DRAWING THE LINE:
A WORKING EPISTEMOLOGY FOR THE STUDY OF ARCHITECTURAL DRAWING

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For my parents
Who were not offered the opportunities of higher education
But who have never questioned my decision to make so much of it

And to Lisa

ABSTRACT

The conventional view of architectural drawing presents it as a paradigm for architectural knowledge based on a visual relationship between an idea and a built work where the drawing operates as a neutral and passive vehicle for the transformation of architectural thought into architectural practice. In this model the drawing is merely a utilitarian convenience for the passage of the architect's imaginings. Coded into this relationship is the accepted authority of our visual faculties to mediate and interpret the communicative aspects of drawing.

This work questions the hegemonic role of vision in the execution and interpretation of architectural drawings, and proposes instead a more complex and discursive model for the transmission of architectural knowledge through a drawn medium.

With reference to three case study drawings circa 1980 (Aldo Rossi: *Interno con il del mondo*, 1981; Morphosis: *Venice III*, 1982; Peter Eisenman: *House X*, 1976) this period is identified as the end of a tradition of manual drawing for architects, that has historically defined the practice of contemporary architecture. It is argued that architects have depended upon a visual paradigm for the operation of drawing to organize their relationship to architecture, and that this has in turn prohibited comprehensive analytical critique of the drawing and its place in wider architectural production. Each case study offers a point of departure for a critical reappraisal of the role played by drawing in the relationships that exist between the idea and the work in architecture. In particular the function of touch is proposed as a counter sensory knowledge that is coded into architectural drawing, but whose presence is then repressed as unconstitutional to the idea/project relationship. In making this argument a series of figures are introduced (consisting principally of the hieroglyph, the hand and touch, and blindness) to produce an epistemological framework for further discussion on the subject.

It is suggested in conclusion that although the development of digital technologies has shifted architectural representation away from traditional manual practices that this should not be viewed as a representational paradigm shift since the ideological framework that organizes our relationship to the screen is the same one that has existed with the page, and perpetuates the same ideological problems.

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PREFACE

Generally, the object of architectural drawing is the representation of architecture.
Reginald Blomfield[1]

The title of this project is deliberately argumentative. To evoke a 'working epistemology' calls into question, not only the architectural drawing as a site of existing architectural knowledge, but also the integrity of the drawing as a principle factor in the construction of architecture as a discipline. There is also a risk in the exploratory tone of the title that this work presents itself as a solitary voice on the subject. This is not the case, and indeed I would not have been able to conduct this research had it not been for the scholarship of Robin Evans, Marco Frascari, Alberto Pérez-Goméz, and Werner Oechslin, or the work of many others to whom I refer throughout this thesis. I am attempting here to bring together these varied threads of thought into, if not a rope, then at least a 'yarn'. To this end what I am challenging in the title is the manner in which most (not all) writing on architectural drawing typically discusses it as an aspect or characteristic of the discipline of architecture, rather than as a disciplinary architectural discourse in itself. If, as Robin Evans has argued, we are to take architectural drawing seriously as a condition of architectural foundation,[2] then we must be prepared to address it as a centre of, and not simply an adjunct to, all architectural study. This is not the same as simply proving the integrity of a foundation. Architects have traditionally treated the drawing as a necessary and reliable tool, and with this assumption they have rarely felt obliged to test the limits of drawing, but merely accepted its advantages.[3] It is not my intention to destabilize the role that architectural drawing plays in the production of architecture, but it is of concern to me that architects generally treat the drawn medium as an impartial tool that facilitates the transmission of architectural thought into architectural action with the minimum of interference, and that in doing so certain attributes and characteristics of architectural production have been suppressed that are dependent on the act of drawing. These characteristics have the potential to offer insight into the advancement of idea/project relationships in architecture. This work then is conceived of as a working epistemology for the strategic purpose of identifying some of these subversive factors. It is an epistemology motivated less by philosophical scepticism than by personal interest in the place of drawing in the production of architecture. Why, and how, architects should have avoided such questioning for so long are recurrent motifs of this work.

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1 Blomfield, R. (1912): 5.

2 Evans, R. (1995)

3 "They [architectural drawings] are expected to be absolutely unambiguous to avoid possible (mis)interpretations, as well as functioning as efficient neutral instruments devoid of inherent value other than their capacity for accurate transcription. Professional architects generally see architectural drawing in this light." Pérez-Gómez, A. and L. Pelletier (1997): 5.

Argument structure

The problem of architectural drawing can be characterised as the problem of the line – or more correctly, linearity, and how linearity is maintained in a drawn medium. Architectural drawing has been defined by linear relationships, be they from idea to execution, architect to building, or thought to expression. Linearity is a particular characteristic of the architectural drawing's representational system.[4] However, I will argue that this linearity is also a form of insidious censorship that actively denies other forms of architectural knowledge a place in the representational process of drawing. In presenting such 'otherness' in thesis form there is a risk that it will assume the prominence of an alternative discourse rather than a complementary one. With this in mind the argument given here resists a strict linear expression of its own, and instead wanders on a more rhizomatic course. Writing on the rhizome, Deleuze and Guattari have shown that concepts are already lines.[5] This is particularly true of the architectural drawing where the representational systems are coded by mimesis as the very principle of architectural linearity, and architectural concepts are translated into practice by these same codes. Thus, in order to reveal 'other' knowledge suppressed in, and by, architectural drawing it is necessary to pursue a second kind of line where:

> *The line no longer forms a contour, and instead passes* between *things,* between *points. It belongs to a smooth space. It draws a plane that has no more dimensions than that which crosses it; therefore the multiplicity it constitutes is no longer subordinated to the One, but takes on a consistency of its own.*[6]

The One, in this case, may be read as the existing orthodoxy of architectural drawing. This thesis is a 'reading between the lines', and it is intended that this phrase signify more than a fanciful pun. It should not need to be emphasised that an architectural drawing is not a building, yet the traditional relationship between architects and their drawings often assumes such an association. The premise of this relationship is a visual correlation between those lines that are the drawing, and those lines that are the building. This is the point made by Pérez-Gómez and Pelletier when they call for a radical revision of architectural ideation:

> *In architecture, an uncritical acceptance of transparent communication as a dominant requirement (over potential meaning) has reinforced the use of projections to function as surrogates of buildings. When sets of drawings attempt to provide us with a "picture" of an architectural place or object, the buildings produced by such techniques necessarily reflect the predictive quality of their conception: the possibility of a revelatory dimension is abandoned. That this assumption of a literal relationship between the project and the building is basic*

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4 See Ingraham, C. (1998).

5 Deleuze, G. and F. Guattari (1987).

6 Deleuze, G. and F. Guattari (1987): 505.

to both the "correct" politics of rationality and industrial production in the modern city makes a critical reassessment all the more pressing.[7]

Projection, as it is used by Pérez-Gómez and Pelletier, is the principle of a linear visual system that treats the drawing as a site of pictorial translation, and their fear is that it contains within its literal graphic function a precise limit on the information communicated. I share this apprehension. Where an architectural drawing is treated as a surrogate for a building it displaces all other forms of knowledge that are not able to be read as a visual patterning. The first step towards interpreting any dormant knowledge concealed in the architectural drawing must begin with asking the question of how it is hidden, and what form this camouflage might take. It would be presumptuous of me to suggest that this work satisfies such a testing demand, but it is intended to contribute towards this as a goal. To that end I discuss three specific examples of architectural drawing that confront the paradigm of the drawing as a site of pictorial or representational clarity. The degree of this confrontation is the nature of the argument contained here.

In *Drawing the Line* I am arguing that another architecture can be found between the graphic lines of the architectural drawing that we already know so well.

Thesis organization and case study selection

This text is arranged in four major sections, each of which operates with a conditional autonomy governed by the rhizomatic action introduced above. In keeping with the epistemological intent of this work, the introduction does not describe the organization of the thesis, but enters directly into the philosophical context of the argument. It offers a brief overview of the ideological climate of architectural drawing practice, paying particular attention to the significance of the period from which the case study drawings are taken, and the dominant theme of architectural 'vision' that underlies both architectural drawing, and this thesis, is introduced.

In section 1 the 'translation model', the accepted paradigm for the responsibilities of the architectural drawing, is discussed. Attention is given to the orthographic relationship between elements in architectural drawing, and the role played by projection. The conventional ideological framework for architectural drawing is shown to be one that privileges the visual. Counter to this orthodoxy the role of blindness and touch are introduced as key elements that recur throughout the work, and the hieroglyph is proposed as an alternate figure of representational authority with which to examine the architectural drawing.

Employing Aldo Rossi's drawing *Interno con il Teatro del mondo* (1981), section 2 focuses on the inclusion in the architectural drawing of information not specifically limited to the idea / project relationship. In particular the themes of memory and death are

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[7] Pérez-Gómez, A. and L. Pelletier (1997): 390.

explored, and the function played by the inclusion of biographical and personal motifs in Rossi's drawn work. This leads to the exploration of a metaphysical component in architectural drawing. Finally, the figure of the hand in Rossi's drawings is proposed as a complement to the eye as the centre of an 'other' architectural vision.

Section 3 continues the discussion on blindness and drawing by establishing the graphic technique of *trompe l'oeil* as emblematic of the limits of two-dimensional representation. The Morphosis drawing, *Venice III* (1982), is used as a case study. The architectural drawing is described in terms of the grotesque and the caricature, and the place of fetishism in architectural drawing makes use of a Coop Himmelblau drawing as a literal case of blind drawing. Following Marco Frascari, it is then argued that the architectural drawing contains a poetic element that is contrary to the prescriptive orthographic relationship, highlighting the division between the eye and the hand in drawing.

With particular reference to Peter Eisenman's drawings for the project *House X* (1976), the final section addresses the question of the origin of architectural drawing as a means of establishing fundamental principles of relations between the visual and the tactile. The hieroglyph is reintroduced as a dominant motif, and the presence of the bas-relief leads to a critique of sight / touch relations. The architectural drawing is presented as a repository of privileged knowledge similar in effect to the hieroglyph. Finally, the dependence that architects have on this authority is argued as evidence of a separation of the architect from the architectural project. The drawing then becomes the site of confusion between origin and terminus, birth and death.

The thesis identifies a commonality between the three major case study drawings based in the recurrence of specific discursive representational themes and elements explicit in each. These include the themes of blindness and seeing, the hand and touch, birth and death. However it needs to be emphasised that while these particular drawings may be considered exemplars of these characteristics, the role they serve as case studies is to draw (as it were) attention to the presence of these factors in all architectural drawing of one kind or another. To this end each drawing discussed here has been included as useful, but they are by no means the limit or extent of available examples. They each exhibit overt violations of the conventions of architectural representation that govern projective linearity. Not only are the three key drawings not able to be realised as buildings through any obvious pictorial parallel, they go on to fundamentally challenge the conventional graphic codes of architectural drawing that rely on a visual paradigm. These are drawings that attempt to address the revelatory dimension of architecture as their representational *rasion d'etre*. The supporting work of other architects used here strives toward a similar end. What distinguishes my use of the drawings *Interno con il Teatro del mondo*, *Venice III*, and *House X* is the degree to which these three drawings demonstrate a highly self-conscious attempt to violate the hegemony of vision that governs the linearity of architectural drawing. Importantly, they do this in very different ways, within the decade immediately prior to the introduction of digital technologies to the field of representation in architecture (1975-1985). The intention in these images is to confront the histories, traditions, and principles of architectural drawing in the face of a profound technological shift. However, I am not suggesting that all the architectural drawings by Peter Eisenman,

Aldo Rossi, Morphosis, or those others mentioned, are bound to demonstrate these same qualities - they are not. What they denote are the most assertive (and attractive to me personally) examples that support my thesis.

Glossary of architectural drawing

The appendix is a glossary of drawing terms. The Oxford Dictionary of Architecture contains no entries for ‘drawing’, ‘representation’, ‘presentation’, or ‘drafting’.[8] Descriptive attention is given only to the conventions of architectural drawing: plan, section, elevation, axonometric projection, and perspective. This architectural dictionary contains an extensive entry for the equally generic concept ‘stair’, including a full extension of words and terms associated with the stair. The impoverished nature of entries concerning architectural drawing can be illustrated by the entry for ‘perspective’: “Method of representing graphically an object as it appears to the eye, suggesting three dimensions.”[9] Although not factually wrong, this record fails to introduce any theoretical or conceptual framework about which the technique of perspective might be discussed.[10] This suggests that the ‘stair’ is considered by the Oxford editors to be a topic worthy of contextual elaboration, while ‘drawing’, and its associated terms, is to be relegated to succinct pragmatic description. Yet drawing, as it is to be discussed here, is a far more complicated and difficult problem than this entry allows. In this context such poor elaboration of critical terms might be interpreted as a determined attempt to make drawing a passive and benign activity, particularly when it is in service to the act of building. It has, then, become necessary in the course of this work to elaborate on the lexicon of architectural drawing not only to clarify complex relationships, but also to introduce theoretical and philosophical relationships that have lain dormant in the very syntax of drawing. There are a number of precedents for the architectural drawing glossary including institutional standards and general publications,[11] but in general these address the need for a wider explanation of drawing terms used in architecture as a purely descriptive exercise. This glossary is a supplement to the first four sections, and is not conceived of as a comprehensively inclusive or categorical document. For this reason quotation or discussion previously used in the main text have not been included here. The glossary has been conceived of as a compendium for further lines of thought, and as a final step in this work towards disengaging architectural drawing from the dogma of orthodox convention.

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8 Curl, J. S., Ed. (1999).

9 Curl, J. S., Ed. (1999).

10 For example, see Damisch, H. (1994). This dictionary reference almost exclusively consults one work by Trevor Reekie from 1946. Reekie, T. (1946).

11 For example see Powell, H. and D. Leatherbarrow, Eds. (1982).