PERMACULTURE DESIGN COURSE (PDC)

Accredited with the Permaculture Research Institute (PRI), Australia, and, the Permaculture Association, Britain

PDC FACILITATOR

PDC Facilitator: Ezio Gori, www.permaculture2012.co.za
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Qualifications: M.Sc Construction Management, MCIOB, Diploma of Applied Permaculture Design (UK).
Experience: My 25 years experience in the development sector in Southern Africa has spanned a wide spectrum of projects, ranging from development planning studies, large scale land reform and public housing, infrastructure delivery improvement, labour intensive construction, community agricultural projects, agri-business plans, ecovillage designs, and, teaching Permaculture and Design for Sustainability. My website contains a portfolio of some Permaculture type projects and a host of other related information, including examples of my project management applications. My forte is in programme / project management, especially in the project conceptualization stage and the packaging thereof to project teams that can design, implement and operate such projects; and also, in establishing programme management systems. This forte extends through to Permaculture design, which in turn, has provided an invaluable approach for a more holistic application of project management processes.

PDC APPROACH

The PDC facilitator cannot teach on his own. Every PDC class has students with unique life skills experience that can contribute to any PDC. To this end, the facilitator draws from this collective experience in order to enrich the PDC class with a more holistic understanding of the PDC applications. For this reason, the course is taught in a participative and interactive way which uses “think and listen and feedback” discussion loops in order to facilitate the understanding of the course material and to reinforce the key lessons. This empowerment process also inculcates a sense of mindfulness, openness, transparency, trust and confidence to share skills and experience.

The content of the PDC is always seeking cutting edge ideas and applications from the growing Permaculture Body of Knowledge. This PDC is not only about gardening and landscaping: it expands the Permaculture applications to the built environment and sustainability in general. The facilitator is also the online tutor at the Open University of Cataluña teaching the Ecological Dimension of the virtual course “Design for Sustainability” offered by Gaia Education at www.gaiaeducation.org, which is an invaluable resource from which to draw on for cutting edge teaching material and integration of Permaculture within other aspects of the “sustainability movement”.

The PDC uses a large number of presentation slides primarily during the morning sessions and several films (The PermacultureWay series presented by Geoff Lawton) during the evenings to convey the teaching material. This is augmented by practical work to apply the lessons learnt, generally in the afternoons, and, a few visitations to nearby Permaculture (type) projects in order to appreciate what it takes to implement and manage such projects.

The students are also required to work in groups and prepare and present their group design to the PDC class on the final day of the PDC. Individual projects are also encouraged during the PDC, but time often does not permit this on a 12-day intensive PDC. However, where the PDC is stretched over 2 or 3 months, then both group design and individual design projects are required; and in addition, at least two “open days” of garden practice where family and friends are invited to participate.

PDC OUTLINE AND OUTCOMES

The full 12-day PDC schedule is contained in **Schedule 1** below. The information contained within the brackets are references to specific slideshow presentations for ease of future access. A DVD containing all these slideshow presentations, as well as other relevant information, is given to students. The outline of the PDC and associated outcomes is described below.

Days 1 & 2: The Foundations of Permaculture Design are presented together with some Permaculture design inspirations. The initial garden practice involves explaining the Permaculture designs in the teaching garden and a few hours helping out in the garden. The films shown during these first two days are “Permaculture Design” and “Urban Permaculture”. A nearby site is visited where students will undertake a group design exercise to prepare a very basic Permaculture Concept Plan, and thus, learn about Basic Permaculture Design. These first two days also suffice for the Permaculture Introductory Course (PIC) which is often the drawcard to attract students to the full 12-day PDC. To this end, the PIC contributes two days towards the 12-day PDC for those students who cannot immediately continue with the PDC.

Days 3 & 4: The Sustainability Worldview is presented on Day 3 in order to sensitize students about the “big picture” for sustainability, and in particular, the ecological footprint basis for determining the anthropogenic impact on the Earth. For practice, students emulate the ecological footprint and then discuss their experiences. The environmentally evocative film “Home” is shown to help sensitize students about Permaculture ethics. Day 4 focuses entirely on an abbreviated version of the inspiring Regenerative Agriculture (www.regenag.com) course material, which demonstrates the great hope that genuine sustainable farming practices can contribute towards global sustainability. The practice includes reading contour maps and setting out swales, which is a cornerstone of the RegenAg course. The evening film show is “Harvesting Rainwater”. This then inculcates the Permaculture Consciousness.

Days 5, 6, 7 & 8: At the outset of Day 5, the students are formed into design groups and given a specific tract of land to design. These days present the themes of, Soils and Plants, Farming Systems, Waste Water and Sanitation, and, the Built Environment, respectively. The presentations deepen the understanding of how these various themes can function sustainably and be integrated into Permaculture designs. The films shown are “Soils” and “Food Forest”, whilst the major practice concentrates on applying the lessons learnt, such as, food forest design and integration thereof within the rainwater harvesting designs; some natural building methods; and, beekeeping. The outcome of these themes is the Integration of Ecological Systems into Permaculture Design.

Days 9 & 10: These two days present the realities of energy peak and descent, and, the planning required for building sustainable communities. These two themes introduce biophysical energy economics, the Transition Movement and New Economics, and then follow with some ecovillage perspectives in order to show how these ecovillages are striving towards sustainability. Some basic project management techniques are also presented that will assist towards the making of good plans and designs. The films “Power of Community – How Cuba Survived Peak Oil” and “Transition 2” are shown to provide inspiration in Designing for Sustainable Communities.

Days 11 & 12: These last two days are used to integrate sustainability into design plans, and, to outline further learning pathways in Permaculture and sustainability, which culminate in Project Design Presentations and Permaculture Networking.

The outcomes of this PDC can be assessed by the quality of the group project design presentations, some of which are show on the link, www.permaculture2012.co.za/pages/40037. However, in arriving at these group designs, the PDC students adopt the Permaculture Project Design Process shown in **Schedule 2**. This design process uses project management processes to advance the quality of a Permaculture design, and as such, is a thorough and holistic design process that continually refines the overall sustainability of a project.

To conclude, the PDC is designed to permeate the Permaculture Ethics in the ensuing group project designs in the following manner:- Eathcare: by embedding physical sustainability systems; Peoplecare: by working together to inculcate mindfulness and community co-operation; and, Fairshare: by sensitization of the sustainability worldview.

Prepared by: Ezio Gori
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Schedule 1: Permaculture Design Course (PDC) - Programme v1b

Accredited with the Permaculture Research Institute (PRI), Australia, and, the Permaculture Association, Britain.

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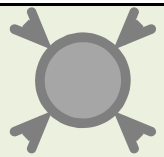
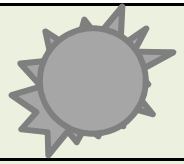
Day Theme	Presentations and Discussions	Practicals, Site Visitations & Design Work	DVDs and Open Time	Outcomes
Day 1 **Foundations of Permaculture Design**	**Introductions:-** Registration, introductions, expectations, course programme (1.1). **Teaching styles and learning preferences:-** Visual, auditory and kinesthetic (1.2). **Permaculture Defined:-** Evolution from Contemporary Agriculture to a Permanent form of Agriculture (1.3). **Permaculture Ethics and Attitudes:-** Earth care, People care and Fair share (1.3). **Permaculture Attitudes :-** Work with nature not against, everything gardens, unlimited yield, the problem is the solution, minimum effort for maximum effect (1.3). **Permaculture Design Principles:-** Energy Efficient Planning: zone planning, elevation planning and sector planning (1.3). Resource Planning: multiple function, natural energy and biological resources (1.3). Design Planning: relative location, microclimate, maximise edge, succession, diversity and pattern (1.3).	Site tour of teaching garden to explain application of Permaculture Design Principles Group & Individual Project Design Brief	Permaculture Design DVD	**Basic Permaculture Design**
Day 2 **Permaculture Design Inspirations**	**Permaculture Design Inspirations (own designs):-** Small scale gardens, a Permaculture learning centre, keyline systems, rainwater harvesting designs, community based organic farming projects, agri-village models, sustainable housing settlements (2.1). **Permaculture design portfolios (designs by others):-** Aranya's Diploma Portfolio (2.2). **Permaculture Design Processes:-** SADIM, O'BREDIMET, CEAP (2.3). **Design checklists:-** Environmental analysis, Permaculture designer's check list and client questionnaire, site and land selection criteria, site evaluation checklist (2.4). **Permaculture Project Design Process (own process):-** Site analysis, concept design, detailed design, implementation and operation (2.5).	Garden practice – layout and preparation Design Practice – site visit and preparation of basic site Concept Plan	Urban Agriculture DVD	

Day Theme	Presentations and Discussions	Practicals, Site Visitations & Design Work	DVDs and Open Time	Outcomes
Day 3 **Sustainability Worldview**	**Ecological Footprint:-** Sustainability Overview from Findhorn Ecovillage (3.1), Global Footprint Network 2010 Annual Report (3.2), Ecological Wealth of Nations (3.3), Biodiversity Challenge (3.4), Anthropocene (3.5), and, Happy Planet Index (3.6 & 3.7).	Ecological Footprint group exercise and discussion Garden practice –composting and mulching.	Home DVD	**Permaculture Consciousness**
Day 4 **Regenerative Agriculture**	**Regenerative Agriculture**:- Keyline Principles (4.1); Climate (4.2), Geography (4.3), Yeoman's Scale of Permanance; Water (4.4), Access (4.5), Forestry (4.6), Buildings (4.7), Fencing (4.8), Soils (4.9).	Keyline design practice – map reading Setting out swales with A-Frame and water level, and, making raised beds.	Harvesting Water DVD Check in and Feedback	
Day 5 **Soils and Plants**	**Soil Fertility:-** Soil analysis (5.1), soil composition (5.2), composting (5.3), vermiculture (5.4), myco-remediation (5.5), soil vitality (5.6). **Plant Health:-** Seed diversity (5.7), companion plants (5.8), plant guilds (5.9), seedballs (5.10).Food vitality (5.11), refractrometer (5.12), integrated pest management (5.13).	Garden practice – seedlings, companion planting, guilds, seedballs and vermiculture.	Soils DVD	**Integration of Ecological Systems into Permaculture Design**
Day 6 **Farming Systems**	**Farming Systems**:- Limited Till Systems (6.1); Conservation Farming (Zambia) (6.2); Natural Farming (Fukuoka) (6.3); Biodynamics (6.4). **Polycultures:-** Backyard Aquaponics (6.5), Polyface Farm (USA) (6.6). **Rainwater Harvesting:-** Urban (6.7), drylands (6.8 & 6.9), vetiver grass (6.10)	Food forest design and practice – integrated with swales, layering and planting.	Food Forest DVD	
Day 7 **Waste Water and Sanitation**	**Living Water:-** Emoto (7.1) and Schauberger (7.2); flow forms (7.3), Earth's Water Budget (7.4). **Waste Water Treatment:-** Constructed Wetlands, Restoration of Water, Living Machines (7.5), bioremediation (7.6), waste water design parameters (7.7), WET systems (7.8). **Appropriate Sanitation:-** Compost toilets (7.9), The Arborloo (7.10), tree bogs (7.11), Howard Higgins Theromophyllic EcoSan Waste Management System (7.12).	Visit of Permaculture type project	Project Design Work	
Day 8 **Built Environment**	**Natural building technologies:-** Cob, adobe, strawbale, rammed earth, stone masonry, renderings, hybrid systems (8.1). **Permaculture Approach to Built Environment:-** Sustainable housing layouts (8.2), Permaculture town plan layout (8.3 & 8.4), large scale suburban project (8.5), Permaculture Applied to Natural Building (8.6), Green Buildings (8.7).	Natural building practice – cob, adobe, stone masonry, renderings.	Check in and Feedback around the Campfire	

Day Theme	Presentations and Discussions	Practicals, Site Visitations & Design Work	DVDs and Open Time	Outcomes
Day 9 **Energy Descent Planning**	**Biophysical Energy Economics:-** Energy Return on Energy Invested (9.1), entropy vs ecotropy (9.2), Future Scenarios (Holmgren) (9.3). **Transition Movement:-** The Cuba Experience (9.4), Transition Influences (9.5), Transition Primer (9.6), Vision in Transition (Holmgren) (9.7 & 9.8). **Project Management Techniques:-** Foundations of Project Management (9.9), Strategic Planning Frameworks (9.10), project management process (9.10).	Beekeeping talk Project Design Work	DVD – The Power of Community – How Cuba Survived Peak Oil	**Designing for Sustainable Communities**
Day 10 **Building Sustainable Communities**	**Ecovillage Perspectives:-** Findhorn (10.1) & Zuvuya (10.2), Institutional and Land / Legal arrangements (10.3), The Anastasia Phenomena (10.4), Fundamentals for Ecovillage Design (17.5), Foundations for Sustainable Rural and Peri-Urban Development (10.6), Umbumbulu Vegetable Box Scheme (10.7). **New Economics:-** Leaky bucket economics (10.8), social enterprise (10.9), complementary currencies (10.10), ethical banking (10.11).	Visit of Permaculture type project Project Design Work	DVD – In Transition 2	
Day 11 **Integrate Sustainability**	**Design for Sustainability:-** Sustainability Ethics:- Based on Earth care, People care and Fair share (11.1) Sustainability Attitudes:- Curtailment, co-operation, community, resilience, human scale (11.1) Sustainability Design Principles:- Enabling environment, minimize impact, minimize waste, biocapacity restoration (11.1 & 11.2)	Project Design Work	Project Design Work	**Project Design Presentations and Permaculture Networking**
Day 12 **Closure and Networking**	**Learning Pathways:-** Diploma of Applied Permaculture Design (12.1); GAIA Education Design for Sustainability (GEDS / EDE) (12.2 & 12.3); Permaculture Networks – Permaglobal; Further training – RegenAg, Nutri-tech, Agro-Forestry; Permaculture Research Institute (PRI). **Project Presentations:-** Group design projects, and, individual projects. **Closure:-** Sharing and improvements; feedback survey; handout of PDC certificates; and, celebrations.	Project Design Work	Celebration	

Schedule 2: Permaculture Project Design Process

A thorough and holistic Design Process that continually refines the overall sustainability of a project

				
1. Site Analysis **Status quo assessment:-** Land history, local ordinances, surrounding neighbourhood, traffic, utility services, site access, local resources. **Physical attributes:-** Building structures, trees, hedges, topography, water flows, view sheds. **Local climate and sector analysis:-** Sun exposure, sun angles, rainfall, temperature ranges, wind intensity and direction, microclimates, thermal masses, fire threat, water courses and wild animal intrusions. **Local biological health:-** Native species and their health, intended uses, chemical and biological soil analysis. ***Output: Base Plan***	**2. Concept Design** **Overall long-term vision:-** 50 year+ horizon, robust sustainable framework, flexibility and adaption to changes. **Yeoman's scale of permanence:-** Keyline rainwater harvesting; water recycling; roadways, forest areas, buildings, boundaries, soils. **Zones:-** Plan for zones 1 to 5. **Natural flows and patterns:-** Geomancy, biomimic natural flows, flow forms, microclimates, harvest natural energies. **"Wild design":-** Incorporate at least one wild idea. ***Output: Concept Plan***	**3. Detail Design** **Refine concept ideas:-** Create the design framework and locate the major design fixes. **Refine flows and patterns:-** Delineate flows and patterns and incorporate within the design framework. **Micro-design elements:-** Multiple functions, natural energy systems, biological resources. **Integrate all design elements:-** Create a master layout plan with all design details in accordance with milestone phases. ***Output: Design Plan***	**4. Implementation** **Resource specification:-** Organisational structure, roles and responsibilities, manpower requirements, technical specifications for structures and landscaping, plant lists, seeds, biological resources. **Budget estimate:-** Schedule of quantities, pricing, taxes, total budget. **Gantt chart:-** Work breakdown structure, activity scheduling, resource distributions. **Commit resources:-** Secure budget, contractual arrangements, procurement, brief and deploy work teams, site supervision. ***Output: Programme & Budget***	**5. Operate** **Maintenance:-** Manage the evolution of the master layout design plan, manage planned successions, manage biological resources, co-ordinate work teams, harmonise project beneficiaries, and, financial control. **Evaluate:-** Continual SWOT analysis of maintenance activities. **Tweaking:-** Design and implement enhancements. ***Output: Monitor & Evaluate***