The Simplest Design Process

discovered by James Chapman

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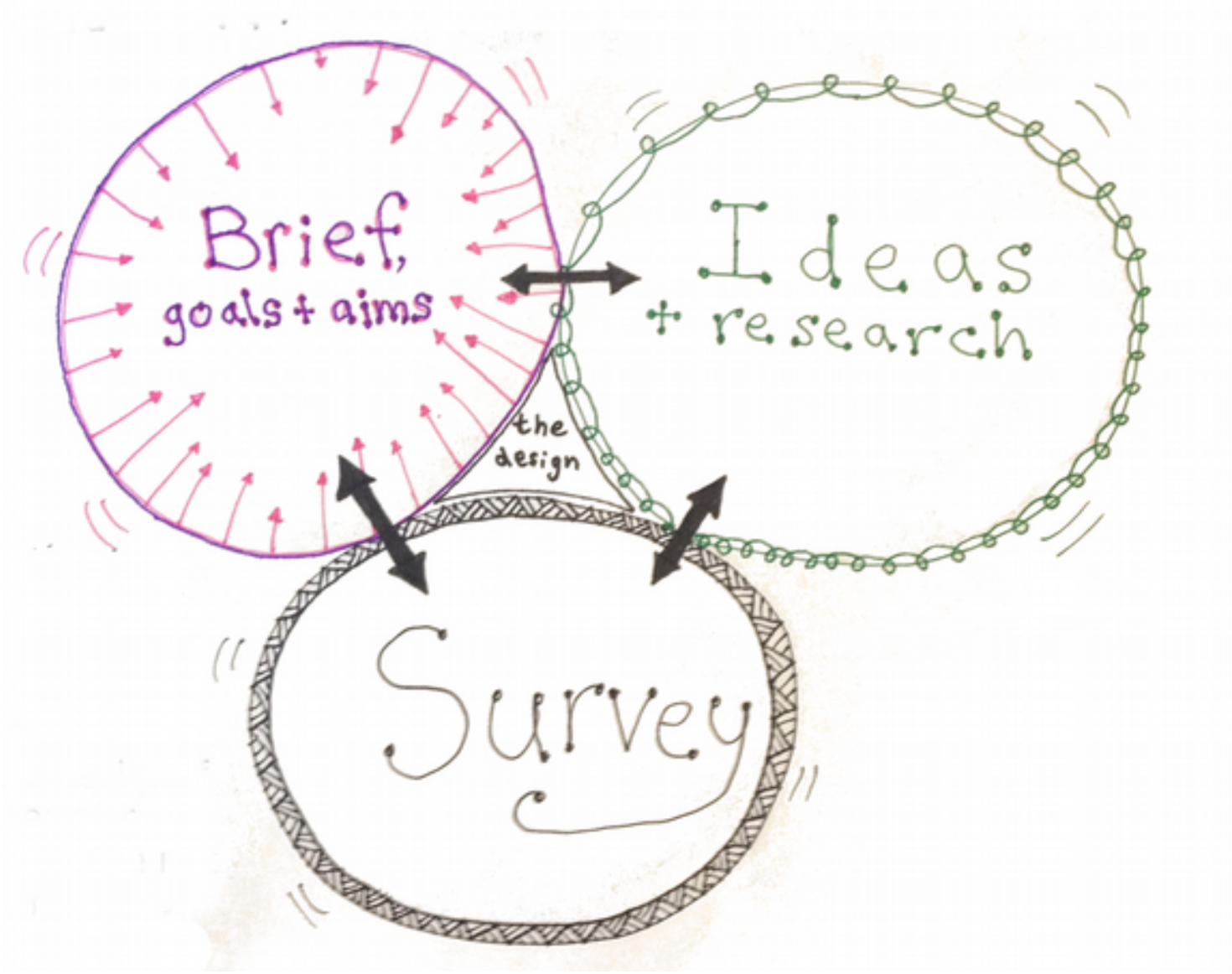

A guide to designing almost any project (but especially permaculture ones)

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A few words from Permaculture Explorer James Chapman

I discovered "The simplest design process" by using and teaching permaculture. This way of designing can be used for almost any project (permaculture or not), and the beginning of this document will hopefully be useful to anyone interested in designing and implementing a project. The rest of the guide (starting from "Tools for designing") is more specific to permaculture design and uses terminology common to permaculture.

Permaculture gives people the skills to create truly sustainable, productive habitats.

I run regular permaculture courses, am a permaculture diploma tutor and design consultant. For more info about me and what I get up to please visit my website, www.nonstuff.co.uk

For a full list of permaculture courses in Britain visit www.permaculture.org.uk

The Simplest Design Process: User's Guide

Getting started

The simplest design process is a very easy to learn, transferable guide to creating projects. If you are coming from a permaculture point of view, then your projects will have a strong sustainability angle to them.

With the simplest design process, there are 3 possible start points: Survey, Brief and Ideas. It doesn't matter where you begin.
You might have seen a technique elsewhere and want to explore if it would work for your project (starting in Ideas area). You could be observing what is already happening and notice that there is room for improvement (starting in Survey). Or, you could be given a Brief by a client or create one for your own project (starting in Brief).

As you go through the design process, move between the three main areas making each one more accurate and complete. At the start of the process, each area will be bouncing around with lots of new information flying about. As you near the end of the process, each area will become more settled, and you are then ready to bring the design together in a coherent way.

The 4 areas and The 4 questions

Area 1 : Survey
Whilst surveying a project, you are trying to answer the question "What is already there?" This can include trees, resources, boundaries, water, soil, buildings, skills, money, people, animals etc. Include everything that is already part of the project and also external influences that will affect it.

Area 2 : Brief, goals and aims
In this area you are trying to answer the question "What does the project need to do?" You may be given a general brief like "Design a Community Garden", but during the design process this brief will become more defined. During the process you may need to add (for example) "the budget is £5000", "the site needs to attract pre-school children and those over 65" and "to meet our funding requirements all the food produced needs to be weighed". The final design needs to meet all the needs mentioned in the Brief.

Area 3 : Ideas and Research
In this area you are trying to answer the question "What are all the potential solutions?" Collect ideas from everyone involved, visit similar projects and

do as much research as possible.

Area 4 : Design
You may notice that the design area is very small. Designing *should* feel like a small task, and it will ***if*** you have done enough work on

- The Survey (you know what is already there)
- The Brief (you know what you are trying to achieve)

and

- The Ideas (you know all the potential solutions)

If you are clear about these three things, a good design will make itself apparent.
If one of the three areas is still active (unsettled), a good design is unlikely to emerge as yet.

The survey, ideas and brief are like a mould, with the design being the emergent form. If the mould changes, so does the form within.
If you are trying to bring a design together and it's giving you a headache, that's because more work is needed in the Brief, Survey or Ideas areas.

The 4th question
The big question you are trying to answer for any design is "What is the best possible solution for this project and the people involved?"
If you do not answer this question truthfully, you are not designing very well. Make sure you are not trying to give people a solution just because you like it. The solution must ring true for all involved.

Good Habits

Be thorough with your survey. If you miss some vital bit of survey work, your design could fail, costing precious time, money and resources. (It is hard to remain motivated with a project after a big set-back.)

Regularly check that your brief, goals and aims are up to date.
Make sure you are not spending all of your time and effort in one area and visit each one regularly.

Non-attachment to Ideas
Treat your ideas lightly and do not get attached to them. You could write them down on small bits of paper and put them in a basket, or pin them to a board, or simply brain storm them onto some paper.

The important thing is to get them out of your head and share them with everyone you are working with on the project. Doing this will allow some space around your ideas so you can clearly see which ones really fit the brief.

I've seen many projects where people have been excited about a technique and it's not worked very well. There's nothing wrong with the technique, it's just being used in the wrong project.

Under-designing and Over-designing
The world is full of under-designed projects, especially ones where the needs of the end user and the planet are not being met.
The simplest design process tries to improve the success rate of projects through a thorough, holistic approach.

It can however also be problematic to over-design projects.
The real world will seldom behave exactly how you want it to, no matter how long you spend thinking things through.

How to find a good balance between under- and over-designing?

Designing the main features carefully is important, but leaving room for incremental improvements can be very useful.
If your design is too complex there is a danger that the client will feel overwhelmed and won't know where to start.

Designer and Client

When designing projects you will often be working for a client, and this document is written from that perspective.
When working with a client, it is essential that you both agree on the brief for the project. However, it is obviously also possible to design projects for yourself. In this instance I'd still strongly recommend you create a clear brief for the project.

Working closely with your client
If you are working for a client (rather than designing for yourself), it will probably be because they have hit the edge of their comfort zone with a project. You will hopefully have the skills or resources that they do not.

Do not hide away like a mad genius creating a great design alone to be presented in a grand unveiling. The design will have a much greater chance of being implemented successfully if you walk hand in hand with your client, designing as a team so your client understands the process by which the design was arrived at.

Soft Borders

You should hopefully now be clear about the 4 areas of The Simplest Design Process (Brief, Ideas, Survey and Design).
It's important to realise that they are areas within the entire design process, and that there is a lot of flow between all areas.

It is therefore impossible to work in one area exclusively. By doing your survey work you will automatically be coming up with ideas and also

collecting questions for the client to improve the brief.
It is however important to intentionally focus on one area at a time, whether it be for 5 mins or a day.

I’ve seen people make the mistake of putting a lot of energy into ideas and doing good survey work but being unclear about their brief. In this situation it’s almost impossible for them to pull a design together.

Tools for designing

Just like a mechanic has an extensive tool kit, permaculture designers also have a range of tools. These design tools help us answer the 4 questions.

I've collected together a list of tools I've used for different projects, loosely grouping them under the headings Survey Tools, Brief Tools, Ideas Tools and Designing Tools.
After each tool I've indicated which areas I think they could be used in. Some tools however can be used in more than one area, e.g. zoning, which can be used as a design tool and a survey tool.

It is unlikely that you will ever use every single tool listed here in one design, since as you get to know them all you will be able to see which tools are best applicable to your current project. Some designs only need one or two tools.

Survey Tools

These tools that help you answer the question "what is already here?"

Patrick Whitefield's 4 Stage Observation
Stage 1 – First impressions and walking round the perimeter. What is the context of the site?
Stage 2 – Imagine what the site was like before people started managing it. Imagine what it will be like if left alone from now on.
Stage 3 – Go to your favourite spot and do something creative.
Stage 4 – Start listing plants, analyse soil, make maps, take photos, interview clients etc. etc.....
This is often a great way to start your design off.
**Survey tool*

Action Research
Before implementing a design on a site we are encouraged to observe it for a full year. However, a lot can be learned by having meaningful but temporary or low impact interactions on a site in the first year, on the understanding that work done during this time may not fit in with the final design.
**Survey tool*

Boundaries
List physical and social boundaries. These have the potential to turn into limiting factors further on in the design process. You may be short of money for instance, but you won't know if this is a limiting factor until you have completed you survey work and understood your brief (and the budget it requires).
**Survey tool*

Resources
List all visible and invisible resources. Visible = spade, horse manure etc. Invisible = money, skills etc.
**Survey tool*

Micro-climates
**Survey tool: It is important to notice all existing micro-climates during the Survey.*

**Designing tool: You may want to create more micro-climates during the designing phase.*

Spirals of Erosion
Identify negative patterns that are already in place.
**Survey tool*
Identify interventions that could turn the pattern into a positive one.
**Idea tool*

Maps
Use existing maps and make your own. Making your own is a great way to get to know a space, and it forms a sound base for all your design work.
**Survey tool*

Photographs
Take lots! They may save you making a return visit and are also a great record of a project before the design has been implemented.
** Survey tool*

Videos
Video is an excellent tool for survey work. For many people it's much easier to make a short, informative video pointing at a feature in a garden than writing a report about it. Most modern phones seem to have a decent video function and *youtube capture* is a great app for sticking them together.
**Survey Tool*

P.A.S.T.E.
This stands for Plants, Animals, Structures, Tools, and Events. Try and compile a comprehensive list for each category.
** Survey tool*

D.A.F.O.R.M.
This is currently mostly used in woodlands but is useful in other habitats too. It stands for Dominant, Abundant, Frequent, Occasional, Rare, and Missing (species). It can quickly and usefully describe the mixture of species in an area without the need to count individuals. It could also be used in gardens, urban environments, roles in a group etc.
**Survey tool*
Can also be used as a Brief tool, e.g. 'What are the dominant features you want in the finished design? What things would you like to incorporate in a small way (occasional)?' 'What things do you want to get rid of (missing)?'

Needs and Expectations Mapping
Try to mind-map the needs and expectations of everyone involved in a project. Include the client, their neighbours, the public and yourself as the designer. I also like to think of the needs of the habitat.
**Survey tool and Brief Tool*

Legislation
You don't want to run into trouble further down the line by not considering any troublesome laws or regulations. If you are planning to be a bit cavalier, it is still useful to know what the law is.
** Survey tool*

Local Knowledge
You can discover some real gems of information by talking to neighbours and researching old documents and maps. This especially important if you have a short time frame to complete a design.
** Survey tool*

Flow Diagrams
Mapping the flow of energy in a site. For example between the house, the compost heap and the chickens.
** Survey tool*
Can also be used as a Design Tool to highlight the flow of energy in a finished design.

Entropy
Try to document any visible or invisible entropy in the system. Entropy could be seen as a loss of usefulness. Where are resources loosing their value? E.g. rotting fire wood or water in a gutter not being harvested.
** Survey tool*

Raw or Pure Observation
This is observing an area without any set objectives. It is best done in silence, and can take some practice and patience. Creating some space around a design process can be very beneficial.
You can find out more about this type of observation by researching mindfulness meditation.
** Survey tool*

Sectors
Sectors are about looking at things that influence the project but do not fall into the remit of the Brief. These influences often can't be stopped as you have no direct control over them, but they can be worked with, e.g. prevailing wind, sun, pollution, vandalism.
** Survey tool*

+ - ? (Positive, Negative , Interesting)
Use these three questions to create a simple analysis or as a way of comparing different options.

** Survey and Designing tool*

Soil Analysis
Get to know the soil type and pH, structure, drainage, organic matter content etc. Methods range from a jar test or digging a pit to a home-kit for pH testing to sending samples off to a lab for a full chemical analysis.
** Survey tool*

Brief Tools

These tools help you answer the question "what are we trying to achieve?"

The Brief can be seen as the anchor for the project. It grounds what you're trying to achieve in reality. It can also be seen as a filter; only the ideas that match the brief will make it into the final design.

Client Questionnaire
This is your main tool for creating a Brief. What are the aims and goals of the project? What are we trying to achieve? It is important to include all clients for the project (i.e. speak to all people with a stake in the project, not just one person).
**Brief tool*

Prioritising
It is sometimes useful to prioritise the elements on the client's wish-list, especially if this list is long and detailed. You can do this by giving each element a score out of 10, which creates a ranking system. This will show you where to focus the bulk of your efforts.
** Brief Tool*

Ideas Tools

It is good practice to write down every single idea you have for a design – no matter how genius, daft, practical or impractical it seems at the time. Getting everything down on a bit of paper is a great way to keep the design process fluid and open. As well as your own ideas, you should collect any ideas which other people have come up with.

Permaculture Techniques
These could include mulching, fruit tree cordons, forest gardening, humanure composting, coppicing etc.
** Ideas tool*

Appropriate technologies
These could include solar panels, wind turbines, chain saws, wood burning stoves etc.
** Ideas tool*

Random Assembly
Pick 2 elements at random and try joining them together with a different word, i.e. bee hive next to shed, beehive inside shed, beehive on top of shed. Some will be nonsense, but a beehive on top of a shed might keep them out the way, give them more sun and keep the bees flying above you heads, rather than into them!
** Ideas tool*

Permaculture Principles
Some folk seem to see the principles as a list of rules or a check list. ("If I include enough principles it must be permaculture" sort of attitude.)
I simply see the principles as a source of inspiration, a set of patterns which can create fantastic ideas.

I find Mollison's principles the most useful for designing land based projects.

- Relative location
- Each element performs many functions. (This is very efficient.)
- Each important function is supported by many elements. (This is very resilient.)
- Efficient energy planning: zone, sector, micro-climate and slope
- Using biological resources
- Cycling of energy, nutrients, resources
- Small-scale intensive systems, including plant stacking and time stacking
- Accelerating succession and evolution
- Diversity, including guilds
- Edge effects

From Introduction to Permaculture, by Bill Mollison & Reny Mia Slay

**These are all Ideas tools*

Outputs and Inputs
Thinking about the output/products and inputs/needs of different elements is an effective way of joining a site together and coming up with ideas.
**Ideas Tool*
Can also be a survey tool for analysing existing connections between elements.

Patterns in Nature
Nature has some very elegant ways of solving certain problems. Understand the problem that a certain form is solving and you can use the same pattern to solve a similar problem you are experiencing. E.g. in nature, branching patterns are very effective at distributing and collecting energy. On a farm you are also distributing and collecting energy and resources.
** Ideas tool*

Design tools

The designing tools help to solidify the final design, ready for presenting to the client.

Design by Limiting Factors
As you enter the last phase of your design process, you should be able to spot which of the boundaries (from Survey area) are going to become real limiting factors on the design.
You can use these limitations to your advantage as they can eliminate possibilities.
For example, you're trying to work out where to put your vegetable patch. You know that annual veg need lots of sun and do better if you can easily see and look after them. By eliminating all the areas that you can't see easily and the areas that are not in full sun, you may only be left with one or two options.
**Design tool*

Zones

Zone 0 : house or focal point
zone 1 : everyday use or maintenance
zone 2 : a few times a week
zone 3 : few times a year
zone 4 : once a year
zone 5 : never managed

**Design tool – used to create a more efficient design.*
And as a Survey Tool - You can use the Zones to describe how a site is currently being used.

Yeoman's Relative Permanence Scale

The order of permanence of different aspects of landscape should guide the order in which we address them in a design. The first point at which we can generally make an intervention is water (since we cannot control the climate, or determine the broad scale landscape.) On this basis, the first thing to do when designing is to consider how we can guide and use water to best effect, and how we can get it to perform as many functions as possible before it leaves the site.

It is a key strategy used within large site permaculture design. Yeoman's scale of permanence is:

1. Climate
2. Land shape
3. Water
4. Roads
5. Trees
6. Buildings
7. Fences and boundaries

8. Soil

** Design tool*

OHIO

OHIO stands for Only Handle It Once. Very handy for designing the implementation of a project.

**Design Tool*

Computer Software

Programmes like GIMP (free and open source) or Photoshop (costs money) are very useful. I use GIMP because I like the way you have a base map and then click different layers on and off. Sketch-Up is a free 3-D modelling tool good for designing structures. There are also a number of useful mind-map software available (e.g. X-mind).

** Design tool*

Bits of Paper

Once you have a base map and are clear which elements you want in the design, you can use bits of paper to great effect. Write or draw each element on a small bit of paper and move them around the base map to create a design. Take a photo, take them all off again and try and create another design. It helps to create cut outs for larger plants (trees, shrubs) and structures to scale.

**Design tool*

Incremental Design

It's often useful to build in room for further designing, tweaking and enhancements. In a garden you could decide where the shed, veg patch and paths go, implement these and design the other elements as these are in place.

This approach can take a lot of stress out of trying to design absolutely everything before you start doing anything.

** Design tool*

Phased Implementation

Think about how to implement the design over a number of phases. This can be particularly important if the site is already being used.

**Design tool*

'**Do Nothing**' **Scale**, or **Scale of Least Intervention**

This scale promotes doing nothing whenever possible. If a habitat is functioning well and is productive, leave it alone. A good example of this is natural regeneration. If you do need to make changes, chemicals are the absolute last resort but can be a good choice in certain situations.

1. Do nothing
2. Biological intervention
3. Human scale changes
4. Mechanical changes

5. Chemical interventions

** Design tool*

Other sources of inspiration and good practice

As well as the principles and tools listed above, there's a host of other useful permaculture theory. What inspires you will differ for each individual and will colour how everyone designs and develops their own style. Here are some I enjoy.

Permaculture Ethics

While these rarely form an explicit focus in a design, it is a good idea to check how your brief, ideas and design resonate with the three ethics of

- earth care,
- people care, and
- fair shares.

A good design will be strongly informed by at least one ethic; if you include all three your project has a much better chance of being truly sustainable.

Mollison's attitudinal principles:

- Work with nature rather than against
- The problem is the solution
- Make the least change for the greatest possible effect
- The yield of a system is theoretically unlimited (or only limited by the imagination and information of the designer)
- Everything gardens (or modifies its environment)

Holmgren:

- Design From Pattern to Detail
- Apply self regulation and accept feedback

James Chapman / Chris Johnson:

- Don't try to do everything

Be patient

Don't rush the design process. Missing some basic bit of information could cause the design to fail.

Permaculture is a design discipline. A lot of work has been done for you by a host of people creating and collecting solid design tools and principles. The

discipline required from you is to take your time.

You will improve with practice
The more designs you complete, the better you will get at:
1) Judging the amount of survey work required;
2) Creating a brief and working with clients; and
3) Choosing your design tools

Be a detective

Try imagining the design process as a detective story. You are the detective trying to solve the case - what is the best design for this site and these people? Each bit of research takes you closer to solving the case; each interview will bring you clues and information to complete the picture.

Remember a design is only useful if it is realistic, achievable and inspiring.

Don't be scared

Your first design is unlikely to be as good as your tenth, but it will almost certainly be better than a non-permaculture design. It may not be perfect, but it will be significantly better than anything else.

I've created a design, What's next??

1) Present the design to your client. Accept any feedback and make any adjustments.
2) Once everyone is happy, implement the design.
3) Once your design is up and running, go through the simplest design process again to design any tweaks.
4) Implement the tweaks.
Repeat step 3 and 4 when required.

Using the simplest design process in groups

The simplest design process really lends itself to group design projects. The visual aspect of the design process means everyone can see which area people are focusing on.

Creating a clear brief and writing it down on a big bit of paper helps clarify what everyone is aiming at. It also makes sure everyone is trying to solve the same problem!
Having all the ideas on a big sheet of paper allows everyone to contribute

fairly to the design.

It really helps if everyone can let go of ownership and see their ideas as belonging to the group.

Credits

I've credited the creators of the different tools where possible. Sorry if I've listed something that you've created and not credited. Please let me know if this is the case.

Proof reading by Eleanor Kinross and Jevgenia Milne