Imagining the building: architectural design as semiotic construction

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Reporting on three days of observation and recording in a Canadian architects’ practice, the authors display the progress of the collaborative design of one element of a large building as a ‘design stream’ into which various influences flow, affecting what is being constructed. That construction is seen in semiotic terms as a complex of signs in which three components can be distinguished: a ‘virtual building’, an envelope of considerations and a network of associated references and meanings. The primary product is thus not the drawings and written specifications but an ‘idea’. ‘Maps’ of the sequence of design events show the semiotic transactions that take place, and attention is drawn to the role played by different semiotic (or symbolic) modes, and especially to that of spoken language.

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Do we not make one house by the art of building, and another by the art of drawing, which is a sort of dream? —Plato

‘Design’ in English is both a verb and a noun. As a noun it takes two forms: first, a non-count noun referring to the process (‘design is an opportunistic activity’); ‘design’ in this version can’t be preceded by ‘a’ or ‘the’ and can’t have a plural; and, second, a count noun referring to the products of the process (‘the design was unsuitable’, ‘several designs were considered’). That much is commonly understood (though not necessarily in those esoteric linguistic terms). What has been rather taken for granted, however, is what the design, the product of the design process, is. We think the typical understanding is that it’s the constructed-in-advance representation that will
determine essential features of the eventually-to-be-constructed artefact. In architecture and engineering the representation will often be a set of drawings and written specifications.

But what is the representation a representation of? The common sense answer is, ‘the building that is to come into being.’ But representations, simply by being representations, bring objects (objects of cognition, ideational entities) into existence without any necessary reference to actual or future states of affairs in the world. The drawings can thus also be regarded as representing an existing building, one that does not exist in constructed form but that nevertheless has many characteristics of buildings—specific shapes, configurations, dimensions, materials and so on. And we have evidence that architects in their deliberations are most often addressing this existing conceptual or imagined or dreamed building and not the one that will be built: they say, ‘Let’s lower the balcony here’—but there isn’t a balcony because the ground hasn’t even been broken yet. There is no doubt that this imagined building, which we have referred to as the virtual building (VB)\(^1\), despite being unreal in a physical sense, is a solid social fact, something known, often in great detail, to participants, both inside and outside the office, in the activities that cause the building to get conceived, financed, approved and built.

Clearly this symbolic or semiotic artefact, the VB, is, together with its representations, the product of the design process and may aptly be called the design. But it isn’t the whole product, and one purpose of this paper is to draw attention to what else the outcome of design activity might be. Without deciding in advance what ‘the design’ is, we choose to study rather what gets produced or comes into existence, as well as how these effects occur, in the course of design: what new things and what new connections between things appear in the world.

Our epigraph from Plato is helpfully suggestive. If design dreams an object, the process may have some of the characteristics of dreams, which include not only clear representations of people, places and situations but also associative overtones, resonances and moods that impart an affective colour and tone to the experience.

1 A semiotic approach to studying design

The problem with studying design is that the virtual building, its intended product, isn’t visible. Of course, design is typically associated with and is often only possible with the aid of material artefacts such as drawings. But these aren’t the design. The design, in its emergent and final states, is a complex of ideas. It exists in consciousness, an object of cognition, which

\(^1\) Medway, P ‘Virtual and material buildings: construction and constructivism in architecture and writing’ Written Communication Vol 13 (1996) 473–514
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is to say that it is precisely not a material phenomenon, though it is undoubtedly ‘coupled’, as systems theorists say, either ‘loosely’ or ‘tightly’, with neurophysiological processes.

A semiotically-inspired approach may be helpful in that it addresses signs, which are by definition two-sided, comprising a material, or quasi-material form, and a meaning or effect in consciousness. Signs belong both to the outer world of physically detectable phenomena and to the inner world of the mind. The sign is a material thing or process like a spoken word or flames rising from a building, but it isn’t a sign unless it’s accompanied by a meaning or effect, something that happens in the mind as a result of our treating the thing or process as a sign, and not just as mere physical stuff. It’s our act of interpreting or reading that makes a sign a sign.

A semiotic approach thus focuses on signs, not minds. In the research reported here, which makes the sign complex known as the design the object of study and traces its developments and transformations over time and across communicative transactions, it nicely gets around the unfortunate tendency pointed out by Coyne and Snodgrass for researchers to locate design as occurring in individual minds. In our model, the idea simply changes or stays the same over time as a result of the semiotic activities to which it is subjected. For our purposes it is not a priority to discriminate between individual and social cognitive processes, which in any case we see as inextricably intertwined.

As a discipline, semiotics, or semiology (see note 1), has split in numerous directions. For the sake of brevity, we will only note that for our purposes we find the semiotics of C.S. Peirce more relevant than the semiology of Ferdinand de Saussure. For Peirce, the sign, once we recognise it as a sign, has an effect on our minds, such that we call to mind what is being referred to, even though that thing isn’t present to perception, or such that particular associations of emotion, mode or tone are evoked. This event in the mind, that which happens as a result of ‘triggering’ by the sign, Peirce calls the ‘interpretant.’ The sign then isn’t necessarily an external material thing or process, but can occur as a mental event or state.

The other important point to take from Peirce is that the interpretant—the mental response to the sign—isn’t necessarily a single act but is more typically a chain of events or the simultaneous activation of networks of associated knowledge and affect. Thus the interpreting that’s activated by the word ‘tree’ itself acts as a sign, bringing about further mental events like recollections and associations and definitions, and they in turn act as
signs in that they make further things happen—and so it goes on until something stops it. So Peirce speaks of ‘unending semiosis’.

1.1 A design episode: bringing an elevation into being

In this paper we attempt to take a semiotic approach to the evolution of a design over a few days in a Canadian firm of architects, using data gathered by Bob Clark. We take it for granted that the design is not the drawings but is the idea that the drawings (always partially) represent. Then we treat this idea as a complex sign and note its specific character and the processes (transformation, connections, splittings etc) it undergoes, all on the basis of, still, what we can observe and what the participants are able to tell us. (There’s no getting away from those methods in micro studies within the human sciences.)

The larger (though still quite small) study from which we are drawing took place in two Canadian architects’ firms. Forty-five hours of observation were carried out (3 continuous days in each firm). 6 hours of audio tape were recorded and four ‘reporters’ notepads filled with fieldnotes. Explanations of the activities, conversational references etc were spontaneously offered by the participants and solicited by us in the course of our observation; and we had a long discussion on a different day with our key informant, one of the senior designers. Funding being limited, only parts of the recordings were transcribed but the whole was carefully listened to and summarised. Documents generated or referred to by the participants were photocopied or collected and numbered. We produced a summary document, comprising a narrative of the entire observed period with references to fieldnote page numbers, tape locations, transcript sections and collected documents.

To assist analysis of the data and communication of our findings we attempted to display the ‘design streams’ we observed in diagrams or ‘maps’, of which we include three in this paper. We confess to liking these maps with their lines indicating the movement of ideas; they are appropriately reminiscent of diagrams of neuronal networks, and provoke speculation and imagination in the way that city railway maps did for the Situationists.

In the firm on which we report in this chapter several jobs were in progress. We followed only one of these, the design of a laboratory facility for a US corporate campus. The firm had a staff of about 12, of whom half were to a greater or lesser extent involved in this project. Within this project, while we were there in a recent February, a number of design ‘strands’—aspects of the building—were being worked on concurrently. We attempt
to show their intricate relationship in Figure 1 which displays, in a considerably simplified form, the totality of the design work we observed on this project, the lines representing the strands.

What follows relates to just one of these strands (distinguished by the unbroken line), the design of the external elevations of the building’s
administration wing. ‘Before Tuesday’ refers to the weeks and months of work that took place before we arrived on the scene. Bob Clark was in the firm observing from the start of Tuesday until the end of Thursday, though the work on the elevations strand took place exclusively on Wednesday and Thursday. The culmination of the work was the elevation drawing (26) which was to be presented at a team meeting, which we were not able to attend, on Friday. The purpose of the meeting was to evaluate the total design to date.

The numbers that are enclosed in square brackets in the maps and in round brackets in the text refer to documents, mainly drawings, that we collected or photocopied. The text contained in oval balloons identifies semiotic encounters, activities, artefacts and inputs that resulted in the design’s being moved on a step; some key meetings to which we need to refer have been allocated letters (A to E). One of our intentions in the ‘maps’ we produced was to emphasise the point that the design is not the drawings and specifications; the design can change (e.g., by a decision in a meeting) some time before the documentation catches up.

The map, although much simplified and highly selective in relation to our detailed records, is still complicated and far from self-explanatory. We present it, in fact, mainly to show the intricacy (social and semiotic) of the processes that led up to the design as it existed at the end of Thursday. In order to tell the elevation story, however, we need a larger scale graphic (Figure 2). Even here, however, because of space restrictions, not all the actors and incidents can be shown, nor can all the episodes be fully addressed in detail in our discussion.

The design work involved a senior designer, Joe, whom we mainly followed, several other architects with less experience and the principal of the firm, Rachel, who had the final design authority over all the firm’s projects and contributed substantially to this one, though it was only one among her many responsibilities (see note 2). In addition, one external participant played a part, Janine, a structural engineer.

In the maps (Figures 1, 2 and 4) we show the points at which different elements enter the ‘design stream’, in ways that may result in changes to the evolving design. The maps also show the physical manifestations in which the design gets provisionally fixed at various points, the material traces that the design process creates and leaves. Figure 3 shows the symbols we use.

Speech and gesture, which are ephemeral, certainly leave traces in the
memory of the participants but are not allotted a special symbol. The circles, on the other hand, refer to relatively non-ephemeral semiotic artefacts such as drawings. The distinction between the double and single circle symbols is that the former represent the ‘definitive-for-now’ state of some aspect of the design; subsequent design activities take these artefacts as given starting points (which is not to say the designers may not later retrace
Figure 4 (a) The external elevations strand; (b) the external elevations strand (continued)
their steps upstream beyond the artefact to an earlier decision node and proceed down an alternative branch). We have adopted the term ‘legacy’ from computer programming, where ‘legacy code’ is code that is inherited from predecessors or earlier work. Information, ideas, stimuli for design, advice etc may be found in texts, existing buildings and other non-human embodiments (the square symbol) or in what other people say or do (the triangle symbol). Finally, ideational resources may be present in the design situation—the magazine on the desk, the consultant on the end of the phone—or may be brought to the design from memory. When the latter happens, we show their entry into the design process by an arrow with a dotted line.

We should stress that we could produce these maps only by simplification and abstraction from processes that were much more tangled than appears: for instance, where we refer by a single word to someone’s speech, that word may name a key theme in what was actually a dialogue that lasted for several minutes.

2 One day’s design work on the elevations
The elevations strand, the special responsibility of Rachel [Principal] and Joe [Sr Designer], emerges as a distinct separate task on Wednesday. In Figures 4a and 4b we zoom in yet closer and show, in as much detail as space will allow, the main semiotic transactions that comprised that day’s design work.

In summary, what happens is as follows: Joe [Sr Designer] takes the relevant ‘legacy artefacts’ and starts to take the elevation design forward. (Thus the team’s outputs re-enter the process as inputs.) He finds that he needs to know the wishes of Rachel [Principal] and asks to meet her. The meeting happens in the modelling room. Rachel tries to explain what she wants by modelling, fails, goes off and brings a new elevation drawing back to their resumed meeting. With the help of this artefact, Joe tries to understand Rachel’s intentions and produce a model to embody them, with two different outcomes.
The legacy artefacts from which the new work starts comprise a model (1st Model), a set of plans (7), and an elevation by Alan [Arch] (6). There are also doubtless ‘memorial traces’—of conversations, previous failed attempts, site visits, client meetings etc. ‘Memorial traces’ are, in common parlance, simply memories. We refer to them as traces because they may be as lasting in their effects as other, visible ‘inscriptions’, their continuing presence in the situation as real as that of materially embodied artefacts such as drawings and written texts.

In what follows, the numbers that precede the narrative chunks correspond to those that run down the left of the boxes in Figure 4. At some points in the text we include in square brackets following those numbers the times when the events occurred.

Joe drawing new elevation 1 [10:55]
In order to produce a revised elevation, Joe calls up on the computer the existing (legacy) elevation (6), consults the model of the admin wing, calls up the plan (7) on the computer and begins making changes.

2 [11:05]
Realises he needs a meeting with Rachel and requests one—needs to know what she wants so he doesn’t waste his effort.
Yes, she’ll meet him after her phone call.

Recall that what we are looking at in this study is what gets produced or comes into existence in the course of the design operation. One of the things that can, and often does, enter the process and receive conscious attention is a gap, absence, lack or question. For Joe, what is missing from the design is its overall configuration in profile—a big issue and beyond his competence to decide. Only Rachel knows or has an idea of this configuration; and because she’s the boss, how she imagines the building is how it will be (the statements of the powerful can have performative value—they bring about the state of affairs they represent); or at least her idea will be the starting point for negotiation.

3 [11:23]
Meanwhile, Joe phones Janine [Struct Eng] about the dimensions of a column, information necessary for the elevation drawing; then consults with Zack [Sr Tech] about cladding the column, to ascertain final dimensions (of column plus cladding).
New ideational inputs, in the form of quantitative information obtained by direct interaction with human sources (the triangle symbol) outside and inside the office, are now added to the VB, or rather to Joe’s knowledge of it, since the column dimensions are already known to Janine (just as the overall elevation profile is presumed to be known by Rachel). Although the VB is a socially shared cognitive entity, it is not known with the same exhaustiveness or in the same aspects by all the participants.

3a [11:27]
[8] Joe works on the drawing on his computer, thus producing a new artefact—the old elevation modified (though only provisionally and incompletely).

To this point, inputs into the developing elevation have been in three modes: model, drawing, and speech. Joe now generates new production in the second and third modes.

Meeting A, Rachel and Joe
As requested by Joe, in the model building area
4a [11:39]
Rachel selects a piece of blue styrofoam (polystyrene) and starts cutting it into the shape she has envisaged for the admin wing.

The semiotic mode in which development of the elevation occurs now switches to modelling. Physically, the new production is a 3D styrofoam object; ideationally and semiotically (and specifically iconically) it represents a new shape for the end of the admin wing. Rachel’s production (since she does not consult any sources) is presumably based on memory, not just of legacy documents but of the VB more globally as it exists at this point, partly in shared social space and partly (e.g., the elevation profile) only, till now, in her own head. As a result of her modelling, the VB now acquires a material specificity for Rachel and becomes more completely known to Joe. The current configuration may not survive further consideration, but its memory will, and whatever VB eventually emerges will carry, for at least these two participants, the semiotic loading (or connotative meaning) of ‘like (or not like) Rachel’s model.’

4b [11:41]
Rachel begins to describe her idea, that she wants to ‘play with the mass
in three dimensions’ and wonders ‘what would happen if we put a bit of a curve in it...(in order) to lighten the beast’—the building is now a ‘too rigid box’.

Modelling is evidently not enough, because Rachel has recourse to concurrent speech. ‘What can language do that drawing, the architect’s other principal medium [or modelling], does not?’ (Forty 2000). In Figure 4 we suggest that speech adds the ideational elements of intention, rationale and qualitative specification. What Rachel can probably do only in language at this point is identify the intention behind her current activity (‘play’) and the rationale for the activity (the need to ‘lighten’ the building).

What changes with this act of speech, however, is less the VB as potential material reality (its dimensions etc) than its positioning within a field of possibilities. Qualitative specification refers to semiotic acts by which the actual or intended VB is located or positioned in terms of alternative possibilities, or of qualitative oppositions and dimensions. Here this means placing the VB in terms of implicit or explicit oppositions, the first element of each pair carrying a positive valency:

curved vs. rectilinear
lighter vs. heavier
less rigid vs. too rigid

Thus what was before the unproblematically accepted solution—the legacy design for the end of the wing—is now repositioned by being placed in relation to a new possibility. This repositioning within a fresh frame is a frequent move in design.

5 [11:50]
Rachel mentions and sketches (4) a ‘sculptural’ fridge ‘with rounded shoulders’ she recently saw in the Globe and Mail, admitting that this reference is ‘tongue in cheek’. Her desire is for the building to be ‘elegant (and) distinctive’, not ‘strident’; and to be ‘a modernist statement’.

Here a new ideational input enters the design stream from a visual image. This image, however, is not currently to hand but is available only as a memorial trace (indicated by a dotted line in Figure 4a). In order to communicate the remembered image Rachel engages in a secondary (graphical)
Inscriptional semiotic modes, of which sketching is one, are usually associated with permanence, record etc; but the function of this inscription is ephemeral. (Cf Ferguson’s categorisation of sketches as ‘thinking sketch’, ‘prescriptive sketch’ and ‘talking sketch’). Once glimpsed by Joe, it will have served its purpose and can be thrown away. The artefact will not survive—but, importantly, the memory of the image will. It is now part of the growing cluster of associations and meanings that surround the VB as it evolves.

The spoken language again concerns both the intention of the designer’s activity (‘tongue in cheek’) and the location of the VB within a space of qualitative possibilities. So, ‘sculptural’ perhaps suggests that the impact of the building is to be in its three-dimensional massing, and not just its outline, while ’modernist’ has its clearly understood alternatives. Along a dimension of, perhaps, ‘noticeability’, there’s an implicit undesirable extreme of ‘unremarkable’, a desirable position of ‘distinctive’ and an opposite undesirable extreme of ‘strident’ (raucously seeking attention).

What we now need to add to our account is an acknowledgement of the design resource of metaphor. The term ‘statement’ used in relation to what a speechless building does is, along with other language-based metaphors, classic in modern architecture:

In the pursuit of a language free from metaphor, modernism tolerated only two particular classes of metaphor, those drawn from language, and those drawn from science.

‘Strident’, however, is a metaphor from noise. Most noticeably, round shoulders, characteristic of people, are transferred by the use of this trope to fridges and thence, by a double metaphorical transposition, to the VB.

One of the things that happens in design is that, by means of metaphor in language and formal and other associations in the visual mode, things that are not buildings (e.g., fridges) get into the design for buildings.

In episodes 7–9 Rachel gives up modelling and goes away to produce (in what medium she doesn’t specify) something (again) ‘sculptural’, a term which thus gets recycled so that its trace gets more heavily ‘inscribed’ into the assemblage of criteria and considerations governing the design; each time it is used it acquires extra meaning from association with the occasion of its utterance. Once verbalised, the active criteria and considerations tend to stay verbalised in the same form. Peter Lloyd’s remarks on the emergence of a shared vocabulary and language ‘capable of describing aspects of the

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6 Ferguson, E S Engineering and the mind’s eye MIT Press, Cambridge, Massachusetts (1993)
evolving design […] in the continual telling and re-telling of experience a language is built up which can be used to negotiate the factors influencing the final design’.

Meeting B
10, 12a [13:38]
Rachel returns not with a model but with an elevation (10) produced in colour with Corel Draw. It shows a rounded form on the end of the building’s administration wing.

12b [13:39]
She describes it as a ‘far too strident… (but) sculptural… powerful form’ inspired by the idea of ‘a crucible’. Though she says she doesn’t ‘want to get into symbolism or anything’, she thinks ‘there’s value in exploring (it)… to take a very rational thing and have it teeter a little, and also be a lot more fun’.

Rachel’s speech, supplementing the drawing she places in front of Joe, here again serves a number of functions: evaluation and elaboration of what the drawing shows (again recycling both ‘strident’ and ‘sculptural’) — the evaluation is in the ‘too strident’; identifying the metaphor that’s already there visually (the crucible — appropriate to a science building) — a metaphor that for a time becomes the ‘primary generator’; and specifying and discriminating motives and intentions, evidently placing a negative value on ‘symbolism’ and positive value on deviating from the purely rational in the interest of ‘fun’ (these evaluative loadings are noted by the signs + and — in Figure 4).

12c [13:42]
Rachel says she would like to have it done in styrofoam. Joe agrees to try.

Rachel’s utterance serves a jussive function (issuing an instruction). The VB, as indicated in her drawing, thus acquires a new loading of authorisation and sanction: from being merely a possible outcome, it becomes that which is required to happen. Again, this is a change not to the building in its material aspect, but to the meanings attached to it. In linguistic terms, the drawing gets modalised.

13 [13:43]
Joe then asks if the form ‘curves in two directions,’ something ‘which isn’t apparent in this… drawing.’
Rachel replies that of course it does, ‘it’s a crucible.’ Joe protests, and Rachel realises that this is not clear because she has drawn it only in elevation. So she sketches the addition in plan (12) and in perspective (13). ‘Like a boat?’ Joe asks. Rachel says ‘Yes,’ so that Joe now knows what she is to model.

Although the drawing enabled Rachel to achieve a representation that proved impossible in her model, the representation is satisfactory only to herself. It doesn’t communicate to Joe—as Rachel is taken aback to learn. One role of questions becomes apparent: to force an explication of knowledge that was assumed to be shared but in fact wasn’t; in this case to push the interlocutor into a further specification of the VB. On the cue of a verbal indication of confusion, Rachel supplies additional ideational input to supplement the already elicited graphical and oral representations. She does this first in graphical mode (in two different genres), and then verbally, by reasserting the authority of her original metaphor (crucible) and confirming the validity of J’s alternative metaphor (which works as well visually but does not serve the same semiotic function of evoking alchemy or chemistry). (Possibly Joe, like many of us, isn’t too sure what a crucible looks like.) Again, the progress of the design of the building is dependent on the evocation of an image (the boat) that has nothing to do with buildings.

So Rachel and Joe finally (for now) get there by cycling this aspect of the VB through a succession of mode switches: elevation drawing to speech to plan sketch to perspective sketch and back to speech.

In summary, Joe makes pragmatic objections, to which Rachel replies, in effect, that she’s not trying to be pragmatic and that, indeed, the line she’s pursuing is ‘gratuitous.’ Joe builds the model, as best he can, in accordance with Rachel’s conception, declares that it’s ‘ugly’ and that ‘sometimes the boss is just wrong,’ and then embarks on what he regards as a preferable design, an assemblage of plates which he characterises as ‘planar’ (rather than volumetric) and ‘better than a bloody crucible’. Rachel dislikes this, and says what’s needed is ‘halfway between that [a Canadian Architect image that is lying around] …and what you’ve got [Joe’s own concept].’

That takes us to the end of Wednesday. Work continued through Thursday but the activities we have described from one day will allow us to make the provisional points we are interested in.
3 What happens and what gets made during design?

Our semiotic analysis reveals the following (tentative) picture. We can perhaps distinguish three sorts of things—and then merge them into one thing, the product or outcome of design.

In the first place a building emerges, or a virtual building, the conceptualised or imagined version of a building. By the end of Thursday the VB has features it didn’t have on Tuesday morning; some features present on Tuesday have in the meantime been erased or modified, while aspects that were originally blanks or question marks have since been resolved by the specification of dimensions, shapes, materials etc.

Second, we have noted the putting in place of semantic realities which do not relate directly to, or cannot be translated immediately into, the physical configuration of the building. These include, on the one hand, qualitative specifications (a ‘lighter’ building, a ‘rational’ building that ‘teeters’ toward the non-rational) and, on the other, what we have termed ‘criteria and considerations’. Amongst the things identified and articulated or gestured toward have been principles according to which success should be measured, dimensions and polarities in terms of which the building’s positioning is critical and identifications of constraints (aesthetic, economic, functional, what Rachel wants, the limitations imposed by construction methods) and of affordances and opportunities. We can think of this set of (usually verbally) identified considerations as an envelope of coordinates within which the building must find its bearings.

Thirdly, there are all the other associations and meanings, some of them personal, some of them more or less widely shared, that aspects of the VB have acquired along the way—associations with and affective colourings from memories of the production process, from the pleasures and disappointments experienced, from other realities evoked by similarity or contiguity (see note 3).

This three-part complex comes into being bit by bit through the performance of innumerable semiotic acts: acts of creation, contemplation and communication of meaning. In the process both frequent switching between and simultaneous recourse to different semiotic modes, each with their own limitations and potentialities10, is noteworthy (see note 4).

If we view the essential product of design not as the resulting physical artefacts of drawings, volumes of specifications and electronic files, but as the semiotic product, part of which gets encoded in those material forms,
then we must recognise it as primarily a socially distributed mental construction that embodies all three elements just described. When we try to name or describe this construct, a profusion of metaphors comes to mind, none of them quite satisfactory. It’s a construct of meanings, but the meanings are not clearly bounded because one potentially connects to another ad infinitum (Peirce’s ‘unlimited semiosis’): building evokes fridge evokes ice cream and kitchens and annoying hums... We are talking about a semantic space, except that a space implies boundaries; Vygotsky’s metaphor for thought—a cloud of meeting seems more appropriate. So perhaps we should think of a zone of densification or a clustering within semantic space, by analogy with the way that matter ‘thickens’ to form galaxies. But we are also talking about semiotic chains and networks, so the notion of the design product as a semantic node is appealing.

But quite another appropriate metaphor is that of a palimpsest, a surface that starts off (relatively) blank and then gets written over many times, so that layers of traces are laid down (an expression used by Peirce) and a dense mat of meanings accumulates. Think how the virtual elevation (the elevation in its ideational or conceptual form) acquired all those layers of significance, some peculiar to either Rachel or Joe, some shared by both of them and some by others as well: it was metaphorically connected (by the end of Thursday, the day we did not describe) to images of fridge, boat, crucible, golf club and avocado; it was located in terms of bipolar constructs, and conceptualised not just as what it was but as what it wasn’t: thus it was or was not planar, strident, rational, sculptural...; it carried evaluations (ugly, unworkable, distinctive); and it was coloured (a matter of affective tone—Plato’s dream analogy is appropriate) by memories of success and frustration, and of the fulfilment and thwarting of wishes.

4 Discussion
(Discussant: Sean Hall, Goldsmiths College, University of London)

SH: Philosophy is a world of gaps: between appearance and reality in metaphysics, between subjective and objective in ethics, between knowledge and opinion epistemology, and between truth and falsity in logic. It struck me that this paper is about the gap between design thinking on the one hand and how we represent design thinking—through the diagram and through written language. How do we map the thinking process, because the thinking process is fluid; it is unlike an outcome. We might want to make a distinction between thinking, which is very difficult to alight upon, and thought, which in logic can be represented by p and q. How do we map this thinking process in design, which is quite unlike a formal logical process? One answer might be the diagrams of this paper, although at

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various points it is mentioned that these are simplifications of what happened. So back to the gaps that we need to talk about; between the virtual and actual building, between metaphorical thought and literal thought, between ‘what is not’ and ‘what is’, between representation and the actual thing, and between abstract and concrete. I was particularly interested in metaphor, the way we can have verbal metaphors and image metaphors. If we have the metaphor building is boat we can interpret that in thought or image. If we interpret it visually we have maybe an archetypal boat from a particular society and culture. If we interpret it through language we have three things: the term boat, instances of boats—ferries, liners, destroyers, rowing boats, etc.—and properties of boats—bow and stern, mast, deck, anchor. How do you think we play between the metaphorical and the literal in design thinking?

PM: Architectural discourse is pervaded by metaphor and a lot of metaphors come from language, so we talk about the ‘vernacular of the building’, the ‘vocabulary of the building’, ‘buildings making statements’, ‘reading buildings’. Metaphors like ‘boat’ and ‘crucible’ seem to impart a sort of poetic haze, a fuzz, a glow of associations around what are actually very stark technical drawings. When the architect goes across the office, opens the drawer and pulls out what looks like a blueprint, which is just a set of lines with some figures (to someone like me). What the architect sees is ‘boldness’ or ‘fragility’. On top of that each drawing has this affective load: ‘this is the one we really messed up on’, or ‘this is the one that I really didn’t want to draw, but Rachel wanted it’. All this sort of semiotic layering is laid down, palimpsest-like, on top of that; an accruing of semiotic traces. The alternation between image and language is highly generated in design I think. What will typically happen is that someone will first specify a design idea in either words or a sketch, and an interlocutor will take that representation and translate it into the other medium by saying something like ‘oh, so you mean this…’ and then the person who drew the sketch will say ‘no not like that at all, what I had in mind was this…’. In other words each medium, each semiotic mode has its own performances, possibilities, and requirements. You can say that you are going to have a door in this wall, but when you are drawing it you’ve got to pick a particular position in the wall, you can’t just have it, there’s not anywhere in drawing, there’s always somewhere. There is also the mode of gesture, architects conduct the buildings as they draw, as they talk over drawings they enact the building in three dimensional space. Very often their pencil is moving above the paper, very often their pencil is drawing on the paper, and it doesn’t seem to make much difference.

The question of ‘is’ vs. ‘is not’ has a very Sausurian answer. What emerges
is that design seems to be a process of constructing a system of differences. Whenever a positive is stated in design, for example ‘it’s going to be like this’, there is always a negative implied, for example ‘and not like that’. So in effect it becomes the placement of something within a bipolar construct. Finding a position along a dimension where there are various alternative positions.

Questioner 1: I was troubled by your conclusion that once this process is over, the design has been generated and has left the building, so to speak. All the metaphors and all the affect is no longer there. I think it is very much there, it’s just not verbally stated. The building will elicit the associations that were in the original metaphor(s)

PM: Architects assume that all the associations and meanings and metaphorical connections get communicated through the drawings and then through the built structure. That’s not necessarily the case, which is why many buildings don’t have the effect that was intended. If you look at a working drawing and say ‘show me the boat in here’ or ‘show me the crucible’ you can’t locate it, I mean the builder doesn’t know there’s a crucible involved. I’m just stuck by the narrowness of funnel that this whole thing has to get through before it goes out into the world. What leaves the office is so ascetic, so stripped down, so tenuous and attenuated, compared with this huge great mass of associations and metaphors. It’s like do not inflate your life jacket before you leave the aircraft.

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Notes
1 Semiotics' was the term that originally tended to be used in North America, 'semiology' in Europe, but now they seem to be in effect interchangeable.
2 In the interests of anonymity, architecture in Canada being a small world, we have assigned gender to participants on an arbitrary basis. At the cost of some awkwardness, we from time to time specify the job title in abbreviated form in square brackets after the name: Principal, Senior Designer, Architect, Structural Engineer and Senior Technician.
3 We used to include all three elements in our conception of the VB, but now think it more useful to confine that term to the virtual material aspects (quantifiable and specifiable) of the imagined building.
4 Some of the authors other discussions of the role of language and other semiotic systems in design will be found in Medway12 and in the architecture chapters of Dias et al13 and Dias and Paré14.