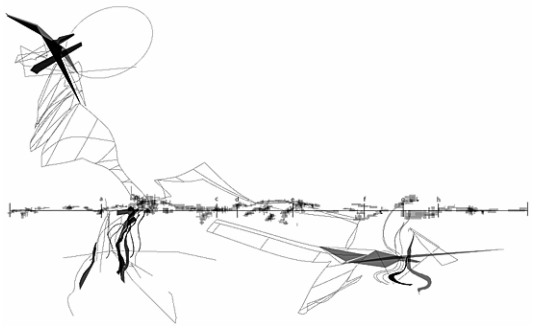
Ceci n'est pas une pipe.
The architectural drawing between representation and function

Claus Peder Pedersen, Henrik Oxvig, Royal Danish Academy of Fine Arts

In *The Sciences of the Artificial* Herbert A. Simon reflects that "Engineering, medicine, business, architecture, and painting are concerned not with the necessary but with the contingent – not with how things are but with how they might be – in short, with design."[i] The reflection serves as an introduction to Simon's attempt at developing a design theory: A theory about the conception of that which differs from what we already know. A theory in a challenged dialog with the contingent.

Simon is aware that traditionally, design theory has been orientated towards the establishment of an understanding of the canonized and typical, and that the theory as such should serve as a guideline for what was to be created. Traditionally, the theory has been a reflected list of answers. By way of example, consider how the Neo-Platonic architecture treaties of the Renaissance sought to establish abstract and ideal rules and frameworks to secure any future works. Through repetition of the regular, the work becomes an example of a presumed eternal and essentially true idea. Or consider the ambitions of the modernist town planning, as they were expressed in the resolutions of *CIAM* as well as in concrete town planning proposals, in which the specific purpose was to transform the town's quantitative environment into qualitative by means of 'abstraction and repetition'. The architects of modernism and the Renaissance shared a confidence in the possibilities of the abstraction to establish a template for the individual example. Consequently, both lines of thinking demonstrate confidence that by means of mathematics and the Euclidian geometry, an essential world structure is found which may justify the qualitative validity of *abstract* rules. And that is precisely why the *repetition* of the structures and types of the abstraction becomes a design-theoretical imperative. Whilst the Renaissance treaties gave the impression of being carried by an insight into the world's eternal – divine – structure, the modernists were orientated towards the technological or the natural. However, to some extent the rules were the same, as Colin Rowe pointed out in his famous article, 'The Mathematics of the Ideal Villa'. Rowe compares – in continuation of Rudolf Wittkower's Renaissance studies – Palladio's and Le Corbusier's basic plans for villas and demonstrates remarkable similarities between the syntactic-geometric organizational principles of the plans. To a certain degree, modernism naturalizes the divinely founded rules of the Renaissance. And because of this, it gives rise to expectations that, as is the case with the Renaissance treatises, architectural theory should develop ideas and rules that are valid for the concrete assignment, notwithstanding that they – the rules – are developed in abstract independence of any contingent situation.



Those are the types of expectations to the theory that Simon argues against when insisting that the work is contingent. He claims that the individual work differs unpredictably from the rules and typologies that existed prior to the work. However, Simon's skepticism towards normative design theories does not imply that he finds theoretical work irrelevant for the creation of the contingent. On the contrary, Simon's ambition is to establish a mutual experimental relation between theory and practice.

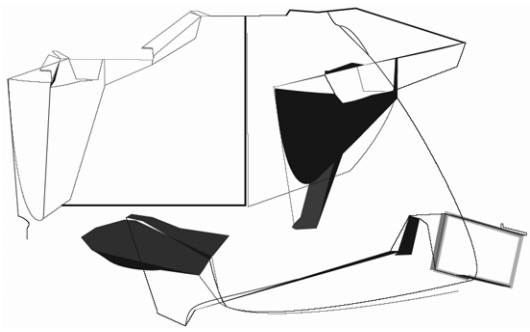
This ambition to establish a science about the artificial, based on the experimental in both theory and practice, appears somewhat congenial with Stan Allen's critical reflections on the relation between theory and practice in the essay collection *Practice – architecture, technique, and representation*. Allen does not argue that criticism of traditional theory should result in notions that theory and practice should be separated. On the contrary, it is Allen's opinion that the missing dialog between theory and practice is part of the problem. On one hand, this implies that the theory could be perceived as a set of ideal codes and conventions determining the significance and purpose of architecture independent of practice. On the other hand it implies, that practice is maintained in traditional, naturalized rules and procedures, which might have been relativized and changed by the challenged theory. In the essay collection's introductory chapter, Allen comments that,

"Today's conventional view (prevalent, for example, in schools of architecture) understands theory as an abstraction: a set of ideas and concepts independent of any particular material instance. Practice, in turn is understood as the object of theory. In this view, theory tends to envelope

and protect practice, while practice excuses theory from the obligation to engage reality. Design is reduced to the implementation of rules set down elsewhere. Ironically, the separation that results is not dissimilar from the very structure of conventional practice supposedly challenged by theory. Conventional practice renounces theory, but in so doing, it simply reiterates unstated theoretical assumptions. It works according to a series of enabling codes, which have been defined without reference to individual practice."[ii]

Hydra

We share Simon's ambition, and we are aware that in architecture – with its concrete, practical assignments and in its related, theoretical discussions – we must confront the issues to which Allen calls attention. This understanding relativizes the objective, geometrical space which in the Renaissance and modernism has sustained the theory's notions of a universal, repeatable structure or typology. This space must be considered specifically against the subjective, perceived, and situated, which concerns practice and – potentially – contingence.



In continuation of these considerations, it is our thesis that the work always – potentially – contains more than the theory is able to retain and determine through abstraction.

We believe that the work contains *both* aspects that can be objectified, e.g. geometrical-proportional aspects, *and* perceived and situated aspects. It is therefore not sufficient to replace the objectified, geometrical space with Heidegger's or Merleau-Ponty's phenomenological critique of the objective, where the perceived or perceiving and the situated are given precedence over any abstract and generalizable resolution. The work as such is a structure, a statement that contains both the objective and the subjective, and rather than joining practice and theory through phenomenology's Cézanne-inspired critique of the Renaissance and modernism's objective space, it is our view that architecture, understood as a field with many perspectives, many places, demands an epistemological reflection.

Such an epistemological reflection is one of several starting points for a series of studies carried out on the Greek island of Hydra throughout 2004 and 2005 (one final visit is planned for 2006).[iii] The focus of this work is not an objective mapping. The study is not concerned with the classic architectural surveying, nor is it aimed at creating conventional architectural projects. It takes the form of an architectural and artistic development work, establishing a discussion of the architectural contingent through deliberations concerning the interchange between the mapped and the perceived, through reflections about architectural drawing conventions and ways of drawing, and through a procedural exchange between the contextualized and the independent drawing.

Hydra is characterized by a dramatic topography that creates a landscape of dynamic forces, which clearly determines the nature, building typologies, infrastructure etc. of the island. The mapping of this landscape of dynamic forces forms the basis for the architectural work. The initial question for this work could then be as follows: How is it possible to develop an architectural statement in dialog with the energies and dynamics which characterize precisely this complex landscape?

Drawing and representation

This question takes as it starting point reflections about the architectural creation process as a relation between medium and statement. You may claim that architecture, as opposed to most other art forms, works with a distance between artist and statement. The extent and the complexity of the architectural statement make it necessary to interject a medium – typically the drawing – as a contributory intermediate link. This means, that the drawing is neither merely an objective tool nor a passive medium which simply registers and formalizes the architect's ideas so that they can be realized as buildings.

The English architect and historian Robin Evans discusses this relation in his *The Projective Cast. Architecture and Its Three Geometries.* Evans shows that geometry is inevitable in the creation and appropriation of architecture, but it is worth noticing that he does not link this inevitability to uni-

versal organizing charts. Geometry emerges and is developed in the interchange between thinking and drawing, between drawing and building, between perception and thinking:

"The First place anyone looks to find the geometry in architecture is in the shape of buildings, then perhaps in the shape of the drawings of the buildings. These are the locations where geometry has been active in the space between and the space at either end. What connects thinking to imagination, imagination to drawing, drawing to building, and building to our eyes is projection in one guise or another, or processes that we have chosen to model on projection. All are zones of instability. I would now claim that the engaging questions of architecture's relation to geometry occur in these zones."[iv]

The challenge of the scales

We can expand on Evans' view by referring to Philip Boudon. Boudon stresses the scales' significance in *Architecturology*. To Boudon, it is absolutely decisive that notions that the Renaissance and modernism should be founded in an objective space are based on the architectural theories' scale oversight: The identification of space with geometry and – in continuation of that – of architecture with geometry is based on the oversight that architecture as opposed to geometry comprehends size, measurements, and as such gives measurements to our world, and that architecture in any volume can have many perceived spaces. However, Philip Boudon points out that the theory, which is in dialog with the conception of architecture, can *neither* be based on notions of the objective space *nor* on phenomenology's contrary weighting of the subjective, the perceived. As the creative practice, the theory, too, must know how to work with *both* the objective *and* the subjective in an open complexity. Boudon:

"If Henri Poincaré in relation to our everyday space indicates that the space of experience is not that of geometry [Euclidian] and decides to find a suitable geometry [topology], the same issue can be raised in relation to the architectural space: Which 'geometry' will be suitable to make this space intelligible? (...) It would then be possible to pass from Euclidian geometry to topology thinking that the latter solves the problems raised in relation to the former. (...) But can any geometry – no matter which – explain the issue of scale, when we know that geometry is born by negating the scale? (...) The task is then to *invent* a spatial concept which explains the architectural space in accordance with the understanding displayed and which is concerned with measurements, sizes, scales.

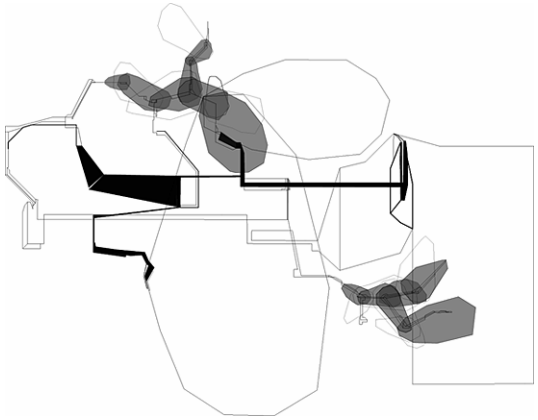
(...) If, as indicated by Poincaré, space is created in relation to experiences and therefore not, as Kant claimed, *a priori*, it must be constructed, which it will be in accordance with various geometries, and then you might understand by way of analogy, that the architectural space is also created on the basis of certain experiences, but also that these experiences differ from experiences gained by anyone, and that rather than perceptual experiences they are *conceptual experiences*.[v]

Instead of examining perceptual experiences related to the everyday space, *Architecturology* seeks to examine experiences of conception, which may have conception as one of its scales. To speak about scales instead of proportion as the horizon of design theory is in itself an indication that the Euclidian space as a framework for architectural treaties from Vitruvius via Alberti to Perrault is a specific, now problematized framework, even though the framework is not replaced by another, e.g. a topological one. The real question is then which scales the project can implement – a question which the theory may pose but which it can only answer on the basis of the concrete, contingent work, i.e. with the implementation. It is on the basis of a dialog with the creative act, and thus with the media that form part of the conception of architecture, that we establish our concrete examinations of the dialog between theory and practice.

Labile conventions

Along with Boudon and Evans we would claim that architecture is *not* developed in one conception or through one geometry. It is made up of a complex field that contains many different aspects. The drawing represents a crossfield which makes it possible to channel and coordinate many of these different aspects. Geometry is significant because it supports and formalizes the architectural drawings' diversified interchanges. Supported by geometry the drawing becomes a reflection space in which architecture can be thought and developed.

The potential of the architectural drawing thus does not consist in its incorporation into a overlapping geometry or an overlapping space, nor in the idea that it is possible to eliminate the distance between the perceiving architect and

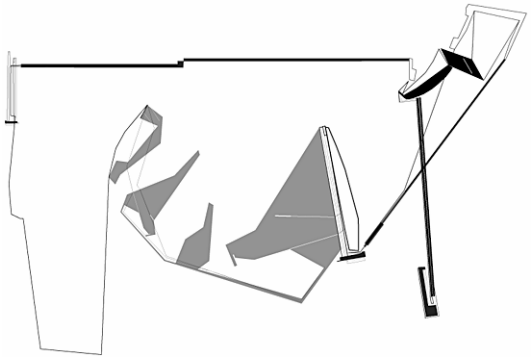


the architectural statement. The potential arises from the possibility of making use of the fissures and free spaces created in the drawing's crossfield between idea, perception and formalizing. For that same reason the sectional drawing and the relatively high level of abstraction of the plan are not a problem either, but rather an opportunity to pinpoint and develop architectural questions and issues.

The Hydra project seeks to develop an understanding of space which is not related to the ability to think oneself into the space and perceive it in perspective considering sizes, materials, and light effects. The project rather seeks the architectural space created in the tension field between context, idea, and drawing, in which it is possible to develop an independent dialog by shifting information between different drawing forms gradually unfolding a space.

This also explains why the drawings of the Hydra project do not unfold architectural spaces in conventional terms. There is no specific relation between interior spaces which are defined by exterior forms. There is no architectural object inserted into or merged with a specific context. Nevertheless, the Hydra project is developing specific architectural reflections and specific architectural drawing methods in a critical dialog with a series of the traditional drawing conventions of architecture. It makes use of the plan drawing's distribution and coordination of diversified domains and units, as well as of the vertical course and implied spatial depths of the section. It develops a terminology which speaks of 'places', 'concentrations', and 'components', and it relates these to different states such as the 'temporary', 'the stationary', and 'the mobile'.

However, these conventions and terms are not rigidly and unambiguously defined. There is no projective geometry which coordinates the formal relations of sectional and plan drawings. Instead, their characteristics and relations are continuously reconsidered and rearticulated. Architectural conventions are – deliberately – made labile. They form a provisional basis for the architectural reflection. In this way, the Hydra project seeks to establish a fragile dialog between the perceived and the registered, between Hydra's dynamic landscape and the drawing's independent logic. Its aim is to sustain and develop this dialog in order to develop and qualify the architectural statement.



Digital imperfection

The Hydra project's applied reflections about the relation between statement, geometry, and media are also connected with a special use of digital tools and the distinct knowledge related to these.

Stan Allen has pleaded the case of a less technology fixated rethinking of the digital media's architectural potentials. He indicates that the development of digital tools in the late '80s and early '90s lead to a technological fetishism based on advanced animation software and a formal fascination of the complex, plastic form world which these tools made possible. For architects such as Greg Lynn and Bernard Cache, these digital tools provoke the idea that it will become possible to determine the architectural statement through algorithms that are able to convert complex contextual relations and influences into architectural form. In a certain sense, these architects are once again trying to found architecture on a normative geometric basis. They are simply replacing the Euclidian geometry of the Renaissance and modernism with a topological one.

Allen claims that as the computer becomes common property, it will no longer be possible to maintain the same fetishist relation to the digital tools. Instead it will become possible to develop an innovative, low-tech approach to the medium. "Operating more like a fitness landscape, successful buildings and cities offer degrees of appropriateness and levels of fit; an architecture open to the contingencies of contemporary life and capable of sponsoring a variety of activities over time. To design for this uncertainty requires an intelligent deployment of technology, but it also implies a skepticism about singular, totalizing, technological solutions.

This is only one possible direction that might emerge out of a less complex relationship to digital technology in architecture – a reasonable, inventive, and expedient use of available digital technologies within the logics of our own discipline… The computer is an abstract machine, and as it moves beyond the logics of visualization, new potentials open up."[vi]

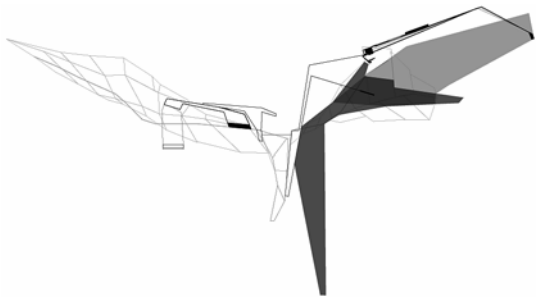
The Hydra project implicitly seeks to rethink the questions and challenges the computer represents to the architectural drawing in order to develop a distinctive drawing logic related to the computer. A logic in which the significance of the drawing is not based on a formalized spatial representation of data but rather on the specific possibilities that emerge from the computer's data handling and interface. This approach is based on the idea that it is possible to consider this potential backwards through a reflection on the differences between drawing by means of conventional drawing tools and through the computer interface.

The traditional architectural drawing is developed in an interchange between sketching and constructing. The sketch has an immediate physical relation and thus a relation of scale. It is a gesture that emerges in a physical coordination of visual and perceptory impressions, motor function, and drawing tool. The sketch is immediate; it can rapidly search and test various courses, relations, or exchanges. The constructed drawing formalizes the potential of the sketch by means of drawing tools, and gradually submits it to a geometric construction. However, there is no unambiguous and linear relation between the two drawing forms. The sketch is not formalized by the drawing of 'correct' geometrized lines through its implied form universe. The formalized drawing rather reconstructs the potentials of the sketch in a new independent statement. This statement is opened up again by new sketches which subvert and reconfigure the formalized drawing's construction in a constant interchange between that which builds and that which opens up.

The computer interface changes the relation between body and drawing. The architectural drawing creates a relation between drawing and building based on scale, but at the same time it also creates a relation between the architect's body and the drawing. Sizes, relations, and connections are distended by the drawing's physical size and delimitation. At one and the same time there is a visual and a physical decoding of the drawing which is not found in the digital drawing, which can be steplessly scaled within the fixed delimitation of the computer screen. This physical distance is also connected to the execution of the drawing. The drawing's relation between body, pencil, and line is complicated by the computer interface in which the drawing is created in interchanges from hand to mouse to screen to printer.

The dissociated physical relation is at the crux of the challenges to the digital drawing. It causes a displacement from the gesture of the sketch to the formalized drawing's construction. This also affects the producing interchange between that which builds and that which opens up. In the computer drawing, the unambiguous and the geometric have a tendency to become dominant which results in faulty incompleteness rather than constructive imperfection. The challenge to the digital medium consists in overcoming the unambiguity and rethinking the conventional drawing's dynamic changing between that which is searching and opening, and that which is formalizing and clarifying.

The Hydra project seeks to develop a parallel to the speed and lightness of the sketch in the computer's ability to absorb and manipulate different types of information. In the computer, all information is leveled into binary chains of numbers that can be processed mathematically. This leveling of information causes a particular flatness; however, this flatness is a potential rather than a problem. The computer makes it possible to remain on the surface. It makes it possible to copy, move, and manipulate the different elements and information of the drawing with a certain superficial speed. It blends information, formalizes it, and makes it mutually interchangeable. The stratified design of the computer drawing makes it possible to change between different types of information – the contextual and the formal, for

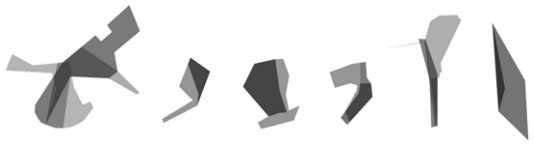


instance. In this rapid, fluid exchange of information, and through the reproducibility and manipulability of the digital statement (in which the ability to remove information by means of the *delete* function may be the most significant of all), the Hydra project seeks to develop a new productively opening approach to the digital drawing material. A productive approach in which the opening indefiniteness of the sketch is replaced by the manipulated morphologically varied configurations of the same statement. An indefiniteness which continuously assimilates and segregates differing information changing between the contextualized and the independent. In this way, it is possible to create an architectural drawing in which the conventional architectural drawing's physical measuring is replaced by a consciously casual approach to the computer's forced precision.

Ceci n'est pas une pipe

Modern typology studies, as we know them from e.g. Aldo Rossi, were based on the understanding that the drawing material is anchored in an objective structure, and that the individual drawing is comparable to a statement, contingent on the structure's possibilities. Rossi was inspired by structuralist linguistics. The deconstruction and Jacques Derrida made us aware that any talk of – and with – an objective structure presupposed the delimitation of the objective and thus the reflection about what it means to pinpoint an objectivity altogether. Derrida showed that phenomenology in particular insistently has raised this issue. As indicated, phenomenology found its resources by showing that the ideas about objectivity, which do not take into account the conditions of objectivity, ignore the fact that the objective is objective to a reflecting subject. Phenomenology places any idea that cannot be motivated by the subjective reflection in parenthesis, and insists on founding knowledge all over again in and with this subjective reflection. Phenomenology was examining, among other things, whether it might be possible to establish objectivity but this time with an emphasized understanding of the knowledge-stipulating and intentional subject. Objectivity founded in an understanding of intentionality. In the article '"Genèse et structure" et la phénoménologie', Derrida wrote that, "Even the most naïve implementation of the idea of conception, and in particular the idea about a structure, presupposes at least a strict delimitation between natural areas and the domains of objectivity. But this prior delimitation, this elucidation of any regional structure, can solely be raised by a phenomenological critique. This means, that the latter rightfully always comes first. "[vii]

It is a well-known fact that it was not Derrida's ambition in this way to replace structuralism with phenomenology. On the contrary, Derrida would stress that phenomenology did not succeed in sustaining objectivity either: By virtue of phenomenology's insisting on the reflection about the premises of objectivity, but in contrary to the declared intention of phenomenology to establish objectivity in and with the subjective and intentional, Derrida claims that it becomes possible to unfold whatever possibilities there are in the linguistic – structuralist – understanding that origin is not an identity, but a game of differences. The individual statement – the individual drawing – is conditioned by a structure of differences, but as the structure is only known through the statement and is not objectifiable *an sich*, the statement (the sketch, the formalized drawing) should rather be examined for its potential dialog with the contingent than be anchored in (and with the idea of) the regular. On this basis, structure, which can only insufficiently be objectified, is then understood as a field of virtual possibilities, which we know solely through dialog with representations, indirectly. As previously mentioned, through the Hydra project we seek to understand this situation as an imperfection that is challenging – and helpful – for the development of the mutually experimental dialog between practice and theory. The project has no firm foundation or predefined telos, but in between these – and by challenging the presumed and conventional with the contingent and yet unknown telos – practice and theory work in and with the development of a structure, a work which will be more than and different to something which could be contained by any given point of view. As such we are inspired by Gilles Deleuze's Foucault reading, and in particular his demonstration that phenome-



nology's necessary confrontation with any unreflected objectivity was merely a passage to working practically and theoretically – visually and in speech – with a structure that is only established and recognized through this work. Deleuze: "Foucault [breaks] with phenomenology in the 'vulgar' sense of the term: with intentionality. (...)

If phenomenology 'places things in parenthesis' as it claims to do, this ought to push it beyond words and phrases towards *statements*, and beyond things and states of things towards *visibilities*. But statements are not directed towards anything, since they are not related to a thing any more than they express a subject but refer only to a language, a language-being, that gives them unique subjects and objects that satisfy particular conditions as immanent variables. And visibilities are not deployed in a savage world already opened up to a primitive (pre-predicative) consciousness, but refer only to light, a light-being, which gives them forms, proportions, and perspectives that are immanent in the proper sense, that is, free of any intentional gaze. (...) This is Foucault's major achievement. The conversion of phenomenology into epistemology. For seeing and speaking means knowing [savoir], but we do not see what we speak about, nor do we speak about what we see; and when we see a pipe, we shall always say (in one way or another): "this is not a pipe," as though intentionality denied itself, and collapses into itself."[viii]

Endnotes:

[i] Herbert A. Simon, *The Sciences of the Artificial*, Third Edition (Cambridge, Mass. 1996), p. xii.
[ii] Stan Allen, Practice – Architecture, technique and representation (Amsterdam 2000), p. xv.
[iii] The specific studies are carried out by Cort Ross Dinesen and Claus Peder Pedersen with the assistance of a group of architecture students - Malene Glintborg Justesen, Gro Christine Sarauw, Gudrun Krabbe, Mette Marie Kallehauge, Nana Diercks, Helen Nishijo Andersen, Helene Koch, Nikoline Dyrup Carlsen, Luise Hooge Lorenc, Flemming Thomsen, Mikkel Damsbo, Jens Ulrik Christiansen, Christoffer Marsvik, Jesper Bang Marcussen, Hans Bærholm, Hjørdis Toft, Guro Sollid, Rakel Helling, Ludvig Witte and Mikkel Sørensen. Simultaneously, the study is considered in a theoretical reflection space consisting of contributions from the fields of art and literature history, philosophy and theory of science by Frederik Tygstrup, Malene Busk, Steen Nepper Larsen and Henrik Oxvig.
[iv] Robin Evans, The projective Cast. Architecture and Its Three Geometries (Cambridge, Mass. 1995), p. xxxi.
[v] Philippe Boudon, "Préface à la seconde édition", *Sur l'espace architectural*, (Paris 2003) pp. 35-36.
[vi] Stan Allen, "The Digital Complex" *Log* no.5 (Spring/summer 2005), pp. 98-99.
[vii] Jacques Derrida, *L'écriture et la différence*, (Paris 1967), pp. 236
[viii] Gilles Deleuze, *Foucault* (London 1988), pp. 108-109