Title: A DESIGN OF PERMACULTURE PRINCIPLES

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Contents

Current status (survey of principles)

What is this about:

Permaculture design is meant to be based on the smart application of permaculture principles, which themselves are observed from nature, and yet my observation from working with permaculture is that these isn't a clear set of principles to work from.

Because I approach designing in a fairly structured way, I find this challenging and so I am aiming to use the permaculture design itself to help crystallise what the core permaculture principles are, in a way that I can then apply consistently across future designs.

Permaculture principles:

There are multiple versions of the permaculture principles out there. In particular,

- Mollison's first short set from his Designer's Manual
- His second more in-depth set from his Introduction to Permaculture with Reny Mia Slay
- The 12 Holmgren principles from his Principles and Pathways book
- Those I learnt from, and place significant weight on the value of - Patrick Whitefield's 9 principles in The Earth care Manual.

These principles are:

Holmgren	Mollison 1	Mollison 2	Whitefield
Observe and interact	Work with nature not against it	Edge effects	Wild soil
Use and value diversity	The problem is the solution	Each element performs many functions	Diversity and niche
Use edges and value the marginal	Make the least change for the most effect	Each function is supported by many elements	Multiple Dimensions
Creatively use and respond to change	Yield is theoretically unlimited	Efficient energy planning - zone, sector, slope	Relative location
Catch and store energy	Everything gardens	Use biological resources	Key Planning Tools
Obtain a yield		Cycle energy, resources and nutrients	Small scale
Apply self-regulation and accept feedback		Small-scale, intensive systems, including stacking	Input-Output
Use and value renewable resources		Succession and evolution accelerated	Energy flows
Produce no waste		Diversity (guilds)	Wholes
Design from patterns to details		Everything works both ways	
Integrate rather than segregate		Permaculture is information and imagination intensive	
Use small and slow solutions		Relative location	

These are not the only principles. Many others, such as those set out in Hemenway's Gaia's Garden, do exist, but this is sufficient to exemplify that they are many, and they do not overlap clearly.

The problem with the use of principles

Different people use and emphasise different ones and at times. Often people swop between different principles from different sets at different times. Some sites present the full suite of all of these principles, but with little to show how they interact or relate. Many people have settled on one set – the Holmgren set – but there is no reason that this set should be considered superior to others, other than preference.

Permaculture design is meant to be based on the smart application of permaculture principles, which themselves are observed from nature, and yet my observation from working with permaculture is that these isn't a clear set of principles to work from.

My situation

I am aware that for me to be able to work confidently and fully on permaculture design, I need one set of principles that I can apply to my design work that together are representative of the natural systems that permaculture is aiming to learn from and mimic.

Analysis

To me, permaculture is a design system and way of living that uses principles learned from the natural functioning of life systems on the planet and attempts to apply these to design for ways of living on the planet that are in harmony with and benefiting from these natural systems. As such, the principles need to be grounded in genuine learning from natural systems and evidently pulled from natural systems in such a way that examples of these principles in play can be evidenced.

If permaculture principles do not relate back easily and directly to principles observed in natural systems or are not expressed in such a way as to show that they do, then it doesn't feel to me like permaculture, but a more generalised low impact living philosophy. A low Impact living philosophy is wonderful, needed and important, but Permaculture, to me, is a set of principles that guide how we design anything, based fundamentally on observations of how natural systems work - that's critical to the nature of permaculture and to its legitimacy.

I find David Holmgren's principles abstract and a stretch away from a grounding in natural systems. They feel to me like rules rather than principles from observations. For that reason, whilst I know they are popular and oft-quoted, I do not find them easy to apply in a way that I feel confident in. Mollison's feel more grounded in observations of natural systems, as do Whitefield's.

All these sets of principles have things in common and some sets overlap with other sets, as well as with each other. So, in order to reach a point where I am confident in the set of principles I will apply consistently, I have analysed the different principles to find where they relate to each other. Each colour represents commonality between principles within sets and between sets.

Holmgren	Mollison 1	Mollison 2	Whitefield
Observe and interact	Work with nature not against it	Edge effects	Wild soil
Use and value diversity	The problem is the solution	Each element performs many functions	Diversity and niche
Use edges and value the marginal	Make the least change for the most effect	Each function is supported by many elements	Multiple Dimensions
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Integrate rather than segregate	Permaculture is information and imagination intensive	
Use small and slow solutions	Relative location	

Design

From this analysis, it seems to me that there are essentially ten core principles, which I have pulled together below to represent the common points being proposed in the principles above:

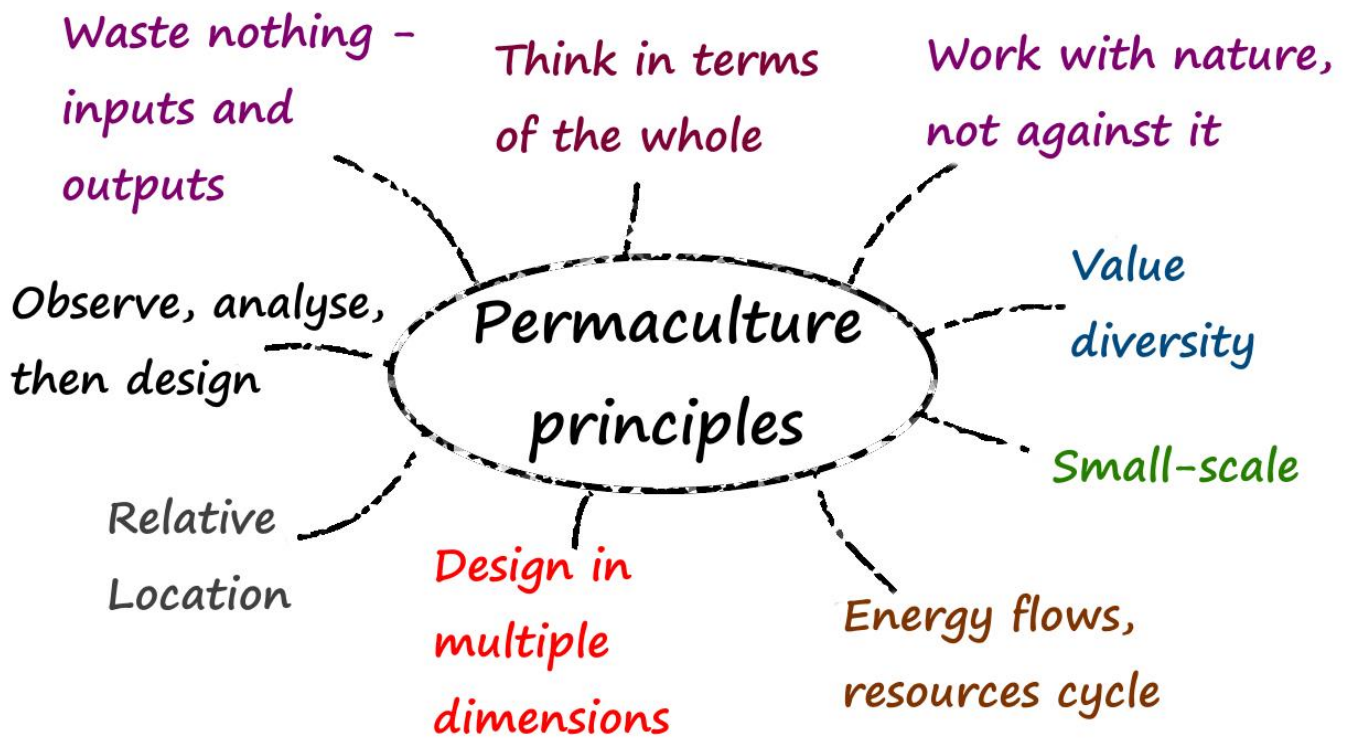| Colour	Description
(black)	This principle differs from others in that it is not itself an observed principle in nature. Nature doesn't observe itself. It is however essential to the success of the approach of permaculture to be able to observe and study and survey. The principle is essentially "Observe and make use of the information you find"
(yellow)	Most ecosystems are richly diverse and either has niches filled or niches available to fill. Diversity increases resilience and productivity.
(blue)	Natural systems develop so that everything locates at the optimum location relative to other influences. Choose the optimum location for elements relative to each other in a system
(green)	There are existing productive, resilient systems at work in nature that themselves exist within a point in succession. Change, evolution and succession are natural, even if they are a consequence of human activity. We can understand the value of change and work with it to our advantage
(orange)	Energy and resources are naturally available - use them efficiently and re-use them where you can
(purple)	Abundance is natural and waste is not. Natural systems are circular. Design for circular systems and make the most use of the functions every element has, to return value.
(red)	Observe, survey and design a system around the place you are working and the users' needs, using the concepts of sector network, elevation and zone. Don't jump into the details straight away – find the patterns first.
(peach)	Nature works at a small-scale. Even large habitats like oceans operate and respond at the local and small-scale. High productivity and efficiency can be gained by working at the manageable, naturally small-scale
(pink)	Natural systems make the fullest use of space and time that they can. Designing this into human designs enables abundance alongside diversity.
(grey)	Everything effects everything else and you are working with a system, not just individual elements. Designing should aim to bring things together rather than have things act apart.

There is also an eleventh concept, presented by Holgrem as a principle, which is that we should "obtain a yield." We might put that as follows:

Colour	Description
(light blue)	Yield is the reason we do permaculture - focus on it and maximise the potential for it

However, to me, yield is the *goal* of permaculture design rather than a *principle for the delivery of the goal*. It sits at the heart of the point of doing all of this in the first place and so for me, it is not a separate principle but rather, inherent in all the others.

I have presented these principles in a more accessible format below, with the description of relevant core principles next to each. This is the set of principles I will use to design with permaculture, in the diploma and beyond.

MY SET		
Work with nature (and change) not against it		There are existing productive, resilient systems at work in nature that themselves exist within a point in succession. Change, evolution and succession are natural, even if they are a consequence of human activity. We can understand the value of change and work with it to our advantage
Value diversity		Most ecosystems are richly diverse and either have niches filled or niches available to fill, which are eventually (and often quickly) filled naturally. Diversity increases resilience and productivity.
Focus on the small-scale		Nature works at a small-scale. Even large habitats like oceans operate and respond at the local and small-scale. High productivity and efficiency can be gained by working at the manageable, naturally small-scale
Value resources: Energy flows and matter cycles		Energy and resources are naturally available - use them efficiently and re-use them where you can
Waste nothing		Abundance is natural and waste is not. Natural systems are circular. Design for circular systems and make the most use of the functions every element has, to return value.
Find connections: relative location and niches		Natural systems develop so that everything locates at the optimum location relative to other influences, and as a result of connections between elements. Choose the optimum location for elements relative to each other in a system and design to benefit from existing connections. Don't forget the value of edges and niches when looking for optimum location.
Use multiple dimensions		Natural systems make the fullest use of space and time that they can. Designing this into human designs enables abundance alongside diversity.
Observe, analyse, then design down		Observe, survey and design a system around the place you are working and the users' needs, using the concepts of sector network, elevation and zone. Don't jump into the details straight away – find the patterns first.
Think in terms of the whole		Everything effects everything else and you are working with a system, not just individual elements. That means often, we should aim to integrate, rather than segregate.

Waste nothing – inputs and outputs

Think in terms of the whole

Work with nature, not against it

Observe, analyse, then design

Permaculture principles

Value diversity

Small-scale

Relative Location

Design in multiple dimensions

Energy flows, resources cycle

Implementation

I am not convinced that the world needs someone else advocating yet another set of permaculture principles. For that reason, I will use these principles as follows:

- In training events, to explain permaculture in the context of the other existing principles
- In my own design work

Update July 2020: I am using the principles directly in my designing work as follows:

- For each diploma design, each principle is considered applied as appropriate in the designing approach, and this is recorded in documentation (or will be where it still needs writing up)
- For other use, the principles are printed out and on display above my garden design desk, to prompt and guide application during garden designing work

Update June 2022:

I have used the principles as the main set of principles for the design of most of my diploma portfolio designs. They were used directly and explicitly for every design except the Animals System design, for which I used the Standardised set of principles set out by David Holmgren, alongside Tomas Remiarz's web of principles framework.

Maintenance plan

I will review this set of principles on an ongoing basis when applying it to designs and seek feedback where opportunities allow, and I will consider evaluation and tweaks where necessary. However, as a theoretical proposition there isn't a need for ongoing maintenance beyond evaluation.

Evaluation and Tweaks

Assessment comments from tutor	Resulting changes

Make sure you evaluate your use of the principles and record any tweaks you might make.	MET sections added and populated as planned (with further evaluation to come towards end of pathway)
Consider use of portrait format to make reports easier to read on screen.	Changed to portrait
Include evaluation of the design's success later on during your pathway.	Further evaluation to come towards end of pathway
It would be useful to add a section at the beginning, explaining the background for the design and its purpose (even if that may have evolved through the design itself). Also, I do like a title page and contents section, even for such a small design (which may yet grow through its further stages).	Section added at start of document Title page and contents added
For your implementation plan, develop/ describe in more detail how you might use this set of principles in your design work and documentation. This could then be evaluated later in your diploma pathway, which would round off this design nicely.	Done
Include evaluation at the end of your pathway	Further evaluation to come towards end of pathway

Further Evaluation and tweaks

July 2020: The principles have been applied in several designs (most of which need writing up at this stage) and so far, have proved useful, clear and without conflict. However, during use I have noted that the second principle, value diversity makes clear that niches do naturally exist that are ready to be filled, but not that these niches are then naturally filled eventually (and often quickly). This has been added and updated above.

September 2020: When using these design principles in the front garden design, it became clear that two of the principles could be clarified further.

- Although the principle "Observe and Survey" makes clear in the explanation that it means to focus on design tools, the statement "Observe and Survey" sits ahead of that part of the process. This principle is really trying to emphasise that the process of permaculture design is about (a) observation and analysis ahead of decisions and (b) the use of design tools to allow for the creation of a systems design. It has been changed above to "Observe, Analyse then Design," to allow for this, and the explanation has been tweaked.
- The explanation of the principle "Think in terms of the whole" allows for this throughout the process but would benefit from a more explicit reference to the need to look for integration in design, rather than focusing on each element individually. This has been made clearer.

September 2020: For some time, I have had a visual representation of these principles but have not added it to this design. That is now done above.

June 2022: Evaluation of the principles on completion of all 10 portfolio designs

1. *General*

Whilst I recognise that most permaculture designers now use the standardised principles from David Holmgren, I wanted to do this particular principles design to try to capture what I felt was the essence of some of the leading sets of principles in a way that I could make most sense of.

I was particularly keen to ensure that I was able to capture the original essence from the Mollison principles and also the wonderful, particularly land-based principles of Patrick Whitefield, which I was closest to in the PDC.

I have designed most of my portfolio using this set, but I also created one design using the Holmgren set. Having used both, I haven't found that my set lacks anything, except perhaps a few tweaks to clarify better the meaning of one or two of the principles (see below). In their essence, and their use, they didn't seem to lack anything, and I've found them useful and representative enough of permaculture to want to keep using them.

2. Tweaks

Having now used these principles actively and heavily over a long period, I still think they capture the key essence of permaculture and have worked very well for my designs. However, I think some could be made clearer with a few tweaks. In particular:

a. **Observe, analyse and design**: *I think the explanation of this principle would benefit from also making a clearer reference to the flow of design from (a) finding the shapes, systems and patterns and then (b) moving into the details and connections. "Observe, analyse and design down" captures it quite well.*

b. **Relative location**: *really this has been boiled down a bit too much as a phrase as it is really trying to capture this: "Choose the optimum location, relative to other elements. Make good use of niches and edges." Really, edges are just one beneficial location and there are plenty of beneficial locations and niches. However, explicit reference does help remind me to give them some thought.*

c. **Work with nature not against it**: *This could have made more explicit reference to "change" being a key part of nature. Whatever you are working with, change is a natural occurrence. It's implicit in the principle but I think the principles could make a more explicit reference to change as a natural, unavoidable part of life. "Work with nature (and change) not against it" captures it quite well.*

3. Directives

Alongside these changes, it seems to me that most of the principles are directives, acting as guiding principles to use in a design process. For that reason, two could be rephrased to be consistent with this directive style:

- *"Multiple dimensions" can become "Use Multiple Dimensions"*
- *And "Energy flows and matter cycles" can become "Value resources: Energy flows and matter cycles,"* capturing the sense that this is about making the very best use of whatever resources you have access to.

As a result, I've updated the "my set" table above and presented the principles in two clearer images below. One is the basic set of principles. The other (for zooming in to only) is with further information.

4. Using the principles every time

I am of the belief that permaculture design requires the application of the principles for it to be legitimate. That application can be conscious or more, organic, coming from practice and familiarity. But if a design is done without use of the principles in some way, it doesn't feel like it's permaculture.

One thing I have found, applying these principles, is that every design became stronger as I consciously considered them during the designing process. Most design approaches struggle to find a comfortable place for the principles to sit which is why I think, whichever set of principles is being used, the principles framework by Tomas Remiarz is a very good design framework indeed. It could be used with this set of principles of mine, or any other, but is places the principles at the heart of the design process, where they belong. They are what make permaculture unique.

Waste
nothing

Value
diversity

Work with nature
(and change)
not against it

Choose the optimum
location relative to other
elements. Make good use
of niches and edges

Value resources:
Energy flows
and matter cycles

Focus on the
small-scale

Use multiple
dimensions

Think in terms
of the whole

Observe, analyse
then design down

Most ecosystems are richly diverse and either have niches filled or niches available to fill, which are eventually (and often quickly) filled naturally. Diversity increases resilience and productivity.

Value diversity

Energy and resources are naturally available - use them efficiently and re-use them where you can

Value resources: Energy flows and matter cycles

There are existing productive, resilient systems at work in nature that themselves exist within a point in succession. Change, evolution and succession are natural, even if they are a consequence of human activity. We can understand the value of change and work with it to our advantage.

Work with nature (and change) not against it

Choose the optimum location, relative to other elements. Make good use of niches and edges

Natural systems develop so that everything locates at the optimum location relative to other influences, and as a result of connections between elements. Choose the optimum location for elements relative to each other in a system and design to benefit from existing connections. Don't forget the value of edges and niches when looking for optimum location.

Waste nothing

Abundance is natural and waste is not. Natural systems are circular. Design for circular systems and make the most use of the functions every element has, to return value.

Focus on the small-scale

Nature works at a small-scale. Even large habitats like oceans operate and respond at the local and small-scale. High productivity and efficiency can be gained by working at the manageable, naturally small-scale

Use multiple dimensions

Natural systems make the fullest use of space and time that they can. Designing this into human designs enables abundance alongside diversity.

Observe, analyse, then design down

Observe, survey and design a system around the place you are working and the users' needs, using the concepts of sector network, elevation and zone. Don't jump into the details straight away – find the patterns first.

Think in terms of the whole

Everything effects everything else and you are working with a system, not just individual elements. That means often, we should aim to integrate, rather than segregate.