Making Permaculture Stronger

by collaboratively identifying and addressing its weaknesses.

INQUIRIES

Christopher Alexander's Challenge meets Darren J. Doherty's Design Process – Part Two of Two

Posted on July 28, 2016 by Dan Palmer / 1 Comment

Note: This post is a direct continuation of Part One. It is our most substantial post to date, to the extent a table of contents is in order. Accordingly, regardless of whether you make it through the body of the argument, please at the least check out the post summary and series conclusion. The conclusions we reach below not only further challenge permaculture's foundational design understandings, but provide the context for where we'll be heading next with this inquiry (testing the ideas developed here out on the ground).

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The Dilemma

In Part One of this Two-Part series, we examined Darren J. Doherty's designing/drawing in of a new whole-farm water and access system comprising a new driveway, drain and two dams:

In trying two different ways of simply describing what we saw, we got ourselves stuck on the horns of a dilemma.

On the one hand, we can take the standard permaculture approach and describe these actions as a process of assembling elements into a whole.

On the other hand, Christopher Alexander's alternative way of describing this same thing – as in the exact same actions – as differentiating a whole into parts also appears to accurately capture what is actually going on.

The dilemma is that the two descriptions directly contradict one another – the one emphasising the assembly of parts or details into patterns, the other emphasising the differentiation of wholes or patterns into details.[1]

Resolving the Dilemma

This two-part series is part of a larger inquiry that started when we accepted Alexander's challenge. Accepting this challenge means giving Alexander's living process perspective[2] serious attention towards any value it might offer permaculture.

In the interests of resolving this dilemma, in what follows we'll take a closer look at the implications of four aspect of Alexander's view for the standard permaculture approach to

design.[3]

Four Integral Aspects of Alexander's Approach to Living Design Process

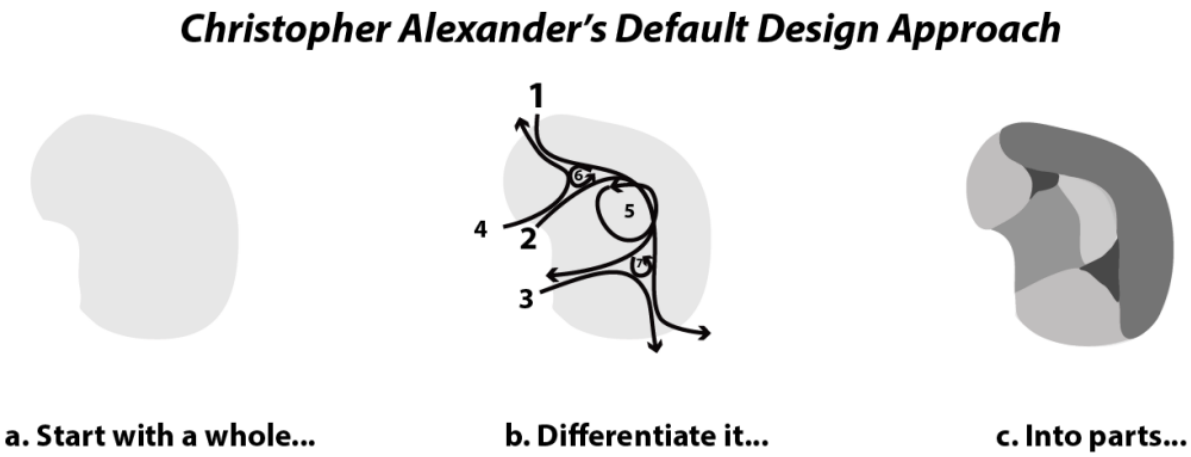
The following sentence is one attempt to summarise Alexander's alternative to permaculture's core understanding of design:

The whole comes first then gives birth to the parts by differentiating space in a sensible sequence.

We can tease this sentence into four distinct (if overlapping) emphases:

The whole comes first – then gives birth to the parts – by differentiating space – in a sensible sequence.

We have previously used this diagram to illustrate this approach (where the numbers represent the sensible sequence):



We will now consider each of these four aspects in turn, clarifying them using Alexander's own words, then asking of each:

- whether it is a true description of Darren's design process
- what if anything of value it might add to permaculture's existing design process understandings
- whether these discussions help us toward resolving our dilemma

The whole comes first…

In Alexander's words:

> *…it is always the whole… which comes first. Everything else follows…* (2002a, p. 87)

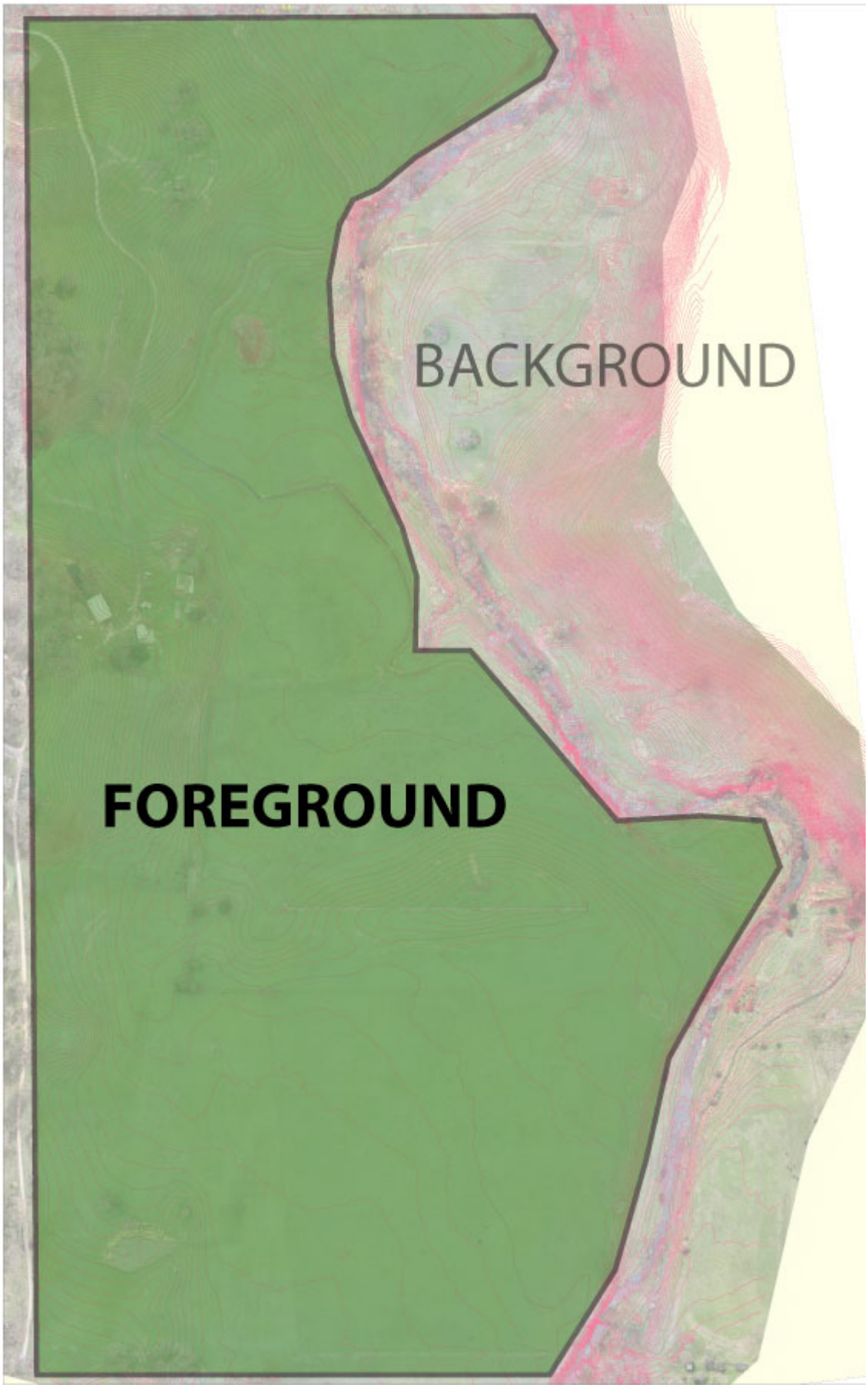
> *At each stage in its evolution the process – when a living one – always starts from the wholeness as it currently exists at that moment* (2002b, p. 216)

> *…the response to the land… must be rooted, always in the whole, in the cultural and human whole and the land and the ecological and natural wholeness of that place which forms the context of our work* (2002b, p. 344)

This contention is clear: all design process begins with a whole. A whole with a current state, as in a current configuration of parts.[4]

Do we see this happening inside Darren's Process?

As observed in the previous post, Darren did indeed start his design process with a complex whole. This whole comprised the land in its current state and the clients in their current state. What we see in the video is Darren tuning into the site aspect of this whole and only then working toward its coherent reconfiguration in regenerative directions.



The whole of the landscape Darren started with – what he sometimes refers to as the “board on

which the game is played."

Does this add anything to the standard permaculture description?

As self-evident as starting with a whole seems, this point breaks tradition with how design is usually defined in the permaculture literature. There, as shown here, the elements or parts are said to come first, and only then assembled or integrated to form a whole, which comes second.[5] Bill Mollison was very clear in this emphasis:

> *Permaculture, as a design system, attempts to integrate fabricated, natural, spatial, temporal, social and ethical parts (components) to achieve a whole. (The Designers' Manual, 1988, p. 36)*

While it might be argued that this is not what Mollison really meant to say, it is what he did say, and what he, and many others that followed him, have said repeatedly.[6] The statement is clear – start with a variety of different parts and then integrate them into a whole. The parts come first, the integration comes second, and the whole comes third.

Henri Bortoft (1996) eloquently summarised this way of thinking:

> *We are accustomed to thinking of going from parts to whole in some sort of summative manner. We think of developing the whole, even of making the whole, on the practical basis of putting parts together and making them fit. In this conventional way of thinking, we see the whole as developing by 'integration of parts.' Such a way of seeing places the whole secondary to the parts, because it necessarily implies that the whole comes after the parts. It implies a linear sequence: first the parts, then the whole. The implication is that the whole always comes later than its parts (p. 9).*[7]

Again, there is nothing controversial in the claim that this is an accurate characterisation of Mollison's approach:

> *For the final act of the designer, once components have been assembled, is to make a sensible pattern assembly of the whole. (Bill Mollison, The Designer's Manual, 1988, p. 70)*

Such statements aside, anyone who knows anything about permaculture design knows that it includes a thorough analysis of at least the site (if not also the clients) early on. It draws on a sophisticated suite of methods for tuning into relevant characteristics of the site as a pre-existing whole. This is presumably one of permaculture's great strengths! Yet the point remains that the permaculture literature's key definitions and descriptions of what design actually is omit or neglect reference to the whole coming first (in favour of stressing the elements and their assembly). Bizarrely, this prominent internal contradiction has not, to our knowledge, been previously recognised or discussed.

What does this Mean for our Dilemma?

Standard definitions of permaculture design are, at the very least, *misleading* about the fact the whole site being designed pre-exists any parts that are introduced. Yet at the same time, as we found in Part One, there is a more narrow sense in which the parts do indeed appear to precede the whole. In the case of Darren's design process, for example, the new water-harvesting-transporting-storing system is a whole that was complete only after Darren had added the road, the drain and the two dams.

This realisation appears to resolve part of our dilemma – it *is* true that we start with a whole. Yet, in the process of adding parts, it is simultaneously true that we not only change the whole, meaning that in a real sense we create a new whole, as in a new version of the old whole, but that we also create new sub-wholes that were previously absent, such as the whole water system.

Alexander's description thus focuses more broadly on the fuller picture of what is going on in a way consistent with, but not reducible to, permaculture's narrower focus on certain sub-wholes.

With this promising start, let us move on to Alexander's further claim that the whole…

…then gives birth to the parts…

In Alexander's words:

> *…each part [e.g., the driveway] is given its specific form by its existence in the context of the larger whole [e.g., the farm] (1979, p. 369)*

> *…the whole gives birth to its parts… (1979, p. 370)*

> *In nature… the parts are induced by the whole and created by the whole. The whole is not created out of them. The flower is not made from petals. The petals are made from their role and position in the flower (2002a, pp. 86-87)*

Alexander here contends that in a living process of design, parts arise in and from the context of the whole, where their resulting shape and layout responds to the context in which they find themselves.

Do we see this happening inside Darren's Process?

Within Darren's process, the form of the fencing, driveway, and dams were all (tentatively) sketched in based on a feel for the reality of the whole site and the current configuration of its parts (pre-existing and new). The form of the driveway, for instance, while adding a new part, also

grew out of the break-of-slope delineation that was already present. So again, this point seems common sense, and uncontroversial: The shape, size, orientation and so on of every part – whether paddock, tree belt, dam, emerged adaptively in response to the current state of the whole.

Does this add anything to the standard permaculture description?

Again, this appears to be a case of something any experienced permaculture designer would dismiss as a truism that nonetheless remains oddly absent from the core definitions of design in the permaculture literature.

There, the implication is that the whole is something that *results* from element assembly, not something that gives birth or gives rise to the actual form of the elements in the first place. The implication, if any, is that the parts give birth to the whole.

It thus does indeed does add something to the standard permaculture description.

What does this Mean for our Dilemma?

A couple of important points arise here.

The first has to do with where the parts come from. For while the location and form of the new dams, say, is determined by the context of the pre-existing whole landscape, it is not true that the landscape by itself 'gave birth' to the dams. It was involved in the birthing process, we can't deny that, but to fully understand the genesis of the dams we have to enlarge our conception of the whole to include the clients. For it was the clients who requested the dams.[8] As we saw Alexander stating earlier:

> *..the response to the land… must be rooted, always in the whole, in the cultural and human whole and the land and the ecological and natural wholeness of that place which forms the context of our work (2002b, p. 344)*

If we enlarge the primary whole in question to include the clients and their culture, vision, etc, then it becomes true to say that the parts did arise from within this larger whole. But there is more going on here.

The second point is that there are key moments of transition inside Darren's design process whereby the *idea* of a road, or drain, or dam gets transformed into an *actual* road, or drain, or dam. Let's say that Darren in conversation with the clients establish their desire for a new driveway. At that point the driveway is a generic idea or concept, in that its actual location and form have not been determined. It is simply the possibility of *a* new driveway. At this stage it is pure potential. Only inside the process does it become *this* new driveway. Only inside the process does it take on form and become an actual, real, defined entity.[9]

You might say that the idea of the driveway was *conceived* by the clients, then actually *birthed* by and out of the landscape inside Darren's design process.

The permaculture literature glosses over if not completely misses this distinction. There, the design process typically starts with a 'wish list' of desired elements:

> *The elements in a typical small farm might include: house, greenhouse, garden, chicken pens, water storage tank, compost pile, beehives, nursery area and potting shed, woodlot, dam, aquaculture pond, windbreak, barn, tool shed, woodpile, guest house, pasture, hedgerow, worm beds, and so on. These can be moved about, on paper, until they are working to best advantage* (*Mollison & Slay, 1992, p. 6*)

As we have seen, whether a road, dam, chicken house, or fence, these 'elements' start as generic culturally appropriate desirables that the design process actualises or makes real. Jumping straight from a wishlist to talk about moving them about on paper (as in the common permaculture exercise of juggling cutout elements into optimal assemblies) can distract us from the fact that one of the jobs of the design process is to translate the generic ideas of these parts into actual components within the evolving whole being designed.

We saw in the Darren design example that the form of the driveway, drains and dams only came into existence inside the design process where they arise from and within the whole. It wouldn't make sense there to talk about "moving them around on paper," for such talk implies that they already have been given some sort of form.

To be clear, we are not denying the useful role such exercises can play within design process.[10] It is just that until we appreciate the distinction between a generic potential part and an actual designed-in part, it is easy to mistakenly think of the elements on a wish list as already defined actual things or elements. From there it is hard to avoid the trap of construing the design task as assembling these prematurely defined elements. The process of design is then inevitably understood as the process of combining these elements where, if anything, the parts birth the whole.

Let's now bring this discussion to bear on our focal dilemma. What does all this mean for the relative usefulness or accuracy of the two contrasting descriptions of what was going on as

Darren designed in the driveway, drain, and dams?

In the Alexander-informed description, if we enlarge what we mean by the whole sufficiently, we have seen that it is indeed the case that the whole not only births the parts, but conceives them.

In the permaculture (element assembly) description, on the other hand, the idea of element assembly only makes sense if the form of the elements or parts are defined ahead of time.

The design task then becomes simply figuring out where these preformed elements will sit in relation to each other. When we tune into the distinction between the idea of each parts as a generic desirable and the actual part as a formed entity, however, the element-assembly approach, despite its superficial coherence, starts to become inherently problematic.

For as any experienced permaculture designer would surely attest, the point of the design process is to bring forth the parts (and hence their relations) within and from the whole, such that the parts honour, enhance and harmonise with the whole (in the very process of evolving the whole in desired directions). When we distort this reality with talk of pre-existing parts we merely drop in and assemble to create (or birth) the whole, we depart from not only the reality of what we want to do, but from the reality of what is actually going on.[11]

Let us now move on to consider Alexander's view of how the whole births the parts, which is…

…by differentiating space…

In Alexander's words:

> *every individual act of building [or in this case farm design & implementation] is a process in which space gets differentiated* (1979, p. 365)

> *…a living process helps us achieve living structure by differentiating space…* (2002b, p. 210)

> *Each pattern is an operator which differentiates space…* (1979, p. 373)

Alexander talks of *differentiating* space rather than *adding* or *integrating* or *assembling* parts.[12]

Now the concept of differentiation presupposes some larger thing or whole that is being differentiated.

Consider the difference between the verb *cut* and the verb *join*. To cut requires something to cut! It requires a preexisting whole thing. To join, however, requires only a minimum of two separate (i.e., unjoined) parts. It requires no preexisting whole, and indeed if anything implies that the

whole will come about as a result of the joining.

It is no different with the verbs *differentiate* and *assemble*. Alexander uses the word *differentiation* in the sense of making one thing into two (or more) things. To differentiate is to make distinct, to make different.[13]

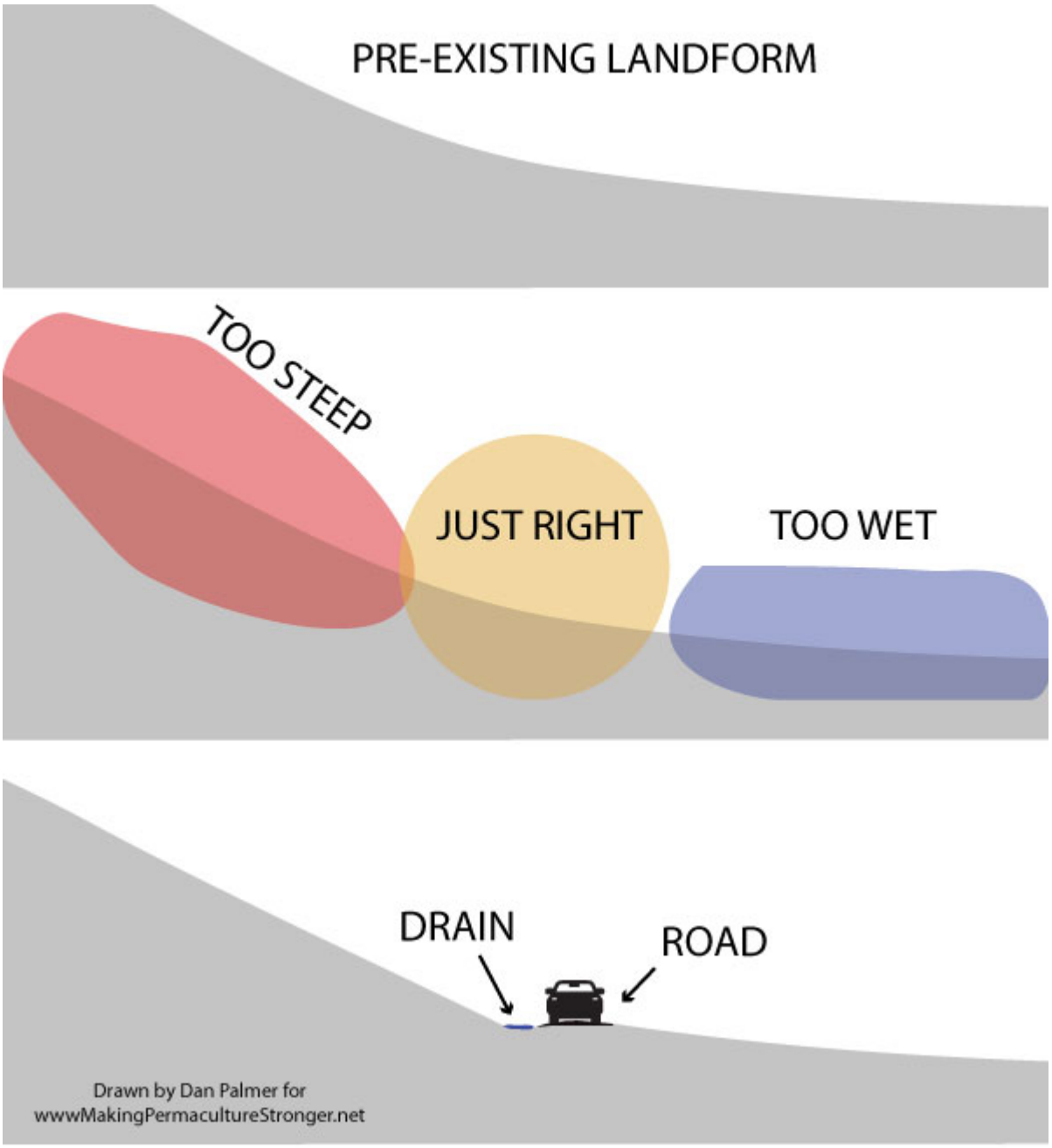
But this is only the first part of this aspect of Alexander's approach – the idea that the core act within design is *differentiation*. The second part is the nature of the stuff so differentiated – the stuff Alexander consistently refers to as *space*. Here, not only is the core act within a design process differentiation, the core thing being differentiated *is* space. This emphasis challenges the culturally persistent Cartesian/Newtonian paradigm in which design is primarily about fiddling with solid objects in a backdrop or container of empty space. Here is one statement in which Alexander tries to explain his issue with this deeply entrenched doctrine:

> *Each act of building [or designing], which differentiates a part of space, needs to be followed soon by further acts of building [or designing], which further differentiate the space to make it still more whole.*
>
> *This is commonplace in nature: and indeed, it is just this which always manages to make the parts of nature whole.*
>
> *Consider the leaves of a tree. At first sign it seems as though the leaves are solid, and the air between the leaves is merely space. But the air between the leaves is as much a part of nature as the leaves themselves: it takes on shape as strongly as the leaves themselves; and like the leaves, it is given its shape by the influences which work on it.*
>
> *Each leaf has a shape which is determined by the need for strength, the growth of the material, and the flowing of the sap within the leaf. But the air between the two leaves is given its shape as definitely. If the leaves are too close together, the air between the leaves cannot act as a channel for the sunlight which the leaves need; and there may not be enough breeze there to ventilate the leaves; if the leaves are too far apart, the distribution of the leaves on the twigs and branches is inefficient, and the tree will not get enough sunlight to support it. Every part you look at is not only whole in itself, but is part of a larger whole, has wholes all around it, and is itself made up entirely of wholes.*
>
> *This is essential to the way that nature works: and all of it is generated by the processes of successive differentiations, each one helping to fill gaps, and mend gaps in the whole* (1979, *pp.* 482-483)

In Alexander's view, space is not merely the backdrop of design – as hard as this can be to grasp from within the confines of the element-assembly (mechanistic) paradigm, it is the fundamental medium or stuff we are working with when designing landscapes. Indeed, in this view landscaping is one type of space-scaping.

Do we see this happening inside Darren's Process?

As we saw in Part One, at each step in his design process, Darren is inserting differentiations into the three-dimensional fabric of the unfolding whole site. As he tentatively draws in the new driveway, for example, he is differentiating the paddock area above the new driveway from the paddock area below it. Zooming in, he is also modifying and hence differentiating the shape of the land the driveway flows through, as shown here:



So it is true to say that as the design process unfolds that space is being reshaped. The fabric of the landscape/spacescape is morphing:

> *In the process of differentiation… the parts appear as folds in a cloth of three dimensional space which is gradually crinkled* (Alexander, 1979, p. 370)

Does this add anything to the standard permaculture description?

First, the idea of differentiating space as opposed to inserting and assembling elements carries certain advantages. For one, it helps avoid the common mistake in permaculture of imposing prematurely formed elements on a site without due attention to context. This is surely a lot more possible when you think about design as primarily a process of inserting and assembling elements.

As permaculturalists regularly decry, it is all too possible to insert and assemble *inappropriate* elements. Whether it's a bad case of the hugelkultur hiccups, swale fever, herb spiral addiction, or mad chicken tractor disease, certain cliched elements get peppered about in a way that cripples the integrity of the design process and its ability to generate deeply appropriate design solutions.

If, like Alexander, you instead stress differentiation as the fundamental design act, then your first question is what are we differentiating here?[14] Just as it is impossible to cut a piece of paper without paying attention to the piece of paper being cut, it is impossible to differentiate a space without paying attention to the space being differentiated. Here, inappropriately imposed cookie-cutter solutions take a hit simply in virtue of how we conceptualise what it is we are doing.

Second, Alexander's emphasis on space as that which is differentiated informs a different and more inclusive perspective on what a *part* is. In the permaculture literature, parts or elements are almost exclusively conceptualised as physical objects. Again:

> *The elements in a typical small farm might include: house, greenhouse, garden, chicken pens, water storage tank, compost pile, beehives, nursery area and potting shed, woodlot, dam, aquaculture pond, windbreak, barn, tool shed, woodpile, guest house, pasture, hedgerow, worm beds, and so on* (Mollison & Slay, 1992, p. 6)

As Alexander emphasises above in discussing the tree, for him the spaces between (and inside) the objects are equally functional and integral parts within the fabric of the whole. So as the driveway gets sketched in (or graded in for that matter) the driveway and the newly defined paddock space to the west (uphill) and to the east (downhill) are equally parts. Indeed, if anything Alexander emphasises the form of the empty spaces as *more* important than the physical objects.[15] He stresses the importance of making the spaces between the objects what he calls "positive" and recommends visualising this space as if it were solid as part of the design process in order to bring its shape out into the open and to consciously make it flow, function & hence feel as well or good as possible.

Consider the drain. Firstly, the drain isn't a physical object. The word *element* starts to seem a bit

forced, a bit meagre. The drain is a reshaped stretch of earth – effectively a slightly off-contour scratch. Here's a photo of the newly cut driveway & drain (to the left you can see Darren doing some finer-grained scratching with a keyline plow):

Secondly, the concave shape of the drain, as in the profile and size of the space defined by the drain base, is what makes it work (or not). So here Alexander's terminology seems to more usefully point out what matters, rather than speaking of the drain as an *element* which implies some bounded physical object or building block.[16]

In summary, this aspect of Alexander's view adds two important perspectives to the standard permaculture approach.

First, stressing differentiation rather than assembly forces an engagement with the whole being differentiated that beginning permaculture designers are notorious for neglecting.[17]

Second, the idea of design as the differentiation or reconfiguration of *space* removes permaculture's awkward and detrimental dichotomy between 'elements' as primary and the bits of space in between as secondary (where the resulting all-important shape of these in-between bits becomes accidental as in whatever is left over after the element-assembly game is done).

What does this Mean for our Dilemma?

The crux of the dilemma is the fact that on the surface of things the same act can be meaningfully described as both differentiation of a whole into parts *and* assembly of parts into a whole.

Though this inquiry is revealing serious shortcomings with the notion of design as element

assembly, it is still true to say that looking at the designed system as a subwhole (comprising the road, drain and dams), we see a set of closely related parts. In this sense we see an *assemblage*. Now surely an *assemblage* implies some *assembly*. If design results in *assemblages*, and the way to get assemblages is to *assemble*, and to assemble you first need some *parts* to assemble, then what is all the fuss about, right? Isn't it self-evident that design is thus a process of element assembly? Isn't this an unquestionably true logical necessity?

Not so fast, says Alexander. Not so fast. For it turns out that differentiation can equally contribute to or create assemblages as interrelated configurations of parts. In his words:

> *It is important to grasp that each differentiation adds relationships and brings more interdependence among the centers [Alexander's preferred word for parts]. Of course, as a result of the many adaptations, and the growing centers and properties, the structure slowly becomes thick with relationships. It is getting denser and denser all the time. And it is vital, for success, that the process is able to keep on cramming more and more relationships* (2002b, *p.* 201)

Hang on a second, the way we cram in more relationships is not by assembling parts but by further differentiating the whole? This is Alexander's contention. It is a contention supported whenever we actually observe the growth of an organism.

Consider for instance Alexander's example of an unfolding embryo (see here). An embryo develops from a sequence of differentiations that begins with a single cell. The result is a complete human baby – a phenomenally complex assemblage comprising billions of functional relationships. Yet, unlike a car, a lego spaceship, or, if you follow the books, a permaculture-designed garden, it was not assembled. It was differentiated.

This is a startling conclusion. For it calls into question what at first appears an obvious way of reconciling the diametrically opposite approaches to design we are here investigating. In this apparent solution, we suppose that both approaches are equally critical co-partners inside sound design process. But now we've seen that unlike element-assembly, which we are finding problematic even on its own terms, differentiation works both when moving from whole-to-parts *and* moving from parts-to-whole. Further, even when we insist on *talk* of assembling elements within permaculture design, what we actually *see* is the differentiation of parts.

This realisation marks a pivotal juncture in our inquiry. Up till now we have been conflating *differentiation* with moving from a whole towards parts (as opposed to moving from parts toward a whole). What we have just discovered is that we can decouple the act of *differentiation* from any particular directional commitment (in the sense of moving either up or down in the resolution of our focus). Sure, we can't get started without a whole, but we can then differentiate the tiniest part and move up from there if we like, to differentiate a larger part that includes this smaller part. Or we can drill down still further inside this tiny part and differentiate a part still tinier. Or, as a third option, we can move sideways, and differentiate a part or parts next

to or overlapping this tiny part we initially differentiated.

We now see yet another reason for favouring differentiation over assembly as the core design act: it applies equally to moving from larger to smaller parts *and from* smaller to larger parts. Assembly, on the other hand, only works in the latter direction – you can't assemble larger parts into smaller parts.

When we consider that assembly, unlike differentiation…

- creates a false dichotomy between the elements assembled and the space between them.
- is consistent with neglecting the whole space being designed such that in this view of design elements prematurely formed are routinely imposed (as opposed to finding their form as they come into being as parts of the designed space). Not just as a mistake for beginners who didn't pay attention to their book or teacher, but as an inevitable side-effect of the underlying conceptualisation of what design is

….we start to realise that though it initially appeared to be an equally useful description of Darren's design process, the element-assembly approach is ridden with inherent issues. These issues have persisted for over 40 years of conceptualising design as element-assembly. They show no sign of abating. It therefore appears this approach *inevitably* compromises sound design process and is thus overdue for a serious rethink.

…in a sensible sequence.

In Alexander's words:

> *Unfolding, the essential feature of all living processes – which we may also call differentiation – comes about, and succeeds, because it always occurs in a certain kind of sequence. It goes step by step, we already know that. But it goes step by step in a certain order* (2002a, p. 300)

> *The crux of every design process lies in finding the generative sequence for that design, and making sure that sequence is the right one for the job* (2002b, p. 317)

> *…the actual creation of the sequence… is one of the most crucial aspects of the design task* (1979, pp. 382-383)

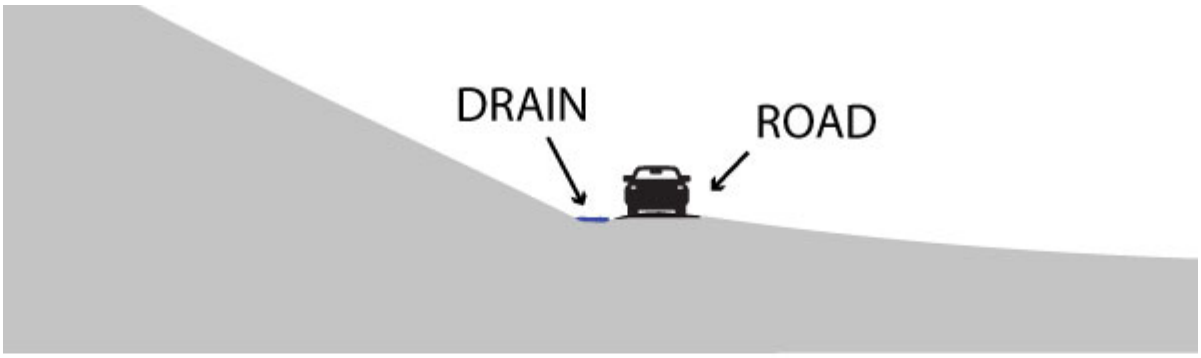
Do we see this happening inside Darren's Process?

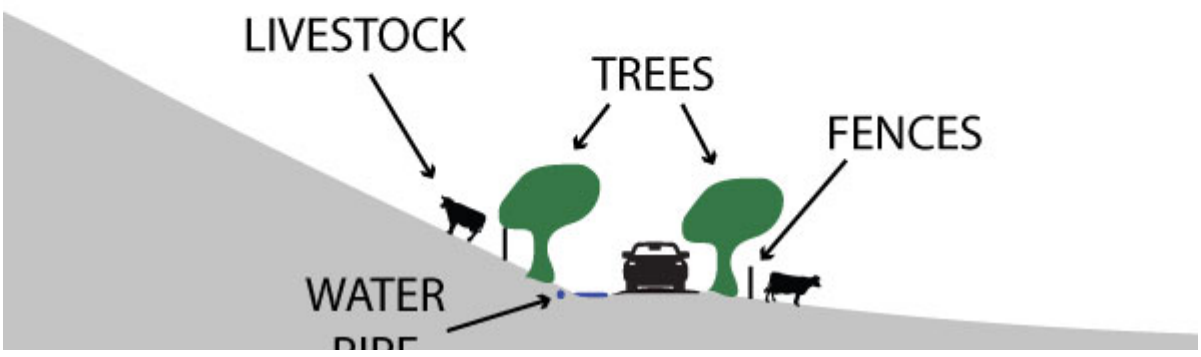
Affirmative. Darren is partial to a good *sequence*, as evidenced by the fact that the Regrarians Platform guiding his design process literally *is* a sequence. A default sequence adopted then adapted from P. A Yeomans' *Scale of Permanence:*

- Climate (including the personal and cultural climate) – which Darren calls *the rules of the game*
- Geography – Which Darren summarises as *the board on which the game is played*
- Water
- Access
- Forestry
- Buildings
- Fencing
- Soils
- Marketing (added by Darren)
- Energy (added by Darren)

By and large, Darren moves from the top toward the bottom of this sequence, in general designing in dams, drains and driveways before considering the layout of tree systems, internal fencing, livestock and so on. This means that things that are relatively harder to influence and more permanent are, as a rule, considered before things that are relatively easy to influence and less permanent.

As you'll see in the video, Darren started differentiating the layout of tree systems and paddocks (not to mention many other details like tanks and pipes) earlier and in a more fluid and shifting sequence that I have shown here. But in general he did and does move from the mainframe 'skeleton' created by water and access systems to flesh it out with different kinds of tree systems, fence & gate layouts, and so on down through the scale. Here is a profile sketch showing some of the extra detail that unfolded around the drain/driveway system. One thing gave rise to other things, where the sequence was crucial.





Drawn by Dan Palmer for
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Does this add anything to the standard permaculture description?

While some kind of sequence is implicit, if not explicit, in most presentations of permaculture design, a corollary of construing design as element assembly is a kind of detachment from any particular sequence, at least in terms of which parts are assembled first. Permaculture design methods such as random assembly encourage just that, and in practice a permaculture designer will often look about until a compelling reason for placing a particular element somewhere arises. That element in place, whatever elements make sense to plug in to that element are inserted, and so on.

This is a bit like playing lego but without the assembly instructions. One has a vague feeling for what one is after, grabs a piece, and goes from there. In this approach design starts with a list of parts and a board (landscape) to assemble them on. Although heuristics like water-access-structures-plants-animals (WASPA) or the scale of permanence are often given lip service[18] and indeed used to some extent, the actual design process becomes a trial-and-error sequence of clicking or connecting everything together. The implicit assumption is that there are any number of different sequences or pathways to the goal of an assemblage of interconnected elements.

In contrast, Alexander emphasises that getting what he calls the *sequence* of unfolding right is imperative to an authentically organic, living or adaptive design process. In his differentiation-centric approach, each differentiation is also a transition within, and a transformation of, the evolution of the whole. Here, the parts just differentiated help define the new whole from which the next differentiation takes its leave. He argues that the key to the generative power of this approach is getting the sequence just right:

> *a structure is truly generated, and perceived as such, and perceived as having life, only when it has unfolded from a nice, beautiful sequence of differentiations – and this is perhaps the most important point of all.* (2002b, p. 320)

> *The power and relaxedness that come from a proper sequence are immense* (2002b, p. 322)

So while the idea of sequence perhaps itself adds nothing *fundamental* to permaculture that we haven't already discussed, Alexander does add a much, much stronger *emphasis* on the idea of getting the sequence just right in a continuously adaptive process. Reading the permaculture literature you can easily get the impression that the exact sequence used in a particular process is a secondary concern. For Alexander, it is the crux of the matter.

What does this Mean for our Dilemma?

Designers like Darren (or Dave Jacke) are rare in explicitly discussing the importance of a sensible sequence.[19]

For our purposes here, however, we can summarise our discussion about this aspect of Alexander's approach as a matter of relative emphasis. Like most of what Alexander has to say, there is more to it than this, but we can for now conclude that this aspect does not directly contradict anything inside permaculture's foundational understandings of design that we haven't already covered. Besides, teasing out the ramifications of what the core act of design is (be it assembly or differentiation) is already bordering on biting off more than we can chew. Best we leave further inquiry into the way in which repeated instances of this core act are *sequenced* for another time.

Summary

This post started with the dilemma we inherited from the last post: we can describe some of the same core acts we saw inside Darren J. Doherty's design process as both the differentiation of a whole *and* the assembly of parts. This fact renders inadequate our prior conclusion that these two acts are complementary partners inside design process.

We then looked at four aspects of Alexander's approach to living design process: *The whole comes first – then gives birth to the parts – by differentiating space – in a sensible sequence.*

In exploring these aspects toward resolving our dilemma, we saw serious cracks appearing in the element assembly view that has dominated permaculture for over 40 years.

Along the way we discovered that differentiation not only fares a lot better as a coherent description of what is actually going on, but that differentiation more meaningfully describes the movement in design not only from a whole to parts, but from parts back up toward the whole.

The view of design we are left with has a clear recommendation concerning the idea of design as assembly: **Let it go**.[20] To try and recap all the nooks and crannies we've just explored, in its place we are left with a view of design something more like:[21]

- Starting with an existing configuration of a whole-space-comprising-a-configuration-of-already-differentiated-parts…
- …further differentiating this whole…
- …fluidly moving down, up, and sideways as necessary…
- …both modifying what is there and conceiving (as potential) then introducing (as actual) new parts…
- …that grow out of and hence harmonise with the whole…

- ...to support the evolution of that whole...
- ...as a rich network of interelated parts...
- ...toward our desired outcomes of a resilient, abundant, human-supporting ecosystem (or whichever wording floats your boat).

Series Conclusion

> *I think Alexander's concept is much closer to how permaculturists actually design, by starting with something that is already a whole and then differentiating and integrating additional factors into it. The issue is mostly that our language has not caught up to our practice. (a recent comment on an early post in this inquiry by best-selling permaculture author Toby Hemenway)*

Let us not mince words. We have exposed permaculture's default approach to design as mistaken, misleading, contradictory, and counterproductive. We have explored the beginnings of an alternative approach more aligned with the *reality* of sound permaculture design process. This alternative approach, for which thanks are due to Christopher Alexander, promises superior service toward permaculture's stated objectives than permaculture's own currently dominant approach.

Thus ends this two-part series. We invite critical review, detailed questioning, and hearty discussion of these conclusions. We invite you to point out our inevitable wrong turns, mis-takes, weak links. But if the ideas developed here stand firm,[22] we invite permaculture colleagues around the world to consider tentatively accepting them as part of a provisional pathway forward. This would be something to celebrate. This would be an example of collaboratively acknowledging and addressing our foundational weak links toward making permaculture stronger.

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Endnotes

1. To be clear, this means it is a false solution to say that element-assembly and the differentiation of a whole are mutual and reciprocal partners inside healthy design process. In this common reaction we effectively assemble the two into a more complete understanding and think boom – problem solved without any fundamental rethinking required. The dilemma shows that this is in fact only the appearance of a solution. It is not a real solution. ↵
2. As in his full-blown theory of design as a living process. This is in contrast to Alexander's pattern language concept which, though just one part of his broader design approach, has spread through permaculture like wildfire. This is despite Alexander spending 30 years writing his four-volume masterwork *The Nature of Order* to convey and further develop the living process approach he realised readers didn't pick up on in his earlier work on pattern languages (which for this reason he saw as a failure) ↵
3. Earlier we discussed foundational permaculture design descriptions, and you might find it useful to revisit them here before reading on ↵
4. If it weren't for something wanting in that current state/configuration of parts there would be no requirement for a design process. ↵
5. An exception proving the rule comes from the late Patrick Whitefield in his *Earthcare Manual* who not only hardly uses the word *element* in discussing permaculture design but in a section entitled *Designing in Wholes* writes "look at the whole system first and last" (p. 36) ↵
6. Not to mention what our culture whispers in our ear from birth – effectively a restatement of the mechanistic view that all wholes result or emerge from the right combinations of parts. ↵
7. We look forward to exploring Bortoft's sophisticated alternative view of the whole-parts relation, which we have only just become aware of, more in future. Thanks to David Seamon for the tip-off ↵
8. or at least was open to them upon Darren's suggestion ↵
9. This is so even though Darren stresses its form will become still clearer later in the process as the driveway is marked out and actually constructed ↵

10. Though later we'll show there are other, less risky ways of achieving rich assemblages of interconnected parts ↵
11. What is amazing here is that in spite of this the element assembly mantra somehow still dominates the literature of permaculture design after 40 years of not actually making much sense of what is actually going on! ↵
12. A way of talking he challenges us to abandon, if a process is to be what he calls a *living* process ↵
13. Note the difference between differentiating and cutting, where to cut is to make not only distinct but to make separate ↵
14. The second question being "on what basis?" ↵
15. Rather than what happens to be left over once element-objects have been inserted and assembled as is the case in all too many permaculture designed systems ↵
16. Incidentally, it turns out an essential but overlooked aspect of Alexander's idea of patterns, which permaculturalists hold in such high regard, is that patterns are not elements, but tension-reducing geometrical configurations – that is to say arrangements of space. His notion of a pattern dissolves the idea of elements altogether ↵
17. As discussed, in its preoccupation with joining parts in the right way, permaculture often ends up imposing these parts regardless of their appropriateness to the whole. ↵
18. Darren's process is an obvious exception and stands out to the extent the sequence does indeed guide the process ↵
19. which for Darren is about moving from more permanent to less permanent and for Dave Jacke is primarily about moving from wholes toward parts ↵
20. With gratitude, and a generous retirement package, for it has played its part in permaculture's evolution. But part of growth and life is knowing when it is time to discard that which is no longer of service. ↵
21. Forgive the clunky expression – but let's get the ideas out and worry about cleaning up the wording later ↵
22. Not in the sense of fixed conclusions to adhere to for the next 40 years, but as a provisional platform for further discussion, experimentation and growth ↵

Dan Palmer

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1 Comment

Kama Burwell
August 1, 2016 at 2:57 pm

Crikey Dan, if only I'd read all this before I came to the Making Permaculture Stronger Hui…. then I wouldn't have been such a pain in the butt 🙂

I agree I agree I agree….

I believe that the design process I use and teach, which draws very heavily on my learnings with Haikai Tane, is in alignment with what you are describing here. The language is different (and language is always slippery), which is why is has taken me so long to understand what the heck you are talking about.

I commonly tell people that the landscape will tell you what to do…. that design is pretty easy and obvious when you follow the cues of the landscape… (and when I hear myself say this to potential clients I try to back-track to make sure they still value my expertise!).

Mind you, I will carefully check my written teaching notes now – and ensure that they reflect what I say and do…. many of us I suspect use old teaching notes that could do with an overhaul.

Warmly, Kama