

## Spatiality and Digitisation

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### ABSTRACT

Digital technologies have had a significant impact on the practice and theorising of architectural productions. Within the milieu of design practice, computer aided design has significantly changed the manner whereby architectural design and documentation are undertaken. At the level of architectural theory, key contemporary thinkers in the discipline of architecture have engaged with theorists in philosophy and cultural theory, in order to present something of a new horizon for considering the architectural. Developments in technologies of virtual reality have opened a new domain of spatiality for design thinking. Concomitant with this emerging horizon is a radicality in developing new epistemologies of spatial design. This paper examines the work of a number of key proponents of "Hypersurface Architecture" and assays the claims currently being made for digital technologies in architecture, as well as the grounds of those claims.

The fundamental event of the modern age is the conquest of the world as picture (Heidegger, 1977: 134).

It seems extraordinary at times that the techno-celebratory tone that accompanies so much writing on digital innovation floats on the most conservative, which is to say, idealist, of metaphysical thinking concerning questions of technology, instrumentalism, representation and human cognition. One discipline particularly marked by this is the field of architecture, affected in two significant ways by the advent of digital technologies. On the one hand, the most pragmatic and instrumentalist applications of computer-aided design software have 'revolutionised' the design office, eliminating the manual skills of hand drafting for the dexterity of keyboard and mouse. On the other hand, architectural theory has taken a delirious lunge towards the virtual. Yet, if we critically examine the fundamental grounds for the pragmatists or the radical epistemologists, we will find that same ground exposed, for example, by Heidegger in modernity's adherence to the Cartesian subject, and the anthropocentrism inherent in representational frameworks. In short, that which goes by the name 'cyberspace' or 'virtual reality' tends to be construed on the most conservative of metaphysical principles.

Heidegger's seminal writings on the essence of technology and the image have an uncanny anticipation of the impact of cybernetic systems on the construal of our forms of knowing. In "The Age of the World Picture" (Heidegger, 1977) our Cartesian legacy of subject/object relations understood in terms of 'representation' and human calculability is countered by an invocation to another modality of being-in-the-world, another sense of being human, that Heidegger nominates under the name of the 'incalculable':

This becoming incalculable remains the invisible shadow that is cast around all things everywhere when man has been transformed into *subiectum* and the world into picture. By means of this shadow the modern world extends itself out into a space withdrawn from representation, and so lends to the incalculable the determinateness peculiar to it, as well as an historical uniqueness. This shadow, however, points to something else, which it is denied to us of today to know (Heidegger, 1977: 135-36).

This theme of the incalculable has become something of a preoccupation for the contemporary philosopher Jean François Lyotard, though read via a Kantian legacy of the sublime (Lyotard, 1994). In Kant's aesthetic philosophy, the mathematically and dynamically sublime are precisely that which is presented in sense apprehension that exceeds the capacity of the Faculty of Understanding to bring about a determinant judgement, which is to say, to bring a sense impression into the order of the calculable (Kant, 1986: 90-203). Lyotard references this in his essay "Answer to the Question: What is the Postmodern?" in terms of a relationship established between the presentable and the conceivable (Lyotard, 1986). For Lyotard, modernity is marked by a particular relation of the conceivable to the presentable, in as much as modernity is characterised by a projective futurity, or what Heidegger would call the thrownness of being. This is the anxiety or uncanniness of the new. For Lyotard, the conundrum of modernity is encapsulated in the notion of presenting the unrepresentable. If there is indeed, ever, the event of the new, it would be the presentation of that for which there is no existing model, making present or presentable that for which there is no conceivable calculation. The new, as new, would present us with an inexpressibility, hence Lyotard's turning to the Kantian sublime.

It is on this relation between the conceivable and the presentable that Lyotard draws a distinction between modernity and postmodernity. Modernity, in whatever age, is marked by a singular strategy when confronted by the anxiety of presenting the unrepresentable. It has recourse to form, nostalgia for form, a transforming of formlessness into the calculability of good form, which is to say recourse to representational schemas and anthropocentric worldviews. On the other hand, postmodernity, in whatever age, is marked by something altogether different that Lyotard likens to the incalculability of the sublime. There is a distinction drawn here between the pleasure in good form and something closer to the ec-static of a Heideggerian authentic being. Heidegger throws into question the centric of anthropocentrism, thereby revealing the possibility of a new horizon for questioning what it is to 'be human'. One thinks here also of the formlessness celebrated by Georges Bataille, and the co-incident rallying against architecture in his writings (Hollier, 1989).

In the space provided for this paper, I am going to side-step a critical examination of instrumentalist applications of computer-aided design, and focus rather on the radical epistemologists of the virtual, who most often reference the writings of Gilles Deleuze as a touchstone. In so doing, I want to firstly outline the position of major proponents of what is termed "hypersurface architecture," and, secondly, provide some critique of this work.

"Hypersurface architecture" is a term coined by Stephen Perella, a designer and academic attached to Columbia University's School of Architecture. He writes:

'Hyper' implies human agency reconfigured by digital culture, and 'surface' is the enfolding of substances into differentiated topologies. The term hypersurface is not a concept that contains meaning, but an event; one with a material dimension. We are currently at the threshold of this new configuration as a site of emergence for new intensities of culture and intersubjectivity (Perella, 1998: 10).

Quoting the Japanese architect, Toyo Ito, Perella stresses that with the proliferation of new media forms and their influx into urban and architectural space, such space is becoming increasingly cinematic and fluid. Architecture is emerging as the construal of a new notion of body, one that imbricates and hybridises two contemporary, though dichotomous bodies. Firstly there are "our material bodies [that] are a primitive mechanism" and secondly, "another kind of body which consists of circulating electronic information" (Perella, 1998: 10). Traditionally architecture has been seen as that which functions to house this 'primitive' body and as a cultural practice, has been

dominated by the question of the forms that such housing may take. Indeed, architecture has a long history of anthropomorphism, precisely as the convergence of the question of form as a response to the ideality of the body proper. Perella signals a radical shift in all of this. With respect to function, form no longer plays a game of correspondence. One may see this in any number of contemporary design practices, many of which have not been absorbed in issues of hypersurface (Tschumi, 1994). And, traditionally, architecture as ornament or sign has been secondary to other determinants, particularly with respect to a transcendent and idealised notion of form. With the imbrication of new media technologies in architectural projects, there is the advent of 'pixel' architecture, as the manifestation of information space, whose topological materiality is surface. Hence Perella can say:

Pixel or media architecture has sought to bring the vitality of the electronic sign into the surfaces of architecture, but in order to do this has negated or neutralised form (Perella, 1998: 10).

There is recognition here of the massive impact contemporary capitalist strategies of mediatisation have on everyday culture, and an effort to critically engage with them in design practice. Hypersurfaces are a reconfiguration of both the human subject and the world of objects, a rethinking of Cartesian space and phenomenological grounds for perception (Cache, 1995). Or, as Perella says: "Hypersurface is fully intense when both surface/ substance and signification play through each other in a temporal flux" (Perella, 1998: 10). Hence, everything becomes surface. Computer aided design software allows for a shift in design emphasis away from volume-space considerations to those of activated surfaces, or what Perella refers to as "topological architecture" wherein containment or volume is the enacting of folding and refolding surface. Perella sees here the collision of two cultural arenas that are still a little separated. Avant-garde architectural practices, assisted by digital design technologies are inventing a new architectural plasticity in activated surfaces, while advanced consumer culture has already absorbed the propulsion of the sign into the surface and the surface into the sign. Inevitably, those surface architectures currently being invented will be colonised by pixel architectures of pure commercialism:

An influx of new digital technology interconnects with other transformations taking place in global economic, social, and scientific practices cultivating fluid, continuous and responsive manifestations of architectural morphogenesis (Perella, 1998: 10).

The outcomes of such architectures present an ongoing and incommensurate relation between form and image, where surface is activated and motile and hence the perception of volume or containment is open, a 'fluxus' architecture. For Perella, such a notion of hypersurface as event-architecture necessarily needs to accommodate the incommensurability of both Heideggerian phenomenology and Deleuzian empiricism. Most certainly, though, it is Deleuze's writing from his early co-authored *Anti-Oedipus* to his *The Fold* that establishes the philosophical ground for Perella's thinking (Deleuze and Guattari, 1977; Deleuze 1993).

A key concern of Deleuze has been how to understand the question of knowing other than by way of the concept. In opposition to a philosophical tradition dominated by the Idea (Plato), the Cogito (Descartes) or the Faculties (Kant), Deleuze posits a materialist or empiricist philosophy whose legacy lies in Leibniz, Spinoza and Hume. In opposition to the relation between the possible and the real mediated by the concept, Deleuze poses the relation between the virtual and the actual, where the virtual is the complication of a multiplicity of differences implied in any actuality. Thinking, knowing, experiencing is the unfolding and refolding of what is actual to reveal implied virtualities. In this sense, the substance that is the materiality of things and bodies is so much surface whose topological complication is the fold (*le pli*) (Rajchman, 1998).

In the discipline of architecture contemporary practitioners and theorists have adopted some key Deleuzian phrases in discussing emerging design work. Perella is no exception. However, this notion of the fold has been adopted almost entirely at the level of form manipulation. That is to say, Deleuze is mobilised to justify some grounds for new forays into form-making. We see this so clearly in Perella's invocation to topological architecture, with its multiplication of surface differences, its disruption to classical notions of ideal forms. The 'elite' design practices referenced in the

publication *Hypersurface Architecture*, foreground this valorising of form, in the same moment that the critical register of this work is supposedly neutralising or nullifying form as form-image.

That is to say, from the perspective of Lyotard's relations between the conceivable and the presentable, a certain 'solace' is found in the pleasure of form. From a Heideggerian position we can make some similar comments, particularly with regards to that complex 'middle ground' that is neither subject nor object, or that 'third body' that is neither primitive human body nor electronic informational body. This locale where surface and sign interpenetrate, where image/form/body become an incommensurate event, may be recouped in a less delirious discourse in terms of the *gebild* of Heidegger's "The Age of the World Picture" - the image-system. Heidegger stresses that by 'picture' he does not simply mean image or representation. He suggests that the colloquial expression "we get the picture" is closer to what he means:

'To get into the picture' [literally, to put oneself into the picture] with respect to something means to set up whatever is, itself, in place before oneself just in the way that it stands with it, and to have it fixedly before oneself as set up in this way .... 'We get the picture' concerning something does not mean only that what is, is set before us, is represented to us, in general, but that what stands before us - in all that belongs to it and all that stands together in it - as a system (Heidegger, 1977: 129).

This would necessarily have to be read in conjunction with Heidegger's writing on the essence of technology, on the *gestell*, or the *enframing* of standing reserve: "the challenging claim that gathers man to order the self-revealing as standing reserve" (Heidegger, 1977: 19). The claims being made by Perella, in the invocation of radical philosophy, are too swift for the degree of resolution he brings to his thinking concerning those philosophical works. More, to the point, the nexus he establishes between the topological architectures of a design avant-garde and the pixel architectures of a multimedia consumer industry are quite easily recouped within much more conventional frameworks. Three such frameworks would be firstly those of representational schemas (contemporary architecture expressive of contemporary schizoculture). Secondly, there would be formal analysis (one looks for the diagram of the fold as one would have once looked for the Beaux-Arts plan); and, thirdly, anthropomorphism (there is little disturbed in the mechanism of mimesis going on, only in the form within which one thinks the body). At stake here is what Perella might refer to as the misreading of intensity for extension. As event, hypersurfaces are localised and singular sites of intensity, of body coupling with thing, rather than sites that are calculable in the Cartesian sense of locating things in space. But Perella does not say enough here about intensive spaces, even whether or not they can be prefigured in design process.

Returning to the Deleuzian problematic of the virtual and the actual, it is necessary to pinpoint how much of architectural discourse and practice misconstrues its engagement here, so as to conventionalise what might otherwise be a radical approach to a new ontology of spatiality. It is instructive to gauge the comments by a cultural philosopher who has addressed this Deleuzian material in the context of architectural practice and digital technologies. I am thinking here in particular of some of the writings of Brian Massumi (1998). One might also consider the major contributions by John Rajchman and the design practitioner, Bernard Cache, already cited, as well as the work of Elizabeth Grosz (Grosz, 1998). In "Sensing the Virtual, Building the Sensible," Massumi moves more cautiously than does Perella in discussing the notion of topology in architecture, and the relation of computer-aided design to a Deleuzian notion of the virtual. Architectural practices have always necessarily negotiated moving from the abstractness of prefiguration in design procedures to the concrete real of still-standing forms. However, design practices have tended to work with an abstraction defined by the concept of t1M calculable. Massumi's example here is Le Corbusier whom he quotes: "To conceive, it is first necessary to know what one wishes to do and specify the proposed goal" (Massumi, 1998: 16). While Oeuleuze's 'virtual' is abstract, it is not the abstraction of the possible by way of the concept. Rather it is the potential for the new in what is actual; hence actuality is understood as 'a becoming otherwise'. Topology is a response in architectural practice for negotiating how one moves from virtuality to actuality. To quote Massumi:

Topology deals with continuity of transformation. It engulfs forms in their own variation. The variation is bounded by static forms that stand as its beginning and its end, and it can be stopped at any point to yield other still-standing forms. But it is what happens in-between that is the special province of topology. The variation of seamlessly interlinking forms takes precedence over their separation. . . . When the focus shifts to continuity of variation, still-standing form appears as residue of a process of change, from which it stands out (in its stoppage) .... The variation, as enveloped past and future in ceasing form, is the virtuality of that form's appearance (and of others with which it is deformationally linked) (Massumi, 1998: 16).

Crucial for Massumi, is the difference between abstraction as prefiguration of what is already in the mind's eye. In other words, the assembly of novel combinations from pre-existing forms, and abstraction as an active engagement with an indeterminacy, or incalculability, via what he terms "virtual forces of deformation." The computer is not used as a device to image what is to be built but is rather a tool to "catalyse newness and emergence" (Massumi, 1998: 17). The key notion here is 'force.' It is not the imageability of forms of deformation that is at stake, but the activating of forces of deformation. How might we understand this?

We necessarily need to turn to how Deleuze uses the notion of "diagram." When Deleuze is writing on Michel Foucault's "panopticism," he references this as a "diagram of power" (Deleuze, 1986). For Foucault, panopticism, as an analytics of a certain reading of modernity, is derived from an architectural figure, Jeremy Bentham's Panopticon, the design of a prison (Foucault, 1978). Many commentators have been critical of Foucault for using such a limited figure in describing such an abstract and diffuse notion as the modern forms that power takes in productive and coercive mechanisms of control. There never was built a pure Panopticon and modernity's spaces are infinitely more variable. Deleuze, in discussing the notion of a diagram of power, points out a serious misreading of Foucault here. Foucault speaks of our forms of knowing as being produced by relations of power, or force against force. "Form" here has two meanings - the organisation of matter into visibilities and the finalisation of functions into statements. knowledge is composed of these two heterogeneous forms, statements and visibilities. Relations of power, however, work with unformed, unorganised matter, and unformed, unfinalised functions. It is this informal dimension that Deleuze and Foucault designate by "diagram". The concrete assemblage of the strata of knowing (statements and visibilities) are effects that realise something because relations between forces, power relations, are virtual, potential and unstable. The diagram of relations between forces is a non-unifying and immanent cause coextensive with the whole social field:

It is precisely because the immanent cause, in both its matter and its function, disregards form that it is realised on the basis of a central differentiation, which, on the one hand, will form visible matter, on the other will formalise articulable functions (Deleuze, 1986: 38).

When Deleuze discusses the fold as that which mediates between virtuality and actuality, he uses the term as a diagram, in the sense mentioned above. It is not the organisation of matter into some visible form, nor the finalisation of matter into function. Rather it is the virtual relations of force that destabilise the determinable and the articulable into the new. And, just as commentators of Foucault began to look for little Panopticon prison designs in every disciplinary space of modernity, so designers who have read a little Deleuze start making buildings with little folding surfaces. Such practices fail to recognise the distinct ontologies of form and force that are crucial for Deleuzian (and Foucauldian) analyses.

It is for this reason that Massumi is critical of those working in digital technologies and architecture that define this imbrication at the level of the window. That is to say, designers have tended to recognise relations between digital technologies and architecture in terms of designed hypersurfaces as events embedding the multimedia dexterity available on the computer screen. It is crucial not to confuse the complexity of technologies of multimedia for virtualisation. The virtual is not the content or even the 'infosphere'. Nor is it the technological connectivity itself. What is it, then? Massumi gives two models, one he terms "windowing," the other "tunnelling":

Windowing provides a framed and tamed static perspective from one local space onto another that remains structurally distinct from it. The connection established is predominantly visual, or audiovisual. Features from or of, one locale are 'delivered' into another as information, prepackaged for local understanding and use. Windowing is communicational (Massumi, 1998: 23).

We may understand this model as the predominant one of Internet technologies and the architectures of virtual spacing, where 'virtuality' resides at the level of the determined forms and determining functions of content. The imbrication of pixel architectures and topological surfaces suggested by Perella, have tended to be construed in one form or another according to this model. Tunnelling, on the other hand activates virtuality at the level of the Deleuzian diagram, and is concerned not with the communicability of good form from one locale to another as data pre-packaging, but with perception itself, "presenting perceptions originating at a distance."

The perceptual cut-ins irrupt locally, producing a fusional tension between the close at hand and the far removed. As, the distance cuts in, the local folds out. This two-way dynamic produces interference, which tends to express itself synaesthetically, as the body returns vision and hearing to tactility in an attempt to register and respond to a structural indeterminacy (Massumi, 1998: 23).

Crucial for Massumi, this process is not concerned with producing the new, as in a new thing or an invention. Rather, this opening is onto newness: the reality of transition, the being of the new, quite apart from anything new" (Massumi, 1998: 23). And it is in this sense that digital technologies may be conceived of as virtual, in the sense of being activating forces for the emergence of unformed matter and unfinalised functions that are constitutive of the event of the new. Hence, the stakes for the discipline of architecture are not in the presentation of new forms responding to the technological innovation or imperatives of digital technologies. Rather, they are in the activating of the virtualities in what is already actual, the horizons of which are revealed in the capacities of digitised technologies to confound the near and the far as the non-local. As Massumi suggests:

When the communicational medium ceases to be transparent and perforce stands out in its materiality, information blends into perception. Information then precedes its understanding: it is experienced as a dimension of the confound before being understood and used and perhaps lending itself to invention (Massumi, 1998: 24).

If we ask how to conceive of the relation between digitisation and knowledge, it would be a mistake to figure digitisation as one of the many forms that knowledge may take, as if it is an instrument that gives shape. Rather, digitisation is a technology of power and necessarily needs to be conceived of ontogenetically in terms of a diagram in Deleuze's or Foucault's sense, as something akin to panopticism or the fold. In this sense, it is the activating of a force at the level of unformed matter and non-finalised functions, producing formed matter as visibilities and articulable functions as statements. In a similar way we may begin to recognise architecture, abstractly, as a diagram of power, or technology of power, and it is at this level, of regimes of power productive of our forms of knowing that the imbrication of digitisation and architecture may be recognised. The question would be then, how does one now recognise panopticism, as the spatialising of disciplined bodies, in the light of regimes of truth productive of the non-local and unstratified spacings of digital technologies (Agamben, 1998; Jackson, 2000).

Without reducing this question entirely to a Heideggerian formulation, certainly the question of technologies of power and diagrams of power circulate around the issue of enframing, as exposed by Heidegger in "The Question Concerning Technology". Equally, the confound of the 'non-local' and the being of the new, as discussed by Massumi, alerts us to a broader problematic of the uncalculable that is alluded to by Heidegger and developed more fully in Lyotard's work on the sublime.

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