **Climate Effects**: Beaufort Scale, Seasonality & Prevailing Winds, Windbreaks, Cyclones, Tornadoes, Firestorms, Landscape Effects, Allan J. Yeomans "Priority One" DISCUSSION What about your climate?
	D	INTERACTIVE (30mins) Windbreaks & Microclimate Brainstorm (after Earthcare Education): How does microclimate effect the design of a windbreak? Scribe onto Butcher's Paper. INTERACTIVE (10mins) Cold T-Shirt Effect (per Darren Doherty): 1 hour before dusk walk up foothill, then with only a t-shirt walk down the slope and mark (goosebumps/stiff nipples) where there is a distinct change in temperature observing air cool air movement/damming INTERACTIVE (10mins) To warm up again!! 2st Turn of Compost (per Geoff Lawton)
	E	BEER – FILL & CAP BOTTLES? MAJOR DESIGN EXERCISE TIME

DAY 5		TREES & THEIR ENERGY TRANSACTIONS
	A	INTERACTIVE (10mins.) Revision: "Visualisation" (per Earthcare Education) – Take guided relaxation visualisation reviewing of the previous day. INTERACTIVE (20mins) Mindmap (per Earthcare Education) What are the effects and functions of trees?" Scribe onto butchers paper. SLIDESHOW "Tree Biomass: Beyond Tree Products" General core model; landscape reading (wind effects)>absorption, compression & turbulence; edge effects; tension & compression; particulate interception; evaporation, condensation & other gaseous effects; nucleic & ionic exchanges; trees vs. grasses & carbon cycling; climate modification & moderation; snowmelt & energy capture; rainfall interception & throughfall; forest loss pro-quo
	B	SLIDESHOW "Tree Establishment, Management & Utilisation" Diagnosis & Design; Tree Layouts; Timber & Non-Timber Forest Products; Forest Economics & Assumptions; Nursery Production/Selection; System Set out; Ground Preparation; Irrigation Systems; Food, Fodder & Timber Forest Management; Harvesting; Processing; Marketing INTERACTIVE (30 mins) Video "Logosol Chainsaw Mill" Logosol AG
	C	INTERACTIVE (45+45mins) "Tree Utilisation Index" (per Darren Doherty) Get into Major Design Groups and develop a tree species list for the major design site – construct a table describing & rating the attributes of each species selected. Present to class the findings
	D	INTERACTIVE (60mins) Forest Walk, Talk, Cut (per Darren Doherty) Walk through any tree environment & observe the patterns, rhythms & relationships. Demonstration & discussion of silvicultural management INTERACTIVE: (10mins) 3rd Turn of Compost (per Geoff Lawton)
	E	VIDEO: THE FUTURE OF FOOD: THERE'S A REVOLUTION HAPPENING

DAY 6		WATER
	A	INTERACTIVE (15mins.) Revision: "Visualisation" (per Earthcare Education) – Take guided relaxation visualisation reviewing of the previous day. INTERACTIVE (75mins) Brainstorm (per Earthcare Education) What can we do with water? How can it constrain us? What do we need to be aware of?
	B	PREAMBLE "…Water is Australia's biggest export commodity…." Darren Doherty, 2003 SLIDESHOW "De Agricultura" Cato; Hydrological Cycle; Soil Storage; Interception/Infiltration; Engineered Storages; Biological Storages; Calculating Water Needs; Water Tank Selection & Construction; Pumping & Reticulation; Catchment & Water Harvesting Formulæ; Urban, Rural & Constructed Catchments; Evaporation Losses; Swales; Appropriate Irrigation Systems; Effluent Water Use & Treatment: "The City Forest, Yeomans; Water purification systems; Natural Swimming Pools: "Biotop System"; Energy Generation: Micro Hydro, Waterwheels
	C	PREAMBLE "…Save water by using it!" David Holmgren, 2006 INTERACTIVE (40+35mins) Group Research Bioregional Water Strategies (per Janet Millington): Major Design Groups table as many strategies for water collection & movement in a bioregion (see map). Tick well placed infrastructure, cross poor. Identify opportunities for future water collection. Present findings to class DISCUSSION What are the ethics of water harvesting: who owns the rain?
	D	INTERACTIVE: One Week Revision Permaculture Pursuit (per Darren Doherty & Earthcare Education): Major Design Groups Assemble: Each group writes a list of 6 questions for each of the first week's topics. In "round robin" format each group gets to ask the other for the list of questions and vice versa
	E	NIGHT OFF – THEN DAY OFF

DAY 7		SOILS
	A	INTERACTIVE: Major Design Exercise – Group Selection (per Earthcare Education)
	B	SLIDESHOW "A Brief Study of Soil Processes & Functions" What is Soil? Soil Formation Processes; Anthropocentric Uses of Soils; Collapse: Topsoil Loss or Climate Change? Soil Diversity & Biodiversity; The Life of Soils; Gaseous Exchanges & Cycles; Soil Pollution, Bio-Remediation & Crop Treatments; Soil Radiation Effects; Traditional Soil Analysis Vs. Modern Soil Analysis; Soil Structure & Texture (study jar of soil prepared on Day 1); Pioneer/Indicator/Accumulator Plants; Plant Nutrition; Soil Additives, Ameliorants & "Fertilisers"; Nutrient Distribution; Remediation & Utilisation of Problematic Soils; Seedballs; Engineering with Soils SLIDESHOW "Comparing Soil Analysis?" Albrecht; Modified Albrecht; Fertiliser Company; Soil Food Web; Refractometer; LaMotte; Geotechnical; Chemical Residue
	C	INTERACTIVE: (80mins) Practical Field Exercise "Broadacre Soil Renovation Techniques" (per Darren Doherty) Pattern Cultivation & Accelerated Soil Creation using Non-Inversion Tillage; Compost Tea Preparation & Application
	D	INTERACTIVE: (5mins) Grouping Activity: "One, Two, Three, Four, Five…" (per Geoff Lawton) In sequence each student calls out "One, Two, Three, Four, Five…" (more numbers if group larger than 25 people); then students from each number get into groups PREAMBLE "…The best thing for a house is a woman in a panic with a bucket…" Bill Mollison, 1995 (re: bushfire threat) INTERACTIVE: (75mins) "Designing for Catastrophe" (per Darren Doherty adapted from Janet Millington) In 40 minutes each group is to develop a strategic outline and/or design to address the best solutions for the following scenarios and then present these findings to the class (35mins): 1. Fire Prone Area 2. Coastal Area subject to Cyclones & Tsunamis 3. Prolonged Drought in Rural Area 4. Post Conflict Refugee Camp 5. Prolonged Utility Loss in Urban Area In each of these potential catastrophes consider the following: • Where to site the house or housing • What are the best construction materials and why? • What planting strategies would you use? • What plant species would you select? • What measures would you take to ensure the ability to consume clean water for at least 2 weeks after the disaster? • How could you ensure access to clean water in the long term? • What things could you do to ensure that you had emergency food as well as the ability to feed yourself in both the short and long term? • Assess the likelihood of one such disaster impacting on your region. What are the risks? • What protective measures should we be putting in place from Zone 1-5? INTERACTIVE: (10mins) 5th Turn of Compost (per Geoff Lawton)
	E	VIDEO: END OF SUBURBIA: OIL DEPLETION AND THE COLLAPSE OF THE AMERICAN DREAM

DAY 8		EARTHWORKING & EARTH RESOURCES
	A	REVISION (15mins.) Revision: Visualisation (per Earthcare Education) – Take guided relaxation visualisation reviewing of the previous day. PREAMBLE "…I've got a bit of a job for us…" Frank B. Dole Snr. (1981) – Re: building a small dam with a scoop and Grey Ferguson tractor DISCUSSION (15mins) "What are the ethical considerations concerning Earthworks?" SLIDESHOW "Earthworks History, Applications & Planning" Earth Resources; Historical Symbolic, Extractive & Agricultural Earthworks; Modern Applications, Machinery & Tools; Low Tech/Energy Earthworks; Noise, Fire, Flood & Pest Animal Attenuation; Soils & Slope; Planning Processes
	B	INTERACTIVE: (5mins) "Short Straw" (traditional): A representative from each Major Design Group to pick a straw – each straw is numbered with the different earthworks scenario for the next interactive: 1. House & Water Tank Site on steep slope; Access road; 1ML Dam 2. House & Water Tank Site on flood plain; Access road; 5ML Dam 3. Three connected dams on foothill topography. New forestry and shelterbelts integrated 4. Urban house on undulating 1000m2 block with existing 200m2 house (close to road). New Permaculture Food Forest requiring swales 5. Exposed urban-fringe 10ha block with severe sheet erosion: existing 1ML dam (half empty & unfenced) with 5 head of cattle in poor condition INTERACTIVE: (30+30mins) Group Research (per Darren Doherty after Janet Millington) – Major Design Exercise Groups to compile a list on Butcher's Paper and then present to the class "Develop an action plan detailing the required preparations, machinery to be used, and sequence of operations during & immediately after completion and any required follow up"
	C	INTERACTIVE: Practical Field Exercise "Setting out Swales, Drains & Dams" (per Darren Doherty) Demonstrating & Participating in the use of a variety of survey instruments (eg. Water (bunyip) Level, A-frame, Hand Level, Compass, Transit Level, Dumpy/Automatic Level & Laser Level) set out a Keypoint (where possible) Dam, Diversion Drain (s), Irrigation Drain and Overflow Swale according to the plan provided
	D	SLIDESHOW & DISCUSSION "Renewable Energy Production & Appropriate Technologies" Define Sustainability?; "Emergy Accounting; Relative Efficiencies of Different Renewable Energy Systems; Magic Bullets: Hydrogen, Fission, Hot/Cold Fusion, "Clean" Coal, Fossil Gas; Biomass; Charcoal; Wood Gasification; Biogas; Hydro; Photovoltaic; Wind; Tidal; Wave; Geothermal; Solar Thermal; Biofuels: Ethanol, Biodiesel, Butanol INTERACTIVE: (10mins) 6th Turn of Compost (per Geoff Lawton)
	E	STUDENT PRESENTATIONS/SLIDESHOWS

DAY 9		THE HUMID TROPICS
	A	REVISION (15mins.) Revision: Visualisation (per Earthcare Education) – Take guided relaxation visualisation reviewing of the previous day. PREAMBLE "Any one site can and usually does display more than one 'climate' with a variety of climate strategies required, though dominated by the prevailing climate" INTERACTIVE (40mins) Brainstorm (per Earthcare Education) "What are the characteristics of the Humid Tropics?" SLIDESHOW "Design Strategies for Humid Tropics" **Humid Climate Elements**: Wet Tropics, Monsoon, Wet/Dry (Savanna); **Tropical Soils Characteristics & Strategies**: Igneous (Basalt/Granitic), Sedimentary; Forest, Grassland, Estuarine; Mulching & Cover Crops; **Terraforming**: Terracing, Swales, Mounding, Pitting, Net & Pan; **House Envelope & Building Design Strategies**: Ventilation, Shading & Materials Ratings Index, Energy Systems, Food Storage, Fermentation; **Garden Agricultures**: Circles, Raised Beds, Food Forests, Avenue Cropping, Windbreaks, Living Fences
	B	INTERACTIVE (5 mins) Group Energiser "30 Second Sleep" (per Earthcare Enterprises) Get comfortable, visualise, and go to sleep, then after 30 seconds,"ITS MORNING WAKE UP!" Stretch, Yawn, Open Eyes, Wriggle Toes & Fingers, Sit up. "Now you have all woken up, we can continue with our humid tropics slideshow…" SLIDESHOW "Design Strategies for Humid Tropics" (continued) **Integrated Systems**: Marae/Ohana Systems; **Village Strategies**: Garden Agricultures, Food & Water Security, Polycultures, Commonlands, Food/Timber/Handicraft Facilities, Village & Intra-Village Networking, Energy Generation; Palms-based Polycultures; Integrating other Lifeforms; Broadscale Industrial Crops, Establishment Methods; **Pioneering Processes**: Recovering Grasslands, Steep Slopes, Rampant "weedy" Vines, Savanna Reforestation; Livestock Utilisation & Management: Grasslands, Rangelands; **Coral Cays & Atolls**: Coastal Protection, Establishment Strategies, Pollution Prevention, Nutrient Cycling Strategies
	C	GUEST SPEAKER Session for (Local) Guest Speaker
	D	INTERACTIVE (40 mins) Video "Global Gardener - Tropics" INTERACTIVE (40 mins) Group Work Major Design Group Exercise INTERACTIVE: (10mins) 7th Turn of Compost (per Geoff Lawton)
	E	MAJOR DESIGN EXERCISE WORK TIME

DAY 10		DRYLAND STRATEGIES
	A	REVISION (15mins.) Revision: Visualisation (per Earthcare Education) – Take guided relaxation visualisation reviewing of the previous day. PREAMBLE "…You can solve salinity with 9 strong men and a .303!" Bill Mollison (1995) "…It's a dry argument…" Traditional SLIDESHOW "Dryland Strategies" Dryland Climate Elements; Landscape Features; Plant & Animal Characteristics; **Precipitation & Opportunism**: Infiltration techniques, Plant Establishment Regimes; **Temperatures**: High Diurnal Soil Temperatures; **Soils**: Characteristics, Excessive Mineral Concentrations, Biocide Remediation, Effluent Disposal Issues; **Key Dryland Strategies**: Swales, Reforestation, Mulching, Water Harvesting Technology, Oasis, Seedballs, Soil Pitting, Fencing, Silt Trapping, Gabions, Stream Diversion, Alley Farming, "Grooving" Tree Establishment, Deflection/Spreader Banks, Clear Water Dams; **Building Design**: Warm House:Cool House, High Density Villages, Cooling Systems; **Garden Agriculture**: Shading, Mulching, Terraforming, Irrigation, Plants, Animal Systems; **Cold Deserts Strategies**: Building Design, Snow Melt Harvesting, Animal Systems, Forestry INTERACTIVE (30 mins) Video "Greening The Desert"
	B	PREAMBLE "…We are persistant in electing footballers & corner shop owners to office – who don't care about systems…" Bill Mollison (1995) INTERACTIVE: (40+40mins) Broadacre Permaculture Drylands Design Exercise (per Darren Doherty) Major Design Groups form. Facilitator is the mock client. A sample 400ha property (topographic aerial photo) is projected onto screen and plans are distributed to groups. Brief is read out and client is questioned throughout design period. Designs are presented and then Facilitator reveals his detail plan of the farm. Class discussion about differences & similarities, pros & cons etc.
	C	INTERACTIVE: External Site Tour (s)
	D	INTERACTIVE: External Site Tour (s) INTERACTIVE: (10mins) 8th Turn of Compost (per Geoff Lawton)
	E	DARREN DOHERTY PUBLIC PRESENTATION: "PERMACULTURE ACROSS BORDERS"

DAY 11		HUMID COOL TO COLD CLIMATES
	A	REVISION (15mins.) Revision: Visualisation (per Earthcare Education) – Take guided relaxation visualisation reviewing of the previous day. PREAMBLE "…If the shit ever hits the fan then these skills I teach you will save you…" Frank B. Dole Snr. (circa 1970's) SLIDESHOW "Cold Humid" Cold Humid Climate Elements; Landscape & Soil Elements; **Building Design/Town Planning**: Warm House:Cool House, High Density, Stacking, Supportive Landscaping, Amenity Landscapes; **Garden Agriculture**: Winter Storage & Cultivation, Trellis, Espalier, Berry Culture, Glasshouse, Orchards, Urban Forestry; **Farming/Rangeland Systems**: Fruit, Fodder, Forestry, Forage Systems, Pastoral Systems, Wildlife Management; Cold Climate Strategies: Phenomena, Ice, Snow, Avalanche!, Grazing Systems
	B	INTERACTIVE: (5mins) Grouping Activity: "Animal Noises" (per Earthcare Education/Janet Millington) Gather class in a cleared, safe area. Give all class members a folded animal picture card (Guinea Fowl, Cow, Duck, Chicken & Pig) to peek at in secret. Ask class to all close their eyes and start making their animal's call whilst locating and congregating with others making the same (!) calls. No human calls allowed. INTERACTIVE: Group Research (as per Janet Millington) "Livestock Systems Design" 1. **Select the Livestock**: Be mindful of your site dimensions. Bear in mind that worms, fish & bees are livestock. Assume that your system is mature enough to support the animals 2. **List Livestock Needs**: Common to most however each animal has specific needs. Eg. Water, Shelter, Food, Security, Health (inc. Psychological) 3. **Demonstrate How Needs will be Provided**: Include internal & external needs provisions. Any structures or feeding apparatus to be shown in diagrams. 4. **Sustainability Statement**: Demonstrate the sustainability of the system or designs to achieve greater sustainability 5. **List of Livestock Functions**: A indexed table may help 6. **External Sources of Livestock**: where will you obtain your stock from 7. **Maintaining Livestock Numbers**: How do you propose to do this?
	C	INTERACTIVE: Group Research (as per Janet Millington) (30+60mins) "Livestock Systems Design" (continued) Group Presentations
	D	GUEST SPEAKER Session for (Local) Guest Speaker INTERACTIVE: (10mins) 9th Turn of Compost (per Geoff Lawton)
	E	INTERACTIVE: (5mins) Put Beer in Cooler/Fridge MAJOR DESIGN EXERCISE WORK TIME – REVISE WITH CLIENTS

DAY 12		AQUACULTURE
	A	REVISION (15mins.) Revision: Visualisation (per Earthcare Education) – Take guided relaxation visualisation reviewing of the previous day. PREAMBLE "…Don't chuck up now there's worse to come…" Bill Mollison (1995) INTERACTIVE: (10mins) Brainstorm (per Janet Millington) "List as many aquaculture environment as possible" SLIDESHOW: "Global Wetland & Aquaculture Systems" **Wetlands**: ponds, swamps, marshes, intertidal zones; **Wetland Constructs**: Canals, Raceways, Wet Terraces, Chinampas, Padi; **Case For Aquaculture**: 4-20 times yield/unit of area than terrestrial systems, Freezer Trawlers Vs. Rice Padi; Western Vs Asian Aquacultures; Algal Biofuel Production; Faruno Rice & Duck System **Historical Aquacultures**: Ohana, Iraqi, Lake Titicaca, Lake Tenochtitlan, East Asia, China, Deltas, Monastic England INTERACTIVE: (10mins) Class Discussion (per Janet Millington) "Why is the aquatic medium so productive?"
	B	SLIDESHOW: "Aquaculture Design & Operation" **Species Selection:** Local species Vs. Exotics, Species Requirements, Market Demand, Systemic Demands; System Design & Construction: Integrated Polycultures Requirements, Energy Considerations, Pattern, Soils, Carrying Capacity, Support Structures, Water Availability, Water Quality, Supportive Vegetation, Tools & Machinery; **System Operation**: Culling, Oxygenation, Nutrients, Feedstock Production, Harvesting, Processing, Waste Cycling INTERACTIVE (30 mins) Video "Backyard Aquaponics" Joel Malcolm
	C	INTERACTIVE: Major Design Exercise Presentation
	D	INTERACTIVE: Major Design Exercise Presentation INTERACTIVE: (10mins) 10th Turn of Compost (per Geoff Lawton)
	E	CLASS CONCERT

DAY 13		THE STRATEGIES OF AN ALTERNATIVE NATION
	A	REVISION (15mins.) Revision: Visualisation (per Earthcare Education) – Take guided relaxation visualisation reviewing of the previous day. PREAMBLE "…The purpose of cities is to keep people out of the country…" Bill Mollison (1995) INTERACTIVE (20mins) Mind Map (per Earthcare Education) What are bioregions & what should bioregional organizations do? INTERACTIVE (30 + 30mins) Group Research (per Janet Millington) Major design groups to design a particular bioregional organization to overcome the outcomes of the current system: 1. Family Structures 2. Land Access 3. Village Development 4. Ethical Investment 5. Effective Groups SLIDESHOW "Bioregional Organisations" International Models, Establishment & Management Strategies, "The Permaculture Flower" (after David Holmgren)
	B	DISCUSSION Ethical Basis, The Notion of Nations, Alternatives to Conventional Political Systems, Ethical Investment Systems, LETS, SLIDESHOW "Trusts and Legal Structures"
	C	INTERACTIVE Permaculture Design Certificate Presentations; The Permaculture Yearbook Presentation; Where to from here?
		PERMACULTURE DESIGN CERTIFICATE COURSE COMPLETED GOODBYE LUNCHEON DEPARTURES

4. ACCOUNT TERMS AND DETAILS

4.1 Australia Felix Permaculture Charges

The following charges are applied for goods and services supplied to client by Darren J. Doherty of Australia Felix Permaculture. (Please note invoices will incur Australian GST @ 10% of invoice total if payment is made in Australia)

Item Code	Item Description	Unit (s)	Unit Charge	Notes
DJDC	Consultancy Services	Day	USD$600 ($60/hour minimum charge $300)	Includes: • Consultancy Engagement • Consultancy Preparation • Project Related Flight Time • Local Travel Inclusive of Consultancy Engagement
DJDEd	Education Services	Day	USD$600	Includes: • Education Engagement • Education Preparation • Project Related Flight Time • Local Travel Inclusive of Education Engagement • Profit Share Negotiable though usually 30% of Gross Profit
DJD_PDC	PDC	72hr Course	USD$5000	Profit Share Negotiable though usually 30% of Gross Profit
DJD_Flight	Air Travel	Ticket	At Cost	Provisions: • Economy Class Return Airfare (s) • Travel Insurance • Visa Preparation and Postage • Airport & Related Charges • Does not include Teacher's family members • Where a number of PDC's are being taught within reasonable proximity then overseas travel costs are shared amongst respective PDC's.
DJDA	Accommodation	Day	At Cost	Provisions: • Corporate Rate Accommodation @ 3 star+ Hotel (subject to availability) • All Meals, Laundry & PDC-related Telephony • No Alcohol • Airport Pickup and Drop Off • Where available and appropriate then local billeting at PDC venue or amongst Permaculture family is negotiable

4. ACCOUNT TERMS AND DETAILS

4.1 Australia Felix Permaculture Charges

DJD_Disbursements	Out of Pocket Expenses	Item	At Cost	Provisions: • PDC Related Fees and Charges • PDC Related Telephony Charges • Taxi & Travel Charges • All Meals ex Accommodation • Stationery and Data Purchases
DJDT	Travel	Hour	USD$30	Travel To and From Base

4.2 Australia Felix Permaculture Account Terms

Australia Felix Permaculture Corporate Client Account Terms are as follows:

- Invoice payments due upon receipt of invoice (unless prior arrangements made)
- Any outstanding payments have charges levied at 10% of invoice total per day outstanding within 7 days of invoice receipt
- Australia Felix Permaculture Invoices are prepared and submitted to client (s) weekly by email (as MS Excel .xls format – facsimile or hardcopies posted by request)
- International Travel Costs (see DJD_Flight) to be paid 14 days prior to departure from base
- Any other Account arrangements are to be determined and agreed 21 days prior to engagement commencement
- All charges are in USD$ unless otherwise specified. Amounts expended in other currencies are charged at the official converted cash rate on date of invoice production (and annotated therein).

4.3 Australia Felix Permaculture Bank Direct Deposit Details

Where appropriate we prefer direct deposit as a secure means of payment of Australia Felix Permaculture invoices. Please advise if other payment means are preferred.

Australia Felix Permaculture Bank Direct Deposit Details are as follows:

BANK:	Bendigo Bank
BANK BRANCH:	Mitchell St., Bendigo, Victoria, Australia, 3550
ACCOUNT NAME:	Darren John Doherty trading as Australia Felix Permaculture
SWIFT CODE	BENDAU3B
BSB NUMBER:	633 000
ACCOUNT NUMBER:	107738742

4.4 Acceptance of Proposal and Account Terms

Clients accepting proposal and account terms should notify Australia Felix Permaculture to have a formal quotation, where required, drafted & subsequently, agreed & modified where necessary, and signed by both the Client (approved officers) and Australia Felix Permaculture. Any Confidentiality Agreement (s), Non Disclosure Agreements (s) and/or Clauses, or other Proprietary Engagement Documents, where necessary, should also be completed at this time.

4.4 Insurance

Course convenors must provide 14 days prior to the course commencement a Certificate of Insurance for the duration of the course, outlining the public liability insurance cover provided for all course participants, teachers, support staff, facilities, equipment, activities and any external pursuits entailing the same.

4. ACCOUNT TERMS AND DETAILS

4.5 Sample Permaculture Design Certificate Course Profit & Loss

The following Profit & Loss (very basic!) is to illustrate to prospective Convenors some of the typical operating costs encountered with a PDC course. This is an actual PDC course P&L scenario, not based on assumptions. The scenario is for an All-Inclusive, Residential 14 day PDC with 20 Students, Organic Food & 6 ifferent lecturers.

INCOME

Course Fees @$950			$19000

EXPENSES

Accommodation			
Scout Camp	$2800		
Night Stay (Field Trip)	$550		
Lecturers/Field Trips			
Lecturer 1 (Architect)	$396		
Lecturer 2 (Permaculturalist)	$2562		
Field Trip 1 (Catering & Farm Tour)	$671		
Field Trip 2 (Farm Tour)	$200		
Field Trip 3 (Farm Tour)	$200		
Lecturer 3 (Permaculturalist)	$2000	$5829	
Catering			
Bulk Foods/Consumables 1	$676		
Bulk Foods/Consumables 2	$644		
Fruit/Vegetables/Meat	$916		
Kitchen Staff (x1)	$1600	$3836	
Miscellaneous			
Bus Hire	$600		
Aerial Photo	$124		
Sand	$33		
Stationary	$290		
Advertising	$500	$1547	$11212

Profit	$7788

Profit Share	
Lecturer 1 @ 20%	$1557
Lecturer 3 @ 20%	$1557
Convenor @ 60%	$4672

5. DARREN JOHN DOHERTY CV

DATE OF BIRTH: 2nd October 1967

NATIONALITY: Australian

LANGUAGES: English (native), Viet Nam (conversational)

SCHOLASTIC HISTORY

2006	**PERMACULTURE DESIGN CERTIFICATE COURSE, REGISTERED TEACHER, THE PERMACULTURE INSTITUTE, SISTERS CREEK, TASMANIA, AUSTRALIA (IN PROCESS)**
2006	**CERTIFICATE IV IN ASSESSMENT & WORKPLACE TRAINING, HORTUS AUSTRALIA, PORT LINCOLN, SA**
2005	**TEACHER ACCREDITATION, ACCREDITED PERMACULTURE TRAINING™ (APT™) – Djanbung, Nimbin , NSW** Tutors: Ms. Robyn Francis & Ms. Earthcare Education
2005	**PERMACULTURE DESIGN CERTIFICATE (NOT COMPLETED) – Melbourne University, Melbourne VIC** Tutors: Mr. Bill Mollison & Mr Geoff Lawton
1995	**DIPLOMA OF PERMACULTURE DESIGN – Permaculture Institute Tyalgum NSW** Fields: Education, Site Design, System Establishment & Implementation
1995	**WHOLE FARM PLANNING CERTIFICATE (TRAIN THE TRAINER) – University of Melbourne, School of Agriculture and Horticulture – Longerenong Campus** Tutor: Mr. Robert Binns
1995	**PERMACULTURE DESIGN CERTIFICATE - Permaculture Institute Tyalgum NSW** Tutor: Mr. Bill Mollison
1993	**PERMACULTURE DESIGN CERTIFICATE - Candelo NSW** Tutor: Mr. Andrew Sheridan & Mr. Hugh Gravestein
1984 – 85	**HIGHER SCHOOL CERTIFICATE (NOT COMPLETED) – Bendigo Senior Secondary College**
1980 – 83	**YEARS 7 - 10 – Flora Hill High School – Bendigo, Victoria**
1972 – 79	**YEARS PREP – 6 – California Gully Primary School, Bendigo, Victoria**

SHORT COURSES COMPLETED

1999	**ADVANCED SOIL FERTILITY WORKSHOP – University of Adelaide, Roseworthy Campus** Lecturer: Mr. Neal Kinsey (Kinsey Agricultural Services – USA)
1999	**HANDS ON AGRONOMY – University of Adelaide, Roseworthy Campus** Lecturer: Mr. Neal Kinsey (Kinsey Agricultural Services – USA)
1996	**PERMACULTURE EARTHWORKS - Permaculture Institute Tyalgum NSW** Tutors: Mr. Bill Mollison & Mr. Doug Durrough
1994	**KEYLINE WORKSHOP – ALBURY TAFE** Tutors: Mr. Vries Gravestein (Chiltern Permaculture Services) & Mr. Allan Lehmann (Lehmann Manufacturing)

WORK HISTORY

2005	**ACDI/VOCA – Viet Nam** Integrated Consultant/Educator – SUCCESS Alliance Program
2004	**M&M'S/MARS INC. – Viet Nam** Integrated Consultant
2000 -	**AUSTRALIA FELIX PERMACULTURE – Bendigo, Victoria** Principal Consultant
1997 - 2000	**AUSTRALIA FELIX LANDPLANNING CONSULTANTS – Bendigo, Victoria** Principal Consultant
1996 - 1999	**GIFT (INVESTMENTS) PTY. LTD. – Bendigo, Victoria** Chairman of Directors
1993 - 1997	**PERMACULTURE DESIGN SERVICES BENDIGO – Bendigo, Victoria** Partner
1990 - 1993	**ORGANIC GREENGROCER/BENDIGO HEALTH FOODS – Bendigo, Victoria** Manager
1990	**JEAN JACQUES BY THE SEA – RESTAURANT – St.Kilda, Victoria** Captain
1989 - 1990	**LAUNCESTON INTERNATIONAL HOTEL – CAMERON'S FINE DINING RESTAURANT – Launceston, Tasmania** Chef de Rang
1988	**GREAT ADVENTURES GREEN ISLAND REEF RESORT – RESTAURANT – Green Island (off Cairns QLD)** Captain & Chef
1987 – 88	**Itinerant Work Throughout Australia**
1986	**EAGLEHAWK RESTAURANT –RESTAURANT – Maldon, Tasmania** Commis Waiter

5. DARREN JOHN DOHERTY CV

COMMUNITY ACTIVITIES

1999-2000	**PETER HARCOURT DISABILITY SERVICES – HARCOURT PARK DEVELOPMENT – Bendigo, Victoria** Steering Committee Member as Environmental Design/Planning Consultant (with David Holmgren) OUTCOME: HARCOURT PARK DEVELOPMENT
1996 - 2000	**BOX IRONBARK FARM FORESTRY NETWORK INC. (BIFFN)** Committee Member, Founding Chairman and Past President
1997 - 1999	**NORTH CENTRAL CATCHMENT MANAGEMENT AUTHORITY (NCCMA)** Regional Development & Farm Forestry Technical Advisory Panel (TAP) for the *Natural Heritage Trust* (NHT)
1998	**NORTH CENTRAL CMA/WIMMERA CMA/BULOKE SHIRE** Regional Farm Forestry Feasibility Study Committee Member OUTCOME: NORTH CENTRAL CMA/WIMMERA CMA/BULOKE SHIRE FARM FORESTRY FEASIBILITY STUDY
1997 - 1998	**CATHOLIC COLLEGE BENDIGO (JUNORTOUN CAMPUS)** Environmental Design/Planning Consultant to Steering Committee OUTCOME: DRAFT ENVIRONMENTAL DEVELOPMENT PLAN OF CAMPUS
1997	**KENNINGTON PRIMARY SCHOOL** Environmental Design/Planning Consultant to Steering Committee OUTCOME: DRAFT ENVIRONMENTAL DEVELOPMENT PLAN OF CAMPUS
1995 - 1996	**St. FRANCIS OF THE FIELDS PRIMARY SCHOOL** Environmental Design/Planning Consultant to Steering Committee OUTCOME: ENVIRONMENTAL DEVELOPMENT PLAN OF CAMPUS

MAJOR ACHIEVEMENTS

- **M&M'S/MARS INC/FOREST SCIENCE INSTITUTE OF VIET NAM (2004-PRESENT)**
  DESIGNER/PROJECT MANAGER OF SUSTAINABLE CACAO AGROFORESTRY SYSTEM (SCAS) RESEARCH & DEMONSTRATION FARM
- DEVELOPMENT OF WWW.PERMACULTURE.BIZ
- DESIGN, DEVELOPMENT & MANAGEMENT OF "DALPURA", MORIAC, VICTORIA (60HA TEMPERATE FORESTRY, SILVAPASTORAL & SUSTAINABLE FARM STAY COMPLEX)
- **SHELL REFINERY, GEELONG (1998-1999)**
  JOINT *SUSTAINABLE LAND MANAGEMENT PLAN* CONSULTANTS + PROJECT DEVELOPERS - developed in conjunction with Mexted Rimmer Landscape Architects
- **GEELONG GRAMMAR SCHOOL – CORIO CAMPUS (1998 – 1999)**
  ENVIRONMENTAL MANAGEMENT PLAN CONSULTANTS + PROJECT DEVELOPERS
- COMPLETED OVER **1100 PERMACULTURE PROPERTY MANAGEMENT PLANS**
- ESTABLISHED OVER **1 000 000 + TREES** (FORESTRY, REVEGETATION, OLIVES, VINES, TREE CROPS)
- DEVELOPED THE WORKING PROTOTYPE OF THE WORLD FIRST **DOJO RIPPER/TILLER/MOUNDER**

ENVIRONMENTAL CONSULTANTS TO (CURRENT & PAST)

M&M'S/MARS INC.
ACDI/VOCA
SUCCESS Alliance
Geelong Grammar School
SHELL REFINERY GEELONG
PERCYDALE OLIVES P/L – OLIVE INVESTMENT GROWERS
VENS CREEK NURSERY – COMMERCIAL FORESTRY AND REVEGETATION NURSERY
OLICORP P/L - OLIVE PROCESSORS AND GROWERS
COMMERCIAL DYNAMICS P/L – KENTON RANGE TREE FARM & CC LOWLINE STUD
OVER 1100 PRIVATE CLIENTS

5. DARREN JOHN DOHERTY CV

COURSES TUTORED

2006 **PERMACULTURE DESIGN CERTIFICATE COURSE (TEMPERATE/SUBTROPICAL)**
72HR, TARANAKI, NEW ZEALAND (CO-TEACHER WITH GRIFEN HOPE & JOE POLAISCHER)

2006 **SUSTAINABLE CACAO AGROFORESTRY SYSTEMS (SCAS) COURSE (TROPICAL)**
40HR, DONG XOAI, BINH PHUOC, VIET NAM

2006 **PERMACULTURE DESIGN CERTIFICATE COURSE (TEMPERATE/SUBTROPICAL)**
72HR, RYDE TAFE, SYDNEY, NSW (CO-TEACHER WITH JANET MILLINGTON & PENNY PYETT)

2005 **PERMACULTURE DESIGN COURSE (TEMPERATE/SUB-ARID)**
72HR, BENDIGO, VICTORIA (CO-TEACHER WITH DAVID HOLMGREN)

2005 **PERMACULTURE DESIGN CERTIFICATE COURSE (TEMPERATE/SUBTROPICAL)**
72HR, RYDE TAFE, SYDNEY, NSW (CO-TEACHER WITH JANET MILLINGTON & PENNY PYETT)

2005 **PERMACULTURE DESIGN COURSE (TEMPERATE/SUBTROPICAL)**
72HR, BEGA, NSW (CO-TEACHER WITH JOHN CHAMPAGNE)

2005 **PERMACULTURE DESIGN COURSE/SUSTAINABLE CACAO AGROFORESTRY SYSTEMS (SCAS) COURSE (TROPICAL)**
160HR, DONG XOAI, BINH PHUOC, VIET NAM

2004 **PERMACULTURE DESIGN COURSE (TEMPERATE/SUB-ARID)**
72HR, BENDIGO, VICTORIA (CO-TEACHER WITH DAVID HOLMGREN)

2004 **PERMACULTURE DESIGN CERTIFICATE COURSE (TEMPERATE/SUB TROPICAL)**
72HR, RYDE TAFE, SYDNEY, NSW (CO-TEACHER WITH JANET MILLINGTON & PENNY PYETT)

2003 **PERMACULTURE DESIGN COURSE (TEMPERATE/SUB-ARID)**
72HR, BENDIGO, VICTORIA (CO-TEACHER WITH DAVID HOLMGREN)

2002 **PERMACULTURE DESIGN CERTIFICATE COURSE (TEMPERATE/SUB TROPICAL)**
14 WEEKS, MALENY, QLD (CO-TEACHER WITH JANET MILLINGTON)

2002 **PERMACULTURE DESIGN CERTIFICATE COURSE (TEMPERATE/SUB TROPICAL)**
14 WEEKS, MALENY, QLD (CO-TEACHER WITH JANET MILLINGTON)

2001 **PERMACULTURE DESIGN CERTIFICATE COURSE (COOL TEMPERATE)**
72HR, ROCKY CAPE , TASMANIA (CO-TEACHER WITH BILL MOLLISON & JANET MILLINGTON)

2000 **PERMACULTURE DESIGN CERTIFICATE COURSE (COOL TEMPERATE)**
72HR, ROCKY CAPE , TASMANIA (CO-TEACHER WITH BILL MOLLISON & JANET MILLINGTON)

1998 **UNIVERSITY OF ADELAIDE, ROSEWORTHY CAMPUS (SUB ARID)**
1 Day, Guest Lecturer – *Sustainable Land-Use: An Alternative Approach*

1998 **PERMACULTURE ASSOCIATION OF SOUTH AUSTRALIA (MEDITERRANEAN)**
1 Day, Guest Lecturer – *Sustainable Land-Use: Techniques*

1994 **INTRODUCTION TO PERMACULTURE DESIGN COURSE (TEMPERATE/SUB ARID)**
3 DAYS, BENDIGO, VICTORIA (CO-TEACHER WITH MICHAEL HEENAN)

PUBLIC SPEAKING ENGAGEMENTS/TELEVISION APPEARANCES

2006 **ABC REGIONAL RADIO**
PERMACULTURE IN VIET NAM

2005 **ABC REGIONAL RADIO**
BROADACRE PERMACULTURE

2004 **CHARLTON & DISTRICT SHOW**
KITCHEN GARDEN & BROADACRE PERMACULTURE

2004 **CHARLTON & DISTRICT SHOW**
KITCHEN GARDEN & BROADACRE PERMACULTURE

2002 **ABC TV - GARDENING AUSTRALIA – MALENY QLD**
PRESENTATION OF MANDELA GARDEN LANDSCAPE PROJECT

2002 **FESTIVAL OF COLOUR – MALENY QLD**
PERMACULTURE GARDENING LECTURES

2000 **YARRA VALLEY EXPO – LILYDALE VIC**
PERMACULTURE FARM PLANNING LECTURES

1999 **YARRA VALLEY EXPO – LILYDALE VIC**
PERMACULTURE FARM PLANNING LECTURES

1999 **NORTH CENTRAL CMA/DNRE/BIFFN – REGIONAL FARM FORESTRY SEMINAR**
Guest Speaker – *Farm Forestry in the North Central Region*

1998 **NASAA/BFA NATIONAL CONFERENCE**
Guest Speaker – *Permaculture and Whole Farm Planning*

1997 **NORTH CENTRAL CMA – VOICES OF THE CATCHMENT – REGIONAL LANDCARE CONFERENCE 1997**
Guest Speaker - *Farm Forestry in the North Central Region*

5. DARREN JOHN DOHERTY CV

PUBLISHED ARTICLES

2000 **THE PERMACULTURE ACTIVIST**
DESIGN & CONSTRUCTION OF SMALL EARTH PONDS

2000 **EARTH GARDEN NO. 114**
ECO-FRIENDLY TREE FARMING – INDUSTRIAL FORESTRY VERSUS FARM FORESTRY

1998 **GREEN CONNECTIONS – ISSUE 19**
TREE CROP FACT FILE: ZIZYPHUS ZIZYPHUS SYN. JUJUBA (CHINESE RED DATE/JUJUBE)

1998 **GREEN CONNECTIONS – ISSUE 20**
TREE CROP FACT FILE: FICUS CARICA (FIG)

1998 **GREEN CONNECTIONS – ISSUE 17**
TREE CROP FACT FILE: OLEA EUROPEA (OLIVE)

1996 **TOWN & COUNTRY FARMER - VOL.13 NO.2**
A MODERN APPROACH TO KEYLINE DESIGN

1996 **TOWN & COUNTRY FARMER - VOL.13 NO.1**
KEYLINE DESIGN & PATTERN CULTIVATION USING NON-INVERSION TILLAGE

1994 **LOTUS – ISSUE 4 VOL. 1**
PERMACULTURE: WORKING TOWARDS AN ABUNDANT 3000 A.D.