



# THE UNIVERSITY *of* EDINBURGH

This thesis has been submitted in fulfilment of the requirements for a postgraduate degree (e.g. PhD, MPhil, DClinPsychol) at the University of Edinburgh. Please note the following terms and conditions of use:

This work is protected by copyright and other intellectual property rights, which are retained by the thesis author, unless otherwise stated.

A copy can be downloaded for personal non-commercial research or study, without prior permission or charge.

This thesis cannot be reproduced or quoted extensively from without first obtaining permission in writing from the author.

The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the author.

When referring to this work, full bibliographic details including the author, title, awarding institution and date of the thesis must be given.

The Kinematography of a City  
**MOVES INTO DRAWING**

Sophia Banou

**SPECULUM**

Doctor of Philosophy in Architecture by Design  
Edinburgh School of Architecture and Landscape Architecture  
The University of Edinburgh

February 2016

## CONTENTS

## LINE

WEAVING LINES/LOOMING NARRATIVES 6

TO DRAW A LINE: ON THE INTEGRITY OF MARKS 6

I THE BEGINNING OF THE LINE 10

II WEAVING THE VOID 15

III OUT-LINES 44

## GAZE

THE ANIMATE GAZE: REIMAGI(NI)NG THE CITY 58

KALEIDOSCOPIIC CITY 60

I RULES OF VISUAL ENGAGEMENT 59

II THROUGH THE LOOKING MAP 67

III MATERIALITY OF THE VISUAL 71

IV TOWARDS AN IMAGE [OF THE 'GOOD' KIND] 88

## SURFACE

DEEP SURFACE: ON THE SITUATION OF DRAWING 100

DRAW OF A DRAWING 104

I A MATTER OF DRAWING 101

II A PLACE OF DRAWING 109

III IN PLACE OF A SITE 115

IV THE SPACE OF DRAWING 122

V DRAWING IN SPACE 126

THE CITY [WITHIN] THE DRAWING 130

I A THESIS ON MOVEMENT 131

II THE DRAWING WITHIN 134

III THE CITY WITHIN 135



LINE

WEAVING LINES/LOOMING NARRATIVES

TO DRAW A LINE: ON THE INTEGRITY OF MARKS

*Weaving Lines - Looming Narratives* was presented in a room at the Newcastle School of Fine Art on February 2013, in the form of a large scale installation. Despite this, it was conceived as a drawing, as part of my enquiry into drawing and into the kinetic character of the city, through drawing. As the first step towards an urban representation that sought to investigate the boundaries of the kinetic character of the city against the limitations of architectural representation, this first project became concerned with the transcription of a small urban site that would allow for the testing out of techniques and practices of observation, documentation and notation, before attempting to approach the complexity of the scale of the urban. Before any writing occurred, the transcription begun with the question of lines. Even while seeking to overcome or negotiate the preconceptions of architectural representation, it seemed inevitable that lines, limits, and rules of engagement with regard to both the ground of the city and the drawing had to be drawn, if this endeavour was to assert its validity within an architectural way of thinking. There were therefore – at least – two kinds of lines to be drawn. One was to define what would come to ‘play’ in the representation; what was to be drawn and thus be made present within the drawing. The other was about the how of the drawing; the modes of notation. It can thus be said that the lines of the former kind were concerned with the premises of the reading of the city, while the latter were concerned with the process of writing the script of the drawing. Both kinds of lines carried what Ingraham would describe as a significant ‘burden’: to maintain the integrity of this endeavour as architectural representation.

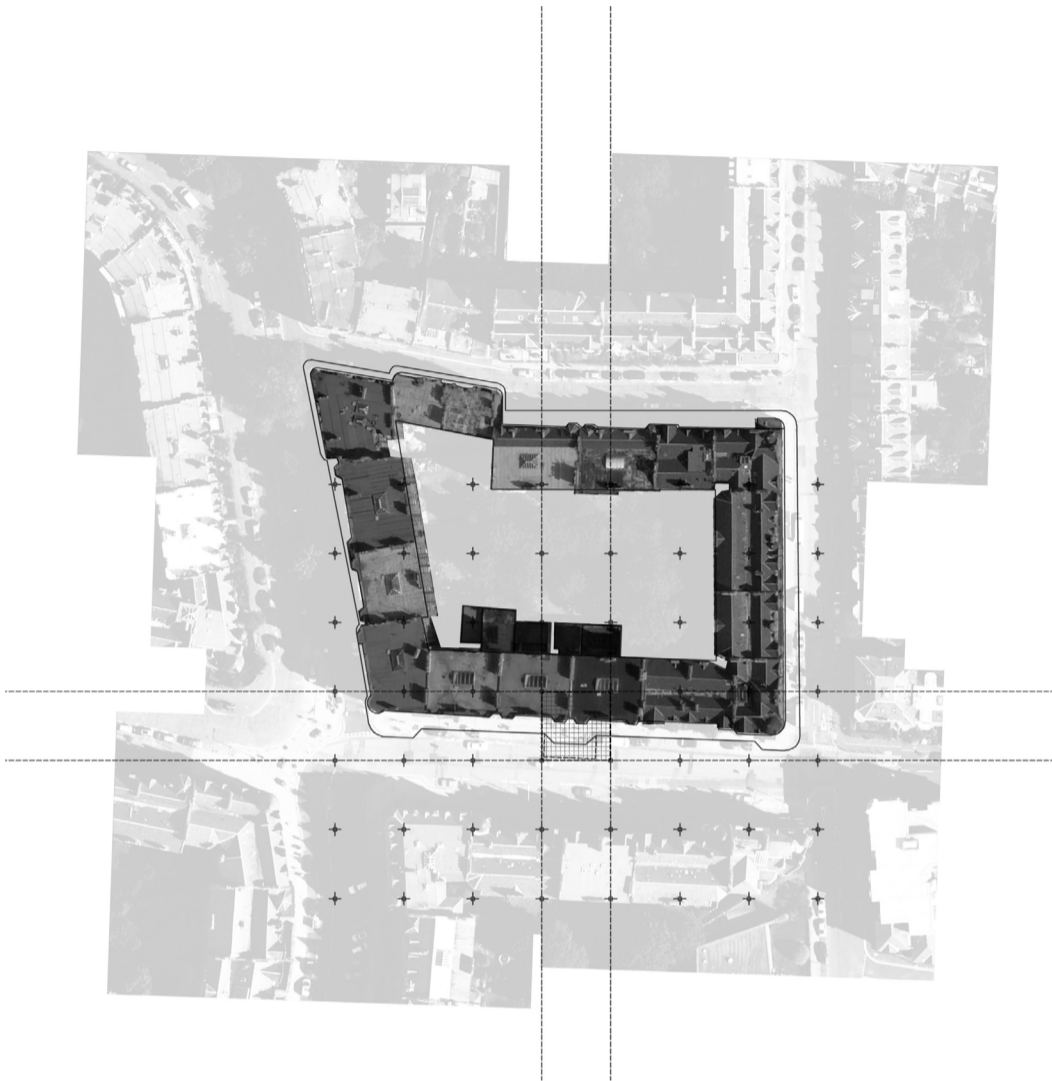
As the archetypal written mark, the line has marked architecture’s form and modes of operation. As Catherine Ingraham writes, linearity is an integral characteristic of architectural practice, not only with regard to architecture’s notational language – a language of both record and composition- but also with regard to the process of architectural thinking as a linear genealogy of thought that ‘promises’ a direct passage from the architectural idea to the architectural object.<sup>1</sup> The line emerges in architecture in multiple ways: as the contour of the real, the note of the drawing or the ‘lineament’ of the mind.<sup>2</sup> Considered in this manner, it exemplifies the function of the signifier in architectural form, but most importantly within architectural drawing, where it stands as the delineation of a material presence, of which the transference into drawing (as a field of architectural thinking and spatial enunciation) it facilitates. Architecture’s dominantly linear notations thus pose as ‘guarantors’ of a *spatial integrity*, rendering and, in a sense, establishing presence as indisputable, measurable, tangible, through drawing conventions.

In its vectorial nature, the line may denote the dynamism of a direction, of a beginning and an end. But the architectural line can be considered a connector as much as a divider and therefore a path of movement as much as a stabilizer. A boundary between the record of the certain and the speculation of the contingent, what it delineates, both in architectural space and in drawing, is the end of the ‘already real’ and the beginning of the architectural. The passage that is signified by architectural notations, is both figural and conceptual, iconic and symbolic. This dual register of the architectural line as form and process, raises thus the question of what can be considered as the ‘line’s linearity’:<sup>3</sup> an integrity that is, in the propriety of signification, theoretically reflected in the *wholeness*, as well as the *impartiality*

<sup>1</sup> Catherine Ingraham writes: ‘*The path from model, template, or drawing to building has always been linear – nothing appears to be lost or gained in the translation from these modes of representation to the actual building. I have found however that here is nothing succinct – everything is tortuous – about the idea of the line and linear representation in architecture*’. Catherine Ingraham, *Architecture and the Burdens of Linearity* (New Haven and London: Yale University Press, 1998), p. 4.

<sup>2</sup> Alberti’s “lineaments” were described as intellectual linear constructs projected “in the mind”, as opposed to the material constructions in the world. They acquired form and figure yet were independent to the material world, suggesting a kind of stylistic equilibrium of form as a criterion of ‘harmony’ for the building. See Alberti, Leon Battista, *The Art of Building in Ten Books* (1485), trans. Joseph Rykwert, Neil Leach and Robert Tavernor (Cambridge Mass.: MIT Press, 1988), p. 7.

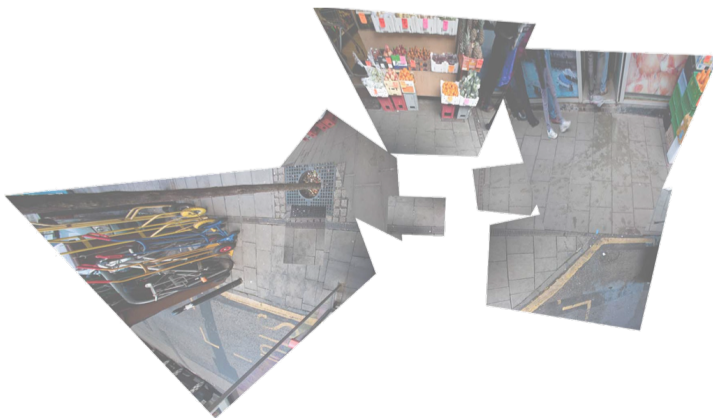
<sup>3</sup> This idea is reminiscent of Jacques Derrida’s analysis of the “structurality of structure” as discussed in the essay ‘Structure, Sign, Play in the Discourse of the Human Sciences,’ in and in response to Catherine Ingraham’s proposition of the disciplinary role of the line for architecture. See Jacques Derrida, ‘Structure, Sign, Play in the Discourse of Social Sciences’ (1967), in *Writing and Difference* (London and New York: Routledge, 2005).



[L1] Site I, Plan, Marchmont, Edinburgh 1/2000

[L2] Site I, Composite View

[L3] Site I, Composite photographic plan



of the 'translation' it entails. Yet the sign is never whole as presence. Always an abstraction, a trace rather than a replication, the architectural mark is in its linearity materially minimum and visually laconic: "without breadth" and "without depth".<sup>4</sup> Considered as such, architecture's linearity ultimately traces a trajectory that reveals architectural representation as a 'non-linear' process of signification, where integrity is substituted by an operative partiality of both form and intention. This partiality suggests an understanding of architectural drawing as a 'place' woven out of lines as detours, rather than a definite destination. It is by means of this partiality that the line of architectural drawing, as both figure and concept, marks the passage across the boundary between the architectural and the non-architectural, even if this is a boundary that it has itself created. In this sense, the mark of the architectural line is what assigns things to architecture and architecture to things.

The first lines were thus drawn to delimit the site. This attentive reading of the site was not to dissect the space in question by means of the sight of an observer as the conventions of an architectural plan commonly dictate, neither was it concerned with offering the aerial panoptic view of an urban planner. In a manner similar to an archaeological dig, it was rather concerned with 'cutting' through the various levels of action of the site, disregarding conventional limitations such as the segregation of things according to degrees and scales of materiality, visibility or temporality. In this way, this investigation sought to excavate the multiple instantiations of the urban that escape attention and representation within architectural drawing. In the fashion of an excavation, a fifteen by fifteen metre rectangular grid was hence introduced, which divided, measured and normalized the city as the ground of an excavation [L1]. Anchored to the Cartesian grid, the chosen site came to constitute 'square (0, 0)', a provisional datum for a fragment of the city, which included both public and private, indoors and outdoors spaces [L2-L3].

Once the ground was defined what remained was the figure. Drawing from the understanding of the city as a textual discourse rather than a finite script, the project placed focus on the kinetic instead of the static elements of the site. In this way, a transversal representation of the site was to take place through a recording of the negotiations that occurred between the human and non-human operating actors, which 'inhabited' and configured the space. This transversal section from air to ground sought to reveal the intricacy of the 'illegible' textuality of urban space by offering an insight into the variety of movements, interactions and reconfigurations that take place within an urban site, as small as 15x15 meters, and the ways in which these could be accommodated within a frame of architectural representation.

The multiplicity of the site was sampled by six characters, both animate and inanimate, which were selected across both physical and temporal scales, in an attempt to overcome the preconceptions of normative architectural representations and graphic scales. The line of inclusion was thus already stretched beyond solid-void dualisms, which was challenged by the traditional understanding of presence and perception as anchored to notions of constancy and visibility. Moreover it was

<sup>4</sup> Euclid, *Elements of Geometry* (ca. 300 BC), trans. Richard Fitzpatrick (Richard Fitzpatrick, 2008).

## I THE BEGINNING OF THE LINE

In the book *Architecture and the Burdens of Linearity*, Catherine Ingraham discusses the uninterrupted impingement of linearity upon the discipline of architecture.<sup>5</sup> This foundational attachment is according to Ingraham both figural and ‘philosophical,’ as architectural theory and practice intertwine in changing and unbalanced compositions.<sup>6</sup> The “wielding of the line” has had a both specific and diachronic influence upon the structure and ethos of architecture,<sup>7</sup> emerging as a disciplinary agent. It persists on ‘disciplining’ architecture by defining a frame of what Ingraham defines as *propriety*: to “keep things in line” within a proper frame of a linear, rational, Cartesian and orthogonal “intellectualism”.<sup>8</sup> This is expressed on the one hand, through figural exchanges between the “proper” as defined by convention and the building as the architectural object, and, on the other hand, through the canonicity provided by a linear inheritance of meaning. Although in this inquiry on architecture’s linearity, Ingraham points out the importance of representational codes on more than one occasions, it is the latter notion, of linearity as a line of origin and descent, and therefore as delineating a genealogy of thinking, which appears to become more integral to her definition of architecture than any other of its manifestations.

This concept of an architectural integrity of knowledge and practice that is maintained by means of the graphic line has been historically prevalent in architectural treatises. Vitruvius’ *Ten Books of Architecture*, marking the beginnings of an architectural epistemology, maintained the understanding of architecture as *science*,<sup>9</sup> a notion of science that would be grounded by Vitruvius’ translators, and particularly Daniele Barbaro on the principles of geometry as a mathematization and hence rationalization of architecture.<sup>10</sup> Convinced by Vitruvius’ position which was in agreement with the positivist idea of universal truths, Barbaro sought to establish a notion of architectural “dignity” in bringing together drawing and geometry as the “cornerstones” of architecture, by distancing art from experience and the sensible: “The principle of art is universal and not subject to the human senses although it is through the senses that it is retrieved”.<sup>11</sup> As Werner Oechslin points out, the term *scientia* (originally meaning in Latin not only science in the modern, disciplinary, sense but high knowledge) is only referenced in Vitruvius’ text at one point other than this initial definition of architecture: with reference to the necessity of a high command of drawing.<sup>12</sup> Despite Barbaro’s attempt to distance it from experience, geometry stands for architecture not only as an intellectual grounding in the mathematical but also as a performative and physical attachment to the graphic. In any case, it is geometry that emerges as architecture’s originary ‘muse’, providing it with a universal epistemological validity.

Respectively, in Ingraham’s interest, linearity represents a factor of continuity and “propriety” that becomes constitutive to the establishment of architecture as discipline by maintaining its integrity as a structure of meaning.<sup>13</sup> But more than this, linearity emerges in Ingraham’s writing as itself the ground of a mutual binding of architecture to the constitution of what is *proper*, implying an architectural function that extends even ‘outside’ normative notions of architecture. Linearity as explained by Ingraham challenges the ‘principle of principles,’<sup>14</sup> reconsidering the originary tale of geometrical convention and revealing for architectural linearity a role that regards not figural (conceptual), nor material (sensible) but, more importantly, *structural integrity*.

The establishment of the proper still coincides for Ingraham with the ‘founding’ of the discipline: the establishment of an origin as a precedent for propriety, and the consequent transference of this validity through a continuity that is produced out of the reference to the origin.<sup>15</sup> Non-coincidentally,

<sup>5</sup> Catherine Ingraham, *Architecture and the Burdens of Linearity* (New Haven and London: Yale University Press, 1998).

<sup>6</sup> *Ibid.*, p. ix.

<sup>7</sup> *Ibid.*, p. 2.

<sup>8</sup> *Ibid.*, p. 51.

<sup>9</sup> In Vitruvius: “Architectura est Scientia”. Quoted in Werner Oechslin, ‘Geometry and Line: The Vitruvian “Science” of Architectural Drawing,’ *Daidalos* 1 (1981) pp. 20-35; p. 21.

<sup>10</sup> *Ibid.*, p. 21.

<sup>11</sup> “Il principio dell’arte e universal e non sottoposto ai sensi umani bence per via dei sensi stato sia ritrovato.” Quoted in *Ibid.*, p. 21. [In-text translation by the author]

<sup>12</sup> According to Vitruvius, the architect must be “peritus graphidos” and familiar with “graphidis scientiam”. *Ibid.*, p. 21.

<sup>13</sup> Ingraham, *The Burdens of Linearity*, p. 10.

<sup>14</sup> John P. Leavy, ‘Preface: Undecidables and Old Names,’ in Jacques Derrida, *Introduction to Husserl’s Origin of Geometry* (1962), trans. John P. Leavy (Lincoln and London: University of Nebraska Press, 1989), p. 1-21.

<sup>15</sup> This reference is in effect produced through effects of representation: the fixing of an origin that constitutes, in Jacques Derrida’s terms, an appellation of both the

displaced from the understanding of the human as privileged body. The characters chosen were [1] a fish, [2] a fish-monger, [3] a flat tenant, [4] my camera, [5] the constellations crossing the sky, [6] the mass of water crossing the street and pavement. The representation aimed to confer upon these characters a kind of a visible materiality, by acknowledging their existence as agents of both the visual and the spatial.

Ingraham's challenging of the origin proceeds through the questioning of another geometric foundation as expressed in Jacques Derrida's *Introduction to Husserl's Origin of Geometry*.<sup>16</sup> The naming of the origin is understood by Derrida in terms of

an "arche-writing",<sup>17</sup> which defines and, in doing so, precedes the origin, challenging thus its presence and propriety by revealing it as a provisional rather than transcendental meaning. The attachment to the line of inheritance is in turn understood as a constant inscription upon the discipline, or rather a re-disciplining of architecture by means of the transcription of the origin. This notion of the announcement of the origin, in effect the establishment of architecture's integrity by means of its linearity as a form of *writing*, reveals the representational nature of architecture and its relation to language and the structures of writing. The constitution of architecture as a stable structure of meaning is an event that entails a certain "violence", a break: what Derrida describes in *Of Grammatology* as the illusion that conceals what is in effect an act of "appurtenance" rather than creation:

There was in fact a first violence to be named. To name, to give names that it will on occasion be forbidden to pronounce, such is the originary violence of language which consists in inscribing within a difference, in classifying, in suspending the vocative absolute. To think the unique within the system, to inscribe it there, such is the gesture of the arche-writing: archeviolence, loss of the proper, of absolute proximity, of self-presence, in truth the loss of what has never taken place, of a self-presence which has never been given but only dreamed of and always already split, repeated, incapable of appearing to itself except in its own disappearance. Out of this arche-violence, forbidden and therefore confirmed by a second violence that is reparatory, protective, instituting the "moral", prescribing the concealment of writing and the effacement and obliteration of the so-called proper name which was already dividing the proper, a third violence can possibly emerge or not (an empirical possibility) within what is commonly called evil, war, indiscretion, rape; which consists of revealing by effraction the so-called proper name, the originary violence which has severed the proper from its property and its self-sameness [propriety]. We could name a third violence of reflection, which denudes the native non-identity, classification as denaturation of the proper, and identity as the abstract moment of the concept. It is on this tertiary level, that of the empirical consciousness, that the common concept of violence (the system of the moral law and of transgression) whose possibility remains yet un-thought, should no doubt be situated.<sup>18</sup>

The constitution of the proper is thus at the same time a loss of the proper, the fixing of meaning and knowledge through the forced inscription of a singularity upon the plurality of a system of differences such as language and, as it emerges through Ingraham's text, architecture.<sup>19</sup> The paradox that occurs in this disciplinary constitution of architecture is the fact that what is 'founded' upon this moment, is not the discipline but rather the origin. As Derrida writes in his *Introduction to Husserl's Origin of Geometry*, it is a moment of constitution, not of founding, which takes place through the historicizing of a mutable event. This constitution of the origin, the beginning of the line, is what establishes the integrity of architecture as an "enduring system of meaning".<sup>20</sup> Yet it is the operation of architecture that needs to be necessarily at play already for the 'making proper' of this moment: as Ingraham writes, "to architect is to make proper".<sup>21</sup> The 'writing' of the origin within the system presupposes that architecture is already at play for the creation of the originary ideal, such as the line. But it also suggests, as Derrida writes, that there is a fault, an 'improper', inherent within writing and within architecture as constitutive forces of the structure of meaning, from the beginning.<sup>22</sup> In this sense, it is possible to maintain that although geometry and its breadthless linearity remain integral to

origin and the discipline, and, consequently, the tracing back, the recounting through a linear genealogy of knowledge of this lost origin as a stabilising factor. See Jacques Derrida, *Introduction to Husserl's Origin of Geometry* (1962), trans. John P. Leavy (Lincoln and London: University of Nebraska Press, 1989).

<sup>16</sup> Ingraham, *The Burdens of Linearity*, p. 81-82.

<sup>17</sup> The notion of the arche-writing, as a writing that precedes speech and thus challenges the understanding of writing as a secondary imitative representation of speech, suggests that language -and in respect architecture which is presented here through acts of speech and writing- is as a structure always already unstable and undecided, contain the notion of 'difference,' of the fissure as a constitutive element. This fissure is described by Derrida as the "first violence of language": "To name, to give names, ... to think the unique within the system, to inscribe it there, such is the gesture of the arche-writing: arche-violence, loss of the proper, of absolute proximity, of self-presence, in thruth the loss of what has never taken place, of a self-presence, within a system of differences which has never been dreamed of and always already split". Jacques Derrida, *Of Grammatology* (1967), trans. Gayatri Chakravorty Spivak (Baltimore: Jons Hopkins University Press, 1997), p. 25.

<sup>18</sup> Derrida, 'The Violence of the First Letter: From Levi-Strauss to Rousseau.' In *Of Grammatology* (1967), trans. Gayatri Chakravorty Spivak (Baltimore: Jons Hopkins University Press, 1997), p. 112-113.

<sup>19</sup> Ingraham, *The Burdens of Linearity*, p. 40.

<sup>20</sup> Derrida, *Origin of Geometry*, p. 12

<sup>21</sup> Ingraham, *The Burdens of Linearity*, p. 12.

<sup>22</sup> The figure and the concept as an opposition emerge in Leavy's preface through Kant. See Leavy, 'Undecidables', p. 40-41.

architecture as a kind of writing of the *figure* of the *concept*,<sup>23</sup> considered, in Barbaro's terms, as the geometric "sign" of the idea,<sup>24</sup> linearity's primary contribution to architecture's integrity of meaning does not operate through a translative delineation that proceeds through the proposition of geometric 'ratio' as a kind of language,<sup>25</sup> but of the ability to destabilize and thus redefine the figure by mobilizing and redefining the provisional 'ratio' that conditions the delineation. Linearity then stands both for the figure and the convention that designates the 'enunciation' of the figure, bringing the two together in a mutable, yet 'concrete', continuity of form and meaning.

Ingraham's argument of the conjunction between structure and architecture offers an insight into the widely debated relationship between architecture and philosophy as it has emerged from the discussion between Peter Eisenman and Jacques Derrida,<sup>26</sup> as well as in the essay *The Translation of Deconstruction* by Mark Wigley.<sup>27</sup> As a response, Ingraham argues that architecture is not really about building, but thinking, and therefore not a discipline of construction but rather deconstruction.<sup>28</sup> It does not stabilize structure by founding the ground, but instead sets roots on a plural and mutable ground, the dynamic of which it manages to conceal through the 'cunning' of representation. Collecting and importing materials from other spaces and discourses -such as geometry and philosophy- architecture constructs its idea of proper knowledge as it goes,<sup>29</sup> an idea of structure of which it becomes the philosophical imagery, while presenting the same mutability, the same 'pathologies', that it implants through its modes of operation into the constitution of structure. There is then a plurality that lies within the founding core of architecture which derives from its mutability that allows architecture to in turn inhabit and domesticate these external structures for which it provides the datum of a founding ground,<sup>30</sup> while concealing this plurality for the sake of its integrity as both structure and a structured discipline.<sup>31</sup> This constitutional act of writing that both establishes and shakes the stable ground of architecture, is then always linear and always representational. As such, it infiltrates architecture as a form of thinking, but also reveals the practice of drawing as not merely a material instantiation of architecture's writing, but as the situated experience of a field of action for architectural design and thinking

To return to Vitruvius' *Ten Books of Architecture* as itself an originary moment and precedent for architecture, the architectural 'ideas' that generate design (*dispositione*) are there described through the concepts of *ichnographia*, *orthographia* and *scaenographia*, that is, as forms of writing or rather drawing (-*graphia* from Greek *graphe*, meaning writing), as linear signs (line in Greek *gramme*, also from *graphe* and of the same root as *gramma*, the letter is inherently written). These 'ideas', are most commonly interpreted as the orthogonal and projective projections of architectural drawings,<sup>32</sup> yet, considering them as ideas in the Aristotelian sense, it is not possible to simply place them in the realm of drawings as material artefacts. These, Aberto Pèrez-Gòmez and Louise Pelletier argue, are:

[...] effectively occupying and revealing a space between Being and becoming. They are mental images kindred to oracular dreams that as generators of architecture, possessed the fixity that we have come to associate with drawing and writing, without ever abandoning the ephemerality of the lived world and the spoken word.<sup>33</sup>

In this sense, the lines of architectural drawing can be considered as not a transliteration into another language, another form of expression, but as a continuous extension of the cunning architectural workings described by Ingraham, into the realm of the sensual, the visual and the material, by means of the graphic sign. As an architectural "domestication" of matter, linearity reveals that in architecture

<sup>23</sup> Derrida, *Origin of Geometry*, p. 40-41.

<sup>24</sup> "As writing is the sign of speech, speech is the sign of intellect, so are the mathematical designs and geometric figures the sign of their, i.e. man's ideas". Daniele Barbaro Quoted in Oechslin, 'Geometry and Line', p. 28.

<sup>25</sup> Comparing architectural drawing to a painting by Le Corbusier Oechslin concludes that "In the architectural project the 'geometricizing' line grows from geometric 'ratio' in an easily reconstructable process, whereas in painting, it has even invaded the represented picture itself – an homage to the line itself". This statement Oechslin follows by Le Corbusier's own comment that "Geometry is the only language we know how to speak". Oechslin's conclusion suggests a insistence to the external reasoning of geometry as a unique source for the validation and 'veracity' of architectural drawing. Counting on 'reconstructability' architectural drawing is distinguished here from painting as unable of discovering the line's own effect. *Ibid.*, p. 34.

<sup>26</sup> As drawn in the publication *Chora L Works* and Derrida's own letter to Peter Eisenman. See Jacques Derrida and Peter Eisenman, *Chora L Works* (New York: Monacelli Press, 1997) and Jacques Derrida, 'A Letter to Peter Eisenman' (1989), trans. Hilary P. Hanel, *Assemblage*, 12 (August 1990), pp. 6-13.

<sup>27</sup> Mark, Wigley, 'The Translation of Architecture, The Production of Babel', *Assemblage* 8 (1989), pp. 6-21. See also *Instructions*, Chapter III.

<sup>28</sup> Ingraham writes in particular that architecture is not an "object profession" but a profession of "object thinkers". Ingraham, *The Burdens of Linearity*, p. 125.

<sup>29</sup> *Ibid.*, p. 16-18.

the graphic, the philosophical and the conceptual are not ever distinct or opposing but negotiating transmutations of architecture's inherent ability to inhabit difference and thus blur the oppositions –between presence and absence, the static and the dynamic– by placing its very own integrity as a structuring mechanism under constant revision.<sup>34</sup> Linearity then does not separate, but rather binds together the conceptual, figural, and material modes of operation of architecture by concealing –and thus, here, uncovering– the originless 'circuitry' of architecture as an act of representation. Drawing then, in its dual nature as symbol and icon,<sup>35</sup> as process and artefact, stands as the primary embodiment of architecture's representational cunning mode of operation.

Upon selecting these odd characters to describe the object of the representation, it was the connective and domesticating ability of the architectural line that was to be tested on bringing these diverse 'expressions' of the urban and their mutual interactions into a coherent representation of a spatial reality. This survey had to 'make room' for elements that, to begin with, were not themselves direct 'products' of a preceding design (such as pre-existing buildings), neither elements of nature that could be accommodated within a pre-existing code of notation. Moreover, the characters involved distinct instantiations of materiality, and acted within distinct scales of time. Considering this, they required distinct modes of documentation as well as transcription

<sup>30</sup> With regard to cunning, Ingraham brings up the idea of *metis* as inherent to architecture. This is a notion that is, as we have seen in *Instructions*, Chapter IV, entailed within the operative modes of writing and weaving, and which has also emerged as a conscious aspiration for architectural practice in the work of the architectural practice *Metis*. Yet, it is important to note that Ingraham's notion of *metis* as a characteristic of architecture does not regard a necessarily conscious intelligence but rather a kind of agency that is shared among the mental and the material realm of architecture, where the mental refers to language and the material to the manual process. *Ibid.*, p. 43.

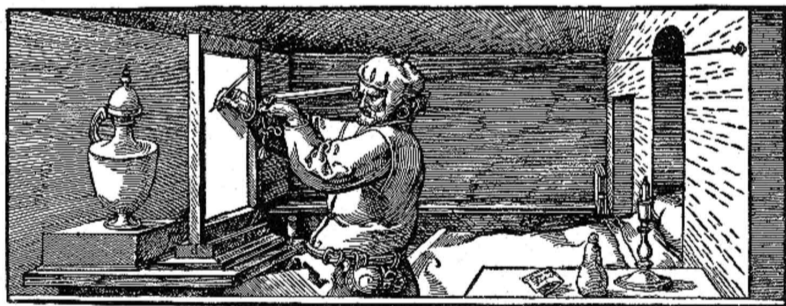
<sup>31</sup> This formative plurality links with the plurality of systems of signification such as language, depending on equivocality, undecidability, spaces between, plural opportunities for meaning and interpretation. As Ingraham writes "architecture is open to the play and danger of 'meaning'". Ingraham, *The Burdens of Linearity*, p. 18.

<sup>32</sup> Respectively understood as plan, elevation and perspective. The notion of idea is here according to Perez Gomez and Pelletier not to be understood as the concept of drawing in the sense of an objectified tradition but interpreted in the Aristotelian sense, holding the meaning of an "image-representation" which is neither purely perception nor thought, but in any case a "precondition" for drawing. Alberto Perez-Gomez and Louise Pelletier, 'Scenographia and Optical Correction from Vitruvius to Perrault', in *Architectural Representation and the Perspective Hinge* (Cambridge, Massachusetts: MIT Press, 1997), p. 46.

<sup>33</sup> Alberto Perez-Gomez and Louise Pelletier, *Architectural Representation and the Perspective Hinge* (Cambridge, Massachusetts: MIT Press, 1997), p. 97.

<sup>34</sup> *Ibid.*, p. 53.

<sup>35</sup> On the dual register of drawing, see also *Instructions*, Chapter III.



[1] 'Aristipp after a happy landing', from Jacques Ozanan, *Recréation mathématique e physique* (1778)  
[2] *Perspective Machine*, Albrecht Durer (1525)

## II WEAVING THE VOID

Among the originary tales of geometry, one finds the myth of Aristipp. In the tale as reported by Vitruvius, the Greek philosopher Aristipp is washed ashore on a coast of the island of Rhodes after a shipwreck.<sup>36</sup> Unaware of his whereabouts he notices on the sand a set of geometric drawings, which he considers an immediate sign of the presence of civilised men: “Let us be hopeful for I see traces of men”, he exclaims.<sup>37</sup> These, are not just traces of men (in Vitruvius “hominum vestigia”) but as specified in Auguste Rode’s translation, “schemata”, that is, consciously manmade (geometric) forms (from Greek *σχῆμα*, meaning form, appearance, geometric shape) [fig. 1]. The idea of drawing as a trace, as a kind of vestige of a past presence is first encountered in architecture in the Vitruvian concept of ichnography as the writing of traces (from Greek *ichnos*), or perhaps the writing by means of creating traces. As such the recognition of the trace as *schema* entails both the understanding of the sensible as a material mark, a visually comprehended form, and a kind of writing (*graphie*), in Derrida’s terms the appellation of an original presence by means of a conscious intellect rather than an involuntary animal trace: a material enunciation by means of convention. The traces upon the Rhodian shore are geometric, and therefore linear and intentional. They are not accidental remnants, nor the sign of an absence but of a meaningful intelligible presence, an “appurtenance” of meaning upon the milieu of the real.

In another interpretation of ichnography, Paul Carter proposes through the notion of *ichnos* as *track* rather than trace, an understanding of ichnography not as a material inscription but an investigation, the study of a field, an archaeological or rather forensic inquiry provoked by the gaps that emerge between the signs as partial, fragmentary, remnants.<sup>38</sup> Carter’s interpretation expresses his understanding of traces as “containers of events”, that have not only individual meaning, but cumulatively reveal temporal and sequential connections, finding the linear in the spatiotemporal storyline that they collectively unravel:

Tracks are what is left behind they bear witness to something that was never there, but always departing, disappearing... They are vestiges of the stride and the instance between two strides... To notice them, to make sense of them is to engage with the leftover of history and to harness their potential to indicate different paths in the future.<sup>39</sup>

As opposed to Aristipp’s linear schemata, Carter’s tracks are distanced from the “dignity” of *ratio*. They are more akin to the bestial, involuntary track of the animal,<sup>40</sup> placing the intelligible act, and respectively the *appurtenance* as the production of meaning on the side of interpretation, as opposed to the side of the preconditioning intellect of the consciously produced lines of geometry. If architecture’s linear integrity is not constituted by, but constituting of meaning, and therefore able to function ‘around’ – or perhaps even beyond – the limitations of an ideal geometric convention, when does a line become architectural? When does a mark ‘enter’ architectural representation? In other words, how does

One of the main questions that arised in the process of making this drawing was how the habitual, the chanceful and the involuntary, could come to inhabit a semiotic and representational space continuous to the ‘space’ of the already ‘linear’ elements of the drawing – that is, of the elements already attached to representational codes, such as the star constellations or even the movement of humans, which were attached to precedents of sky mapping and choreographic notation respectively.

architectural drawing outline the crossing from the sensible to the intelligible, or vice versa? The contrast between the intelligible sign and the found sensible trace defines the two sides of architectural representation:

<sup>36</sup> Oecshlin, ‘Geometry and Line’, p. 27.

<sup>37</sup> Ibid., p 27.

<sup>38</sup> Paul Carter, *Dark Writing* (Honolulu: University of Hawai’i Press, 2009), p. 164.

<sup>39</sup> Ibid., p. 204.

<sup>40</sup> Ingraham discusses this opposition between the animal crooked line and the orthogonal lines of the civilized human. Ingraham, *The Burdens of Linearity*, p. 80-81.

the symbolic and the iconic. One regards the how of *writing* and the other the how of *reading*. The integrity of the former relies on the computational and standardised understanding of convention, while the effect of the latter requires an investigation not only of the mark but of the convention and the discipline as well.

Within the realm of myth, there is also a tale that distinguishes drawing from the geometric rule, shifting attention to other qualities of graphic representation. In the myth of Diboutades as narrated in *Natural History* by Pliny the Elder, Stan Allen points out the themes of absence and desire that arise in the story:

Diboutades, traces with charcoal the outline of the shadow cast by the head of her departing lover. Projection is fundamental to the story. Diboutades traces not from the body of her lover but from his shadow – a flat projection cast on the surface of the wall by the soon to be absent body. At the moment of tracing, Diboutades turns away from her lover and toward his shadow. Information is always lost in projection: the fullness of the body is translated into a two-dimensional linear abstraction... an incomplete image to recall a lost presence.<sup>41</sup>

The outlining of the shadow is suggestive of both ichnography's tracings and the projective plane of perspective as described by *Alberti's Frame* or Albrecht Dürer's *Perspective Machine* [fig. 2].<sup>42</sup> Drawing's operative trait is found here in a projective description that is formed out of the chiasmus of the figure of the sensible and the abstraction of the performance. In the conjunction of the two, emerges the line which is neither one nor the other, but containing elements of both at the same time. What brings together the two sides of mind and matter in a seamless but fluid continuity is the performance: a performance that is carried out by both the line and the architect/draughtsman.

The projective line is an act of desire. This desire is always driven by an absence, or in Ingraham's terms a 'loss' that does not necessarily concern a past presence but, as Eisenman writes, the possibility as well of a possible latent future presence.<sup>43</sup> This desire has been traditionally invaded and commonly 'tamed' by external structures of reasoning, most notably geometry, that pose as validators of architecture's propriety and of the architectural mark's integrity of meaning. The taming of the line entails a taming of architecture's *script* through the understanding of representation by means of the schema language–speech–writing.<sup>44</sup> As Derrida's *arche-writing* shows, this idea of principle, of a hierarchy between the written and the spoken, is an illusion similar to the one pertaining to architecture's integrity of meaning. As we have seen in *Instructions*, Chapter IV, the most common paradigm that is conferred upon architecture as a result of this schema is the understanding of drawing as translation. This paradigm projects upon architectural drawing 'language-like' characteristics that involve notions of syntax and vocabulary. To the consideration of geometry's mathematical reasoning as the 'pillar' of architectural drawing 'language' must be added, as the structured expression of this reasoning. Together, the one figural and the other symbolic, they form what Nelson Goodman refers to as a "curious mixture" of imitation and notation.<sup>45</sup>

The language-like aspect of architecture is commonly based on the notational function of drawing, assigning syntactical "rules of conduct" to the measurable and 'orthogonal' spatiality implied by geometry.<sup>46</sup> In this way architectural lines do work symbolically, conferring upon notation the concept of a structured convention, comprised of discrete functions of meaning. Drawing from Goodman, Allen compares architectural drawing to both musical scores and scripts, an assemblage of spatial and material notations that follow a code of conventions in order to create an abstracted visualization

<sup>41</sup> Stan Allen, 'Hunting the Shadow' in *Practice: Architecture, Technique and Representation* (London: Routledge, 2009), pp. 3-8; p. 4. Allen draws this myth from Robin Evans. See Robin Evans, 'Translations from Drawing to Building', in *Translations from Drawing to Building and Other Essays* (London: Architectural Association, 1997), pp. 153-193; p. 163-165.

<sup>42</sup> In *Della Pittura* Alberti describes a drawing device consisting of a square wooden frame, lined with a grid of parallel horizontal and vertical threads. At a fixed distance from the frame stands a rod of half the height of the frame aimed at aligning the eye with the centre of the grid. Alberti, Leon Battista, *On Painting* (1435), trans. John R. Spencer (New Haven: Yale University, 1966), p. 112.

<sup>43</sup> Peter Eisenman, *Moving Arrows, Eros and Other Errors: An Architecture of Absence* (London: Architectural Association, 1986), p. 5.

<sup>44</sup> The script here acquires a meaning similar to that of *écriture* as used by Roland Barthes. See *Instructions*, Chapter IV.

<sup>45</sup> Nelson Goodman, *Languages of Art: An Approach to a Theory of Symbols* (Indianapolis: Hackett Publishing, 1969), p. 218.

<sup>46</sup> The orthogonal here refers to in Le Corbusier's understanding of the straight line and the right angle as rational, entailing all kinds of Cartesian reasoning applied to architecture. See Ingraham, *The Burdens of Linearity*, p. 51.

of reality.<sup>47</sup> Allen disclaims the classical ideas of mimesis as inadequate to understand the full range of architectural techniques, proposing that theories of notation in mathematics or time-based arts, such as music or dance, are more relevant to architecture's purposes. Notations are necessarily reductive and abstract, but according to Allen they have little to do with traces or imprints. The operative aspect of abstraction, the partial *loss* of representation, is then found for Allen in notation, as an opportunity of introducing into drawing not only the concrete but also the intangible qualities of space as pure signs rather than resemblances.<sup>48</sup>

The earliest experiments of recording movement can perhaps be traced in the almost concurrent chronophotographic practices of Etienne Jules Marey and Eadward Muybridge – which foreshadowed the development of cinema [fig. 3]. Movement is there captured through sequences of temporally equidistant photographs, which describe the action through what Bergson describes as “privileged instances” that overlook the continuity duration. Despite this abstraction, photography posed in these early experiments of chronophotography as a way of fixing the image of movement and thus rendering its temporal materially measurable. Overall, photography has had a constant effect on the history of motion representation, from chronophotography, to the cinematographic animation of the photographic still, and to the figural influences of photography upon modernist art. The impact of the cinematic as revealing of the inadequacy of the sequential fragmentation of movement, is perhaps evident in later approaches to the study of movement such as Frank and Lilian Gilbreth's “micro-motion” studies [fig. 4].<sup>49</sup> In these studies – which were concerned with the coding of movement for the purpose of spatiotemporal efficiency in industrial production – the recording and coding of the event is not based on the photograph as the fixing of an instance but from the ability of long exposure photography to capture traces of enduring movement, particularly with the use of light as a way of literally highlighting figures of gestures and trajectories. A similar attitude can be found in Moholy-Nagy's long-exposure photography, as a kind of ‘drawing’ with light [fig. 5]. Far from the absolute stillness of Marey's photographs, Moholy-Nagy's long exposures dissociated the plasticity of space from the idea of concrete matter, defining volume through the not only the “circumscription of mass”, but also the visual contour of motion by means of light.<sup>50</sup> Furthermore, his photograms – similarly to the Gilbreth's cyclographs – posed as a way of understanding light as a way of not simply drawing with light, but of physical movement as drawing in real space.

In *Weaving Lines/Looming Narratives*, long exposure photography thus offered the possibility of capturing the trace of the ephemeral and transitory movements that took place within the site. Aside from the star constellations, the paths and positions of which were possible to acquire through sky observation software, all other characters were initially recorded through long exposure photography, which helped

Commenting on the commonality of the analogy between architecture and language Robin Evans remarks on the potential of all things with conceptual dimension to act as such. For Evans, architecture may be “language-like” but it is not a language itself. Evans underlines the limitations that such an analogy poses for architectural representation.<sup>51</sup> Both the linguistic and the geometric paradigm serve to secure a communicability, a transferability that will minimize the loss entailed in the ‘originary’ absence. Yet what is at stake in the understanding of notation in terms of the musical or choreographic score, is the site(s) of performance of the discipline. In his conclusion, Nelson Goodman notes that “a musical score is in a notation and defines a work [...] a literary script is both in a notation and is itself a work”.<sup>52</sup> This statement brings out the diverse expressions of language as a system of signification, distinctions that, as Roland Barthes' opposition between the text and the work illustrates,<sup>53</sup> are subject not only to the system of inscription but also to the modalities of performing within the system.

<sup>47</sup> Stan Allen, ‘Notations+Diagrams: Mapping the Intangible’, in *Practice: Architecture, Technique and Representation* (London: Routledge, 2009), pp. 41-67; p. 41.

<sup>48</sup> *Ibid.*, p. 42-43.

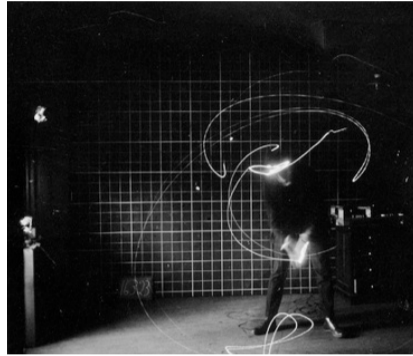
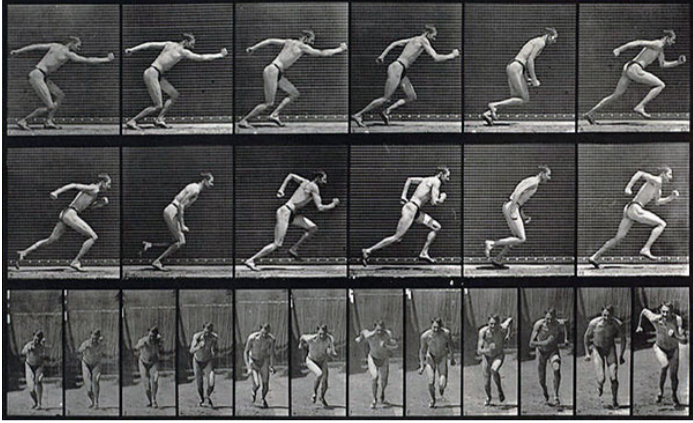
<sup>49</sup> On a review of the micromotion studies of Frank and Lilian Gilbreth in relation to the architectural development of the diagram see Hyungmin Pai, ‘Scientific Management and the Discourse of the Diagram: Architecture, Discourse, and Modernity in America’, in *The Portfolio and the Diagram* (London and Cambridge, Mass.: MIT Press, 2002), pp. 162-197.

<sup>50</sup> László Moholy-Nagy, *The New Vision: From material to architecture* (New York: Brewer, Warren & Putnam, 1932), p. 134.

<sup>51</sup> Evans, ‘Translations from Drawing to Building’, p. 155.

<sup>52</sup> Nelson Goodman quoted in Tim Ingold, ‘Language, Music and Notation,’ In *Lines: A Brief History* (London and New York: Routledge, 2007), p. 10.

<sup>53</sup> This opposition is further discussed in *Instructions*, Chapter IV.



- [3] *Animal Locomotion*, Eadward Muybridge (1877)  
 [4] *Descent of Inclined Plane*, Etienne-Jules Marey (1882)  
 [5] '*Chronocyclograph of golf champion- Francis*', Frank and Lilian Gilbreth  
 (ca. 1915)  
 [6] *Untitled*, László Moholy-Nagy (ca. 1936-1946)

materialise – and at times properly delineate – the presence of the ‘lived’ in-between [L4-L5]. This was not therefore a translation into another form of language, but a direct capturing of the site through an expanded form of experience, as photography was in effect serving to extend the capabilities of my own vision as observer.

The arresting of the image, and the clear outlines it provided, made the transcription into drawing possible. This was a literal ichnography, a fairly straightforward tracing of the figure from the photograph. Yet, what was missing from these discrete fragments of duration was the thread, or the code that would weave them again together into a continuity of time and space within drawing, as in the space they occupied upon their initial occurrence.

As Walter Benjamin notes in the essay *The Task of the Translator*, translation involves a mode of signification that primarily relies on the translatability of the original. This suggests a ‘conclusion’ of meaning that is fulfilled within the original and a concurrent intentionality, whose primary concern is the reception from the reader.<sup>54</sup> Considering this, to reduce drawing’s validity to a process of communication is a misconception that forgoes the performative powers of drawing and, consequently, architecture altogether on the production of meaning.

The idea of representation as performance emerges also in the writing of Peter Woods in the essay ‘Eating in Bed’. According to his view however, it is not really the architect that performs but the drawing.<sup>55</sup> He foregrounds this performative nature of drawing as action by looking at the work of Diller+Scofidio, with particular focus on their *Slow House* project. Diller+Scofidio have indeed made use of architecture as ‘constitutive performance’ in a wide range of expressions that have at many points challenged the boundaries between drawing, installation and performance. Installations such as *The withDrawing Room: Versions and Subversions* presents ‘episodes’ of domesticity into an installation format that invokes the respective domestication and inhabitation of what acts as an intermediary “field” where everyday acts and memories collide with drawing conventions,<sup>56</sup> while the x-ray drawings of *Slow House* that Woods comments on, expand the voyeuristic attitude of architectural representation by introducing the performance of inhabitation into drawing.<sup>57</sup> Yet, it is important to point out that although the idea of drawing as a site of performance opens up an expansion of architectural ‘notation’ into a wider range of traditionally excluded media, it can and should be found at full function already between the line and the surface.

<sup>54</sup> “*Translation is a mode. In order to grasp it as such, we have to go back to the original. For in it lies translation’s law, decreed as the original’s translatability.*” Walter Benjamin, ‘The Task of the Translator’ (1928), trans. Steven Rendall, *TTR: traduction, terminologie, reduction* 10 (2) (1997), pp. 151-165; p. 152.

<sup>55</sup> Peter Wood, ‘Eating in Bed’, in *Tracey: Drawing and Visualisation Research Journal*, p. 6. <http://www.lboro.ac.uk/microsites/sota/tracey/journal/perf/wood.html> [Accessed on 10 July 2015]

<sup>56</sup> Elizabeth Diller and Ricardo Scofidio, ‘The withDrawing Room: Versions and Subversion, Artist’s Statement’ (1987), Capp Street Project Archive. [http://libraries.cca.edu/capp/elizabeth\\_diller\\_ricardo\\_scofidio.html](http://libraries.cca.edu/capp/elizabeth_diller_ricardo_scofidio.html) [Accessed 14 December 2015]

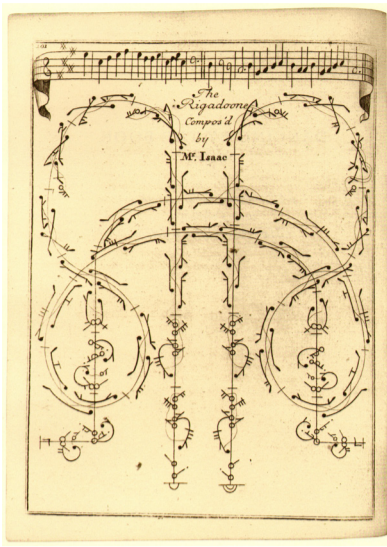
<sup>57</sup> Wood, ‘Eating in Bed’, p. 4.



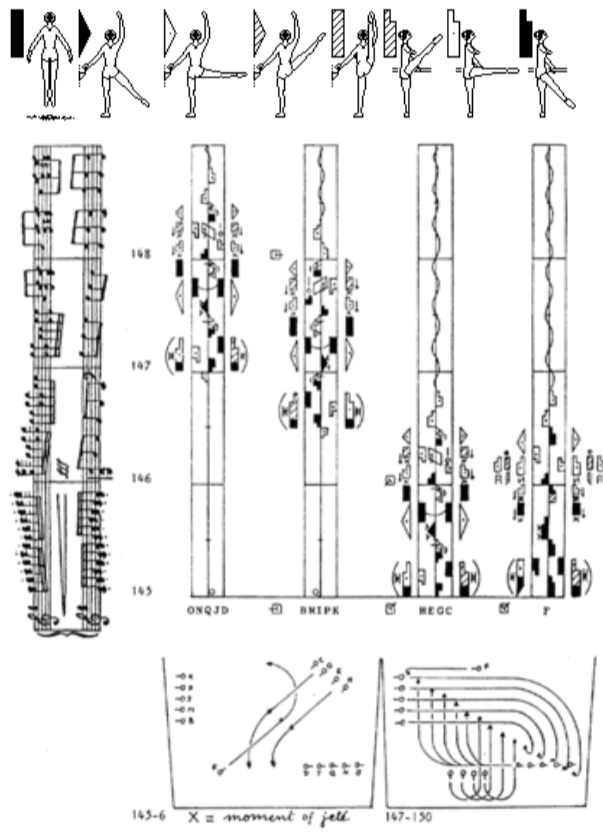


[L4] *Site I*: extracts from the characters' Photographic Sequences  
[from top to bottom]  
Fishmonger  
Water Waste  
Flat Tenant

[L5] Fishmonger: On site long-exposure photography



[7] Rigadoon Dance Notation, Feuillet (1721)  
 [8] Labanotation, Arm and Leg Gestures  
 [9] Labanotation, Rudolph von Laban

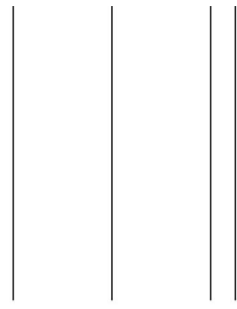
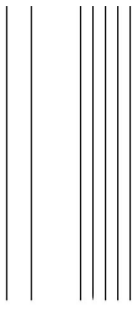


If photography offered the immediacy of figuration, its partiality made imperative the abstraction of a notational code, which would make it possible to introduce into the surface of drawing the element of duration, and to tie the distinct instances to the datum of a continuous spatial field. As Goodman has pointed out, the element of time figures prominently in music and dance notations. These forms of notation Goodman associates with architectural drawing as equally allographic forms of writing. Between the two, it is perhaps the choreographic score, which may seem more relevant to architectural drawing, by combining the figuration of geometric form with the abstraction of notation. In choreography, the inhabitation of space through the figure of the body maintains a visual prominence that constitutes the figural expression of form as imperative. Planar representations sufficed for the Baroque dances described by the Beauchamp-Feuillet notational system [fig. 7],<sup>58</sup> where variations were more limited and the formations of the dancers upon the floor were central elements of the choreography. Nevertheless, the most extensive kind of notation for the movement of the human body is perhaps the one originally devised by choreographer Rudolph Laban in the late 1930s. Labanotation is capable of providing through its notational schema information with regard to “the direction of the movement, the part of the body doing the movement, the level of the movement, [and] the length of time it takes to do the movement”.<sup>59</sup> This is possible due to the arrangement of the notational marks upon a staff – similarly to music notation [fig. 8-9].

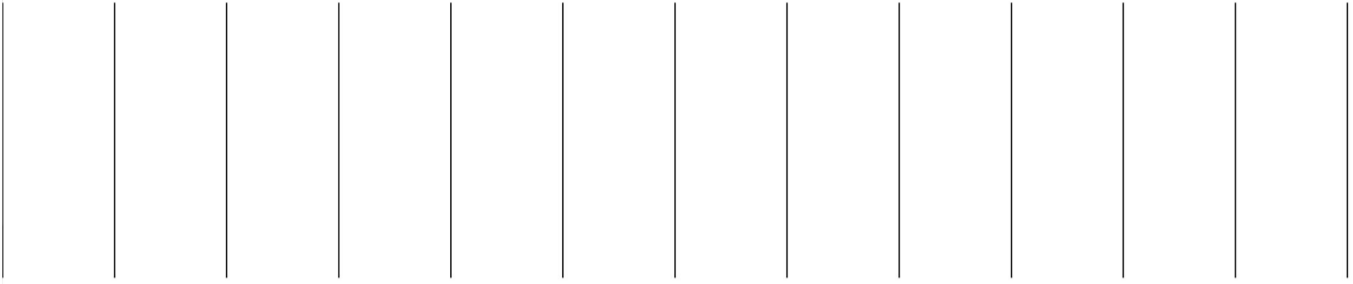
In *Weaving Lines/Looming Narratives*, or rather in the materially two-dimensional drawings that preceded it, the concept of the staff initially appeared as a kind of grid that would allow for the cross-reference of the perspectival views of stills with their position in time. The transcriptions of the photographic sequences were to be juxtaposed with parallel projective notations along two ‘boards’, one horizontal and one vertical, which would facilitate the reading of the characters’ paths through a combined-view representation, as is commonly done in architecture with the juxtaposition of plans and sections [L6]. Providing a datum of temporal and spatial ‘coordinates’, this combined-view drawing would act as a key for the multiplicity of itineraries that the characters wove in the site. In this sense, the drawing would be arresting, and fixing the multiplicity of the site, presenting the latter not as a continuous field but as an index of its distinct constituents within time and space.

<sup>58</sup> For a historical analysis of Feuillet’s notational system see Jean-Noel Laurenti, ‘Feuillet’s Thinking’, in Laurence Louppe (ed.), *Traces of Dance*, trans. Brian Holmes (Paris: Editions Dis Voir, 1994), pp. 81-108.

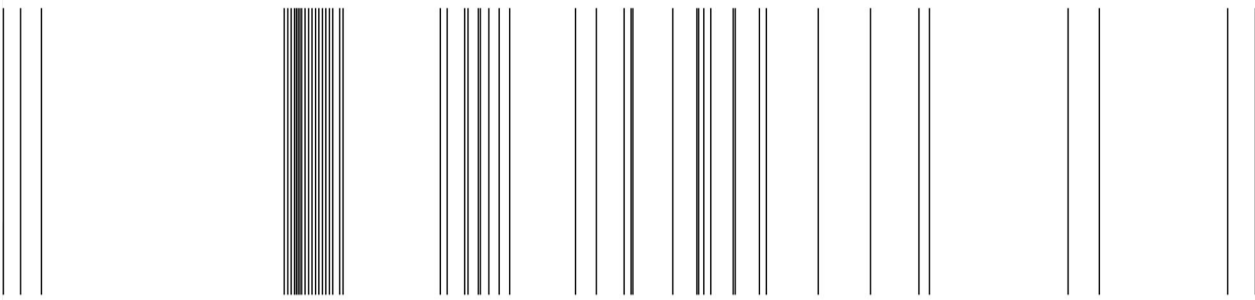
<sup>59</sup> Dance Notation Bureau, <http://dancenotation.org/Inbasics/frame0.html> [Accessed 12 January 2016]



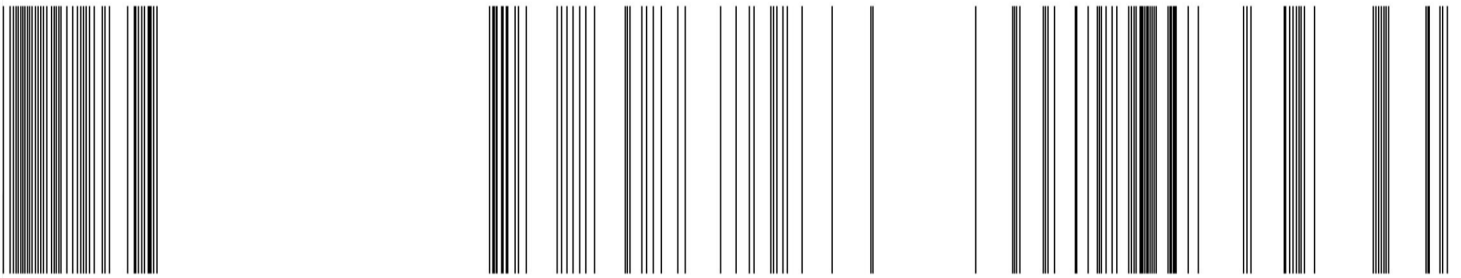
*4 minutes*



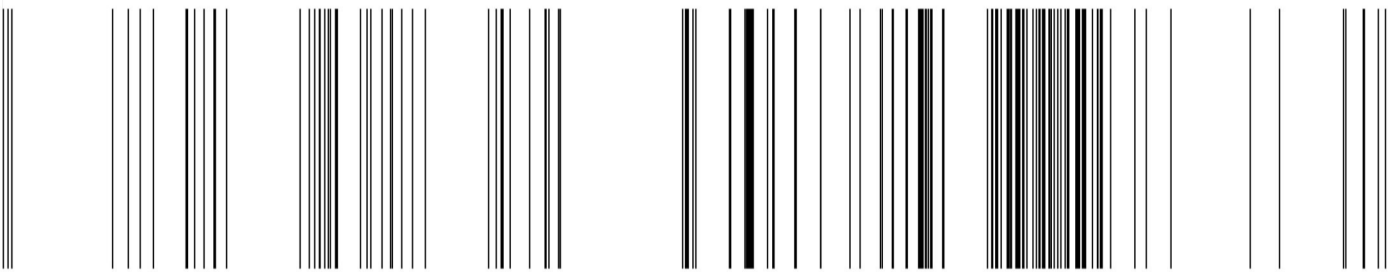
*1 second*



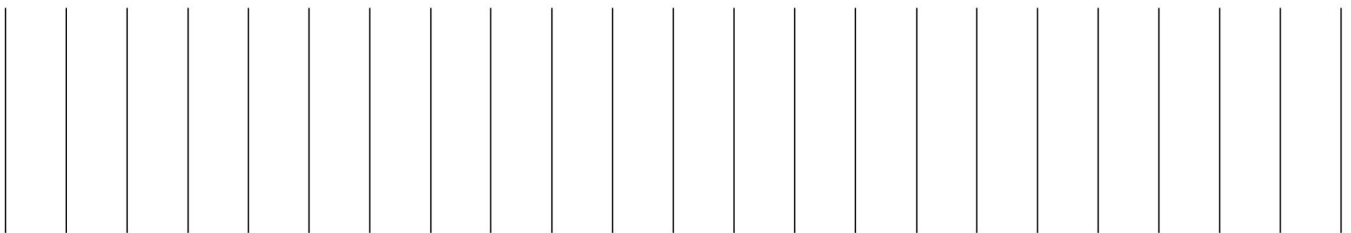
*20 minutes*



*12 hours*

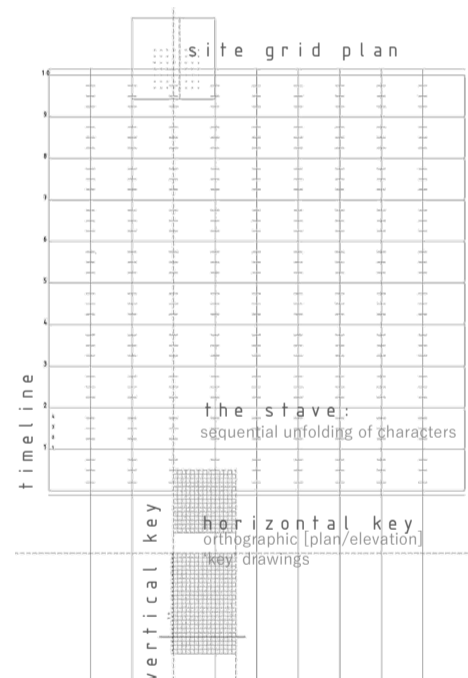


*8 hours*



*24 hours*

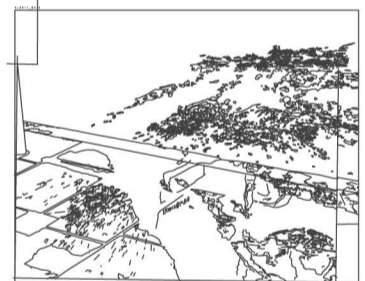
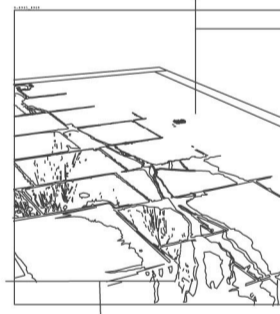
Returning to the basic architectural convention, of representing the 'swing', the 'path' or the non-concrete by means of the dashed or dotted line, and the concrete by means of the solid line, I began to develop a kind of planar parallel projection of the site's layers of action by coding the impressions illustrated on the photographs. This drawing developed in parallel to a detailed indexing of the photographs and their delineated frames through linear mappings of the distinct timescales of the individual characters (these were achieved with high accuracy due to the time stamps provided by the snapshots) [L7-L8-L9]. In essence, the main drawing remained adequately 'faithful' to the principle of a projective measured linearity of normative architectural representations, while expanding however, the scope of its content [L10-L11].



[L6] Characters' Timelines  
 [from top to bottom]  
 Water Waste: Four minutes  
 Camera Shutter: One second  
 Fish: Twenty minutes  
 Flat Tenant: Twelve hours  
 Fishmonger: Eight hours  
 Star Constellations: Twenty-four hours

[L7] Initial 'staff concept' layout

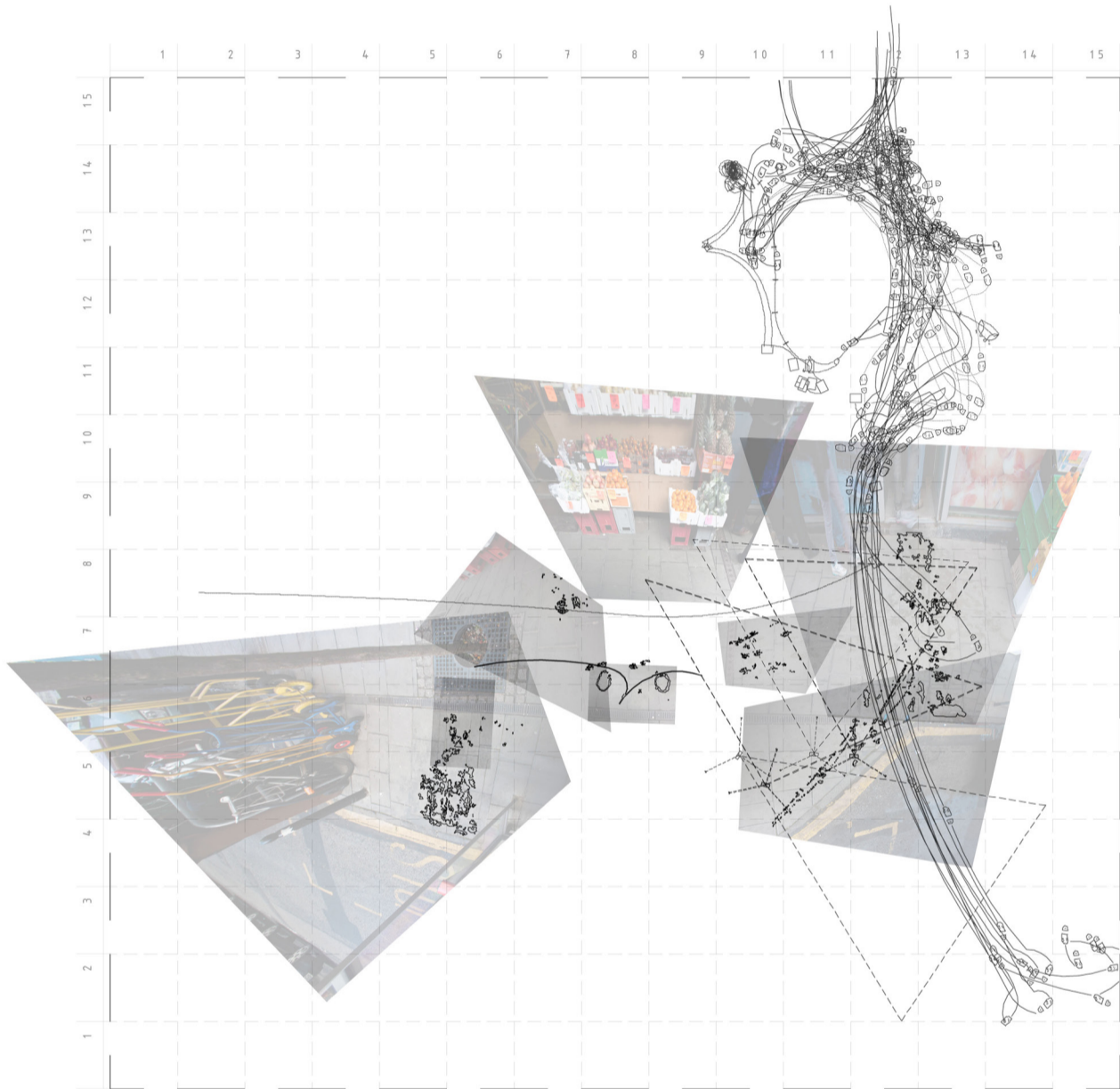




[L8] *Site I*: Extracts from the characters' Tracing Sequences  
[from top to bottom]  
Fishmonger  
Water Waste  
Flat Tenant

[L9] *Site I*: Water Waste Sequence extract





[L10] Site I: Water Waste Planar Tracing

[L11] Site I: Fishmonger, Camera and Water Waste, Partial Plan

What is entailed in the 'performance of drawing' is the active negotiation between the sensible and the intelligible that is inclusive of but not dependent upon convention. Touching upon the discussion of sign and the origin of meaning, Daniel Libeskind writes:

Architecture as a practice of control has projected over itself an immanent frame sufficient to reveal something without. What is at first an oppressive flash in this system yields in fact the things that belong together. [...] It has been observed that one secretly reserves a tendency to disparage this dire state until one has undergone it. Architects too have suffered this ordeal by having followed Orders - the resulting disorder is yet to be appropriated even if it has been diagnosed and foreseen.

The recourse to surrogates is only a habit which can be given up. One can refuse to substitute for the experience of Unoriginality, things that one has never experienced but which are known through originals. To substitute the 'essence' of Architecture for its actual nonexistence would be futile and dishonest.<sup>60</sup>

Libeskind's position suggests a recourse to an architectural interiority, a reliance on the 'Unoriginality' and the disorder of architectural marks as self-sufficient signs. This expansion of architecture's "responsibility" Oechslin finds in both Libeskind and Piranesi's work, where the expansion of the representational field occurs out of the engagement of the architect with a pure abstraction produced between the drawing hand and the line.<sup>61</sup> Exemplary of this seeming 'sabotage' of architectural lineage are works such as *Micromegas*, but perhaps more prominently *Chamber Works*, where this loss of 'meaning', this "not-architecture",<sup>62</sup> creates the space for the full unravelling of the line as a sign of its very own performance; its very own architecture.<sup>63</sup> For Libeskind, the departure from modernity has already marked the "collapse of convention", which he describes as a kind of "obscure and illegible artificialism".<sup>64</sup> Libeskind's tactics to reveal architecture's "unsettling", unoriginal or, in Derrida's terms, originless essence proceeds through an understanding of drawing where convention is not really abolished but grafted with the 'will' of the graphic and the architect. The line there becomes performative itself, able of moving in and out of, convention in a participatory performance of representation.

Like the outline of Diboutades' lover, architecture's marks remain linear and projective. They are variously projective upon delineating, projecting through and not necessarily in to drawing the "non-existent reality",<sup>65</sup> of architecture: the desire for what is not there and may have never been. Although, projection is not identical to convention, they are both as unstable as the line and as versatile as architecture. As Robin Evans writes:

What connects thinking to imagination, imagination to drawing, drawing to building, and buildings 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.<sup>66</sup>

Not only the signs, not only the architect, but even convention performs within architectural projection, a performance that takes place in the mutual animation of a shared subjectivity. This grafting of the phenomenally ordering surrogate of origin that is convention on the one hand, and architecture's own 'unoriginal', but still inherently disciplinary signs is motivated by the desire of the absent, what Ingraham exemplifies by means of the "lament".<sup>67</sup> Ingraham's "lament for the object of architecture" draws out architecture and its representational operations as conditions of movement rather than stasis:

[...] it is not the movement of the material world, that moves architecture but the movement-in-stasis that architecture makes possible... Architecture persuades us of its stasis and territorial stake [...]

<sup>60</sup> Daniel Libeskind, 'Unoriginal Signs', in *Chamber Works: Architectural Meditations on Themes from Heraclitus*. London: Architectural Association, 1983), pp. 4-5.

<sup>61</sup> Werner Oechslin, 'From Piranesi to Libeskind: Explaining by Drawing.' In *Daidalos 1* (1981), pp.15-19.

<sup>62</sup> Peter Eisenman, 'Representation of the Limit: Writing a 'not-architecture'', in *Chamber Works: Architectural Meditations on Themes from Heraclitus*. London: AA Publications, 1983), pp. 5-8.

<sup>63</sup> Robin Evans writes of *Chamber Works* as a unique example of achieving a separation between the system of representation and a signified, latent, reality: "Without representing space, any of the *Chamber Works* can be fantasized into three dimensions, given sufficient volition in the observer, for the space is thought into them by him, not projected out of them by the draftsman. The uniform line of the architectural pen helps Libeskind to avoid constructing illusions of space in the drawings, but what is curious, and very impressive, is that even within the narrow confines of his chosen medium a dynamic potency emanates from somewhere... [the drawing] does not transfer real qualities of movement into lines (making them porters of their own origin) but invokes kinds of motion unconnected to actions previously performed". Robin Evans, 'In Front of Lines that Leave Nothing Behind' (1984), in Neil Leach (ed.), *Rethinking Architecture: A Reader in Cultural Theory*. New York: Routledge, 1997), pp. 482-489.

<sup>64</sup> "I accept the collapse of the convention of representation and its object, in this struggle in which 'Culture' battles 'Post Culture' for the domination of a new age". Libeskind, Daniel, 'Versus the Old-Established Language of Architecture', *Daidalos 1* (1981), pp. 97-102; p. 98.

<sup>65</sup> Libeskind, 'Unoriginal Signs', p. 5.

blinding us to the crucial moment of movement. The architectural edifice both moves and is static. Insofar as architecture is disciplined to stand still while we think our thoughts within it, we may now understand that this discipline, like other disciplines, secures only a momentary and provisional, only an apparent stasis.<sup>68</sup>

Ingraham's paradigm of the lament regards a descriptive recounting of the *loss*. It is a grief for the lost movement, the lost origin, whose absence is marked by the outline, and at the same time for the impending loss-in-translation of architecture's object, the phantasm of which haunts every act of representation. The lament is at once a desire for movement and fixity. Ironically, this latter fear is itself proof of the paradox of architecture's lament. As both Ingraham's notion of the movement-in-stasis, and Derrida's mutability of meaning suggest, this *loss* is only phenomenal. It is a concealment that is equally susceptible to movement. Furthermore, it reveals the issue of the integrity, the unattainability, or more commonly in architecture, the illegibility of the mark as an issue of authority. The phenomenal fixing, the blinding to the movement, what remains outside the convention of propriety, is respectively excluded from the authority. At the same time however, this authority is challenged by the participatory performance of projection.

The binary structure of the universe on which this blinding relies, the division into the *intelligible*, the world of ideas, and the *sensible*, the material and changeable world, is discussed by Plato in the dialogue of *Timaeus*. On the account of mimesis, the sensible is presented as a world constructed by inferior copies of the intelligible. As a mediating term that describes the in-between the two, Plato introduces *chora* (from Greek *χώρος*, meaning space or site), a "receptacle of becoming," where the intelligible becomes visualized. The *chora*, as a site of creation, is an "irreducible", immaterial and temporal field.<sup>69</sup> Neither sensible being, nor intelligible form, it resists absolute description and is therefore unrepresentable.<sup>70</sup> In this sense, the Platonic *chora* suggests the inevitable partiality of the sensible in relation to the intelligible, of the representation in relation to presence. At the same time *chora* suggests a spatial manifestation that overcomes and therefore connects both the purely material and the strictly conceptual, the sensible and the intelligible.

In the late 80s, *chora* became the point of controversy between Jacques Derrida and Peter Eisenman, and a crucial point for the turbulent liaison between architecture and deconstruction.<sup>71</sup> In *Moving Arrows, Eros and Other Errors*, Peter Eisenman discusses the concepts of presence and origins as relevant to architecture and its anthropocentric bias. He points out three states of space: presence, as a physical real form, void, which can be considered the lack of any physical form, and absence which he defines as the trace of a possible presence. Eisenman goes on to describe the site as "a palimpsest and a quarry, containing both memory and immanence".<sup>72</sup> Through this statement emerges the concept of the "non-static site" as containing traces of these "essential absences."<sup>73</sup> Traces hence, are described as containing potential rather than mere residues, through the notion of the absent presence, a concept that can be traced back to Jacques Derrida's idea of *différance*.<sup>74</sup> In his *Letter to Peter Eisenman*,<sup>75</sup> Derrida expresses his objection to Eisenman's interpretation of *chora* in relation to the idea of the site as a kinetic palimpsest of traces, pointing out that the *chora* is not to be mistaken for a void, absence or invisibility. According to Derrida the *chora* surpasses Eisenman's analogy of the site as a palimpsest, where the traces of previous presences create a relief, thus altering the status of the *chora* as an ordinary field. More than a passive receptacle, it is a place and a displacement.<sup>76</sup> *Chora* is the receptacle of an 'interiority' that remains illegible in the representation of the sensible. However, representation itself inevitably must contain the traces of the *chora*,

<sup>66</sup> Robin Evans, *The Projective Cast* (Cambridge, Massachusetts: MIT, 2000), p. xxxi.

<sup>67</sup> Ingraham, *The Burdens of Linearity*, p. 114-115.

<sup>68</sup> *Ibid.*, p. 137.

<sup>69</sup> Eleanor Morgan E., 'Derrida's Garden' in *Fillip*, 2 (Winter 2006).

<sup>70</sup> Wolfreys, Julian, 'Justifying the Unjustifiable: A Supplementary Introduction of Sorts', in *The Derrida Reader: Writing Performances* (Lincoln and London: University of Nebraska Press), pp. 1-49; p. 39.

<sup>71</sup> See the relevant correspondence between the two men in Jacques Derrida and Peter Eisenman, *Chora L Works*.

<sup>72</sup> Eisenman, *Moving Arrows, Eros and Other Errors*, p. 4.

<sup>73</sup> *Ibid.*, p. 5.

<sup>74</sup> In his letter Derrida writes: "This discourse on absence or the presence of an absence perplexes me not only because it bypasses so many tricks, complications, traps that the philosopher, especially if he is a bit of a dialectician, knows only too well and fears to find you caught up in again...". Quoted in Emily Apter, 'En-Chôra', *Grey Room*, 20 (Summer 2005), pp. 80-83.

<sup>75</sup> Presented through a recording, in place of Derrida's physical presence at a conference held at the University of California Derrida, 'A Letter to Peter Eisenman'.

<sup>76</sup> "I am not sure that you have detheologized and deontologized *chora* in as radical a way as I would have wished (*chora* is neither the void, as you suggest sometimes, nor absence, nor invisibility, nor certainly the contrary from which there are, and this is what interests me, a large number of consequences)". *Ibid.*, p. 8.

not as residues but as seeds of *différance*.<sup>77</sup> What Derrida's "detheologizing" of the chora ultimately offers, is an understanding of the function of the trace not as layering or registration, but rather as a mutation, which is in turn open to mutation itself. The concept of origin is thus challenged again, revealing the chora as the place of creation, which is not a privileged nor a privileging originary field but a mutable place where the mark of the absent does not stand as a mimesis, but as the participatory re-constituting of the field that the chora itself nurtures and enables.

The analogy of the palimpsest allows Eisenman to project the notion of chora upon the physicality of the architectural site, where traces can stand as both sensible and intelligible marks of 'pre-existents'. The chora-traces schema presents for him notions of interiority and exteriority for architecture. Yet, the mutation at stake appears to be more crucial to the constitution of the field rather than an original absent presence; more crucial to the understanding of the integrity of an architectural field of meaning rather than the integrity of a mark as the sign of a presence. Considered this way, architecture's geometric linearity does not constitute the architectural 'chora', attached to the genealogy of the line as established by Vitruvian drawing nor the intelligible equilibrium of the Albertian lineaments, but the means to the shifting of the architectural field of convention. The line does not simply bring things into architecture's attention but rather traces architecture's own writing, redefining thus its own field of action. This idea suggests an understanding of architectural representation through the Platonic idea of *methexis*, a kind of partaking that is not concerned with a repetition but rather a participation in a present meaning":<sup>78</sup> the participation of the trace within the field and of the field within the trace, of the static within the dynamic and of the dynamic within the static. Linearity thus maintains architecture's integrity by means of a genealogy that is not one of methodological precedent, in other words of fixing convention, but of a spatiotemporal continuity that is maintained by the participation in the 'shared' performativity of projection.

<sup>77</sup> Jacques Derrida, 'Khōra', in Thomas Dutoit (ed.), *On the Name*, trans. David Wood (Stanford: Stanford University Press, 1995), pp. 89-130.

<sup>78</sup> Carter, *Dark Writing*, p. 91.

Still, the two kinds of drawings, the planar tracings and the delineated sequences were at a distance, which was not similar to the complementary relationship between plan and section, but rather illustrated the one against the other: the instance against the field. Every line on the timeline was an instance of my observation and of a character's range of actions. It was a delineation of the temporal figure of the site at this instance, while it maintained an indexical relation with the respective marks upon the plan. What then could be keeping these three elements apart, the sensible, the temporal and the spatial abstraction, once they were all constructed out of lines? What could bring them to inhabit the same representational field other than the establishment of the field of their interrelation upon the surface of the drawing, other than the line that would represent this interrelation? *Weaving Lines/Looming Narratives*, in its final form, aimed to be that connecting line and at the same time the record of the making of that line, which is neither inclusive, nor representative of the 'things', but representative of the, relevant to the objects, motivation of the drawing and its conventions.

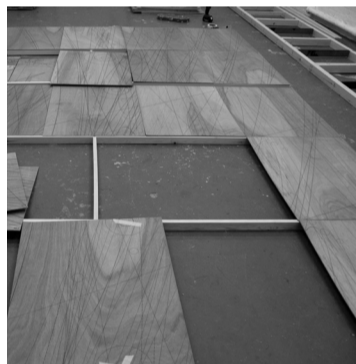
The idea of substituting the surface of tracing paper – which was up to then used for the handling of the drawings – with an actual room [L12-L13-L14] emerged after the completion of the survey, and of this first series of preliminary drawings. First, the linear frames were mapped upon a cumulative timeline that brought all characters together [L15-L16]. Then, these frames were to be mapped upon the field through the extension of the signs of the instances into the space of the plan. On one hand, the immense accumulation of detail raised questions about the legibility and the effectiveness of these drawings as representations in the graphic scales allowed by the sizes of paper available [L17]. More importantly however, the performative nature of the weaving involved in the bringing together of the two elements of the drawing, by now the Plan and the Timeline, was emerging as a kind of mobility relevant to the ones that were already mapped upon the drawing.

The transition to the room finally allowed for a further 'bending' of the rules, as lines were then able to escape the two-dimensionality of the surface and layers of mapping could be lifted from the floor, representing a notion of height and depth in what was originally an act of 'excavation'. In a scale that can be primarily anchored as 1:2<sup>79</sup> the actions of the characters were mapped on surfaces of printed tracing paper for the Timeline, and laser-cut plywood for the Plan. The weaving between time and space, figure and notation, was materialised in black thread, which revealed an alternative image of the site through the density of the shifts that occurred in its materiality upon its daily inhabitation as a real space, and its temporary inhabitation as drawing. The participation of the architect (and visitors) as reader(s), became manifest not only in the inhabitation of the original site – where the camera conditioned a subjective and intuitive recording – but also in the inhabitation of the

<sup>79</sup> The majority of the traces were represented in this scale, with the exception of the trails of the star constellations, due to their scale and distance.



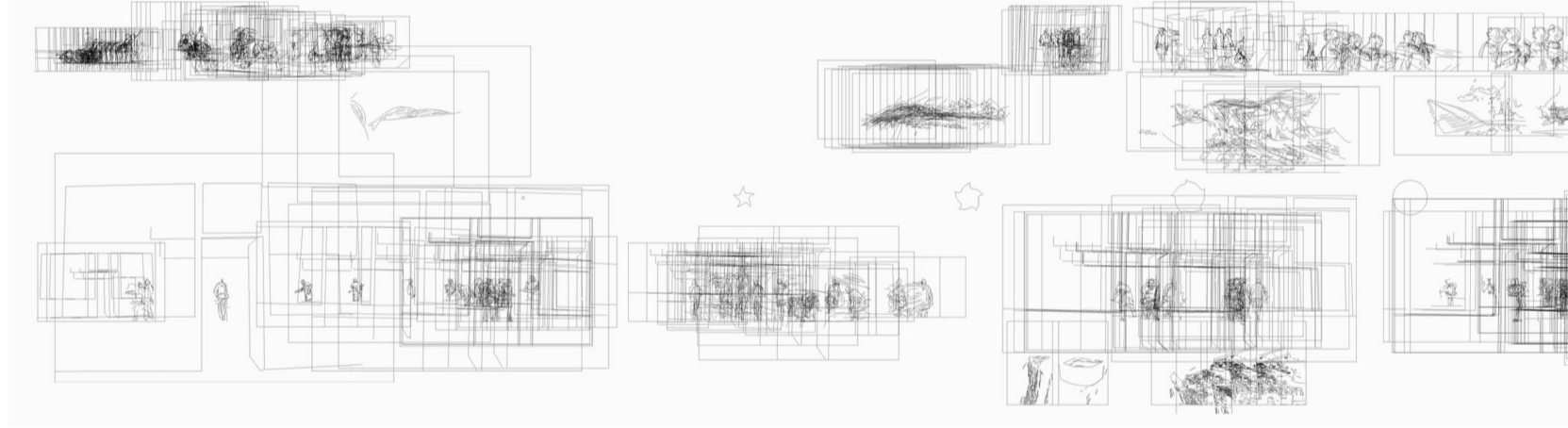
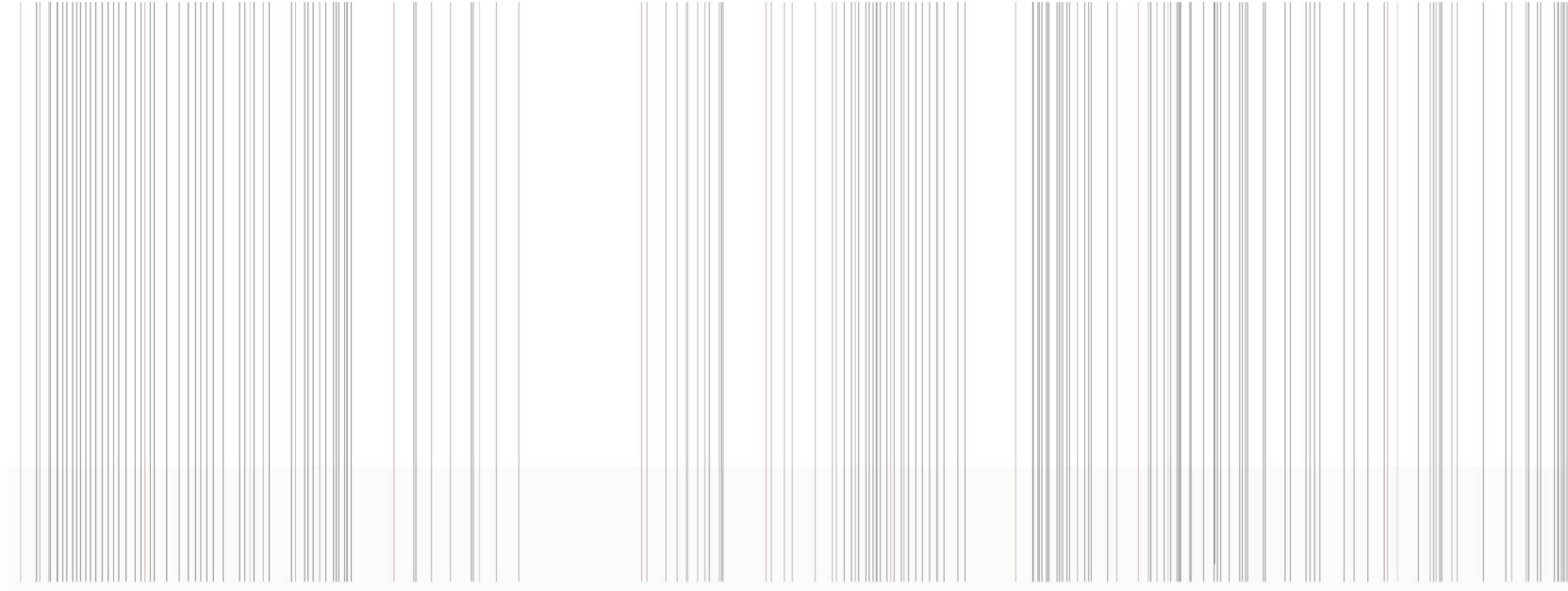
drawing as a physical space, as well as a conceptual place of 'discourse' between the real (the referent), the graphic (notation) and the conceptual (interpretation). The space of the site and the space of the drawing coincided in a room in Newcastle, as a weave of traces that were derived from both the real world and the representation [L18].

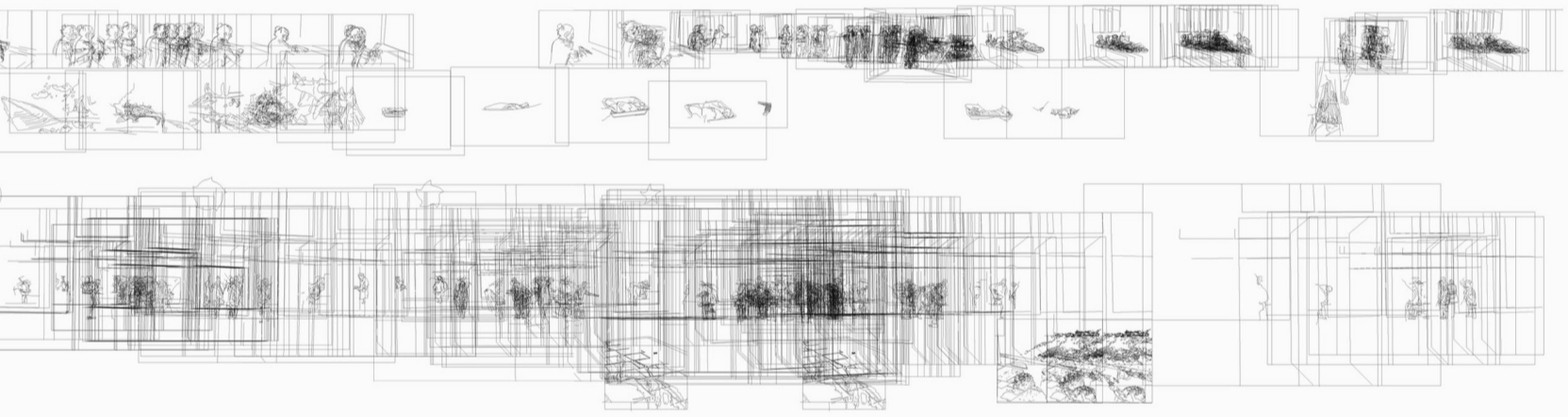
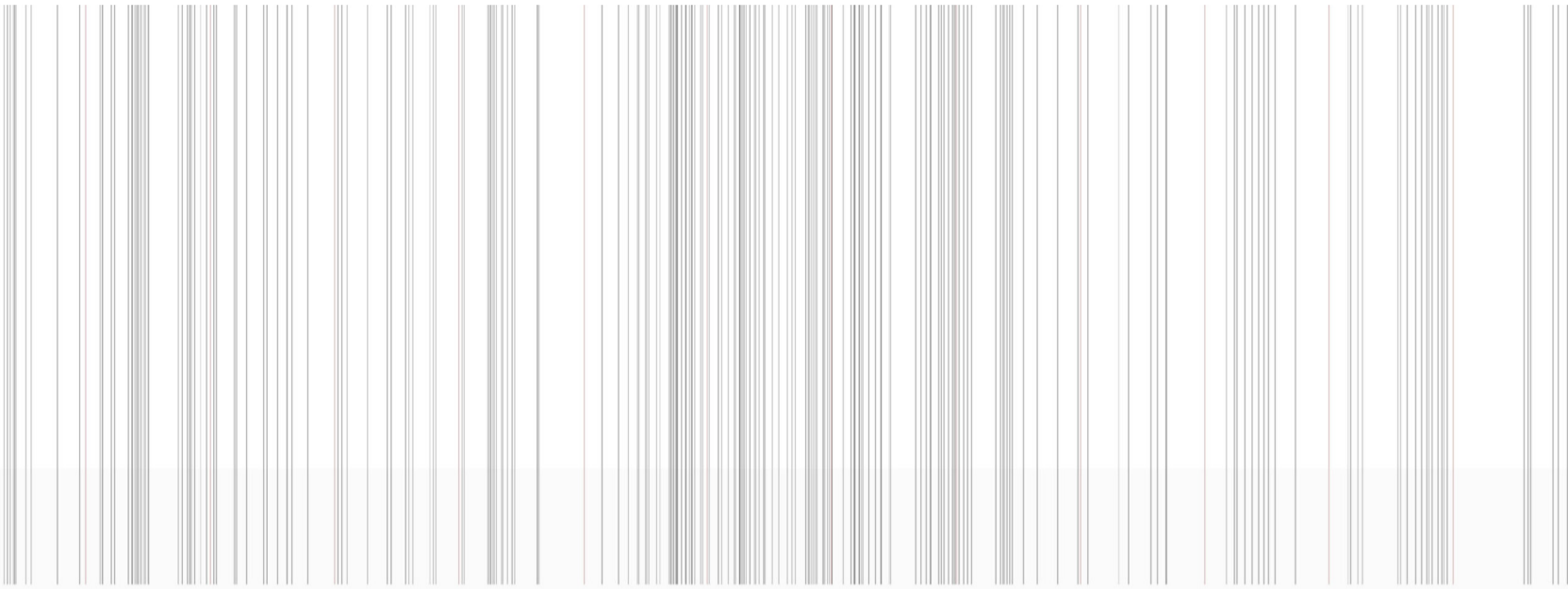


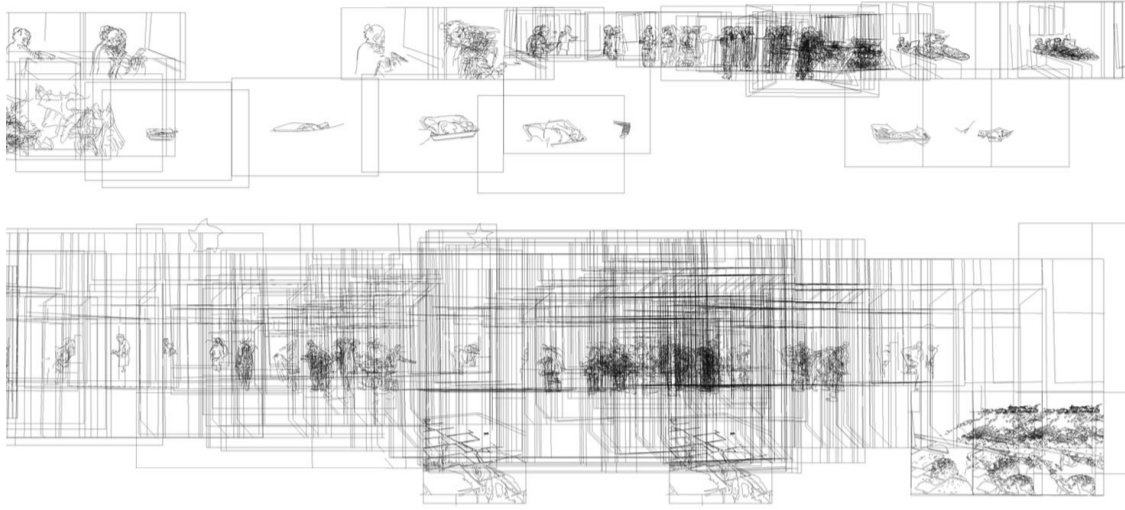
[L12] Room, Survey

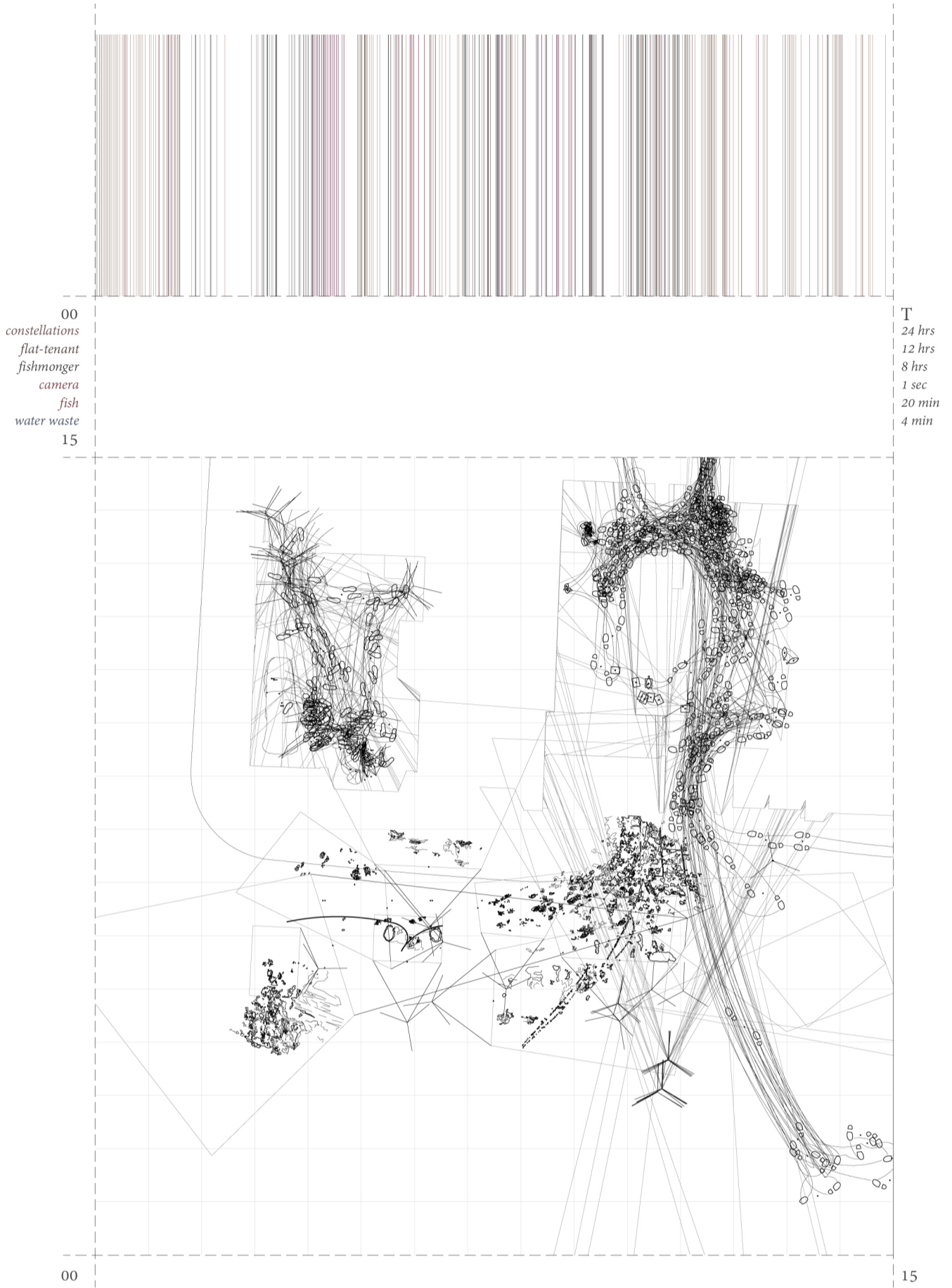
[L13] Room, View

[L14] Installation Progress Sequence



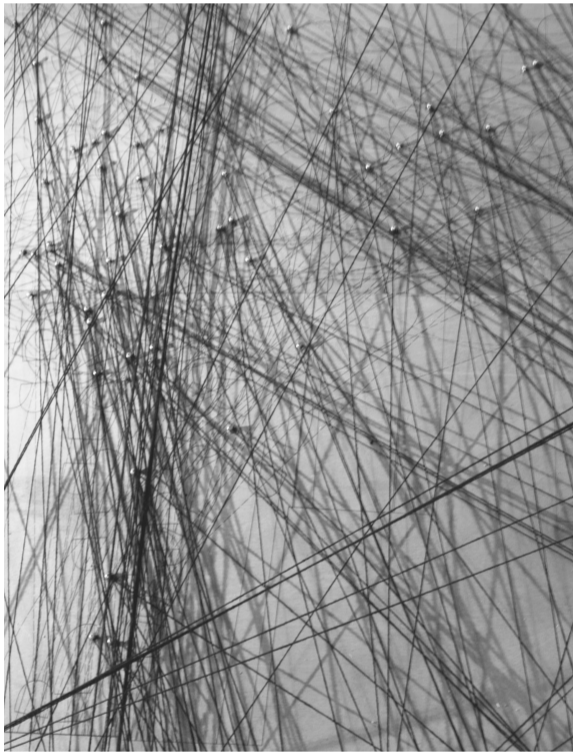






[L16] Weaving Lines/Loming Narratives: Timeline detail

[L16] Weaving Lines/Loming Narratives: Room Key



Timeline

Room Section A-A'

*constellations*  
*flat tenant*  
*fish*  
*fishmonger*  
*water waste*

Room Section A-A'

A

Room Plan

B

Room Plan

B

Plan

Room Section B-B'

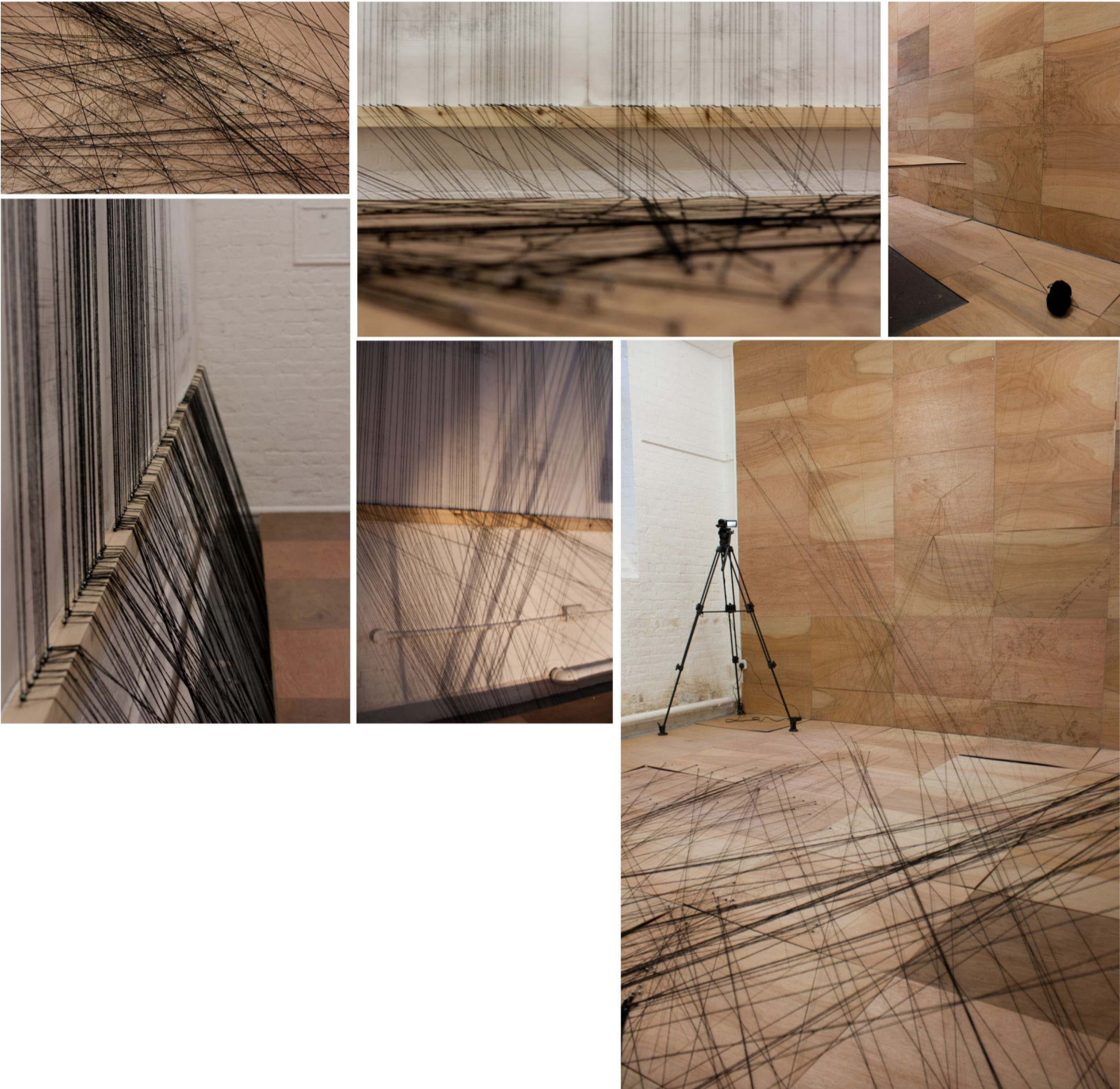
Room Section B-B'



[L20-21-22] *Weaving Lines/Loming Narratives:*  
General views of the room







[L23] The Timeline and Platform inhabited

[L24] *Weaving Lines/Loming Narratives*: Details

### III OUT-LINES

The lament is itself a projection, a linear formation. According to Ingraham a temporally linear recounting of the loss,<sup>80</sup> like Diboutades's tracing it seeks to recall and hold the lost object by outlining its definite boundaries, an outline which acts as both the definitive line of the sign and the trajectory of the movement that its definition fixes. On one hand, it offers a 'safeguard' for its linearity, based on the exhaustive enumeration of the event of presence; on the other however, it is never neutral or absolute. By belonging, as Ingraham writes, to the realm of hermeneutics it does not simply recount, but "paraphrases".<sup>81</sup> A lament is descriptive, but as a wail for the *loss* it is also lyrical and romantic. Considered as a lament, architectural representation entails not only the paraphrase but also the performance of desire. More importantly however, considering the illusory nature of the loss, it appears that description seeks to graft itself into the object in order to conceal its futility.

This effacement constitutes the point where memory, perception and imagination become entangled in the pursuit of knowledge. In Plato's *Theatetus*, Socrates begins to unfold Plato's theory of representation by describing the memory as a block of wax within our souls.<sup>82</sup> This block, a gift from Mnemosyne (in Greek *Μνημοσύνη*, meaning memory), as Paul Ricoeur reminds us the mother of all Muses,<sup>83</sup> we use to create impressions (*semeia*) of the things we experience and wish to remember. The moment of the knowledge, or perception, is paralleled to the moment that the imprint is created. In this case error, which constitutes forgetting, is presented as either the complete effacement of marks (*semeia*) or the failure of the correct association between the present image and the imprint, while recollection constitutes the identification of the imprint. Through Socrates, Plato points out the difference between the original and the *eidolon*, the copy, through the paradigm of the mismatch between imprint and original. Beyond faithfulness and through perception, memory is drawn as a phenomenology of mistakes. In the *Sophist*, however, Plato moves from the *eidolon* to the theory of the *eikon* placing an emphasis on the 'present absent' as opposed to the 'absent presence'. What makes this even more relevant to architectural drawing as the descriptive lament of architecture, is the fact that the concept of the *eikon* occurs from a metaphor directly related to graphic representation. Plato divides the graphic art of "copymaking" to the art of likeness-making (*tekhne eikastike*) which produces an *eikon*, a faithful resemblance, as opposed to the *simulacrum* or *phantasma*, which escapes proper likeness to the original.<sup>84</sup> Through these metaphors, Paul Ricoeur initially articulates representation as a primary mechanism of recollection: memories appear as "images" themselves (*eikon* is the root for Greek *εἰκόνα*, meaning image) that represent a past event.<sup>85</sup> Nevertheless, as he proceeds, this association is tweaked by the mediation of imagination, what he points out as "the least reliable of the modes of knowledge". In order to subvert this implication, and while placing memories at "the crossroads of semantics and pragmatics",<sup>86</sup> Ricoeur defines two types of imagination, that of the fantastic and the unreal, but also an imagination of memory that refers to prior reality.<sup>87</sup> These two types of imagination reflect the twofold nature of the architectural 'lament', as description (recollection) and desire (speculation): the trace of a prior existence, and the trace of a latent, possibility.

Dwelling upon a loss of his own, the death of his mother, Roland Barthes embarks upon questioning the affection of the photographic image as a means of knowledge and recollection in *Camera Lucida*.<sup>88</sup> Barthes becomes concerned not with the production but the reception of the photographic image. Belonging more commonly to the iconic, an image rather than a script, photography as a form of

<sup>80</sup> Ingraham, *The Burdens of Linearity*, p. 13.

<sup>81</sup> Ingraham refers to descriptive geometry, architectural drawing, the practice of traditional architectural history, the account of one's passage through the buildings, the parts of buildings which are translated and transmitted from architect to builder by means of descriptive documents, the procedures and technologies of designing that entail naming and locating forms, parts, and programs and then putting them into relation with one other, and the "mystique" of architectural practice, which like all artistic practices, is habitually represented as something "impossible to describe". *Ibid.*, p. 115.

<sup>82</sup> Paul Ricoeur, *Memory, History, Forgetting* (Chicago and London: The University of Chicago Press, 2004), p. 8.

<sup>83</sup> *Ibid.*, p. 13.

<sup>84</sup> *Ibid.*, p. 11.

<sup>85</sup> *Ibid.*, p. 5.

<sup>86</sup> *Ibid.*, p. 5.

<sup>87</sup> *Ibid.*, p. 6.

<sup>88</sup> Roland Barthes, *Camera Lucida: Reflections on Photography*, trans. Richard Howard (London: Vintage Books, 2000).

<sup>89</sup> In *Image Text Music*, Barthes writes of the photographic image: "it is a message

representation evades the notational characteristics of codification that are so prevalent in architectural drawing.<sup>89</sup> Although photography evades the “mark” as a sign produced within the structure of a premeditated convention, it is still the effect of the marking of a surface – the chemical reaction upon the film. In this way it can be compared to the ‘incidental’ mark as opposed to the conventional sign. To quote Barthes:

Photography is unclassifiable because there is no reason to mark this or that of its occurrences; it aspires perhaps to become as crude, as certain, as noble as a sign, which would afford it access to the dignity of a language: but for there to be a sign there must be a mark; deprived from a principle of marking, photographs are signs which don’t take, which turn, as milk does. Whatever it grants to vision and whatever its manner, a photograph is always invisible: it is not it that we see.<sup>90</sup>

Photography’s recollection proceeds through a clearly phenomenological and figurative sense that is not necessarily alien to architectural drawing’s iconic expressions. The lack of the mark as described by Barthes is the lack of the sign as symbol, and the lack of the ‘rule’ that verifies it. However its veracity is to Barthes undeniable. Deprived of any added formalism, any intermediate coding, photography stands as a “pure representation”, an “undeniable certificate of presence”. In this way, as photography historian Geoffrey Batchen suggests, it poses as a *zero-degree* description.<sup>91</sup> In its exhausting veracity it allows for a direct exchange between the image and the receiver.

Although when discussing the zero-degree of writing, Barthes points out that even this “colourless” writing still presents a noticeable style, “loaded with the most spectacular signs of fabrication”,<sup>92</sup> photography offers to him a ground for a phenomenological approach that engages with the field of the image as a diachronic artefact, conjuring “past, present and future” through the infinite mechanical repetition of the instance – what Barthes defines as the “noeme”, that which has occurred only once – before the reader: “A sort of umbilical cord links the body of the photographed thing to my gaze”, he writes.<sup>93</sup> The artefact acts as a mediator between the original, the photographed, and the receiver, drawing a connective line of participation of the reader within the effect of the image. This participation, which regards an interpretative imaginary that emanates from the figurative as a conjunction of past and present, Barthes describes as an addition, a surplus of meaning that is created between the image and its reading.<sup>94</sup> The camera lucida itself, a drawing device that merged the perception of a visual impression upon the drawing surface, marks the interiority of the photographic affect: the image projected through the lens is only visible to the one viewer.<sup>95</sup> There is a lucid clarity of a contingent effect that takes place between the projected, the projection and the viewer.

In this “vague, casual, even cynical” phenomenological approach, Barthes looks into his own bodily responses to the image.<sup>96</sup> To account for his own reactions he introduces the concepts of the *studium* and the *punctum*. The former regards a kind of analysis, a ‘study’. Suggesting the effect of a pragmatic logical process it entails the recognition of the photographer’s intentions.<sup>97</sup> It is denotative. The punctum on the other hand “rises from the scene, shoots out of it like an arrow, and pierces me”.<sup>98</sup> It concerns the part of the image which evades analysis, and in its unsettling piercing nature sets on another line of investigation; it is “pensive” and connotative, but in its intensity it is also unrepresentable: “What I can name cannot prick me”.<sup>99</sup> It is unnameable but, despite the lack of the “mark”, it is produced out of a *writing*, a process of representation. Considered in this sense, the photograph emerges as a “writerly” text without code.<sup>100</sup> Although it maintains an analogical relation to its referent, it is according to Barthes not realist. Its effect does not emerge from the physicality of the artefact but rather emanates from its diachronic displacement.<sup>101</sup> In this sense, posing for a sharing of subjectivity between the

without a code.” Roland Barthes, ‘The Photographic Message, in *Image, Music, Text* (London: Fontana Press, 1977), pp. 15-31; p. 16-17.

<sup>90</sup> Ibid., p. 6.

<sup>91</sup> Batchen proposes a continuity between Barthes first and last published work, *Writing Degree Zero* and *Camera Lucida* respectively, one that he traces in Barthes’ response to the work of Jean-Paul Sartre. Geoffrey Batchen, Geoffrey, ‘Palinode: An Introduction to Photography.’ In Batchen Geoffrey (ed.), *Photography Degree-Zero*. Boston: MIT Press, 2009), p. 4-5. The notion of the zero degree of writing is also discussed in *Instructions*, Chapter IV.

<sup>92</sup> Roland Barthes, *Writing Degree Zero*, trans. Anette Lavers (New York: Farrar, Straus and Giroux, 1977), p. 64.

<sup>93</sup> Barthes, *Camera Lucida*, p. 81.

<sup>94</sup> “Whether or not it is triggered...it is an addition: what I add to the photograph and what is nonetheless already there.” Ibid., p. 55.

<sup>95</sup> “Patented by William Wollaston in 1806 well before photography’s invention was announced in 1839. Consist of a three sided glass prism suspended before the eye of the draftsman, such that a subject and the piece of paper beneath the prism meld together onto the back of the draftsman’s retina. Thus the image produced by a camera lucida is seen only by the draftsman and by no one else, except in the form of a tracing.” Ibid., p. 11

<sup>96</sup> Ibid., p. 20.

<sup>97</sup> Barthes describes the stadium as “an unconcerned desire of various interest, of inconsequential taste”. Ibid., p. 27.

<sup>98</sup> Ibid., p. 26.

<sup>99</sup> Ibid., p. 51.

reader and the image, the punctum presents a kind of “coding” itself, a self-made formalism that emerges from the performance of reading. In the photographic image then, the lucidity comprises of the uncovering of the punctum, as the not lost but obscured movement of representation. As Barthes writes “from a phenomenological viewpoint, in the Photo, the power of authentication exceeds the power of representation”.<sup>102</sup> The purity of description, the purity of representation is what facilitates within photography the effect not of a copy but of a ‘superlative’ assertion of presence that ‘exceeds’ the validity of representation, in Libeskind’s words: a “non-existent reality”,<sup>103</sup> that emanates from the sign itself.

To return to the architectural controversy between description and speculation, as it ‘translates’ to the challenge of the integrity of the architectural mark as an ‘intelligent’ coded sign of fixed meaning or a ‘phenomenological’, contingent and unstable sign, we can consider Barthes’ idea of ‘pure’ representation through John Ruskin’s fascination with the daguerreotype. Looking at Ruskin’s engagement with this early form of photography, architectural historian Karen Burns focuses on the term documentary posing the contradiction of a mere transcription to an “active translation”.<sup>104</sup> Although it was not possible to reproduce the daguerreotypes, Ruskin adapted a few into engravings for *The Seven Lamps* publication.<sup>105</sup> In this particular act of transcription, of the tracing of the image, Burns identifies in the daguerreotype an opportunity for a “reassessment of representation”.<sup>106</sup> As Ruskin himself indicated, the photographic image, this “lucid” artefact of transparent description, posed as a way of rereading the original and discovering new details. It is at this point that the daguerreotype, becomes as Burns writes, a system of representation of its own.<sup>107</sup> More ‘real’ than the real experience, this early form of photography offered not an exact imitation but a new “model of information”.<sup>108</sup> As Burns writes:

[...] the observer’s fallibility in the gathering of empirical evidence is exposed, but the observer is also presented with another way of seeing. It is the detail formed in the reproduction, rather than the original, that is prized.<sup>109</sup>

Conveyed as a series of effects, information is structured by reproduction as a mode of representation rather than a transparent entity. Furthermore, to return to Carter’s idea of the track, the process of reading, or observing, becomes entangled with the process of representation. A kinetic process is implied that involves the “movement” of the observer. To paraphrase Walter Benjamin, here to *read* is to leave traces.<sup>110</sup> The image as memento, in its superlative authenticity, hence becomes not only about remembering, but also about forgetting. Forgetting the loss through a visual compensation, and forgetting the movement away from origins. Is the lament of the architectural movement-in-stasis then really the recollection of a loss, or is it the repression of a memory, a denial?

The ‘improper’ mark then, that which escapes the line of propriety and reveals the movement, the difference that is coiled within the representation, can perhaps be considered through the Platonic conception of the copy not as *eikon*, but as *simulacrum*. Defined in Plato’s *Sophist* as the counterpart of the eikon, the simulacrum escapes likeness to the original. It is a copy that does not carry the qualities that define the original, therefore lacking substance as a duplicate. In this sense the simulacrum takes on a negative tone, failing to fulfil its role as means of recollecting and therefore representing its origin.<sup>111</sup> By challenging the primacy of the origin however, by differentiating, the simulacrum also separates itself and acquires a certain autonomy. The *eikon-simulacrum* division is found at the second level of Plato’s inquiry, following a first division between the original and the copy, the “thing” and the

<sup>100</sup> The writerly text is, according to Barthes, a text that produces its full effects only upon being read. See Roland Barthes, *S/Z*, trans. Richard Miller (Oxford and Cambridge Mass.: Blackwell, 1990), p. 4.

<sup>101</sup> Barthes, *Camera Lucida*, p. 88.

<sup>102</sup> *Ibid.*, p. 88-89.

<sup>103</sup> Daniel Libeskind, ‘Unoriginal Signs’, p.5.

<sup>104</sup> Karen Burns, ‘Topographies of Tourism: “Documentary” Photography and “The Stones of Venice”’, *Assemblage* 32 (Apr. 1997), pp. 22-44.

<sup>105</sup> *Ibid.*, p. 29.

<sup>106</sup> *Ibid.*, p. 29.

<sup>107</sup> *Ibid.*, p. 40.

<sup>108</sup> *Ibid.*, p. 38.

<sup>109</sup> *Ibid.*, p. 38.

<sup>110</sup> “*To dwell means to leave traces*”. Walter Benjamin, Paris – Capital of the Nineteenth Century (Exposé of 1935), in *The Arcades Project* (Cambridge, Massachusetts: Harvard University Press, 1999), pp. 3-13; p. 9

<sup>111</sup> Plato, ‘Sophist’ (ca. 360 BC), in *Dialogues* Vol. 4, trans. Benjamin Jowett (Oxford University Press, 1892), pp. 217-408.

image. Gilles Deleuze discusses the meaning of Friedrich Nietzsche's proposition of the "overthrow of Platonism" as the abolishment of the division between essences and appearances.<sup>112</sup> Deleuze argues that this idea removes and conceals the real motivation of Platonic theory, pointing out that the real aim of *chorismos* (division), is not the division of a genus into opposing species but the revelation of lines of succession,<sup>113</sup> and therefore the distinction between the pure and the impure, the authentic and the inauthentic. In this sense, Platonic division seeks to define the authenticity of the idea rather than the copy, by defining a proper line, as opposed to a false line of succession. This forms, according to Deleuze, a dialectic of "rivalry", in Plato *amphisbetesis*, which might also be translated as *doubt*.<sup>114</sup> The copy and the simulacrum are still on either side of the division; however, the simulacrum is not simply a false copy. It retains the image but lacks resemblance, in this way calling into question, doubting the very notions of copy and the model:

We can thus better define the whole of the Platonic motive - it is a matter of choosing claimants, of distinguishing the good from the false copies, or even more, the always well-founded copies from the simulacra, ever corrupted by dissemblance. It is a question of insuring the triumph of the copies over the simulacra, of repressing the simulacra, of keeping them chained in the depths, of preventing them from rising to the surface and "insinuating" themselves everywhere.<sup>115</sup>

Plato grounds the domain of representation as filled by iconic copies defined not by an extrinsic relation to an object, but rather an intrinsic relation to the model or ground: a line of hereditary continuity. The criterion of resemblance established by the first division functions to validate the difference between the copy and the simulacrum. The copy, the *eikon*, is authenticated through the resemblance, which the simulacrum lacks.<sup>116</sup> On the contrary, in the simulacrum emerges a resemblance that is an external effect.<sup>117</sup> It is external to the model, but 'internal' to the simulacrum, and the difference upon which its repetition is grounded. The overthrow of Platonism, asserts then for Deleuze the raising up of the simulacrum, which as he writes is "not degraded copy, rather it contains a positive power which negates both original and copy, both model and reproduction".<sup>118</sup>

Already in *Difference and Repetition*, his earliest work of "doing" philosophy, Deleuze began by questioning the subordination of difference to identity and resemblance. As he wrote, since Plato philosophy traditionally subordinates difference to identity, considering it from the point of view of the subject, and consequently as resemblance and analogy.<sup>119</sup> In a way the effect of difference is always externalized and concealed by being understood through a kind of mediation. In turn, repetition is also subordinated "to the identical, the similar, the equal or the opposed":

Henceforth, everything which causes repetition to vary seems to us to cover or hide it at the same time. Here again, we do not reach a concept of repetition. By contrast, might we not form such a concept once we realize that variation is not added to repetition in order to hide it, but is rather its condition or constitutive element, the interiority of repetition par excellence? Disguise no less than displacement forms part of repetition, and of difference: a common transport or diaphora. At the limit, might there not be a single power of difference or of repetition.<sup>120</sup>

The simulacrum subverts this subordination by claiming difference as its own resemblance by producing an effect of 'signification' through a process of disguise that includes both a manifest and a latent content.<sup>121</sup> Like the photograph, it is connotative and denotative at the same time. In the simulacrum, reality and representation are fused, overturning the subject as "privileged position" and hence overturning the primacy of origins.<sup>122</sup> In *Difference and Repetition*, Deleuze makes the point that this process of disguise and concealment is inherent, and the true subject of repetition, which is in its essence symbolic.<sup>123</sup> It does not re-present but signifies:

<sup>112</sup> Deleuze comments on Nietzsche's definition of the task of his philosophy but also tracing similar objections to Kant and Hegel. Deleuze, Gilles Deleuze, 'Plato and the Simulacrum', *October* 27 (Winter 1983), pp. 45-56; p. 45.

<sup>113</sup> As it appears in the allegory of 'The Statesman', in *Ibid.*, p. 46

<sup>114</sup> *Ibid.*, p. 46.

<sup>115</sup> *Ibid.*, p. 48.

<sup>116</sup> *Ibid.* p. 48.

<sup>117</sup> *Ibid.*, p. 49

<sup>118</sup> *Ibid.*, p. 53

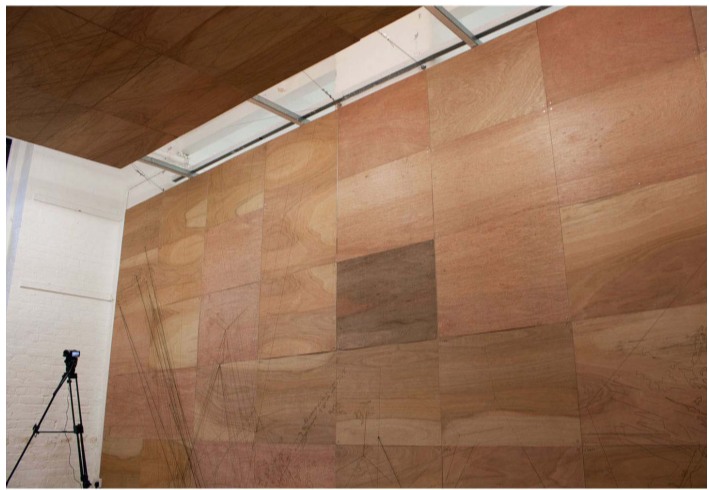
<sup>119</sup> *Ibid.*, p. xv.

<sup>120</sup> Gilles Deleuze, *Difference and Repetition* (New York: Columbia University Press, 1994) p. xv-xvi.

<sup>121</sup> *Ibid.*, p. 54

<sup>122</sup> Deleuze, *Difference and Repetition*, p. 5

<sup>123</sup> *Ibid.*, p. 17.



[L25-26-27] *Weaving Lines/Loming Narratives*: The plan folding from the floor onto the wall, the elevated plane of the table and the suspended ceiling

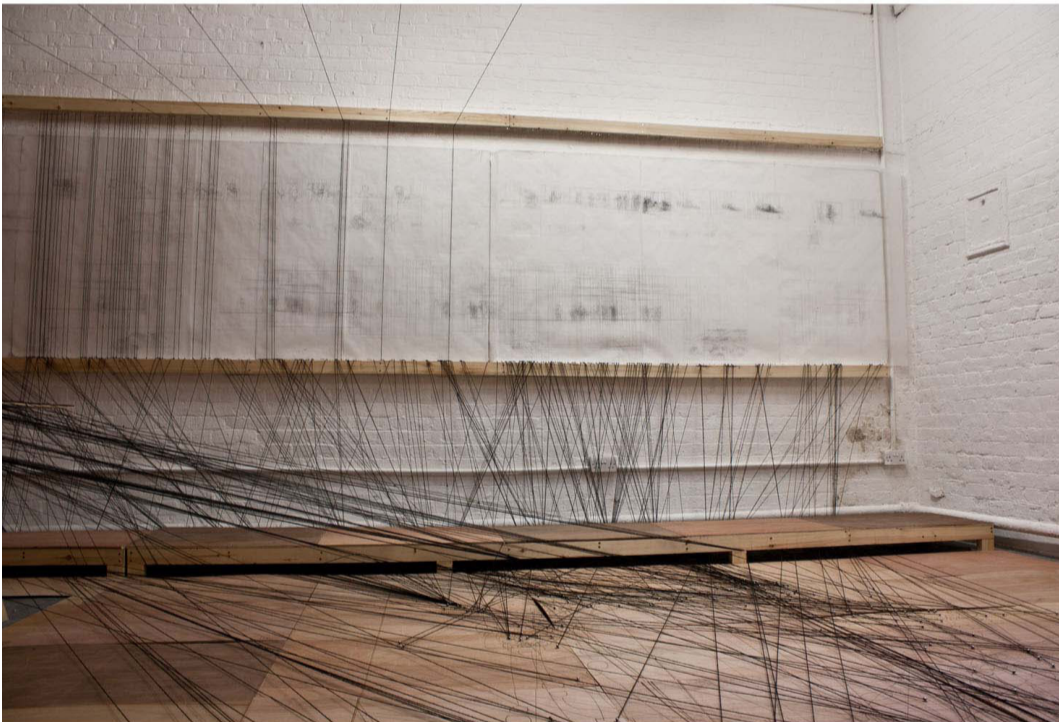
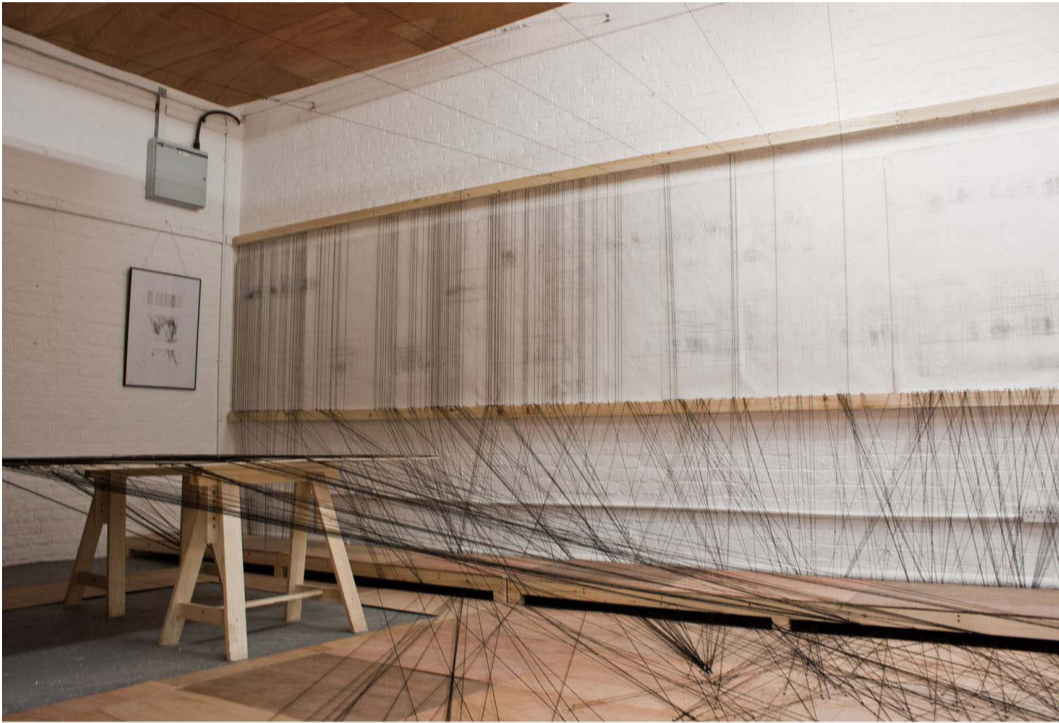


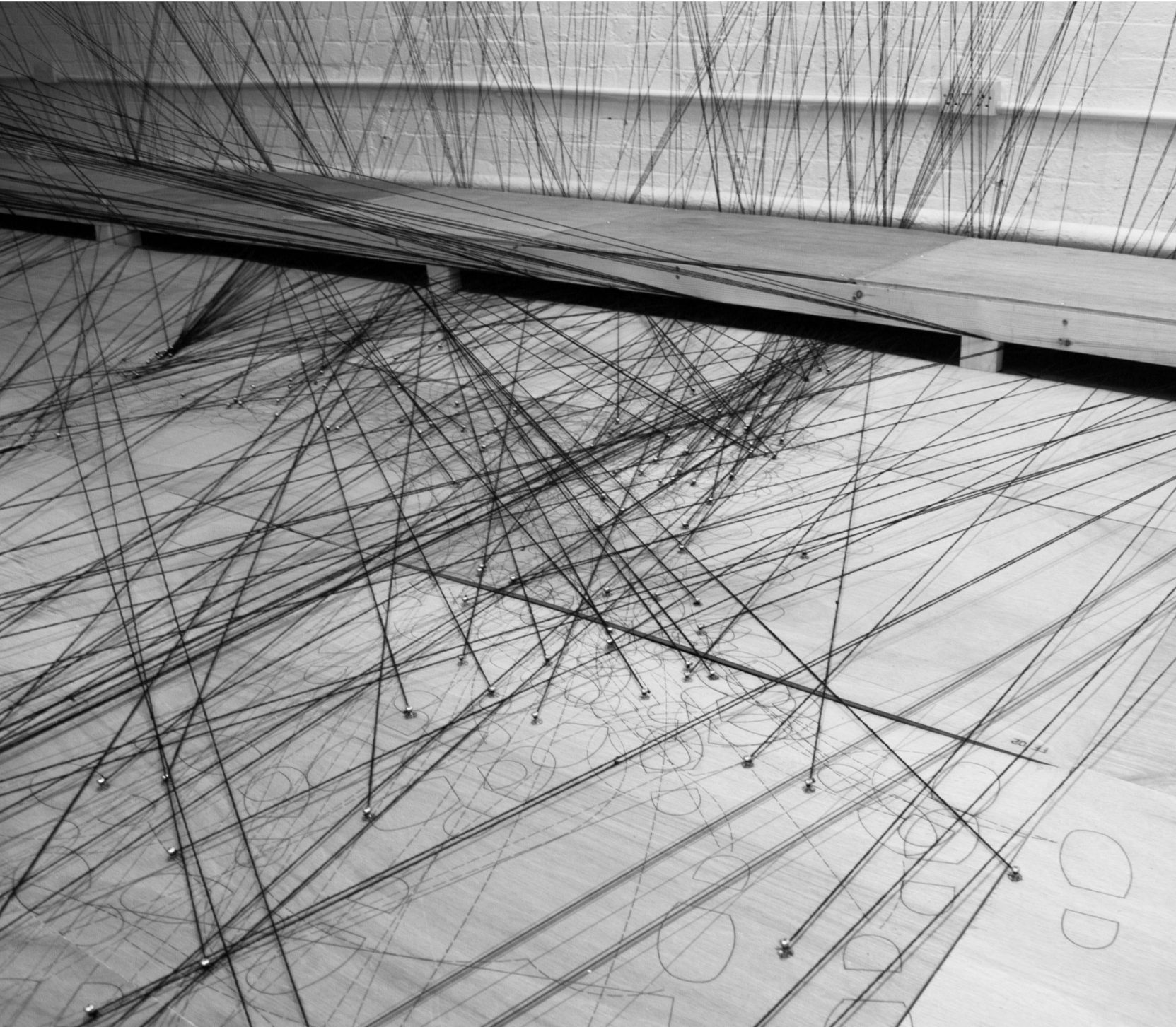
I do not repeat because I repress. I repress because I repeat, I forget because I repeat. I repress, because I can live certain things or certain experiences only in the mode of repetition. I am determined to repress whatever would prevent me from living them thus: in particular, the representation which mediates the lived by relating it to the form of a similar or identical object.<sup>124</sup>

To return this to Ingraham's lines of architectural propriety, the criterion of 'resemblance' emerges in architecture not through appearances but through the maintaining of convention, through the maintaining of the orthogonal/orthographic and the geometric. In the same way that Platonism seeks to conceal the differential point of view, the difference within the repetition, architecture seeks to disguise its own operative movement of disguise: the domestication of the ground through a constitutive act of transmutation. Considered through the simulative repetition, architecture and hence architectural drawing do not constitute a lament but a repressive repetition. The difference of drawing, in Barthes' words its punctum, emanates and flourishes out of this repetition, the again and again that is imposed by the obsessive anxiety for the assertion of the repression, for the disguise of that very difference as a means to an integrity of meaning. This repetition, which is at the same time the movement and the repression of the memory of the intrinsic movement of architectural representation, differs from representation as defined by Deleuze not in that it does not represent, but in that it denies and at times even seeks to subvert its operative performativity. Considering this, the 'stutterings' and 'stammerings' invoked upon the drawing of architecture's line may seem to disrupt and lose the continuity from the origin, but rather what they do is uncover the mutability of the origin as architecture itself. Although these marks appear to be external to the code of convention, they are architectural in that they are able to domesticate and inhabit the convention that they themselves introduce, rather than escape it. The sole prerequisite is that this 'different' code need only be attached to the line.

Although the representation of the multifariously temporal multiplicity of the site was fixed upon the surface(s) of the drawing, the traces of the real came to 'domesticate' the convention by displacing its boundaries. At the same time however, upon entering this drawing, these marks were in turn domesticated by the cunning movement of architecture by being inscribed within another field of action that set them in new motions and trajectories, through the reading of the architect and the interpretations that were conferred upon them in the milieu of drawing. Even though these marks did not constitute an instruction for the reproduction of the characters' actions, they constituted an instantiation of their original site as an intertextual field of action, where the characters described were joined by other 'characters' that came to depict, materialise and conceive of its original state (operators of reading and writing them into the room, ranging from conventions, materials, fabricating machinery and people). The density of the marks may have indeed rendered detail illegible, even in the larger scale of the room. However, within the mutable ground of architectural drawing, it was this density, rather than the individual markings, that in the end posed as the sign of the textuality of a kinetic site.

<sup>124</sup> Ibid., p. 18.





[L28-29] Views towards the Platform and Timeline

[L30] Detail of the Plan and teh Weave emerging from underneath the Platform





[L31] *Weaving Lines/Loming Narratives*: View towards Table and Wall



GAZE

THE ANIMATE GAZE: REIMAGI(NI)NG THE CITY

The encounter with the city is often considered as an ‘affair’ of the eye. The city’s presence is conventionally described and comprehended in architectural representation through ocularcentric processes of figuration.<sup>1</sup> Yet, the means through which this visualisation proceeds are not strictly sensible, and at the same time neither universal nor static. The image of the city takes shape at the intersection of a multiplicity of visual regimes, collective and individual, conventional and impulsive, the agency of which does not rely on the primacy of a ‘hegemonic’ universal vision but rather on the ‘malleability’ of visual perception as a process of knowledge through acts of representation. Ultimately, the encounter takes place not ‘in’ the eyes but in the movement between the eyes and their object – or rather between the eyes of alternating subjects. Dealt with suspicion for the ways they, somewhat cunningly, construct the world, seemingly in absence of the other senses, eyes ‘reorder’ in order to cognitively conquer but are also ‘ordered’ by the gaze and the exchanges it entails. The city thus emerges as the terrain of innumerable gazes: equally approachable and ungraspable, it unfolds by means of a composite imaginative cartography, which is piece by piece conquered at the conjunction of a sensory experience and the narration of experiences past, as recollected in a variety of expressions: maps, stories, photos. And so the encounter ends with ‘eyes’, when all that becomes of it, persists as no more than image(s).

Within this field of congested visualities, architectural drawing presents itself as a device of *looking*, a kind of ‘optical’ device that is capable of offering, in lieu of a universal vision, a unified field of an intertextual visibility. Despite the distinct conventions that have from time to time structured and predetermined the ‘field of view’ of architectural representation, drawing can be considered as a kind of visual ‘prosthesis’ (an extension) that brings things into visibility by proposing alternate spatialisations, which overcome the limitations of our visual perception. In the end, I would like to argue that drawing is always destined to succumb to one final ‘scopic regime’. The gaze of the architect/reader, as the final inhabitant of the drawing, which seeks to ‘fix’ by inevitably animating, a composite and contingent visual territory.

## I RULES OF VISUAL ENGAGEMENT

The idea of the ‘primacy’ of vision can be traced as far back as the fourth century BC, when Aristotle would announce it as the ‘noblest’ of the senses, explaining: “it approximates the intellect most closely by virtue of the relative immateriality of its knowing”.<sup>2</sup> Vision is thus according to Aristotle closer to the immaterial abstraction of the mind, yet *knowing* the reality of matter. Juhani Pallasmaa has followed this operative participation of vision within the process of knowledge and the verification of reality – pointing out the ocularcentrism that has been maintained throughout Renaissance and Cartesian thought – to the rationalist planning of modernity and, lastly, to the alienated spectacle through which the city is ‘lived’ and consumed in the postmodern era.<sup>3</sup> In these last five decades, Pallasmaa argues, not only has architecture become increasingly “retinal”, that is, relying on the teasing of vision through the production of striking imagery, but this ocularcentrism is simultaneously shifting the locus of inhabitation as encounter, from the bodily situation to the flatness of the image.<sup>4</sup> It is suggested hence that there is a saturation of visuality which, embraced as it has been by recent architectural practice and digital modes of visualisation, has led not only to the production of an architecture that is through this proliferation of imagery highly self-referential, but also, due to the disengagement of the body from space, to a sensory decline of vision itself.<sup>5</sup>

<sup>1</sup> The association of the legibility of the city to criteria of visibility we have already encountered in De Certeau’s ‘Walking in the City’, as discussed in *Instructions*, Chapter IV. See Michel De Certeau, ‘Walking in the City’, in *The Practice of Everyday Life* (Berkeley: University of California Press, 1988), pp. 91-110.

<sup>2</sup> Quoted in Juhani Pallasmaa, ‘Part I’, in *The Eyes of the Skin: Architecture and the Senses* (London: Wiley, 1996), pp. 15-37; p.15.

<sup>3</sup> “But the change goes beyond mere visual dominance; instead of being a situational bodily encounter architecture has become an art of the print image fixed by the hurried eye of the camera. In our culture of pictures, the gaze itself flattens into a picture and loses its plasticity. Instead of experiencing our being in the world, we behold it from outside as spectators of images projected on the surface of the retina”. *Ibid.*, p.30.

<sup>4</sup> Within this architecture, vision too becomes according to Pallasmaa nihilistic leading to a crisis of representation: “instead of reinforcing one’s body-centred and integrated experience of the world, nihilistic architecture disengages and isolates the body, and instead of attempting to reconstruct cultural order it makes a reading of collective signification impossible”. *Ibid.*, p. 22.

<sup>5</sup> “It has not facilitated human rootedness in the world”. *Ibid.*, p. 19.

Pallasmaa's propositions reflect a common cautiousness towards the effects of vision upon not only the physical parameters of the perceptive experience, but also on the ideologies that emerge in relation to particular visual cultures. This approach is based on the presupposition that such a privileging of vision is reversible and thus culturally constructed.<sup>6</sup> The fact that Pallasmaa concludes that the opportunity for a 're-sensualisation' of architecture relies yet again on the introduction of a new visual paradigm,<sup>7</sup> asserts that what is at stake is not so much the domination of vision, but the ways in which the domination *over* vision occurs.

The validity of ocularcentrism as hegemony of vision is widely examined by Martin Jay, who proposes instead a status of denigration rather than domination.<sup>8</sup> Shedding light on the contradictions of ocularcentric theories in his book *Downcast Eyes*, Jay reveals the misunderstanding of visual primacy by placing emphasis not on specific images, nor on visual practices but on the "scopic regimes" that condition vision.<sup>9</sup> The concept of the scopic regime, which Jay borrows from Christian Metz,<sup>10</sup> regards not so much the possible configurations of the physiological aspect of seeing (such as for instance the possibility of expanding or altering it through technological appendages), but the ideological dimensions that permeate the understanding of its translation from the physiological to the psychological, that is to say, the structuring of the exchanges of meaning that take place between visual perception and knowledge.<sup>11</sup>

Although certain regimes have been construed in more explicit ways, and as a consequence may have been more directly associated with certain epochs, there is never a universal and dominant vision, but a number of scopic regimes, which, as Jay notes, coexist and often compete with each other. From his earlier work on modernity, Jay had already distinguished three concurrently dominant regimes: Cartesian Perspectivalism, the 'Art of Describing', and Baroque,<sup>12</sup> all of them stemming from earlier historic periods and their pertaining ideologies. This condition of overlapping, and particularly competing, regimes becomes more prominent throughout modernity and its succeeding visual cultures.

The 19th century, was a century of rapid developments in the field of optics. A series of optical devices that imitated or expanded the capabilities of the eye were invented, such as Sir Charles Wheatstone's stereoscope (1838),<sup>14</sup> and Joseph Plateau's phenakistoscope (1829). At the same time, previously established technologies such as the camera obscura evolved, leading to the invention of photography and consequently the cinematograph. The increasing mobility of everyday life that the advent of modernity marked, through the mechanization of production and locomotion, combined with the new kinds of visual experience –a mechanization of seeing– to which the new optical technologies gave rise, gradually contributed to the cultivation of a visual culture, which was radically informed by these physical 'exosomatic' reconfigurations of seeing,<sup>15</sup> yet was still laden with strongly prevailing remnants of pre-existing regimes. Of course, as Jonathan Crary points out in the book *The Techniques of the Observer*,<sup>16</sup> these shifts in the modalities of observation, just as the inventions that inspired them, did not occur in isolation, but in continuity with the preceding and concurrent social and ideological transformations. Furthermore, they coincided with the development of theories on the interrelation between space and time as they evolved in the conjunction of the work of physicists Henri Poincaré, Hermann Minkowski, and Albert Einstein,<sup>17</sup> but also in the writings of philosophers such as Henri Bergson which, challenging the Renaissance model of three-dimensional space, introduced the notion of a fourth dimension.<sup>18</sup> As the rising awareness of motion had a significant impact on the representation of objects and space,

<sup>6</sup> This is argued in Martin Jay, *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought* (Berkeley: University of California Press, 1993), p. 3.

<sup>7</sup> Despite commenting on the enhancement of other senses through the emergence of new technologies, Pallasmaa's conclusive projection relies on the emergence of what David Michael Levin defines as the 'alethic gaze', a hermeneutic and pluralistic mode of vision. See David Michael Levin, *The Opening of Vision: Nihilism and the Postmodern Situation* (New York: Routledge, 1988), p. 440.

<sup>8</sup> As illustrated in the title of the book. See Martin Jay, *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought*.

<sup>9</sup> In his response to his critics in particular Jay describes the idea of ocularcentrism as merely an example of repressive liberal tolerance. Jay Martin, 'Disciplinary Prisms: Responding to my Critics', *Comparative Studies in Society and History* 38 (2) (April 1996), pp. 388-394; p. 393.

<sup>10</sup> This term is borrowed by Jay from Christian Metz, 'The Passion of Perceiving', in *The Imaginary Signifier: Psychoanalysis and Cinema*, trans. Celia Britton et al. (Bloomington: Indiana University Press, 1982), pp. 58-68; p. 61.

<sup>11</sup> Jay, *Downcast Eyes*, p. 7.

<sup>12</sup> Martin Jay, 'The Scopic Regimes of Modernity', in Hal Foster (ed.), *Vision and Visuality* (Seattle: Bay Press, 1988), pp. 3-23. The term 'The Art of Describing,' Jay borrows from Svetlana Alper's *The Art of Describing: Dutch Art in the Seventeenth Century* (1983).

<sup>13</sup> The term is introduced in Christian Metz, 'The Passion of Perceiving', in *The Imaginary Signifier: Psychoanalysis and Cinema*, trans. Celia Britton et al. (Bloomington:

*Weaving Lines/Looming Narratives (WL/LN)* proposed an expansion of architectural drawing, by expanding its subject-matter, its 'field of view', from the enduring materiality of the built to the transitive manifestations of action. Considering the ways in which visual relations and modes of perception come to play in the process of reading (and consequently writing) both the city and the drawing, the second part of the project – which involved the transition from the experimental field of the small scale site to the city – became concerned with the processes of visual perception, interpretation, and even conception, which are involved in urban representation. Already in *WL/LN*, the implications of the physical limitations of visual perception became prominent in the consideration of material presence and the ways in which this could be transcribed into a visual code of representation. In architectural drawing, however – and perhaps even architectural spaces as well, representational regimes and their semiotic function become tangled with what Christian Metz defines as “scopic regimes”,<sup>13</sup> the impact of which expands beyond the practicalities of a transcription of the city on the basis of physical presence (as the interpretation of matter in *WL/LN* suggested). Eventually, ideological effects of power, knowledge, as well as desire, which can be conscious and unconscious, collective and personal, universal and site-specific, affect the ways in which what is considered as 'present' in the object of representation, is made present within architectural drawing.

Shifting focus to the scale of the city, *Kaleidoscopic City* also pursues a reconsideration of urban representation by pushing architecture's own codified modes to include what is still currently excluded by convention. This is attempted by putting pressure on the historical constitution of the codes, by addressing the extensions and transformations that the modalities of our visual perception have undergone under the influence of modernity, as well as a reinterpretation of their effect upon the image of the city. The installation was presented at the Inspace Gallery in Edinburgh, in the frame of the Plenitude & Emptiness Symposium on Architectural Research by Design, at ESALA, Edinburgh College of Art in October 2013, along with a short first draft of this essay.

even dominating, raising thus issues of ideology and intentionality with regards to the politics of observation and representation. As Tom Conley writes, “A person on foot in a modern city is no less indoctrinated than anyone writing a dissertation following the laws of usage that chart the frame of common sense”.<sup>22</sup> The play between vision, as an individual practice of inhabitation, and visuality, as a socially informed (or guided) ideology, becomes central in the understanding of the city, as entity and as object of representation, in which institutional, political, or even capital driven models of perception are often revealed. As Tom Conley remarks, the two become so embedded in one another that the distinction between the dominant and the dominated party becomes blurred.<sup>23</sup> Eye and city are staged towards one another in a dialectic between conditions of observation and representation.

the new vision of 'the world in motion' – as we have seen in *Instructions*, Chapter II – became one of the main preoccupations of modernist artists such as László Moholy-Nagy, who sought to bring to visibility the implications and possibilities of the emerging space paradigm.<sup>19</sup> The shift that was taking place in the mental image of looking was leading to a shift in the physical image of representation.

As opposed to ocularcentrism which alludes to the workings of the eye, the concept of the scopic regime regards visuality, that is, as defined by Hal Foster, “sight as a social fact”.<sup>20</sup> This distinction between vision and visuality does not point to an opposition between the nature and culture of vision, but to a distinction between the eye (and sight) as subject and as object. The scopic regime then, concerned with uniting vision and visuality into an “essential vision”<sup>21</sup> involves equally the modalities of looking as well as representing. Defined as a 'regime', a set of rules, the term suggests indeed a hegemonic intention in relation to vision and its related practices. It is these scopic regimes then, rather than vision itself, that are capable of regulating and perhaps

Indiana University Press, 1982), pp. 58-68; p. 61.

<sup>14</sup> Walter, Wheatstone, 'Contributions to the Physiology of Vision Part the First. On Some Remarkable, and Hitherto Unobserved, Phenomena of Binocular Vision'. In *Philosophical Transactions of the Royal Society of London*, Vol. 128 (1838), pp. 371-394. pp. 371-394. The concept of the stereoscope was later developed by Sir David Brewster who presented the *lenticular stereoscope* – the first portable 3D viewing device – at the Great Exhibition in 1851.

<sup>15</sup> The notion of the “exosomatic organ” is elaborated by Robert E. Innis. Innis considers the body, in the process of cognition and perception (“meaning-making and sense-giving”), as a kind of cyborg formation emerging at the intertwining of an 'artificial body' and the human's own 'natural equipment'. Beyond the physicality of the objects and techniques, “exosomatic organs” expand to the creation of collective biases that emerge from the practices involved in their use. Robert E. Innis, *Pragmatism and the Forms of Sense: Language, Perception, Technics*, p. 131-132.

<sup>16</sup> Crary, Jonathan, *Techniques of the Observer: On vision and modernity in the nineteenth century* (Cambridge, Mass.: MIT Press, 1992), p. 9.

<sup>17</sup> Minkowski, Herman, *Space and Time: Minkowski's Papers on Relativity*, trans. Fritz Lewertoff and Vesselin Petkov (Montréal: Minkowski Institute Press, 2012). <http://www.minkowskiistitute.org/mip/> [Accessed: 25.04.13]

<sup>18</sup> Bergson, Henri, *Time and Free Will: An Essay on the Immediate Data of Consciousness* (1889), trans. F.L. Pogson (New York: Dover Publications, 2001).

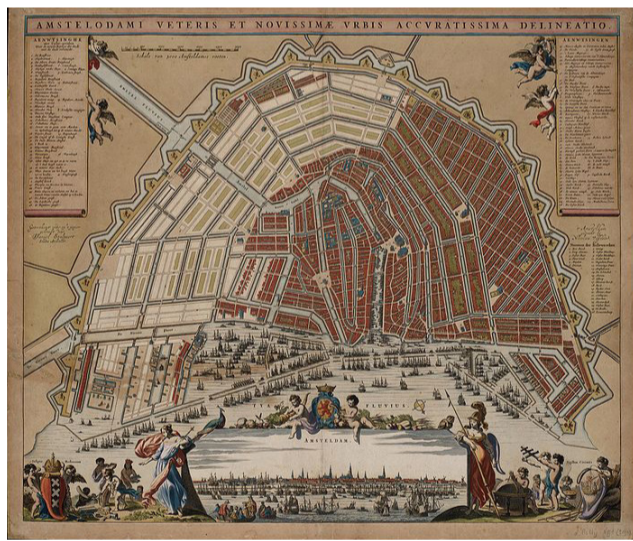
<sup>19</sup> Moholy-Nagy, László, *Vision in motion* (Chicago: Paul Theobald and Company, 1947).

<sup>20</sup> “Although vision suggests sight as a physical operation, and visuality sight as a social fact, the two are not opposed as nature to culture”. Hal Foster, *Vision and Visuality* (Seattle: Bay Press, 1988), p. ix.

<sup>21</sup> *Ibid.*, p. ix.



[11] *Amsterdam*, Daniel Stalpaert (ca. 1670)  
[10] *Map of Paris*, Jacques Gomboust (1652)



The often antagonistic coexistence of multiple scopic regimes has been made manifest in the representation of cities, where the shadow of the Ptolemaic distinction between geography and chorography, between mathematical abstraction and qualitative resemblance, has historically marked the understanding of the city through varying instrumentalizations of vision. Multiple view representations, their expression ranging from the hybrid technique of Daniel Stalpaert's engraving of Amsterdam (ca. 1670) to Jacques Gomboust's collective map of Paris (1652) [fig. 10-11], have often proposed a mediation in the opposition between pictorial resemblance and the conceptual abstraction that has traditionally defined the pursuit of totality within representational regimes of urban cartography, reflecting the oscillation of the understanding of vision as concrete knowledge or illusion. The positioning of the 'looking eye' has defined the development of representational regimes through scopic attitudes that define not only the observation of their subject, namely the city, but also the reception of the image presented. The instrumentalisation of the view was manifest in the use of vantage points for the conceptual construction, but primarily for the associative validation of, and immersion in urban representations, as seen in Giorgio Vasari's *The View with a Chain* of Florence (ca. 1485), or Gomboust's map of Paris (1652), where the depiction of the artist at work in the former, or of an envisioning citizenry in the latter – a citizenry which was at once presented as subject and as object to king Louis XIV receiving the map – established a 'reality' of the image by embedding the body of the receiving viewer into representation.<sup>24</sup> This attachment to the land as a kind of natural 'prosthesis' to the observing body, was primarily present in oblique and multiple view representations, serving as the connecting point between an institutional, meaning-laden visuality and an individual experience of situated perception.<sup>25</sup> The transition from the empiric figuration of the bird's eye view to the speculation of the orthogonal plan, which was established as the dominant mode of urban representation from the 19<sup>th</sup> century onwards, not only illustrates a changing ideology but perhaps also suggests the 'education' of the eye. The dissemination of a certain visuality that was previously exclusive to specialists and intellectuals – artillery and fortification engineers, architects and planners – is indicative of the reciprocal exchanges between the experience of the city and the 'experience' of its representation.<sup>26</sup> As the city became more 'alien', due to its expanding scale and changing form, its representation became more popular, as well as popularised.

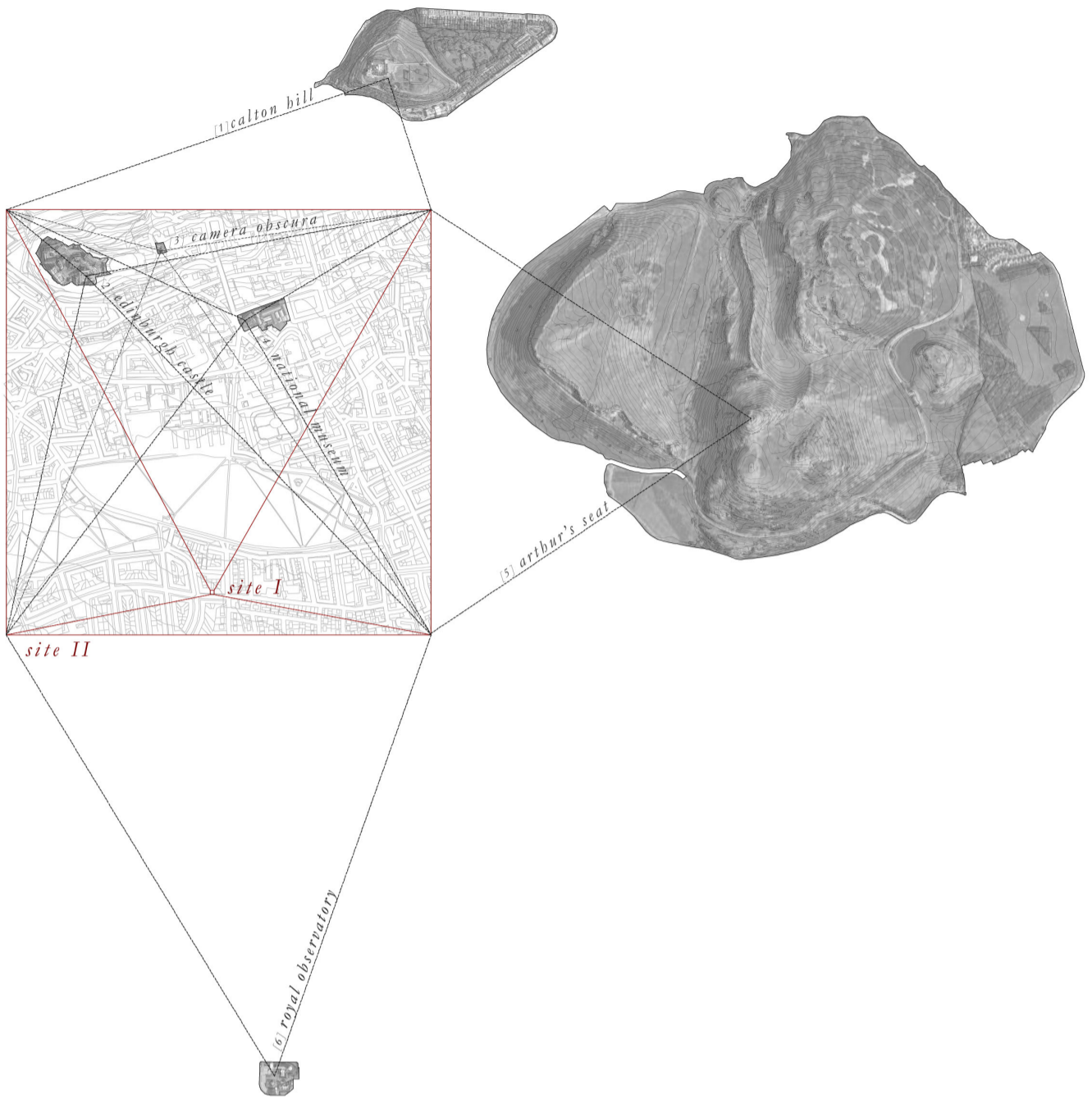
<sup>22</sup> Tom Conley, 'Foreword: The King's Effects,' in Louis Marin, *The Portrait of the King* (Minneapolis: University of Minnesota Press, 1988), p. vi.

<sup>23</sup> *Ibid.*, p. ix.

<sup>24</sup> Marin writes on the representation of the figures in Gomboust's map: "In the places where they appear, these five figures (two nobles, a bourgeoisie, and two of the people) designate and draw attention to the knot of the chiasmus of the real and representation: *the real city in its moment of history, Paris in 1652*. [...] this city here returns, more than three centuries later, faithful, exact, and rigorous, toward our eye today through our attentive gaze. Figures in their place [...] just like that we, now, are their figures in the real that we only perceive, in 1981". Louis Marin, 'The King and his Geometer' (1981), in *The Portrait of the King* (Minneapolis: University of Minnesota Press, 1988), pp. 168-179; p. 178-179.

<sup>25</sup> In the essay 'Perspective as Symbolic Form' Erwin Panofsky illustrates the effects of the symbolic connotations of the perspectival regime. Panofsky, Erwin, *Perspective as Symbolic Form* (New York: Zone Books, 1991).

<sup>26</sup> These modes of visuality originated from the practice of fortification engineers, and later architects and surveyors.



- [G1] Site II, Edinburgh: Plan  
*Legend*  
 [1] Calton Hill  
 [2] Edinburgh Castle  
 [3] Camer Obscura  
 [4] National Museum of Scotland  
 [5] Arthur's Seat  
 [6] Royal Observatory

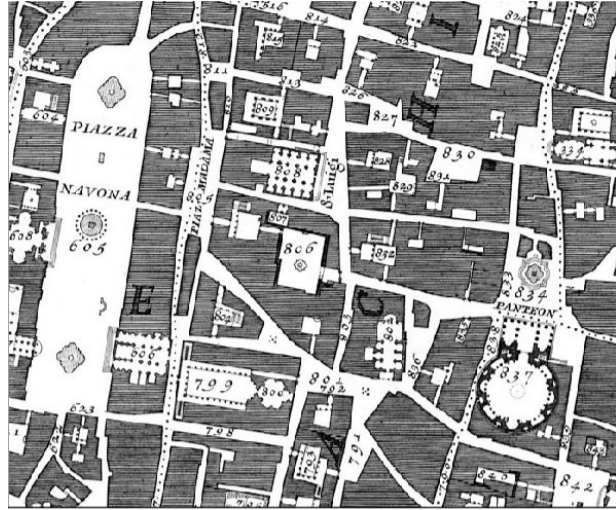
[G2] Tiles of the gallery floor are being replaced in order to emphasize the transversal 'section' of the installation

*Kaleidoscopic City* returned to the concept of the transversal survey of movements that was introduced in *WL/LN*, this time at a larger site spanning over the Old City of Edinburgh. ‘Zooming out’ from the grid structure that had defined the previous site, and seeking to anchor the shift of scale to normative architectural graphic scales, the boundaries of the site delineated an area that was 100:1 larger than the first site (1,500x1,500 metres).

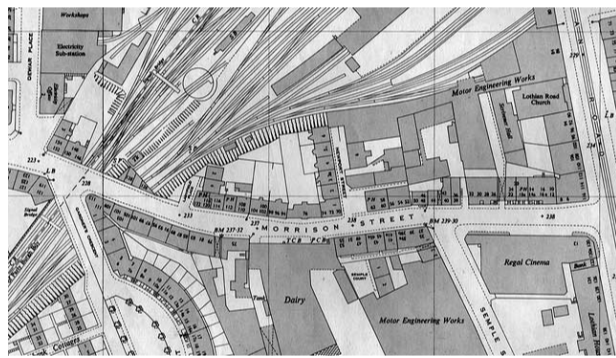
The idea of sampling the complexity of the site by means of six characters was also maintained from *WL/LN*, and the criteria of selection were the same as before with regard to scale, material expression and temporality. Nevertheless, on seeking to critically address the ways in which the city has been historically represented and the visual negotiations between the city and the drawing that these reflect, this representation proposed a mapping of the city that would engage with the previously established ‘images’ already pertaining to the site. The site was in this case large enough to relate to the visually charged image of the city as a predefined entity. Although this thesis is not concerned with the specifics of the particular city as such, it is in the case of the *Kaleidoscopic City* concerned with the ways in which notions of specificity may expand from the idea of a physical context (as in site-specificity) into notions of ‘visual specificity’. It is these specificities that emerged from the past and present of Edinburgh that were anticipated in this project, not as unique conditions but as instantiations of a different kind of ‘mobility’ entailed in architectural, and in particular in urban representation.

**The Geological Map:** Edinburgh’s historic centre spans along the Royal Mile, the main street connecting the old centres of power: the Castle Rock on the West and the Holyrood Palace on the East, almost on the foot of Arthur’s Seat. The ground upon which the main axis of the Old Town is situated constitutes largely of the volcanic rock erupted from Arthur’s Seat, now extinct, volcano. The city’s ground is included in the surveyed characters of this representation, not as a static territory but as a shifting field.





[12] *Plan of Rome* detail, Giambattista Nolli (1748)  
 [13] Ordnance Survey Map of Edinburgh detail (1948)  
 [14] Ordnance Survey Map of Edinburgh detail (2016)



## II THROUGH THE LOOKING MAP

Despite this apparent ideological coincidence, the impact of the new perception of space as a kinetic condition that emerged in the experience of the modern metropolis as well as the perceptive explorations of pictorial artists of modernity, did not find a direct counterpart in the representational expressions of architecture. The panoptic, simultaneous gaze of the ichnographic plan, foreshadowed in the divine elevated viewpoints of the bird's eye view,<sup>27</sup> overcame some of the limitations and spatial distortions that the single point of view perspective created while offering a 'scientific' exactitude that was in agreement with the rationalist attitudes of a functionalist architecture. However, the image of the city that it created, relying on conventions established as early as the 15<sup>th</sup> century, was evidently in opposition to the shifting experience of the modern city.<sup>28</sup> From early city plans such as Leonardo da Vinci's plan of Imola (ca. 1503) to the Nolli plan of Rome (1748) and contemporary Ordnance Survey maps [fig. 12-13-14], the quantitative likeness to the subject is consistently conveyed through the rigid alternation of solid versus void of the figure-ground drawing. The totalising view of the plan matched the newly conquered view of aerial mobility and, in its abstraction, liberated the impression of the static observer of the bird's eye view, conferring upon the observer/reader a free movement across the spaces of the city that are there revealed with equal accuracy. But the city itself is rendered as absolutely static. The plan presents the viewer with a selective image, avoiding embracing the complex interactions of movement that the modern experience of the city revealed. Laszlo Moholy-Nagy's observation indicates the discrepancy between the fixity of the image and the mobility of the city, as it emerges in the technologically 'charged' perception of modernity:

In our age of airplanes, architecture is viewed not only frontally and from sides, but also from above – vision in motion. The bird's-eye-view, and its opposites, the worm's and fish-eye views, have become a daily experience. Architecture appears no longer static, but if we think of it in terms of airplanes and motor cars, architecture is linked with movement. The helicopter, for example, may change the entire aspect of town and regional planning so that a formal and structural congruence with the new elements, time and speed, will manifest itself.<sup>29</sup>

Moholy-Nagy's description is representative of the spatial explorations that concerned the majority of art movements of the first half of the twentieth century, such as the Futurists, the Cubists and the Constructivists, among others. Although still maintaining focus on the visual impressions of spatial experience, the latent concern sketched out in the enumeration of what are visual connections to the city, is not strictly scopic. As we have seen in *Instructions*, Chapter II, Moholy-Nagy's writings in particular advocate the position that this visually interfaced fluidity of perception is biologically tied to a wider experience of dwelling as a process of change and becoming for both the individual and the place.

**The Aerial View:** The ichnographic plan presented the abstraction of a panoptic view, long before the distanced totalizing gaze of the view from above was physically possible. Today such views are more accessible than ever through air travel, software such as Google Earth, or even high rise buildings – let's not forget how Michel De Certeau compares the view from the summit New York's World Trade Centre to the abstracted aerial views of architectural representation.<sup>30</sup> The airplanes that arrive and depart from Edinburgh airport often get to travel around the city's periphery offering similar aerial views to their passengers. The planes figure as one of the characters in *Kaleidoscopic City*, associating the aerial view with experience rather than the conventional abstraction.

<sup>27</sup> Giacomo de Barbari's Portrait of Venice can be considered as consolidating this modality of urban representation. The elevation of the viewpoint from the hilltop views of the oblique to an ideal, imagined aerial viewpoint, may suggest an 'outgrowth' of the gaze from the hilltop view to the panopticity of the plan. See Hilary Ballon, Hilary and David Friedman, 'Portraying the City in Early Modern Europe: Measurement, Representation and Planning', in Woodward, David (ed.), *History of Cartography Vol. 3: Cartography in the European Renaissance* (Chicago: The University of Chicago Press, 2007), pp. 680-703; p. 687.

<sup>28</sup> John A. Pinto, 'Origins and Development of the Ichnographic City Plan', *Journal of the Society of Architectural Historians* 35 (1) (1976), p. 35.

<sup>29</sup> László Moholy-Nagy, *The Vision in Motion* (Chicago: Paul Theobald and Company, 1947), p. 245.

<sup>30</sup> De Certeau, 'Walking in the City', p.92.

Is this discrepancy then, between the static representation and the kinetic perception, a representational, or a 'scopic' issue? In other words, is this, in De Certeau's words,<sup>31</sup> "misunderstanding" owing to a limitation of representational techniques, such as the difficulties faced by early Renaissance surveyors on measuring the shape of streets and buildings, or is there perhaps a need to redefine the very subject matter of representation? The question that arises is therefore not only how an expansion of the capabilities of an architectural representation could take place, but furthermore, under the influence of the dominant scopic regimes, what do we in fact consider as physically *present* in order to re-present? The choice of what is made visible in architectural representation has been diachronically established according to a material criterion for the visual. On one hand, that which is tangible, quantifiable or, visually constant is regarded as legible and is therefore possible of being transcoded into the linear realm of the drawing. On the other hand, that which is not confined within the conscious capabilities of vision is rendered redundant. As Henri Bergson has put it "we look away", from movement as a manifestation of change and temporality.<sup>32</sup> The criteria of representation in architectural drawing are thus submitted to the criteria of materiality as expressed through a duration masked by constancy in the process of visual perception.<sup>33</sup> And indeed, the representational is inevitably visual due to its involving an act of reading, but does the represented need to be respectively 'scopic'?

Although rejecting hierarchies, Jay suggests that the scopic regime most 'in place' within modernity and its postmodern aftermath would be that of the Baroque.<sup>34</sup> Originating in seventeenth century art, Baroque emerged as a distinct reaction to Cartesian perspectivalism, opposing the linear, rationalist clarity of classicism with a plurality of forms and images that provoked the movement of the eyes and invited the agency of vision as a producer of meaning. Associated with the Portuguese *barocco*, from the Spanish *baruecca*, meaning "irregular pearl",<sup>35</sup> baroque proposed a rhetoric where images functioned as signs, and concepts were inextricably charged with visuality. This "madness of vision" as described by French philosopher Christine Buci-Glucksmann<sup>36</sup> promoted a space of visual multiplicity as opposed to an absolute space of universal vision.<sup>37</sup> Thus, it was equally not concerned with the notion of legibility as clarity of matter in the same way that the 'Art of Describing', emerging from the detailed veracity of Dutch painting was.<sup>38</sup> Standing for the odd or the peculiar, as opposed to the ideal, baroque seems to contradict the canonicity of form for the sake of the peculiar, that which was previously not simply excluded, but upon whose exclusion the validity of truth and beauty was previously dependent. The hermeneutic proliferation of meaning, the linguistic (post)structuralism of the image as expressed in twentieth century art from the Surrealists onwards appear to comply with the visual ideology of Baroque as the "palimpsest of the unseeable", in the words of Buci-Glucksmann.<sup>39</sup>

Where then does architectural representation stand with respect to its 'scopic' modalities? If the cartographic/geographic dualism – as discussed in *Instructions*, Chapter III – is considered as delineating the current paradigm of architectural representation, what could the representational regime pertaining to the current architectural discourse entail, as the plan remains the ubiquitous and eternal bearer of the image of the city? In an unprecedented dissemination of 'cartographic' imagery, the dweller of the world, rather than the city, is now no longer merely familiar and 'literate' with regards to reading the orthographic projection of the plan. Google Earth presents its users with the entirety of the globe on their screen, and with it the ability to zoom in from a deep space view to an elevation of a few meters above its surface. Officially aspiring to "organise the world's information and make it universally accessible and useful",<sup>40</sup> Google Earth has contributed to what Mark Dorrian describes as a "collective planetary unconscious".<sup>41</sup> Does it get closer –and at the same time farther– from 'holding', from being aware of the earth than this? It seemingly does, as Google Earth, has is gradually substituted

<sup>31</sup> De Certeau, 'Walking in the City', p.93.

<sup>32</sup> Henri Bergson, *Creative Evolution*, trans. Arthur Mitchell (New York: Henry Holt, 1911), p. 4. The awkwardness of visual perception towards movement the effects of which on theories of presence and perception have been evident since Ancient Greek Thought, is also pointed out by Jay. See Martin, *Downcast Eyes*, p. 24-25.

<sup>33</sup> For a discussion of the effects of constancy on vision see James Gibson, 'On Constancy and Invariance in Perception', in Gyorgy Kepes (ed.), *The Nature and Art of Motion* (New York: G. Braziller, 1965), pp. 60-70.

<sup>34</sup> Jay, 'Scopic Regimes', p. 19.

<sup>35</sup> *Ibid.*, p. 16.

<sup>36</sup> Christine Buci-Glucksmann, quoted in Hal Foster, *Vision and Visuality*, p. 19.

<sup>37</sup> *Ibid.*, p. 16-17.

<sup>38</sup> *Ibid.*, p 12.

<sup>39</sup> Quoted by Jay in *Ibid.*, p. 19.

<sup>40</sup> Quoted in Mark Dorrian, 'On Google Earth', In Mark Dorrian and Federic Pousin (eds.), *Seeing from Above: The Aerial View in Visual Culture* (London and New York: I.B. Tauris, 2013), pp. 290-307; p. 291.

**The Sky map:** The star constellations remain a character in the mapping of *Kaleidoscopic City*, acting as a counterpart of the 'earthly' attachments that architectural representations maintain.

by the more popularised version of Google Maps. Available directly on the browser of desktop, laptop computers as well as mobile phones and wearable smart-watches, Google Maps is the

number one go-to navigation tool for probably billions of users daily.

As Google Earth is giving way to more available Google maps, we move back from the simulation to the map. From the photograph to the linear orthogonal map combined with a 'photographic' oblique, as opposed to the original catoptric view, when one zooms in in "Earth View", meaning an aerial view similar to that of Google Earth – that being said, the "earth" part of this mode is more likely to refer to Google Earth rather than the Earth itself. But what is really new is the immersive effect of the Street View function, where the Google Street View car, posing as a contemporary descendant of the medieval odometer allows one not only to navigate as if 'da vivo' [fig. 15],<sup>42</sup> but also to navigate upon the 'footsteps' of the respective 'Google cartographer' as if driving down the photographed streets. Google Maps, taking the lead and data from the revolutionary Google Earth proposes an accumulation of varied visual modalities, an immersive multiple-view representation, where the 'institutional' recording systems are actively supplemented by the contributions of ordinary users themselves, embellishing the map with their own photos (following from Google Earth's Panoramio), as well as a variety of data from business reviews and advertisements to 3D models of buildings. The contemporary city dweller no more 'looks' with the eyes of the pedestrian 'flâneur', but with the camera of the Google Car. The popular notion of the map is thus reconsidered while acquiring again a widely used navigational role, closer to the original purpose of cartography as opposed to exhibitionist intentions of early urban representations, which were intended to declare the status of the rule and the majesty of the city. Yet, this map, collectively produced between the users and the corporation, is highly prescriptive, and most of the time remains panoptic for its own sake, in its rationally selected routes proposed to the user according to distance, traffic load and bus times.

Google Maps, making use of the vast amount of information and the connectivity afforded by the World Wide Web, represents the visual multiplicity of what the image of the urban has come to mean today through fairly conventional modes of representation, such as the orthographic plan, still photography and a virtual photographic reality whose effect can be considered as akin to a localised panorama. Bringing the user/reader of this 'mapping' in an oscillating relationship of distance and proximity to its object of representation, it still eliminates the intimacy necessary for the 'living eye'.<sup>43</sup> In the digital age, visibility shifts focus from the viewpoint of the 'hero', of the 'ideal one' as represented in Scottish philosopher and historian Thomas Carlyle's original coining of the term *visuality*,<sup>44</sup> to the viewpoint of the ordinary individual. Only the individual is now mediated by, and attached to a scopic regime that has become so closely embedded to their visual interface with the world, that it becomes hard to make out. This omnipresence of a system of representation that becomes so ubiquitous that it begins to approximate virtuality, allows a freedom for collective participation yet one that can only happen within specific guidelines. In this way, it substitutes totalism with a *holism*, which Dorrian describes as a "benign encompassing of difference rather than the negation of difference".<sup>45</sup> The abundance of participation, does not make up for the lack of plurality, as the result of strategic homogenisation.

Beyond the publicity and accessibility of Google, oligoptic representations – to borrow a term proposed

<sup>41</sup> Ibid., p. 291.

<sup>42</sup> The *odometer*, or *hodometer*, was a device known since antiquity, used for the measuring distances in relation to the number of full rotations of a wheel. In his treatise *On Architecture*, Vitruvius dedicates a distinct chapter to its presentation. Vitruvius, *On Architecture* (ca. 30 BC), trans. Richard Schofield (London: Penguin Books, 2009); pp. 300-302. This ancient device is assumed to have been also used by Alberti in its measurements for the *Descriptio de Urbis Romanae*. See Pinto, 'The Ichnographic City Plan', p. 35.

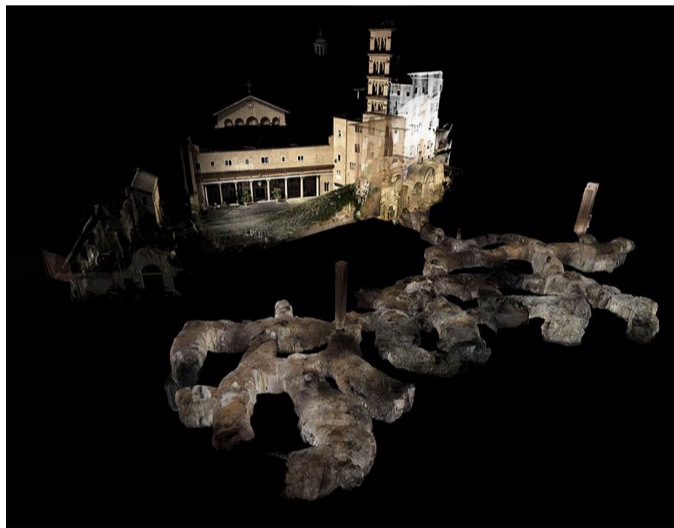
<sup>43</sup> Jean Starobinski quoted in Jay, *Downcast Eyes*, p. 19.

<sup>44</sup> The term *visuality* was originally coined by Thomas Carlyle with reference to his 'pictorial writing' where history was 'visualised' through the narration of heroes as 'agents of visibility.' See Nicholas Mirzoeff, 'On Visuality', *Journal of Visual Culture* 5(1) (2006), pp. 53–79.

<sup>45</sup> Dorrian, 'On Google Earth', p. 291.



[15] Google Street View, Looking towards the project's initial site in Marchmont, Edinburgh.  
[16] *Rome's Invisible City*, 'The temple of the Divine Claudius and its Underground Quarry'; ScanLAB (2015)



by Bruno Latour and Emilie Hermant –<sup>46</sup> such as the pioneering Amsterdam Real-Time (2001),<sup>47</sup> make use of information technology like GPS to present real-time data, bringing change into mapping, while the form of the city can by now be properly captured in three dimensions, by services such as Scan LAB’s large scale 3D scanning “capturing precisely measured, beautifully coloured digital replicas of buildings, landscapes, objects” as well as “events” [fig. 16].<sup>48</sup> So what remains to be discovered by architectural drawing in this age, when everything that can be *seen* can systematically become ‘visual’ and measurable, at the intersection of such multiple visual orders? Or rather, what more is there to be included? How do these modalities of looking at the world take effect within architectural drawing itself? How are the symbolic and semiotic actions of the drawing as looking at and as being looked at, informed by the collective voyeurism that regulates the image of the city? A voyeurism that begins to cultivate corresponding attitudes of exhibitionism, such as the addressing of the “extra-terrestrial” online viewer or the Instagram gentrification, of an aestheticized micro-urbanism. Is there any room left in the city’s utopia for the secondary scopic regimes emerging from a ‘visual-specificity’, or is this multiplicity of spaces limited by the laws of the market?

### III MATERIALITY OF THE VISUAL

If as Hal Foster posits, the purpose of the scopic regime is to fuse vision and visibility to the degree that they form a universal vision,<sup>49</sup> never before has this succeeded to the degree that is in effect now. This homogenisation is akin to the holistic definition of the world and the individual produced by corporations such as Google,<sup>50</sup> but it is also symptomatic of the embeddedness of the visual as virtual; as a visibility mediating between perception and reality, within a constructed unconscious that becomes not collective but mass, by substituting subjectivity for homogeneity. Thus, it is the proliferation of the visual, carried out in the postmodern through conditions such as Jonathan Beller’s ‘Cinematic Mode of Production’,<sup>51</sup> including both the ideology of cinema and its succeeding televised and digitised ‘relative’ media, that suggests not a hegemony of vision but an exquisite embedment of visibility and a consequent homogenisation of consciousness, which is carried out through the ‘techniques’ of vision. Compared to Jay’s proposed scopic regimes, and in particular the relevance of the Baroque to modern visual culture, the ‘cinematic’ appears to surpass the effects of the ‘scopic’ – even though Metz’s term was originally coined to describe the scopic effects particular to cinema.<sup>52</sup> In *Vision and Visibility* Foster proposes an ‘antidote’ to the homogenisation of vision as its “socialisation” – a reconquering

**The postcard:** Edinburgh is a popular tourist destination. Known as ‘The Athens of the North’ for its neoclassical heritage,<sup>55</sup> as a UNESCO World Heritage site, as Auld Reekie for its dark and (supposedly) ‘haunted’ medieval past, and as a festival city for the variety of events that it hosts over the Summer, it is a place where multiple identities converge that millions of tourists visit each year. The tourist becomes a character in *Kaleidoscopic City*, as a temporary inhabitant who often performs a detached ‘overview’ of the city within a short period of time, and one that is commonly either conditioned by ready-made impressions – such as the postcard or the predetermined views of walking and bus tours – or mediated by means of recording such as the photographic camera. In this way, s/he reflects on the image of the city as a collective commodity, informed by ready-made images and modes of urban experience.

of the agency of subjectivity. This suggests then the understanding of vision as an intersubjectivity that reveals the gaze as a dialectic rather than a regime.<sup>53</sup> The cinematic however, does not rely on looking as a discursive act, rather directly reaches consciousness by simulating it.<sup>54</sup>

In both its daily experience and in its representation the city is, as Louis Marin also notes, both seen and read.<sup>58</sup> With the

<sup>46</sup> Bruno Latour and Emilie Hermant use this to refer to places that maintain views of the city’s infrastructural ‘internal’ functions such as water services and traffic. Bruno Latour and Emilie Hermant, *Paris: Invisible City* (Paris: La Découverte-Les Empêcheurs de penser en rond 2006). <http://www.bruno-latour.fr/sites/default/files/downloads/> [Accessed 7 December 2011]

<sup>47</sup> “During two months, 75 volunteers were tracked by GPS in their everyday movements and routines around the city. These traces were then drawn as white lines over a black background. The resulting, animated map has a distinct look and feel of psychogeographic experience: it is not precise or rational, but expresses the intuitive and personal aspects of geography. It shows a city that does not consist of buildings, roads and water, but of the movement of its inhabitants. [...] Viewers of the map get involved in a mixture of aesthetic experience, identification and participation – but also a bit of voyeurism. In the installation and on the Amsterdam RealTime website, visitors can choose to browse and explore individual participants’ maps or to see the combined map as a whole”. Esther Polak, Jeroen Kee and Waag Society, ‘Amsterdam RealTime’ [installation], in *Maps of Amsterdam 1866-2000* (2001). <http://www.li-ma.nl/site/catalogue/art/17300#> [Accessed 20 November 2015]

<sup>48</sup> Founded in 2010 ScanLAB is a creative studio, pioneering in the area of large scale scanning. *ScanLAB Projects*, <http://scanlabprojects.co.uk/> [Accessed on 10 December 2015]

<sup>49</sup> “With its own rhetoric and representations, each scopic regime seeks to close out these differences: to make of its many social visualities one essential vision, or to order them in a natural hierarchy of sight”. Foster, *Vision and Visibility*, p. ix.

<sup>50</sup> This is not limited to services such as Google Earth, or in respect Google Maps, but it is also cultivated by the vast control over information that the corporation handles offering a sort of “augmentation of the brain” and, consequently the ‘self.’ See Mark Dorrian. ‘On Google Earth’, p. 291-293.

<sup>51</sup> Jonathan Beller, ‘KINO-I, KINO-WORLD: Notes on the Cinematic Mode of Production’, in Nicholas Mirzoeff (ed.), *The Visual Culture Reader: Second revised edition* (New York and London: Routledge, 2002), pp. 60-85.

<sup>52</sup> The term first appears in the subheading ‘The Scopic Regime of the Cinema’. Although Metz does not limit the idea of the scopic regime to cinema, it is in his discussion on the “signifier of cinema” that he first makes use of the term. Metz, ‘The Passion of Perceiving’, p. 61.

popularisation of the city map, the supposed scopic and representational regimes that come to ‘collide’ in representation are not only institutional but also individual, and in that sense not only totalising but also singular, albeit, within the cinematic the singular is often overtaken by the holistic. As the city is read, as it is enunciated in its utopic *interspatiality*, architectural design is not defined, but certainly conditioned by the scopic regimes that infiltrate architectural representation. This infiltration occurs from within architecture and the popular culture, the representational sophistication of which has been accelerated by the dissemination of technologies that are entailed in the cinematic. Conventional modes of architectural representation evoked an issue of translatability between the drawing and the building. Yet, considering the abundance of representations through which the city is – particularly within the cinematic/digital culture – experienced and consumed, what kind of ‘transaction’ emerges between the drawing and the city, as a space of not only building but also dwelling? If the map represents the production of the ‘discourse’ of the city, which is produced intersubjectively across the physiological and the psychological, and at the intersection of the universal and the singular, how does this performance of sight, as discursive enunciation of the urban, register into another visual performance, that of drawing?

The characteristic that has identified vision so extensively with human perception on the one hand, and constituted it so operational to the production of ideology on the other, is exactly this discursive function, which is expressed not only with regard to the ways in which sight engages with the world, but also with regard to its ability to project the mental back to the material. As Robert Rivlin and Karen Gravelle note:

The ability to visualize something internally is closely linked with the ability to describe it verbally. Verbal and written descriptions create highly specific mental images [...]. The link between vision, visual memory, and verbalization can be quite startling.<sup>59</sup>

It is this association between the visual and the linguistic, as a concrete articulation of the internal workings of the mind that raises the stakes of vision – along with hearing – among the other senses.

In the essay the ‘City in its Map and Portrait’,<sup>60</sup> Louis Marin underlines the dual character of the cartographic image through the paradigm of the city portrait. The notion of the portrait in urban representation is most commonly associated with the ‘perspective plan’, later known as bird’s eye view, the earliest example of which is considered Jacobo de Barbari’s ‘View of Venice’ (1500) [fig. 17]. Although there has been no evidence that such representations were based on measured surveys rather than mere impressions,<sup>61</sup> the perspective plan marks the move of urban representations from a symbolic depiction of the city as ideal, to the function of map as a record concerned with the specificity of the city’s geographical and manmade characteristics,<sup>62</sup> as well as the combination of a totalising ‘all-encompassing’ resemblance with an abstraction that brings urban representation from chorography closer to the function of cartography.<sup>63</sup> According to Marin, the concept of the portrait primarily suggests this abstraction – the selective representation of traits, which is however founded on the truth value of individuality: the city is portrayed as an individual and the map is both a presentation of the ‘pro-trait’ but also a pro-ject. The city portrait is therefore, according to Marin, characterized by a double meaning of intentionality and recollection:

A portrait, a city map, is thus at once the trace of a residual past and the structure for a future to be produced.<sup>64</sup>

The expression of this twofold nature of the city portrait proceeds, according to Marin, through the two

<sup>53</sup> Foster, *Vision and Visuality*, p. ix.

<sup>54</sup> Similar effects can be considered also with regard to photography, through Walter Benjamin’s concept of the “optical unconscious”. Benjamin, Walter, ‘Little History of Photography’, in Michael W. Jennings, Howard Eiland, and Gary Smith (eds.), *Walter Benjamin: Selected Writings Vol. 2 1927-1934*, trans. Rodney Livingstone (London and Cambridge Mass.: Harvard University Press, 1999), pp. 507-530; p. 511-512.

<sup>55</sup> Cliff Hague and Paul Jenkins, ‘The changing image and identity of the city in the 21st century: “Athens of the North” or “North of Athens”’, in Brian Edwards and Paul Jenkins (eds.), *Edinburgh: The Making of a Capital City Brian Edwards*. (Edinburgh: Edinburgh University Press, 2005), pp. 217-230; p. 218.

<sup>56</sup> In the patent granted to him in 1787, Barker describes the spatial arrangement of the exhibition as an intrinsic part of the Panorama’ “entirely new contrivance or apparatus”: “my invention, called *La Nature à Coup d’Œil*, is intended, by drawing and painting, and a proper disposition of the whole, to perfect an entire view of any country or situation, as it appears to an observer turning quite round; to produce which effect, the painter or drawer must fix his station, and delineate correctly and connectedly every object which presents itself to his view as he turns round [...]. There must be a circular building or framing erected, on which this drawing or painting may be performed; or the same may be done on canvas, or other materials, and fixed or suspended on the same building or framing, to answer the purpose complete. It must be lighted entirely from the top, either by a glazed dome or otherwise, as the artist may think proper”. *The Panorama*, <http://www.edvec.ed.ac.uk/html/projects/panorama/barker.html> [Accessed 15 January 2016].

<sup>57</sup> Angela Miller remarks the extent of its popularity reflected on an estimated number of three hundred giant productions, and an audience of hundreds of millions, in the years between 1870 and the appearance of cinema. Angela Miller, ‘The Panorama, the Cinema

**The Panorama:** Edinburgh is the birthplace of the Panorama, which was patented in 1796 by Irish painter Jonathan Barker, based on his 360 degrees painting of the view from the top of Calton Hill [fig. 18]. Presenting the viewer with immersive panoramic views of landscapes, cityscapes and historical events, which were exhibited in specifically designed circular buildings,<sup>56</sup> the Panorama became a popular form of mass entertainment in the nineteenth century [fig. 19].<sup>57</sup> In its specific staging of the viewer within rather than without the view, the Panorama offered for the first time the experience of a mass mediated virtuality, where the subject was displaced in space and time from its surroundings into a hyperrealistic illusion, where the pursuit of a realistic image was fulfilled through a constructed virtuality. The image of the real was there conditioned through what Otto describes as “an observation of observation”, where subjectivity was dispersed between the viewer and the spatial arrangement of the visual perception as a kind of theatrical event, as well as the ‘first-order’ observation of the artist.

As Miller states, the Panorama foreshadowed the mass mediated, spatiotemporal illusion of cinema and the modernist alienation from the real that it suggests. The Panorama thus stands in the Kaleidoscopic City for the composite immersive mediated view, which can be today found not only in cinema but also in digital environments such as Google Earth’s Street View. As both these latter instances rely on the recomposition of stills (cinema in a sequential/temporal and Street View in a kinetic/spatial manner) my camera becomes the character that refers to the panorama in Kaleidoscopic City. The distinct spatial arrangement of the Panorama as “the observation of observation”, is transposed into the suturing of the stills.

the result of the consecutive filtering of the original through not only a double ‘vision’ (towards the city, and towards the representation of the city), but also through the regimes that regulate both the understanding of presence within the referent and within the representation. There is therefore involved, in this consecutive ‘looking’ a cinematic jolt, a seeing interval between what appear as discrete conditions, which seems to occur as visual perception mediates between experience (immediate and remembered), and the image of graphic representation. Hence, although it is a re-presentation rather than a reconstruction that the drawing pursues, what becomes defining of the degree of the discrepancy, from the intentionality of abstraction to the inconsistency of misrepresentation, seems to be the intermediate ‘movement’ of its visual perception.

In Plato’s dialogue *Cratylus*, Socrates appears to propose the etymology of *anthropos* (ἄνθρωπος), the Greek word for human, as “*anathrôn ha opôpe*”: he who reflects on what he has seen.<sup>65</sup> Although this etymological analysis is commonly challenged, Socrates’ interpretation points out exactly to the close relation between sight and intelligence. In *Matter and Memory*, Henri Bergson, examines this transition from the physicality of matter to the mental image of perception, pointing out the degree of consciousness – or rather unconsciousness – of human perception as the driving force of a perpetual becoming:

essential modes of enunciation, description and narration, which reflect respectively the iconic and the symbolic functions of signification. Signification occurs in this case in the experience of the map as a visually received object. As Marin states, both modes of expression involve a practice of observation. Description refers to an external, ‘synoptic’ gaze, that reflects a “stable order of places”, while narration regards a moving gaze, working through space and itineraries”. The ‘pro-trait’ in the map is that which is being put forward, ‘pro-duced’, extracted or abstracted by representation, from the individual portrayed. The map then presents both the city and its projection of the city, which is experienced again from within the drawing through a sequence of interrelated gazes. This movement between what is present and what is represented is therefore partly voluntary –an instrumental abstraction, and partly an omission, which is

and the Emergence of the Spectacular’, *Wide Angle* 18 (2) (1996), pp. 34-69; p. 36. [http://muse.jhu.edu/journals/wide\\_angle/v018/18.2miller.html](http://muse.jhu.edu/journals/wide_angle/v018/18.2miller.html) [Accessed 15 January 2016].

<sup>58</sup> Louis Marin, ‘The City’s Portrait in its Utopics’, in *Utopics: Spatial Play* (New Jersey: Humanities Press 1984), pp. 201-232; p. 203.

<sup>59</sup> Rivlin, Robert and Karen Gravelle (1984). *Deciphering the Senses: The Expanding World of Human Perception*.

<sup>60</sup> Louis Marin, ‘The City in its Map and Portrait’, in *On Representation* (Stanford University Press, 2001), pp. 202-218.

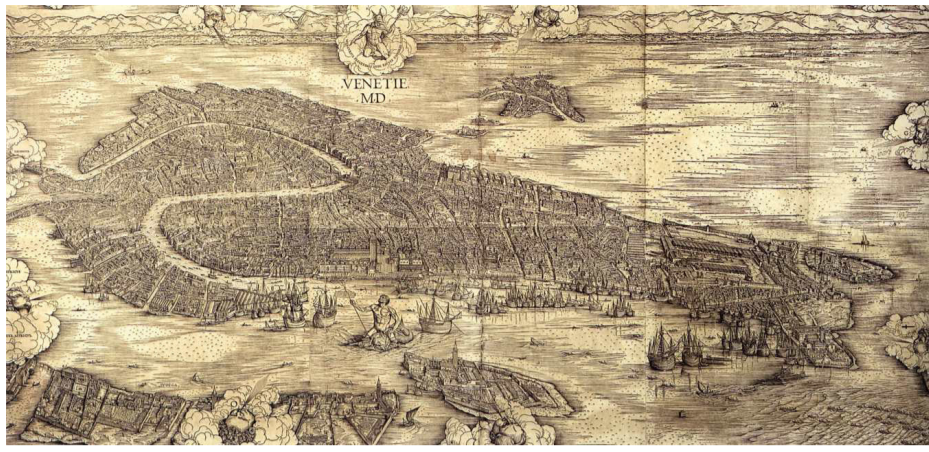
<sup>61</sup> Ballon et al, ‘Portraying the City’, p. 690.

<sup>62</sup> As Juergen Schulz points out, that maps earlier than 1500 were mostly concerned with “*the representation of religious mysteries and history, rather than the recording of precise geographical facts*”. Juergen Schulz, ‘Jacob de Barbari’s View of Venice: Map Making, City Views, and Moralizing Geography before the year 1500’, *The Art Bulletin* 60 (3) (1978), pp. 425-475; p.446.

<sup>63</sup> The concept of chorography and the ambiguities surrounding its description by Ptolemy against the lack of any concrete paradigms in his *Atlas*, triggered the controversy around chorography as a ‘true likeness’ based on a sensual subjectivity, being inferior to the intellectual and mathematical value of geography, and hence suggesting a distancing between chorography as the representation of ‘localities’ to cartography, and particularly cartography as understood today, functioning between the symbolic and the figural, and as it emerges in contemporary cartographic strategies in architecture. On a discussion around chorography in the Renaissance, see Lucia Nuti, ‘Mapping Places: Chorography and Vision in the Renaissance’, in Dennis Cosgrove (ed.), *Mappings* (London: Reaktion Books, 1999), pp. 90-108; p. 91.

<sup>64</sup> Marin, ‘The City in its Map and Portrait’, p. 205.

<sup>65</sup> Plato, *Cratylus* (ca. 360 BC), trans. David Sedley (Cambridge: Cambridge University Press, 2003).

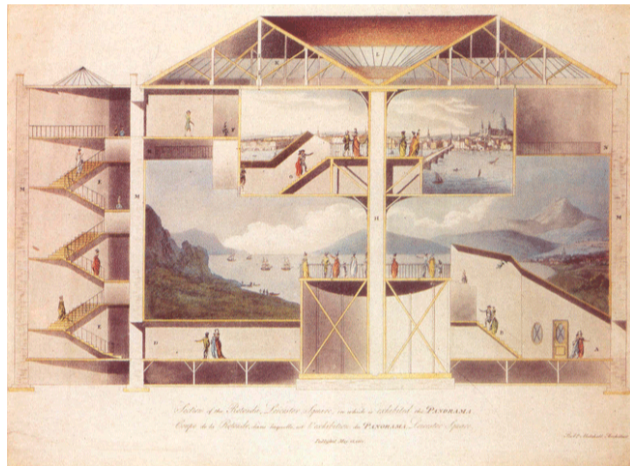


[17] *View of Venice*, Jacopo de Barbari (1500)

[18] *Panorama of Edinburgh from Calton Hill* (extract, Jonathan Barker (1789-1790)

Jonathan Barker (1789-1790)

[19] Robert Barker's *Leicester Square Panorama*, London (1793)



**The bird's eye view:** In the oblique aerial vista of the bird's eye view, the constitutional human meets the unpredictability of the animal. If there is a bird looking at Edinburgh, it must be a seagull. The birds, flying in from the Firth of Forth on Edinburgh's North, can be found all over the city, yet often rest on high vantage points, from street lamps and heads of statues, to the cliffs of Edinburgh Castle Rock.

[...] it is a mistake to reduce matter to the perception which we have of it, a mistake also to make of it [matter] a thing able to produce in us perceptions, but in itself of another nature than they [our perceptions].<sup>66</sup>

Bergson distinguishes the actuality of matter, from the virtual image of perception. However, he does not propose a clear opposition between the physical and the mental –a dualism that could be perhaps transposed to the visual and the intellectual. By reassessing the “common sense” meaning of the image, an image that he places half way between the idealist representation and the realist thing, between pure idea and strict geometry, Bergson defines matter as an aggregate of such images.<sup>67</sup> In Bergson's interest the concern about the material and the mental is transposed to the relation between body and mind. Perception and material reality are bound together through the body as a centre of action, establishing a materiality of perception. In turn, perception as a kind of action itself, is hence understood as continuous with images of matter.

Bergson here explains the transition from matter to perception not as a change of kind but of degree.<sup>68</sup> Space is then understood as oscillating between the physical and the mental by means of the image, and the concept of materiality expands, capable of including all the elusive, illegible, intermediate states of thought and *matter*, that is, those states of perception which cannot be explicitly categorised neither as one nor as the other: the so-considered process of ‘translation’ from the real to the representation and, conversely, from the representation to the real. All facets of space are therefore considered material as all facets of matter are, according to Bergson, considered as *images*. In this continuity of matter and perception, the human body is thus itself a kind of *privileged image* that deals with two types of *movement*: an internal movement that refers to the mental, and the external bodily movement that refers to the relationship with its surroundings and the interaction with other images. Consequently the animate constitutes a form of ‘living matter’, as through its movements it conditions and affects the image of the space around it, in Bergson words, “as though by a turn of a kaleidoscope”.<sup>69</sup>

By discussing perception and matter through the concept of the image, Bergson's approach may appear to suggest a primacy of the visual. However, it is clear that he does not limit the image to the visual, nor the imaginary. Instead of a visual manifestation of matter, what Bergson asserts is the participation of the human body in matter, what he regards as *pure perception*, and at the same time, the multiplicity of conscious perception which he identifies with memory. Consciousness is then regarded as the degree of difference between matter and memory, between perception as description and perception as narrative. What the concept of the image as such offers, is the idea of multiplicity, of both the actual and the virtual as an accumulation of images, the montage of which is always the result of a movement: a transference that represents a duration.

[...] in pure perception, the perceived object is a present object [...] Its image then is actually given [...] But with memory it is otherwise, for a remembrance is the representation of an absent object.<sup>70</sup>

<sup>66</sup> Henri Bergson, *Matter and Memory* (1896), trans. Nancy Margaret Paul and W. Scott Palmer (London: George Allen and Unwin, 1911), p. 1.

<sup>67</sup> *Ibid.*, p. xvii.

<sup>68</sup> “When a ray of light passes from one medium into another, it usually traverses it with a change of direction. But the respective densities of the two media may be such that, for a given angle of incidence, refraction is no longer possible. Then we have total reflexion [...]. Perception is just a phenomenon of the same kind [...] there is for images merely a difference of degree, and not of kind, between being and being consciously perceived. *Ibid.* p. 12.

<sup>69</sup> “[...] my body. This image occupies the centre; by it all the others are conditioned; at each of its movements everything changes, as though by a turn of a kaleidoscope”. *Ibid.*, p. 12.

<sup>70</sup> *Ibid.* p. 236.

It appears then, that the transference of the 'original' to representation is also concluded in a dual movement: an externalized physical interaction and the internalized mobility of the mental image, which through the concept of the image as explained by Bergson, remains both visual and speculative. To return thus to the image of the city as a construct of architectural representation, a movement from matter to memory, is to return to an image of knowledge of the city as a recollection, which is enriched by both the conscious and the unconscious. This process of suturing the two that is entailed in human perception, is what Bergson has paralleled to an internal 'cinematograph': a mechanism that does not translate, but projects the heterogeneous continuity of duration to discrete spatialized instances, only in order to mentally produce out of them a new continuity. "Such is the contrivance of the cinematograph. And such is also that of our knowledge",<sup>71</sup> writes Bergson. But this, as he remarks, is an abstraction that seeks to rationalise our understanding of the multiplicity of presence, by rendering the kinetic process visible as a static object.

In the same way, in a 'cinematic mode of visibility', narration is provided by a constructed 'cinematography' that simulates and thus produces consciousness. Although then this 'newly' conquered comprehension of a vision and space in motion of modernity that Bergson's theory of duration foreshadowed, has since continued to expand in parallel to practices of spatial representation such as digital modes of visualization, what remains critical is the importance of architectural representation as a visual language free of presuppositions and thus able to both look and speculate, rather than simply simulate. If the cinematic in urban representation compromises the agency of perception by being too akin to the mechanisms of human perception, what then could the paradigm for a representation of the urban be? Normative architectural representations, have traditionally proposed a 'material' criterion for the visual, and in return a visual criterion for the material, advocating to the establishment of presence within, and consequently without representation –as the representation has been seen to propose a validation for reality. Yet, what is excluded is not merely the unseen as the not constant, but also the unseen as the intersubjective gaze that will constitute representation as a collective terrain of consciousness rather than a ready-made virtuality. This constitutes a kind of 'visual-specificity', which may not be 'material', yet is visually materialized through representation. Instances of this 'visual-specificity' can perhaps be traced in the cartographic practices as discussed by Mark Dorrian,<sup>72</sup> where representational 'pre-existents' pose as new sites, new contexts, or new origins of presence, enriching the referent of the representation with the multiplicity of scopic orders that 'obscurely' condition its understanding.

<sup>71</sup> Bergson, Henri, *Creative Evolution*, trans. Arthur Mitchell (New York: Henry Holt, 1911), p. 306.

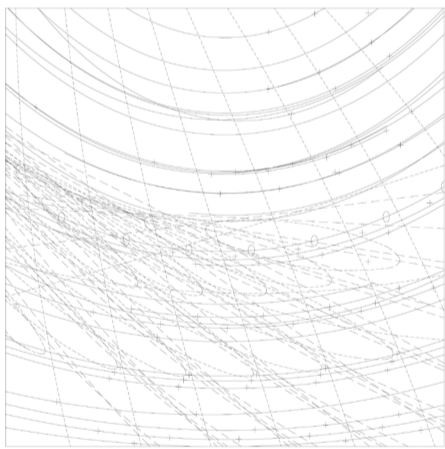
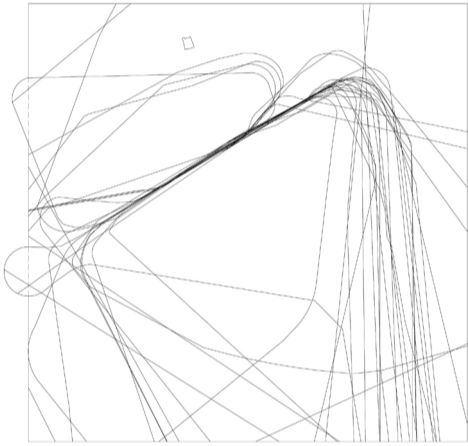
<sup>72</sup> Mark Dorrian, 'Architecture's Cartographic Turn', in Frederic Pousin (ed.), *Figures de la Ville et Construction des Savoirs* (Paris : CNRS Editions, 2005), pp. 61-72. See also *Instructions*, Chapter III.

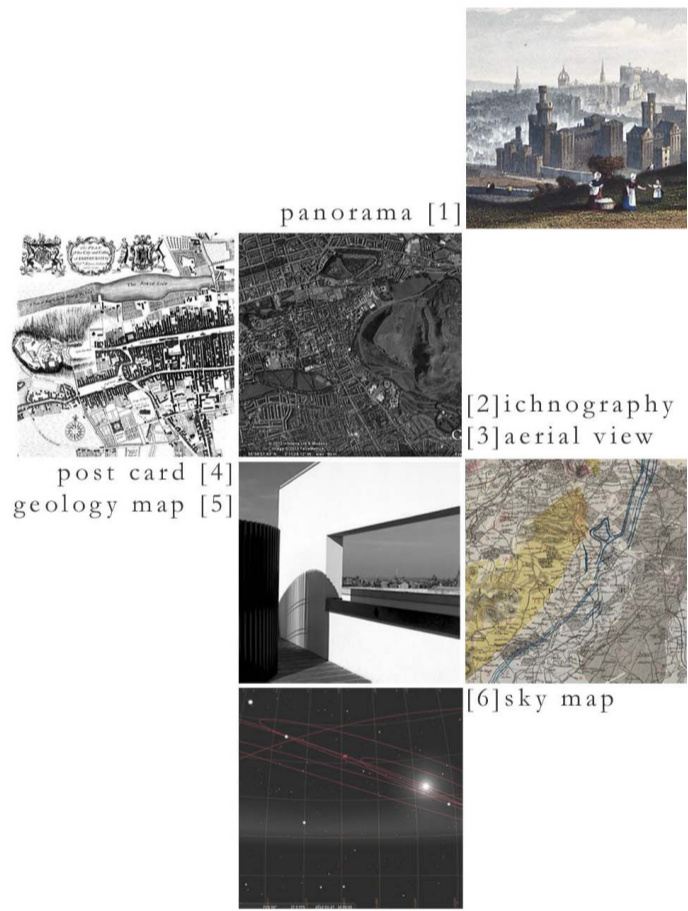
The six characters selected were anchored to interpretations of the modalities of observation involved in a range of representational modes. In congruence with the revision of the scope and codes of representation that had been established in WL/LN, these modes of representation were, with regard to their scope, not limited to the strictly 'architectural' but expanding attention from ground to air, ranging from the subterranean to the stellar, and from the individual to the animal and the institutional.<sup>73</sup> The geological map, aerial view, the sky map, the postcard, the panorama and the bird's eye view, posed as means to interrogate the city as a place of congested visualities and, as a consequence, subjectivities. The [1] the terrain of the city, [2] the aeroplanes, [3] the star constellations, [4] the tourist, [5] the seagull, and [6] my camera stood as operators/actors of these visual orders in the drawing.

The distinct modes of representation were thus introduced through the specific modes of action of the respective characters, into the continuous space of the drawing. This was done following the practices developed in WL/LN, through planar mappings of sequences of instances, which were acquired either through personal observation by means of the camera (in the case of the tourist, the seagull and the camera) or through oligoptic mappings and software (such as Stellarium in the case of the stars, Flight Radar for the planes, and Geology of Britain Viewer for the terrain).<sup>74</sup> Each character thus, became much more than themselves. In experiencing the scale of the city, they were charged with the respective visual and material culture that was related to the modalities of experiencing and, more specifically, of looking at the city, implied in the corresponding modes of representation. The mappings of the characters were laser-engraved and allocated in groups upon six layers of clear acrylic, which similarly to the arrangement of WL/LN added a third dimension of relevant depth to the installation. Seemingly separated between different heights, but in reality brought together through the transparency and reflection of this series of acrylics, acting as 'lenses', these lines remained almost immaterial, hovering in the air rather than being confined to the two dimensions of a sheet of paper. The specificities of a number of distinct scopic regimes that acted upon the city, thus informed the codes of the collective representation. Nevertheless, as each one of these visual orders was equally considered in the 'writing' of the drawing' it became relevant that each one could be respectively involved in its reading.

<sup>73</sup> A similar approach, expanding the attention of urban representation from the mere observation of the ground, can be found in the drawing 'Composite City', compiled by students of the 2012-2014 M.Arch. course *Lisbon-Tagus: Building in the City of Unsure Ground*, led by Suzanne Ewing at the Edinburgh School of Architecture and Landscape Architecture. This composite mapping included aqueous and airborne conditions on representing Lisbon. 'Composite City'. See Suzanne Ewing (curator), *Saltcities: Drawing the City of the Unsure Ground, Shrinking Cities/Expanding Landscapes*, <https://expandinglandscapes.wordpress.com/exhibitions/saltcities/>. [Accessed 10 September 2016].

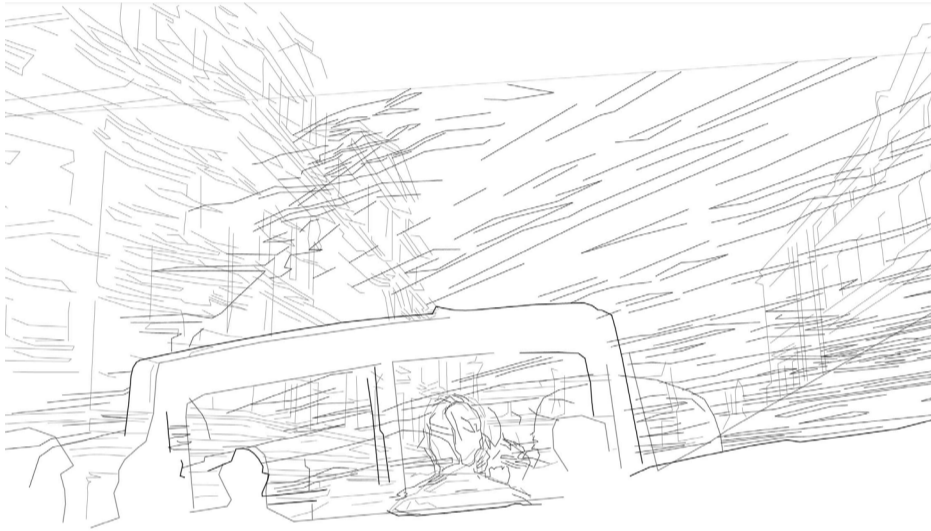
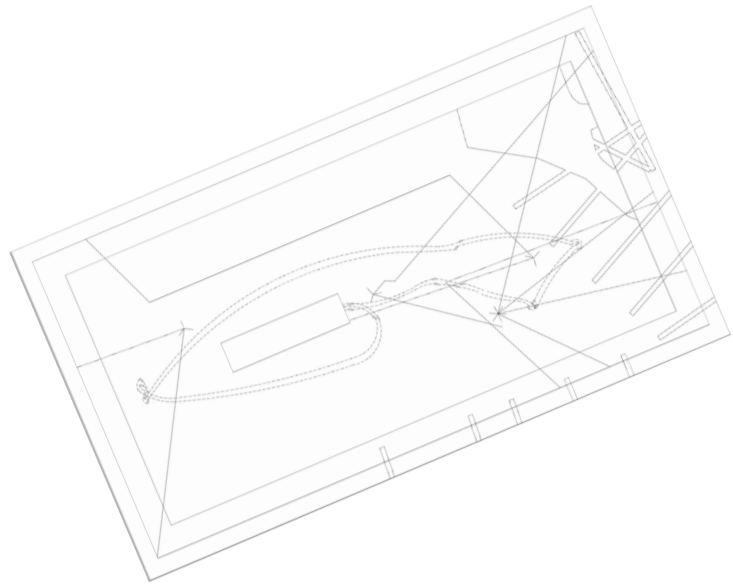
<sup>74</sup> Stellarium, [http://www.stellarium.org/en\\_GB/](http://www.stellarium.org/en_GB/) [Accessed 15 January 2015], *Flight Radar*, <https://www.flightradar24.com/55.63,-1.15/6> [Accessed 10 January 2016] and British Geological Survey, Geology of Britain Viewer, <http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html> [Accessed 10 January 2016].

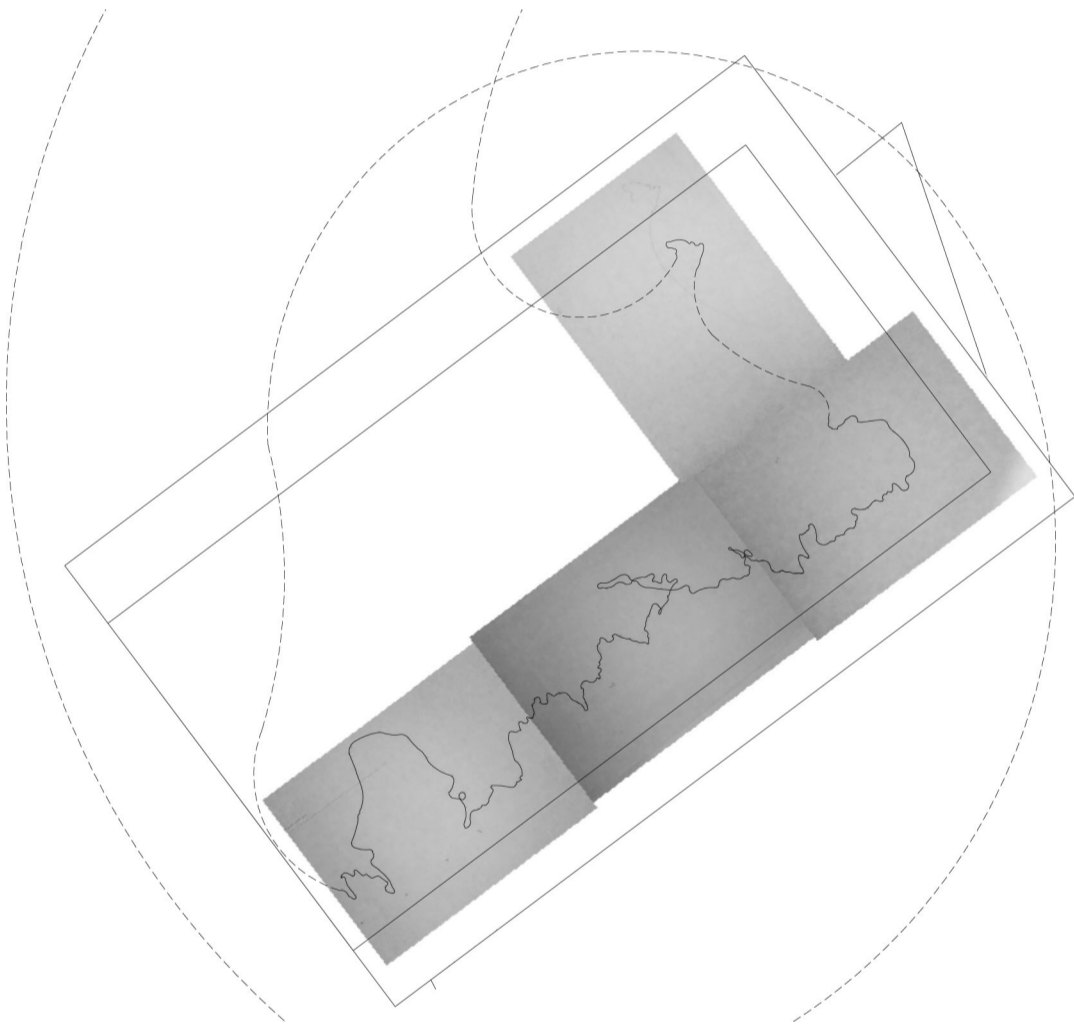




[G3] *Site II*: Characters' Survey  
[top to bottom]  
Terrain  
Planes  
Star Constellations

[G4] *Site II*: Characters and Representational Regimes





[G5] *Site II*: Tourist at the Hutton Roof, National Museum of Scotland

[G6] *Site II*: Tourist in Bus, Transcribed Frame

[G7] *Site II*: Tourist on Bus, Sequence

[G8] *Site II*: Seagull at the Meadows, Plan



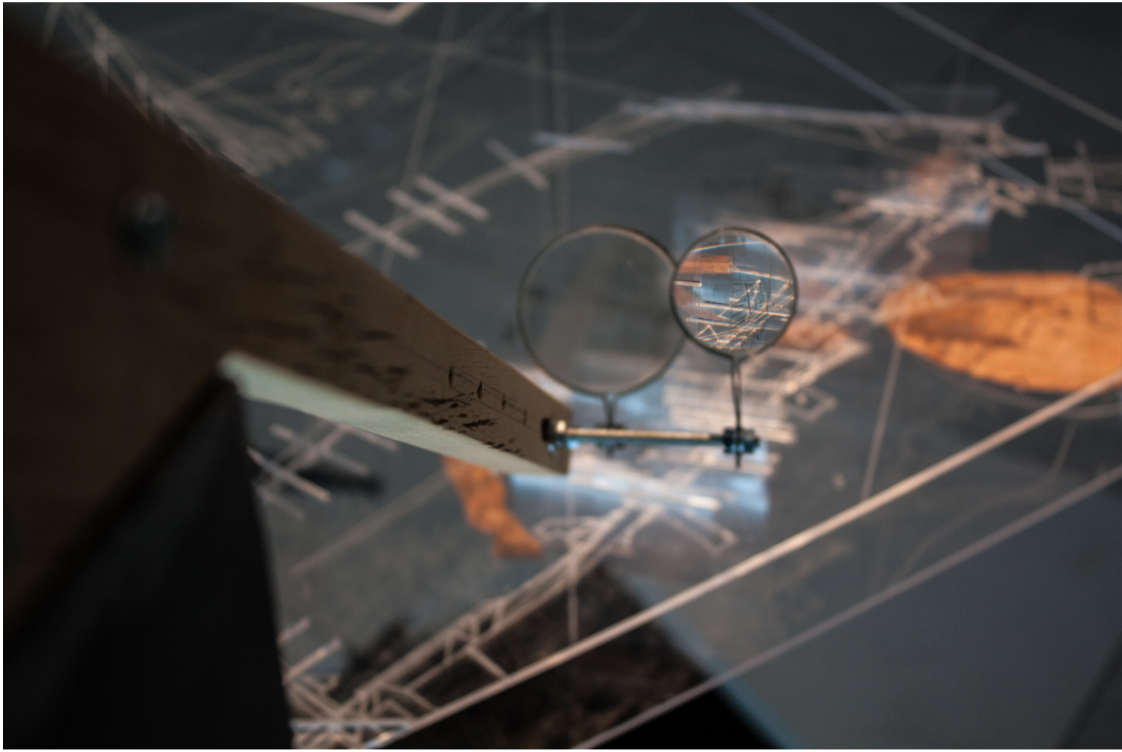


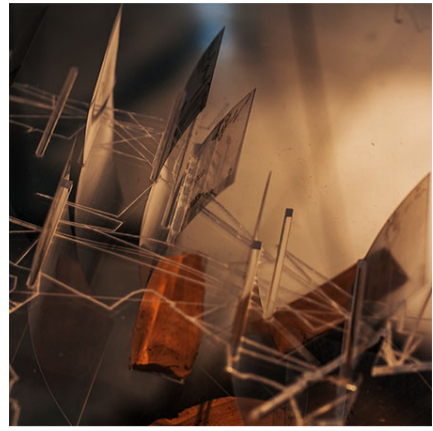




[G11] *Kaleidoscopic City*: Looking at the Mirror from the Observatory

[G12] *Kaleidoscopic City*: The Mirror through the Stars and Planes plates





[G13] *Kaleidoscopic City*: The Kaleidoscope looking at the Tourist's frames, embedded upon the City plate

[G14] *Kaleidoscopic City*: The Terrain extending to the East of the site

[G15] Tourist Frames detail with fragments of the Terrain

#### IV TOWARDS AN IMAGE [OF THE 'GOOD' KIND]

One of the optical devices that emerged from the experimentations with vision of the 19<sup>th</sup> century was the kaleidoscope. In 1814, Scottish scientist Sir David Brewster, was performing an experiment on the polarization of light. While placing a series of reflecting plates in a parallel array he noticed the phenomenon of the multiplication of an image around a centre. This accidental observation led him to the development of the optical device, which he would consequently describe as “an optical instrument for creating and exhibiting beautiful forms to look at”.<sup>75</sup> Used as an object of what Brewster defined as ‘rational amusement’, the kaleidoscope was intended as a mechanical means of artistic production:

It will create in an hour, what a thousand artists could not invent in the course of a year; and while it works with such unexampled rapidity, it works also with a corresponding beauty and precision.<sup>76</sup>

According to Brewster, the success of the kaleidoscope lay in two principles: the perpetual variety of images offered by the mobilisation of the instrument, and the undeniable symmetry of the images produced. On the one hand, due to its mobility, the kaleidoscope offered an inexhaustible supply of new images as even a minute movement of the device sufficed for the substantial change of the whole of the image. On the other hand, this abundance of possibilities was according to Brewster only rendered ‘beautiful’, due to the order imposed by symmetry. In reality, what the kaleidoscope effectively did was to create new images through the multiple reflection of pre-existing objects: disparate, seemingly useless fragments of matter such as pieces of glass, cloth, etc. The kaleidoscope was therefore, according to Brewster’s descriptions, a device that produced *order* out of the phenomenally disorderly image of the objects it contained. An order that, derived from the optical structure of its mirrors, provided an ‘agreeable’ image. It was therefore essentially meant to be a *beautifying* optical filter.

In contrast to Brewster’s fascination with the visual order afforded by the symmetry of the structure, in the ‘Painter of Modern Life,’ the kaleidoscope serves his contemporary Charles Baudelaire as a paradigm for the multiplicity afforded by its mobility, in order to celebrate the dynamic experience of the modern city as emerging from the conscious interaction of humans with their urban surroundings:

[...] the lover of universal life enters into the crowd as though it were an immense reservoir of electrical energy. Or we might liken him to a mirror as vast as the crowd itself; or to a kaleidoscope gifted with consciousness, responding to each one of its movements and reproducing the multiplicity of life and the flickering grace of all the elements of life.<sup>77</sup>

Baudelaire’s visual metaphor for the *flâneur’s* engagement with the city, on one hand, seems to point out a certain primacy of the visual. On the other, it also excludes from the kaleidoscope, by pointing out the necessity of its addition, the element of consciousness. Baudelaire’s notion of the kaleidoscope is in that sense very similar to that of Bergson’s:

[...] the mechanism of our ordinary knowledge is of a cinematographical kind.

Of the altogether practical character of this operation there is no possible doubt. Each of our acts aims at a certain insertion of our will into the reality. There is, between our body and other bodies, an arrangement like that of the pieces of glass that compose a kaleidoscopic picture. Our activity goes from an arrangement to a re-arrangement, each time no doubt giving the kaleidoscope a new shake, but not interesting [*sic*] itself in the shake, and seeing only the new picture. [...] we may say, if we are not abusing this kind of illustration, that the cinematographical character of our knowledge of things is due to the kaleidoscopic character of our adaptation to them.<sup>78</sup>

The kaleidoscope models human perception as agent of a wilful multiplicity, where the body stands

<sup>75</sup> Hence the neologism deriving from Greek words *kalos* (κάλος), meaning *beauty*, *eidos* (εἶδος) - form and *skopeo* (σκοπέω-ώ), meaning *to see*. David Brewster, *The Kaleidoscope: Its history, theory and construction* (London: John Murray, 1858), p. 1.

<sup>76</sup> *Ibid.*, p. 134-136.

<sup>77</sup> Charles Baudelaire, ‘The Painter of Modern Life’ (1863), in Jonathan Mayne (ed.), *The Painter of Modern Life and Other Essays* (London: Phaidon Press, 1995), pp 1-41; p. 9.

<sup>78</sup> Bergson, *Creative Evolution*, p. 305.

<sup>79</sup> *Ibid.*, p. 304.

<sup>80</sup> Catherine Ingraham, *Architecture and the Burdens of Linearity* (New Haven and London: Yale University Press, 1998), pp. 114-147. Ingraham’s idea of the architectural lament is also discussed in *Speculum*, ‘To Draw a Line’.

<sup>81</sup> Vitruvius’ *On Architecture* [*De Architectura*, ca. 30 BC], is the first architectural rule book known today, which distinctively suggested the symmetry and proportions of the human body as a paradigm for the achievement of *venustas* (beauty) in architectural design, compiling an essential triad of qualities completed by *firmitas* (solidity) and *utilitas* (usefulness). Vitruvius, *On Architecture* (ca. 30 BC), trans. Richard Schofield (London: Penguin Books, 2009), p. 19.

<sup>82</sup> On the discussion of origin and geometric precedent as a factor of integrity to architecture’s modes of design and representation see the *Speculum*, ‘To Draw a Line’.

in place of the ‘disorderly’ debris of the kaleidoscope. This multiplicity is however revealed only in the resulting ‘image’ rather than the energy of the shake, through a cinematographic concealment of becoming into distinct states – that is, distinct images. But if ‘will’ is involved in the shake, what remains unconscious, as Baudelaire’s metaphor shows, is the ways in which the reordering, ‘the re-arrangement of the arrangement’ occurs. That is, the visual isolation of the image from its producing action. This philosophical toy, illustrates then, that as much as this effect of reordering is a construction, it is equally an often unconscious necessity for our inherent difficulty in grasping the fluidity of becoming. As Bergson notes, this “trick” through which perception functions, which is a kind of fixing, is the same trick of language.<sup>79</sup> The denial, the concealment of this trick, puts us then in a constant state of what Catherine Ingraham describes as *lament*,<sup>80</sup> we are constantly unaware of the abstraction involved in the ‘image’ of our very own perception.

In the kaleidoscope, the understanding of a geometric order as a criterion of rightness and beauty reflects Brewster’s influence by a classicist notion of symmetry. Yet, this indeed ocularcentric notion of geometry as a rationalism of form is hardly strange to architecture. Visually it is of course related to Cartesian thought and the rationalising of form and perception through perspective, yet that is not its beginning. From the outset, architectural historiography has been laden with rules and orders trying to codify the principles of a spatial order for both the city and its architecture, at least since Vitruvius’ proposition of *venustas* (beauty) as the product of symmetry and the proportions of the human body (ca. 30 BC).<sup>81</sup> Architecture has always sought its ‘proper’ origin and found its scientific integrity, as we have seen in ‘To Draw a Line’ through Werner Oechslin and Catherine Ingraham, within the reason of geometry, both on the level of the sensible (material) and the intelligible (mental).<sup>82</sup> Vignola’s *Canon of the Five Orders of Architecture*, as a Renaissance continuation of Vitruvius’ work, is also a great example of how a set of mathematical and geometrical rules of harmony was carried through to an architectural aesthetics that effectively defined the image of cities up until the advent of modernity.<sup>83</sup> Architecture has consistently served as the means of introducing a rational order upon erratic nature, not strictly, but very often on visual terms. Thus, in the reading of the city, it is reasonably the ordered constant of architecture that is favoured as a means to comprehension. The figure-ground paradigm exalts the primacy of the figure of the built form against the ground, which derives as its negative, while even the term ‘ordnance survey’, the official surveying authority of our environments, reminds the concept of an existing order. This order is not only related to an understanding of architecture as *ordonnance*,<sup>84</sup> but is also largely based on the role of drawing as itself a *viewing device*, traced to the origins of architectural survey as military operation, defining and bringing into visibility fortifications and topographical elements related to the arrangement of warfare.

In contemporary urbanism, aside from the strict geometric form of planning propositions such as Le Corbusier’s conceptual *Ville Radieuse* (1924), or the real metropolis of Manhattan, the concept of a visual order as a criterion of a ‘desired’, legible, *image* emerges in Kevin Lynch’s writings on the *Image of the City*. Lynch’s research sought in 1960 to put critical pressure on the effects of modernity on American cities. Lynch proposes the idea of a ‘clear image’ as crucial to navigating and wayfinding in the city, but most importantly he deems that it “may serve as a broad frame of reference, an organizer of activity or belief or knowledge”, which he considers capable of constituting the city “a useful basis for individual growth”.<sup>85</sup> This clear ‘experiential’ image is of course relying on a geometric clarity of form for the city itself, that is, on the form of the city as defined by its planning and architecture. Lynch is referring here to an order that although artificially invoked, manmade, is meant to be inherent in the structure of the urban environment rather than an order that is secondarily attributed by a kind

<sup>83</sup> Giacomo Barozzi da Vignola’s *Canon of the Five Orders of Architecture* (1562), an architectural treatise comprising of thirty-two engravings as well as some brief accompanying texts, summarizes the forms and figures of the five architectural canons in a highly practical manner that allowed for the wider dissemination of the orders as a set of exemplary rules for architectural production. Vignola’s work was influenced by the work of Vitruvius on compiling *De Architectura*. Giacomo Barozzi da Vignola, *Canon of the Five Orders of Architecture* (1562), trans. John Leeke (New York: Dover Publications, 2011). The idea of the imposition of a geometric order upon nature, in relation to architecture and its representational regimes, can be also found in Ingraham’s discussion on the understanding of the delineation of the landscape as “civilization”. See Catherine Ingraham, *The Burdens of Linearity*, p. 7-8.

<sup>84</sup> John Macarthur writes on Captain Gordon H. G. Holt’s techniques of aerial photography as a tool for ‘the architectural understanding of cities’. Macarthur points out Holt’s description of ‘what needs to be understood’ through his photography as ‘ordonnance’, the etymology of which he traces not only to Holt’s previous engagement with warfare -as an RAF pilot- but also to Claude Perrault’s definition as the “*systematic arrangement of the parts of architecture*”. John Macarthur, ‘The Figure from Above: On the obliqueness of the Plan in Urbanism and Architecture’, in Mark Dorrian and Federic Pousin (eds.), *Seeing from Above: The Aerial View in Visual Culture* (London and New York: I.B. Tauris, 2013), pp. 188-209; p. 190.

<sup>85</sup> Kevin Lynch, *The Image of the City* (Cambridge, Mass. And London: MIT Press, 1960), p. 4.

of visual distortion. He is therefore underlining the importance of a clear structure with regard to the legibility of the 'image', which appears here to surpass the concept of a perceptive experience by manifesting upon the physicality of form. Nevertheless, Lynch does not neglect to point out the temporal aspect of the city in relation to individual perception:

We are not simply observers of this spectacle, but are ourselves a part of it, on the stage with the other participants. Most often, our perception of the city is not sustained, but rather partial, fragmentary, mixed with other concerns. Nearly every sense is in operation, and the image is the composite of them all... While it may be stable in general outlines for some time, it is ever changing in detail.<sup>86</sup>

What Lynch appears to suggest here, is the importance of the multiplicity and fluidity of the image of the city that derives from the subjectivity of the viewer in conjunction with a collective memory and, moreover, similarly to Bergson, from the participation of humans in shifting the actual form of the urban space by means of their actions. Not only design but also an adaptation of our perception –a cinematographic one if we rely on Bergson– are then implied as some form of control over the incoherence of this arbitrariness, a means of achieving the necessary clarity of 'legibility'<sup>87</sup>. It is interesting that Lynch concludes this chapter with philosopher Suzanne Langer's definition of architecture as "the total environment made visible".<sup>88</sup> Langer's definition points out not only the ocularcentric character of architecture but more importantly, its understanding as a system through which the city is visually comprehended. So if in the kaleidoscope, order is optically achieved by the symmetrical reflections of the casual material array of the objects contained, as produced by the fixed structure of the lenses, in the city, it is architecture that through the conditioning of the built as encompassing the physical form of the city, most obviously imposes an order upon the arbitrariness of visual experience. There is then an insistence on our receiving of the visual in an ordered manner, which is enabled by architectural design and, in turn, by the ways in which the latter conditions the form of the city through the 'scopic' operations of architectural representation.

The mechanism of the kaleidoscope becomes a central point of reference to the thinking of both Bergson and Baudelaire in relation to a spatialized experience of perception. Although Brewster places the emphasis of the 'rightness' of his images on the achievement of a kind of order (the beauty of precision), it is the principle of mobility that seems to be operative in the analogies of both Bergson and Baudelaire. However, the kaleidoscope does not pose here as mechanical paradigm for the city's structure, nor the forms of its representation. Instead it is possible to understand it as an analogy for the complexity of the process of visual perception as taking place through the synergetic interaction between two elements: multiplicity and order. The virtue of this analogy is that through the mechanism of the kaleidoscope it suggests the codependency between presence and perception: the interplay between the randomness of the event and the addition of a structural order, either universal or singular, which is external to the object as much as it is intrinsic in the unfolding of what is effectively a process of becoming through a representation. Considered as an act of observation where representational and scopic regimes become fused, architectural drawing constitutes itself a 'shake', and a 'looking through' from one space to another, from the space of the city to the space of architectural representation as a kind of optical device.

The subject of patent controversy, between Brewster in Scotland and Alphonse Giroux in France, the kaleidoscope was described by Giroux as a *transfigurator* (*le transfigurateur*).<sup>89</sup> What this definition brings to the fore is not the concept of a reordering pertaining to the application of a geometric architectural narrative of visual constancy. Rather, the notion of the *transfigurator* illuminates a process of *decomposition* and *re-composition* of a view or image.

<sup>86</sup> Ibid., p. 2.

<sup>87</sup> Ibid., p. 12-13.

<sup>88</sup> Ibid, p. 13.

<sup>89</sup> Georges Didi-Huberman, 'Connaissance par le Kaléidoscope: Morale du joujou et dialectique de l'image selon Walter Benjamin', *Etudes Photographiques* 7 (2000). <https://etudesphotographiques.revues.org/204?lang=en> [Accessed 10 October 2013].

In the essay 'Connaissance par le Kaléidoscope' (*Knowledge through the Kaleidoscope*) Georges Didi-Huberman recalls through Walter Benjamin, Baudelaire's fascination with the kaleidoscope as a kind of 'scientific toy'.<sup>90</sup> Drawing from Baudelaire's 'Philosophy of the Toys', Didi-Huberman proposes the toy as a 'theory of knowledge' that progresses through the operations of disconnection and composition. There is a constant negotiation between the deconstruction and the re-composition of an image, the smashing and the reassembling of the toy, which is carried out through the performance of play, as a process of acquiring and ordering knowledge. The kaleidoscope arises as a 'rational' *toy*, a "rational amusement", which results in the production of a 'proper' image: an image of valid knowledge. The disconnection of matter, the removal from the context, provides for the composition of a new image, in effect a deterritorialisation that signifies the (re)definition and thus the conquering of the toy.

In *Central Park*, an accumulation of notes on Baudelaire, Benjamin writes with respect to knowledge and the kaleidoscope:

The course of history as represented in the concept of catastrophe has no more claim on the attention of the thinking mind than the kaleidoscope in the hand of a child which, with each turn, collapses everything ordered into new order. The justness of this image is well-founded. The concept of the rulers has always been the mirror by means of whose image an 'order' was established. This kaleidoscope must be smashed.<sup>91</sup>

As Didi-Huberman states, Baudelaire's account of the toy asserts the origin not as an archetypical image but as a "vortex of becoming":<sup>92</sup> an operative mediator between past and present, between the once present and the re-presentation. Accordingly, Walter Benjamin parallels the kaleidoscope to a process of history as knowledge that progresses with the decomposition and re-composition of the origin through knowledge as representation. Benjamin's notion of a 'mirrored order' then suggests the dominant scopic regimes, as regimes of representation and knowledge. Benjamin's kaleidoscope of history can then perhaps be situated between Brewster's idea of order, and Giroux's concept of transfiguration.

The kaleidoscope ultimately represents both the instability of matter considered as physical presence and the instability of memory, as the process of 'conquering' matter through processes of representation. Through the 'device' of representation both images of matter and memory are deterritorialised and thus capable of opening up to the possibility of the production of new meaning. As in a child's play, the operative trait of representation is found in the impossibility and hence fecundity of the repetition:<sup>93</sup> the produced image can never be the same, yet its visual 'propriety' is inherent not in its geometric order but in the very difference produced and called for, by the erratic multiplicity of its material traces. From matter, to perception, and back to representation, the image of the city is therefore not reduced, but constantly reconstructed, transfigured through the nested gazes of instructed visualities and spontaneous processes of sensory comprehension.

In urban representation, it can be said that the image of the city has been constructed 'kaleidoscopically': seeking to acquire a *connaissance*, of the city, to produce an image 'proper' with regard to the occasional scientific or ideological expediency of the representation, yet denying to look at and acknowledge the multiplicity of its object. Among the various 'orders' and 'regimes' that work upon constructing the image(s) of the city, drawing emerges as a viewing device, an optical toy of reason 'making the world visible' through its own selective 'mirrors'. With regard to history, Benjamin proposes the smashing of those mirrors, as producing biased reconstructions of history. Yet in the kaleidoscopic understanding of the city, what will remain of the image of the city without any bias, without any subject? What 'eyes' will

<sup>90</sup> Ibid.

<sup>91</sup> Walter Benjamin, 'Central Park', *New German Critique*, 34 (Winter 1985), pp. 32-58; p. 34.

<sup>92</sup> Didi-Huberman, 'Connaissance par le Kaléidoscope'.

<sup>93</sup> We know that for a child repetition is the soul of the play, that nothing gives him greater pleasure than to "Do it again!" the obscure urge to repeat things is scarcely less powerful in play, scarcely less cunning in its workings, than the sexual impulse in love...". Walter Benjamin, 'Toys and Play', in *Selected Writings: 1927-34* trans. Rodney Livingstone (London and Cambridge Mass.: Harvard University Press, 1999), p. 120.



the disciplinary architectural drawing gaze through without any convention? Representation emerges in the kaleidoscope as a constitutive act, which in the intertextually formulated, unstable image of the city, takes on multiple forms and is conditioned by multiple operators. What is perhaps limiting in the representation of the city in architecture is perhaps not the application of the 'regime' of convention, but its acceptance as singular. In this context, the regimes involved can be considered as distinct situations, as staging both city and drawing in specific situations of observation that are reflected back to the collective and individual understanding of the city. Particularly in the current conditions of the cinematic ubiquity and plurality of the image, the architect/draughtsman appears not as a *flâneur*, but rather as a reluctant *chiffonnier*, who inevitably 'collects' what seems to be an erratic debris

of images that come to destabilize the integrity of his/her established scopopic patterns.<sup>94</sup> In this abundance of visual 'orders', of constructed visualities, the hierarchy between the institutional and the individual can be challenged, to include in architectural representation their collective intersubjectivity as a kind of 'visual specificity'. The architect then may attempt to act instead as a wilful observer, who through their own gaze will animate and set in motion the representation, by offering one more shake to its kaleidoscopic vision.

The main aim of this piece was to interrogate the distances across the various representational regimes that act upon the city as their common object. As in the process of representation these regimes implied specific attitudes of observation, the conventions established by each mode of representation were introduced into the drawing with regard to both its writing and its reading. Thus, this representation sought to compose a new image on the basis that these distinct visual approaches are essential contributors to a representation capable of embracing the multiple facets of the urban. If the city can be considered as a weave of complex interactions between the various agencies that inhabit it, then its representation can also be considered exactly as such. Weaving the parallel universe of an image, the agency of the observing subject, be it the dipole of the human eye and mind, the Google Street View car or the odometer along a Renaissance surveyor's map,<sup>95</sup> is always offering only one specific piece of the image of the city. Preconceived images such as Robert Barker's Calton Hill panorama, or the image of Edinburgh as the Athens of the North, are, among others, themselves pieces of the city. They are precisely manifestations of the congested visualities of the city and as such they constitute part of its cumulative entity.

In the kaleidoscope it is only through disorder that 'order' is produced, only through the re-presentation of the seemingly useless that a 'right' image is produced. Respectively, in the kaleidoscopic city, through the uncovering of the secondary subjectivities the drawing is revealed as a new space for action. In the consequent processes of signification that marked the transition from the physical image(s) of the city to the image of its representation, as the visual negotiations that they involve were inherited in the space of the drawing, hierarchies between the 'ordering' and the 'ordered' became interchangeable, and the primacy of vision over matter was challenged through the materialization of both into the drawing. The elusive matter-image of the city was indeed 'transfigured' by acquiring a new form and materiality. In the provisional array of its marks upon the transparent acrylic plates, *Kaleidoscopic City* is ultimately presented as nothing more than a drawing, moments before the coming together of its elements through its final animation by the gaze of the 'wilful observer'.

<sup>94</sup> The chiffonnier has been one more figure in Baudelaire's work, present as well in Benjamin's writings. Susan Buck Morris writes of the ubiquity of these figures "If the flâneur has disappeared as a specific figure, it is because the perceptive attitude which he embodied saturates modern existence, specifically, the society of mass consumption (and is the source of its illusions). The same can be argued for all of Benjamin's historical figures. In commodity society all of us are prostitutes, selling ourselves to strangers; all of us are collectors of things". Susan Buck-Morris, 'The Flâneur, the Sandwichman and the Whore: The Politics of Loitering', *New German Critique* 39 (1986), pp. 99-140; p. 104.

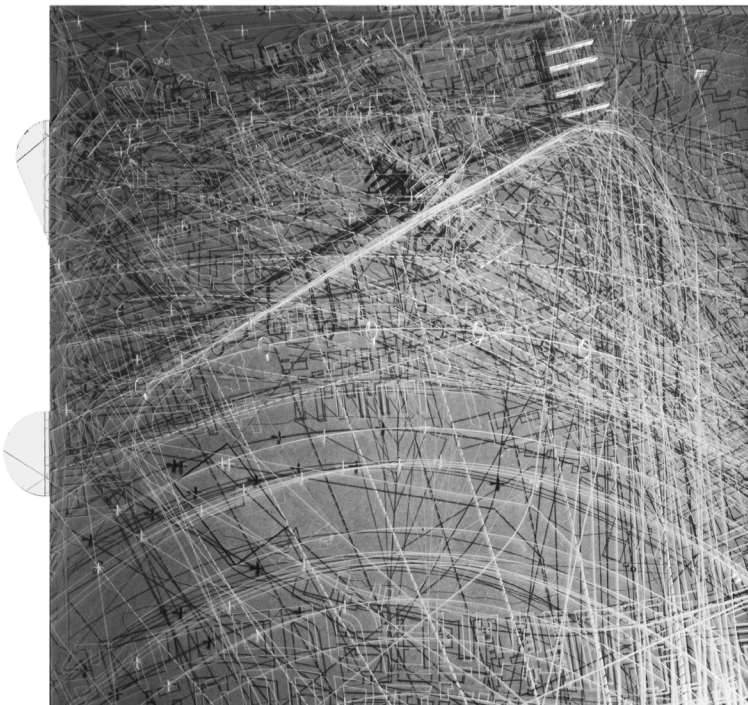
<sup>95</sup> Pinto, John A. (1976). 'Origins and Development of the Ichnographic City Plan'. *Journal of the Society of Architectural Historians*, Vol. 35, No. 1 (Mar., 1976), p. 37.





[G17] *Kaleidoscopic City*: 'Cutting Through: City Level'  
[still from animation]

[G18] *Kaleidoscopic City*: Views through the acrylic plates reposition the marks against one another





[G19] *Kaleidoscopic City* at the Plenitude and Emptiness Symposium reception

[G20] *Kaleidoscopic City*: General View from the Southwest

[G21] *Kaleidoscopic City*: 'Looking Through; The view from the Top'  
[still from animation]



SURFACE

## DEEP SURFACE: ON THE SITUATION OF DRAWING

It is often at the pureness of white where it all begins. The page that anticipates the beginning of the physical instantiation of drawing, is commonly dominated by white, or rather the absence of colour as a signifier of the absence of everything: it is blank. The drawing surface – just like the writing surface – is wishfully considered a ‘*tabula rasa*’, a Euclidean plane with no past and no memory, which will allow for the blossoming of the script: a surface.<sup>1</sup> But it is only as part of this surface that the script *is*. It is only upon this *situation* that drawing comes to be, by assuming the material spatiality of an only seemingly passive and neutral territory.<sup>2, 3</sup> Offering its substance to the effects of the script, this surface is at least as intrinsic to the expression of drawing as any of its other constituents, which range from lines and symbols to the syntactic rules that organise them spatially. In this light the role of the surface in drawing, and consequently design, as a kind of passive infrastructure is challenged.

In architecture, a discipline that has been described as “allographic”,<sup>4</sup> drawing is often regarded as a disposable artefact: the ephemeral expression of the projection of a remote reality, a mere signifier of the real subject matter.<sup>5</sup> The syntactic apparatus of parallel projection – conditioning how the spatiality of the ‘real’ is arranged in the drawing by means of notation – the transition to architecture, that which is physically absent, have been the subject of numerous texts.<sup>6</sup> But what about that which already is and, moreover, that which is made present through the physicality of the drawing surface which, at once haptic and visual, constitutes the site of performance for both architect and ‘reader’? The emergence of drawing takes place there, at the intersection of two spaces: the tangible spatiality of the drawing and another that is absent, either pre-existing (survey) or speculative (design). More than a receptacle, the surface becomes *drawing* upon becoming the *site* of an intricate coincidence.

## I A MATTER OF DRAWING

In his essay ‘The Gesture of Writing’, Vilém Flusser begins by describing writing (*graphein*),<sup>7</sup> as a physical action. He points out that the physical expression of writing had originally been a process of scraping, therefore of “de-structuring” a surface,<sup>8</sup> rather than a creative process of constructing, that is of composing something new. This material aspect of writing Flusser illustrates by recalling early forms of writing:

Some place some time in Mesopotamia people began to scratch soft clay bricks with sticks, and then burned them to harden the scratched surface. And although we no longer do such a thing very often, it is this half-forgotten gesture of scratching which is the essence, (“*eidos*”), of writing. It has nothing to do with constructing. It is, on the contrary, a taking away, a de-structuring. It is both structurally and historically, closer to sculpture than architecture [...] a penetrating gesture. To write is to in-scribe, to penetrate a surface, and a written text is an inscription [...] the gesture of writing is a penetrating gesture that informs a surface.<sup>9</sup>

Writing is thus primarily presented by Flusser as an act of repositioning matter. This material understanding of writing does not shift focus from the semiotic value of the process, albeit it brings forth the physical spatiality of the script as the reconfiguration of a surface.

This interpretation of writing also alludes to another expression of writing: that of drawing as a form of surface script. Although – placing his focus on literary writing – Flusser clearly distinguishes the two (“drawing [...] a gesture of putting shapes on a surface”),<sup>10</sup> his account of writing’s necessary constituents finds a direct equivalence in drawing: it inhabits a surface, it maintains a system of

<sup>1</sup> The Roman *tabula* (Latin) was a wax writing surface that could be melted and thus reinstated to its blank state for reuse. The term *tabula rasa* has come to describe a blank slate thus implying a neutrality that awaits enrichment.

<sup>2</sup> In geography *situation* refers to the relative location of a settlement in relation to its surroundings, as opposed to *site* that refers to the physical characteristics of the location. As such *situation* is a term that describes relationships and associations and it is used here to describe drawing as a dynamic action of placement.

<sup>3</sup> Frascari discusses the role of paper as an “ingredient of architectural conceiving”, yet later refers to it as a “passive instrument”. See Marco Frascari, ‘A Reflection on Paper and its virtues within the Material and Invisible Factures of Architecture,’ in M. Frascari with J. Hale and B. Starkey (eds) *From Models to Drawings* (London: Routledge, 2007) pp. 23-33; p. 23.

<sup>4</sup> On the concept of the allographic sign see *Instructions to Wayfarers*, Chapter III. See also Stan Allen, ‘Notations + Diagrams: Mapping the Intangible’, in *Practice: Architecture, Technique and Representation* (London: Routledge, 2009), pp. 40-69, p.45.

<sup>5</sup> *Ibid.*, p. 41-42.

<sup>6</sup> Central to the explorations of this thesis has been Robin Evans’ essay: Robin Evans, ‘Translations from Drawing to Building’, in *Translations from Drawing to Building and Other Essays* (London: Architectural Association, 1997), pp. 153-193.

<sup>7</sup> Flusser recalls the Greek verb *graphein* (γράφειν). Originally meaning *to scratch* or *carve* as well as *write*, the verb has come to be predominantly used in Modern Greek with the meaning *to write*. See Vilém Flusser, ‘The Gesture of Writing’ (1991), p. 1. Available at *FlusserStudies.net*, <http://www.flusserstudies.net/sites/www.flusserstudies.net/files/media/attachments/the-gesture-of-writing.pdf> [Accessed 27.03.2015].

<sup>8</sup> *Ibid.*, p. 1

<sup>9</sup> *Ibid.*, p. 1.

<sup>10</sup> *Ibid.*, p. 3.

notation and a set of conventions which gives meaning to it (rules of “orthography”), it presupposes the use of tools for this “rearranging of matter”, and it regards the expression of ideas.<sup>11</sup> In fact, there is only one element that distinguishes writing from drawing in terms of Flusser’s definition: the lack of “a language” to be signified through the convention.

In both cases of inscription however, what seems to become important to Flusser through this analysis is that writing appears to regard not the creation of something anew but the intervention upon and reconfiguration of a reality that is already there.

To express is of course a relative term [...] It implies to press to somewhere else. To impress upon a sheet of paper in the case of writing...“Essentially” everything I write upon becomes a Mesopotamian brick by my very gesture. And this is true not only if I restrict my observation of my gesture to its surface. It is also true with regard to the many invisible layers my gesture has to penetrate before it reaches the visible surface of the sheet of paper... The thought as it appears on the paper surface is a result of a series of dialectical processes between my subjective invention and the objective “brick structures” I go through.<sup>12</sup>

The effect of these consecutive re-writings, either literal or mental, is more clearly articulated through Flusser’s experience of translation. As a multilingual thinker and writer (operating between German, Portuguese, English and French) he systematically employed consecutive re-translations as a way of distilling meaning or, as he writes, of “conferring depth” to his own texts.<sup>13</sup> Flusser’s writing method reveals a process that is fulfilled by the allocation of the script upon the surface: writing always returns to the impression, an act that constitutes a spatial recalibration. This process suggests a gesture of projection – of assigning a pre-existing object into a new condition. Projection already presupposes the existence of this new condition or territory, which in the myth of the origin of painting as found in Pliny the Elder’s account of the story of Diboutades tracing the shadow of her departing lover – previously discussed in ‘To Draw a Line’, emerges as the surface upon which the shadow is captured by drawing.<sup>14</sup> Nevertheless, what Flusser’s analysis further suggests is that this projection is hardly ever singular, as it is formed at the intersection of the structure of the method (i.e. the linguistic convention of syntax and meaning) and the elements of “subjective invention” that interact with this structure. This dialectic effect is reflected and purposefully intensified in Flusser’s method of consecutive translations. In Flusser’s account each one of the languages he employs, constitutes a territory to be inscribed, to situate his thoughts upon. The implication of this analogy between language and surface is double. On one hand, it implies that within the gesture of writing there is an intervention of equal weight on a material level (the surface) and a conceptual (the semiotic). On the other hand it suggests an understanding of both conditions (the material and the conceptual) through the gesture of situation that his primal account of writing describes, a situation that is at the same time informing and informed by the script. Although then Flusser’s writings exceed the physicality of their final expression, it is this same gesture of writing, this same spatial configuration that describes a clearly mental process of synthesis. Not only does the mental inform the material but also the material appears to inform the mental.

Both concepts of projection (from the Latin *proicere*: to throw forth) and translation (in Latin, also, *translatio* from the verb *transferre* or *translat-* : to transfer, to carry across) suggest a movement across space; a change of place. Flusser’s analysis clearly denotes this change of place in the situation of matter entailed in the gesture, but also, in the consecutive re-sitings of the inscription that become operative in its taking the form of writing, an action that he clearly distinguishes from mere typing.

<sup>11</sup> *Ibid.*, p. 2.

<sup>12</sup> *Ibid.*, p. 9.

<sup>13</sup> In ‘The Gesture of Writing’, Flusser describes the consecutive translations of his own original texts as a way of arriving to the complete unravelling of the text’s own possibilities. Referring to the third translation of text, from Portuguese back to German, he specifically writes “[...] in the second text all the other languages at my disposal are somehow present, and thus confer it a depth which is lacking in the first text”. *Ibid.*, p. 11.

<sup>14</sup> The myth of Diboutades as the origin of drawing is accounted by Pliny the Elder. See Evans, ‘Translations’, pp. 163-165, and Stan Allen, ‘Hunting the Shadow’ in *Practice: Architecture, Technique and Representation* (London: Routledge, 2009), pp. 3-8; p. 4.

So if we consider that architectural drawing, as a form of re-siting that is concluded through the negotiation of a pre-existing surface and, as such, shares the same constituents as writing, is itself a process of (dis)placement and therefore a form of translation, the question raised is once again, what is 'translated' in the architectural drawing? From where to where is it displaced? And consequently, how does this transference occur? In the essay 'Translations from Drawing to Building', Robin Evans discusses the role of drawing in architecture through the relationship between the drawing and what he defines as the subject-matter of architecture: "the building or space".<sup>15</sup> By proposing translation, the title of the article already points out the gap between the two: drawing is understood as a limited and partial medium towards the architect's real work. To the predicament of this discrepancy, however, Evans contraposes the further exploitation of this mediation.<sup>16</sup> It is exactly in this transitive nature of the drawing, oscillating between the language-like conceptual (verbal) and the phenomenological sensible, and the suspension that is produced through the phenomenal mismatch between representation and its subject, that Evans locates the operative and generative virtues of drawing. Through the mechanism of projection drawing becomes what Evans calls "a translator's dream": a way of achieving the homogeneity that will allow the transference to take place without the alteration of meaning through the assignment of both the verbal and the visual to the spatial.<sup>17</sup>

It is therefore space that is conveyed through drawing but it is also in space that this conveyance occurs. Always partial and always an abstraction, a drawing is highly visual but hardly ever visually conclusive of the concrete architectural reality it represents. Nevertheless, within the drawing always lurks the possibility of a 'deeper' space and, as Flusser shows us, it is through spatial recalibrations that the transcription from the referent into drawing is able to take place. The semantic coherence between architecture and drawing can hence be attributed not necessarily to architectural conventions per se but to the spatial nature of drawing. On concluding his essay Evans writes:

It would be possible, I think, to write a history of Western architecture that would have little to do with either style or signification, concentrating instead on the manner of working [...]. In it the drawing would be considered not so much a work of art or a truck for pushing ideas from place to place, but as the locale of subterfuges and evasions that one way or another get round the enormous weight of convention that has always been architecture's greatest security and at the same time its greatest liability.<sup>18</sup>

Drawing can thus be understood as the place that enables these shifts: itself a change of place. But at the same time this movement is only fulfilled through the drawing's physical alteration: the change of a place. As both Flusser and Evans point out, this movement is not a one-off process: the destinations are multiple but so are the 'origins'.<sup>19</sup> Other writings, and hence re-sitings, precede it, while other writings may be borne by it. Beyond spatial and topographical facts, all kinds of influences and inspirations, carried across a series of spaces, from real spaces such as sites and buildings, to 'Mesopotamian bricks', sheets of paper or techniques of representation, come to meet one another on the surface of drawing. Considering this, drawing constitutes neither an end, nor an origin but a space in between. It rather emerges as an actual translatum: the 'locale', or the space of translation.

<sup>15</sup> "The subject-matter (the building or space) will exist after the drawing, not before it". Ibid., p. 165.

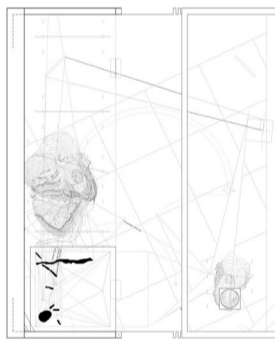
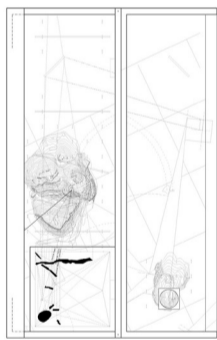
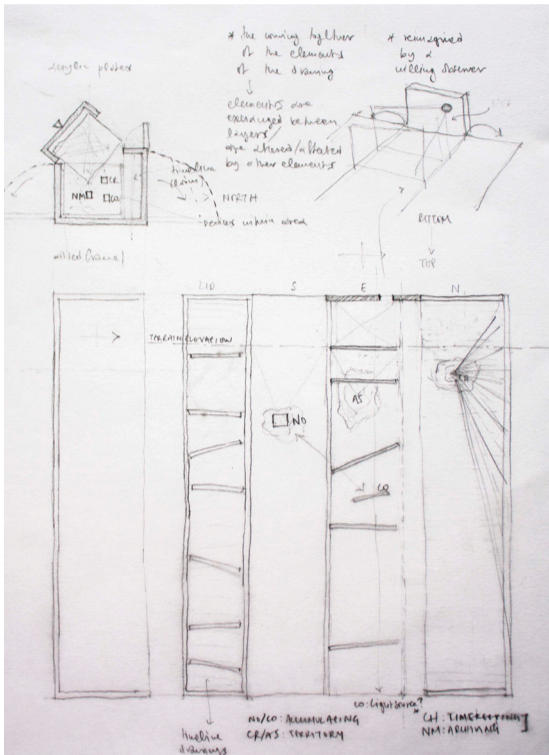
<sup>16</sup> Ibid., p. 160.

<sup>17</sup> Ibid., p. 181.

<sup>18</sup> Ibid., p. 185-186.

<sup>19</sup> "[...] we can never be certain, before the event, how things will travel and what will happen to them on the way". Ibid., p. 182.

DRAW OF A DRAWING



*Draw of a Drawing*, is not a direct representation, but the transcription of a representation of the city of Edinburgh. Drawing from – or rather simply ‘redrawing’ – *Kaleidoscopic City*, *Draw of a Drawing* marked the moment that the elements of the preceding drawing were finally projected upon a single surface. Acting as a transcription and a miniaturization of its predecessor [S1], this installation oscillated between the seemingly distinct spaces that emerged from representation as a transitory state between a tangible materiality (figure) and another materiality that, although not currently physical, was still present (signification). On drawing *Kaleidoscopic City*, this third representation involved not only the indirect survey of the part of the city that was initially represented, but also of the peripheral devices that facilitated its reading.

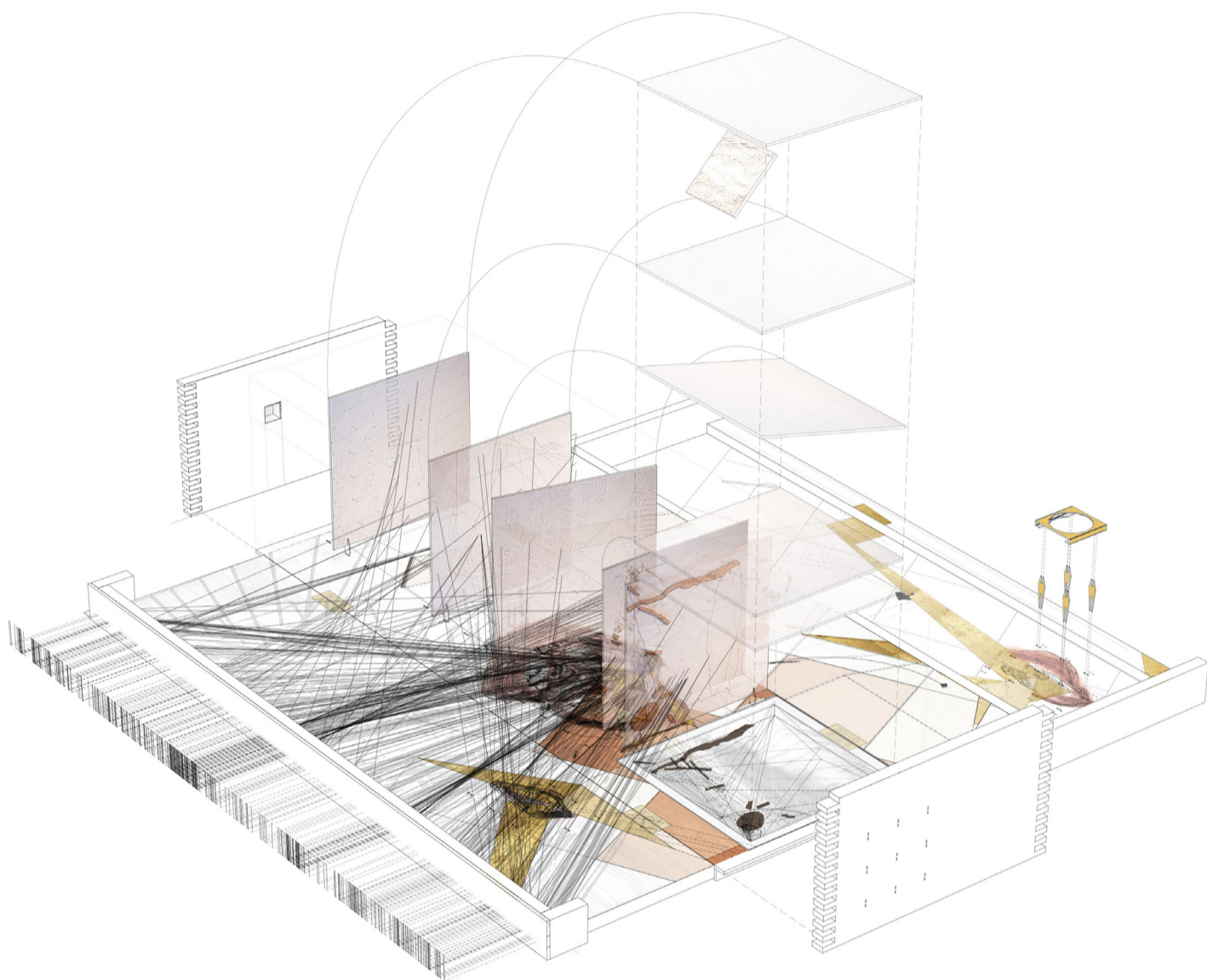
Out of the three installations *Draw of a Drawing* was perhaps the one that ‘resembled’ a drawing the most. However, it was in fact the one that is most concerned with an act of installation, of situating something in a new place. The operations of *Kaleidoscopic City* were not reduced, neither terminally fixed in their new material state, but re-located and thus informed by their new situation. In effect, *Draw of a Drawing* was a portable re-installation of the *Kaleidoscopic City* upon the interior surfaces of a wooden box [S2]. The dual expression of the object as the enclosed space of a box, on the one hand, and as an extended continuous surface on the other, was exemplified through the relationship between the spatial and the ‘superficial’ elements of the installation, while the robust materiality of wood – texture, colour and thickness – created an opportunity to illustrate the negotiations that take place between sign and surface by materially reassigning signification to the effect of inscription. The reconfiguration of the box offered a variety of transitions that required direct physical – both tactile and visual – engagement: unfolding from an enclosure to a flat surface, collapsing from installation to superficial inscription or reversely developing the space that is implied from the surface, *Draw of a Drawing* sought not only to re-present but to also enact the gesture of representation, taking into account architectural signification as a process of (re)configuring a space that is not necessarily ‘other’, but continuous to, the locality of its physical instantiation [S3-S4-S5].

[S1] *Draw of a Drawing*: Initial sketch

[S2] Opening Sequence

[S3] *Draw of a Drawing* developed



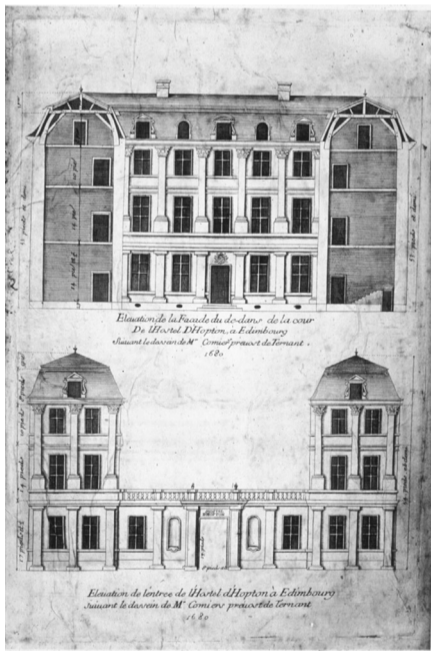


[S4] *Draw of a Drawing*: Views across the miniaturized plates into the folded space of the box

[S5] *Draw of a Drawing*: Axonometric View illustrating the the three-dimensional miniaturization of *Kaleidoscopic City*. The timeline and weave of the *Kaleidoscopic City* characters is visible



[20] The Hopetoun Chest in the Library at Newhailes House  
 [21] Hopetoun House, Elevation, Claude Comiers (1680)  
 [22] Hopetoun Chest, Drawer Detail



## II A PLACE OF DRAWING

While Evans' approach to drawing points out the instrumentality of techniques, which are both structural and semiological, Flusser's description of writing and its gestural extensions bring out the dispersal of this effect on the material manifestation of drawing. This understanding of drawing as an artefact and a process consequently reveals an understanding of architectural representation as a series of relocations. In its simplest form, elements of a site of origin are negotiated through a system of notation and finally relocated upon a new surface. Carrying the memory of a site, either as survey or as intervention, architectural drawings can hence be considered as inevitably carrying an attachment to site (or specific situations). But does the displacement that emerges from representation create an additional latter attachment to the new situation of the surface? Is the locality of the drawing surface 'specific' enough to constitute a *place* out of its *space*?

The Hopetoun Chest is a piece of furniture found at Newhailes House outside Edinburgh.<sup>20</sup> It is a large late seventeenth century chest of drawers of Flemish origin, its figure dominated by an intricate wave-turned ebony veneer [fig. 20]. The most remarkable feature of this chest, however, is the interior lining of its drawers which are covered by the only remaining copies of a series of architectural drawings. The engravings – a series of plans, sections and elevations spread across a number of fifteen drawers – describe French philosopher Claude Comier's 1680 proposal for a grand house for the Hope family in the Cowgate area of Edinburgh [fig. 21].<sup>21</sup> The placement of these never-realized drawings on the walls of the chest does not necessarily suggest a diminution of the drawings' value. Although its purpose of use is not certain, the possibility of it being used as a 'cabinet of curiosities' suggests not only a unique way of exhibiting the drawings but perhaps even a certain primacy of the drawings as a system of curating the objects on display. In any case however, the cabinet itself became a way of re-organizing the drawing [fig. 22].<sup>22</sup>

At the same time the house, although never built, acquired a new spatial arrangement within the spaces of the chest. The space of representation takes on here not only a distinct physical spatiality of its own – other to the referent – but one that is also enriched by the specific conditions of its localization. The isolation of the enclosure, the possibilities of its contents, the choreography of the cabinet (the gradual re-composition of the drawings through a mental unfolding and the opening and closing of the drawers) offer this set of drawings a second life through a reading that surpasses their original purpose. Not only does the drawing thus acquire a clear spatial expression through its contextualization, but the space that it inhabits becomes itself infused by the drawing. In a sense, the entire chest becomes a *drawing*.

The concepts of context and, consequently, site are of great importance to architecture and architectural design. While looking at the Hopetoun Chest drawings, we are faced with a case of re-siting a pre-existing representation, a case of coinciding, yet distinct, *situations* that can be paralleled to Flusser's rewritings. On one hand, this is a representation that refers to a specific origin; an urban site in Edinburgh's Cowgate. On the other hand it is now so closely attached to its site of presentation at Newhailes House that it has come to be known by the name of a chest of drawers rather than of the elaborate estate it describes.

The importance of site, however, is not only prominent in architecture among creative practices, but also art. The notion of site is particularly examined in the work of art historian and curator Miwon Kwon. Originally trained as an architect, Kwon performs an enquiry of art over the latter half of the

<sup>20</sup> I am grateful to Mark Dorrian for pointing out to me this magnificent object.

<sup>21</sup> Joe Rock, 'The Hopetoun Chest at Newhailes House', *The Burlington Magazine*, Vol. 129, No. 1013 (1987), pp. 516-518.

<sup>22</sup> The Hopetoun Chest is presented in further detail by Joe Rock on his personal website. His writing ranges from discussion on the intricate wave-turned mahogany of the chest to remarkably detailed speculations on the possibilities of ownership, erections and demolitions in a small area of the Cowgate, all based largely on his reading of the chest. Joe Rock, 'John Hope's House in Edinburgh, 1680', *Joe Rock's Research Pages*. <https://sites.google.com/site/joerocksresearchpages/home/john-hope-s-house-in-edinburgh-1680> [Accessed 19 March 2015].

twentieth century through a classification of artistic practice in terms of site-specificity. In doing so she engages with defining and eventually redefining the concept of site.<sup>23</sup> Kwon's classification looks further from physical experience offering an expansion of the definition of site beyond that of geographical location. Site-specific art can, according to Kwon, be sited within or without a site, hence siting exceeds the concept of localized accommodation. Specificity suggests then a relation that expands beyond physical placement. Furthermore, Kwon's most radical – and most controversial – contribution to the understanding of site-specificity in art, appears to be the classification of sites that she proposes.<sup>24</sup> In Kwon's understanding, the expression of a site can range between a physical space, an institutional grid, a discursive network or a community formation, respectively establishing a phenomenological, institutional or discursive form of site-specificity.<sup>25</sup>

Originating from a reaction to the self-referential nature of modernist art, site-specific art as a model of practice suggests a performative, inclusive engagement with its surroundings that often goes as far as challenging the unique authority of the artist. As Kwon writes:

Furthermore, unlike previous models, this site is not defined as a *præ*condition [*sic*]. Rather, it is generated by the work (often as "content"), and then verified by its convergence with an existing discursive formation.<sup>26</sup>

Site is here defined neither as a neutral infrastructure, nor as a given territory. Siting is described as a process of reciprocal territorializations where site and installation are both operative in defining one another. The site that emerges from this definition is upon installation infused with agency while it is in turn defined and redefined by the condition of this encounter. More importantly, however, what Kwon's theorization of site-specificity offers is the extension of site to the intangible through the concept of discursive site-specificity, therefore reflecting the multiple manifestations of Flusser's "Mesopotamian bricks",<sup>27</sup> as the material instantiation of the writing surface and as the conceptual frame of language.

Not only does this expansion of the understanding of site therefore support the localized connotations of the notion but instead, it succeeds in associating the discursive with the spatial and consequently – to return to Evans' preoccupations – the verbal with the visual, in a reciprocal interaction: discourse is spatialized while space constitutes a form of discourse in the work of art, through the contingent overlapping of distinct manifestations of site-specificity. The situation of the work of art thus emerges through Kwon's perspective not as one but as the interweaving of a multiplicity of sites.

The question that arises then is what is the effect of these 'places', or rather what is the effect of these placements, on the work of art? As site potentially constitutes content and agency is attributed to the material, it becomes apparent that the relationship between site and work is not one between object and subject, but that both carry the potency of agency upon one another. As a consequence of this the relation to site does not necessarily suggest a relationship of origins, rather it is now drawn out as a relationship that can emerge from an equally dynamic situation. In any case the specific situation appears to become ultimately intrinsic to the work to the degree that it becomes definitive of its identity. That is a moment not of installation, but of proper reterritorialization. Considering the multiple forms of site as introduced by Kwon and the emergent reciprocity between site and installation, the question that could then be raised is what constitutes in turn the *site*, or perhaps the *sites*, of architectural drawing? As the locus of the drawing shifts across different types of geographical sites, sites of fabrication, systems of signification and sites of materialization, do these re-sitings either undermine, or establish the drawing's capacity as a *space* in its own right?

<sup>23</sup> Miwon Kwon, 'One place after another: Notes on Site Specificity'. *October* 80 (Spring 1997), pp. 85-110.

<sup>24</sup> Responding to Kwon's definition, Jason Geiger strongly dismisses it by arguing that "her use of the term 'site' to describe a discourse or field of knowledge extends – the 'amorphous- notion of discourse'- the term beyond its legitimate usage and threatens to undermine the 'locational anchor' of the term". Jason Geiger, 'Dismantling the Frame: Site-Specific Art and Aesthetic Autonomy', *British Journal of Aesthetics* 49 (1) (2009), pp. 43-58; p. 51.

<sup>25</sup> Kwon, 'One Place', p 95.

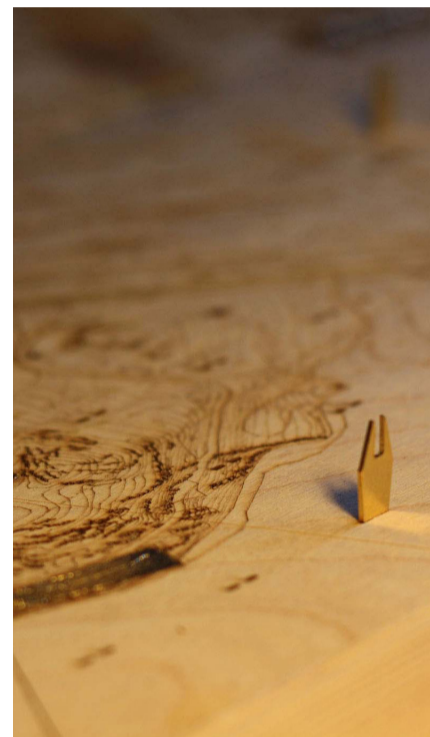
<sup>26</sup> *Ibid.*, p.92.

<sup>27</sup> Flusser, 'The Gesture of Writing', p. 9.

As the lines of the projection were applied on the surface by means of a laser engraving, the material effect of the burning beam on the wood was instant. The negotiation of the surface was already at issue as the box had to be dismantled and strategically relocated in the machine, to which the drawing was digitally fed in portions. This fragmentation of the drawing was initially dictated by the machine as the complexity of the drawing suggested both a large size of data to be transferred and a long time of execution that raised the risk of glitches. However, as each part was applied on the surface – admittedly hesitantly due to the irreversibility of the engraving – the interaction with surface gradually became more complex. The explicit materiality of the box, the thickness of its surface as well as the folds that its original shape created, were so materially compelling that they began to have a direct effect upon the marks inscribed. While the drawing of lines was relatively straight forward (line-weights were assigned by tweaking the power, speed and distance of the laser head) the highlighting of areas – what in conventional drawing would possibly be illustrated by means of hatching, or colour – in the box could become far more intrusive, opening up the possibility of new materials that could intervene with the box's actual structure. For instance, when it came to mapping the Inspace gallery floor upon which certain tiles had been replaced in order to allow for the piercing of the floor, the distinction between the



original and the custom tiles was manifest with the actual replacement of parts of the wood with pieces of Chinese red plywood [S6]. Gold leaf was used to mark the surfaces of the metal devices (such as the Telescope, the support of the Terrain and the Observatory), which, faced with the effect of the surface were not simply projected but in the end developed in the new script [S7]. These operations required that the object had to be removed and repositioned in the laser cutter multiple times. These consecutive relocations informed the drawing not only with their final anticipated effects but also with a series of marks that were derived from the consecutive 're-acquaintance' of the box with the machine [S8]. The folding of the box, respectively, almost dictated multiple projections, on top of the direct planar transference of the marks, with the devices duplicated – where needed - in opposing surfaces, eventually even piercing the enclosure, and reclaiming their original function of enabling observation upon the box [S9-S10].

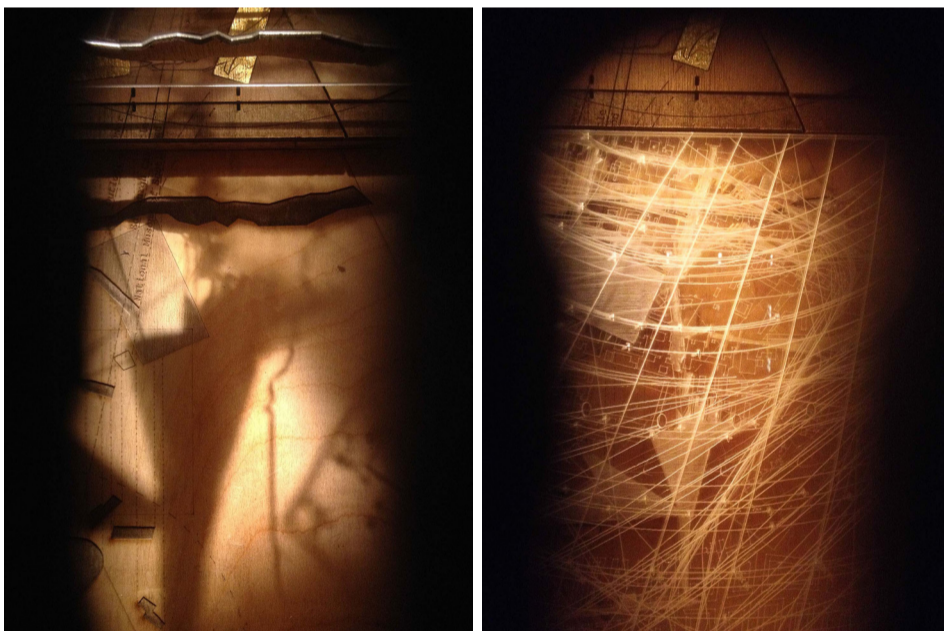


[S8] Marks created as guides for the reposition of the re-alignment of the box with the laser

[S6] Pieces of Chinese red plywood replaced the parts that responded to the custom tiles of the gallery  
These also served to create a sliding component that would allow for the storing of the plates in the recess defined by the 'original site'

[S7] Gold leaf signifies the metal structures of the Kaleidoscopic City devices while dry pastel dust 'sculpts' the volume of Arthur's Seat  
Although impossible to accommodate in a collapsible structure, the 'weave' of the Kaleidoscopic City characters manifests its shadow on the wood by means of laser engraving

[S9] Custom-made brass pins pierce the bottom of the box in order to hold in place the plates, when in full array



### III IN PLACE OF A SITE

In geography, site is a term that is strictly used to describe the physical characteristics of a place. Similarly, in architecture it is primarily used to refer to the characteristics of a location intended for a potential intervention. As such, site defines the final place of action of architecture. It constitutes thus the most immediate context of the space that will be produced out of the architect's drawings – what we have previously seen being defined as the 'real' subject-matter of architecture – but it is also often one of the very first material conditions that the architect gets to work with (program, function, or even geometry may also pose as beginnings but rarely reflect as concrete spatial instantiations). For the architectural subject, the consideration of this context suggests not only a situation in space but also a situation in relation to time. It describes a concrete reality that situates the imagined proposal upon the space and time of earth. This concrete reality constitutes a present that will become the past of the imagined proposal. Site, overall, may be considered as defining an origin for the architectural proposal: the initial state of a condition that is to be altered.

The concepts of presence and origin become prominent in Peter Eisenman's project *Moving Arrows, Eros and Other Errors*.<sup>28</sup> In this project, which engages with the city of Verona by superposing the fictional romance of *Romeo and Juliet* upon the physical reality of the city, Eisenman recognizes architecture's insistence on origin and presence as evidence of an anthropocentric attitude on behalf of architecture. Moreover, Eisenman's objection to this premise is the insistence on physicality, as he points out that this anthropocentrism has consistently been manifested in the form of an attachment to the scale of the human body. To overcome this partiality, Eisenman seeks to challenge the position the concepts of presence and origin hold in architectural thinking and making, by introducing the process of a "scaling" that is not dependent on the human body but belongs to – as it is only applied through – representation. According to Eisenman, this scaling proceeds through three "destabilizing agents" (discontinuity, recursivity and self-similarity) which respectively address the issues of presence, origin and consequently representation. Although Eisenman appears to insist on this tripartite schema by in turn associating it with site, programme and drawing, the prominence of site seems to be evident.<sup>29</sup> Of the site Eisenman writes:

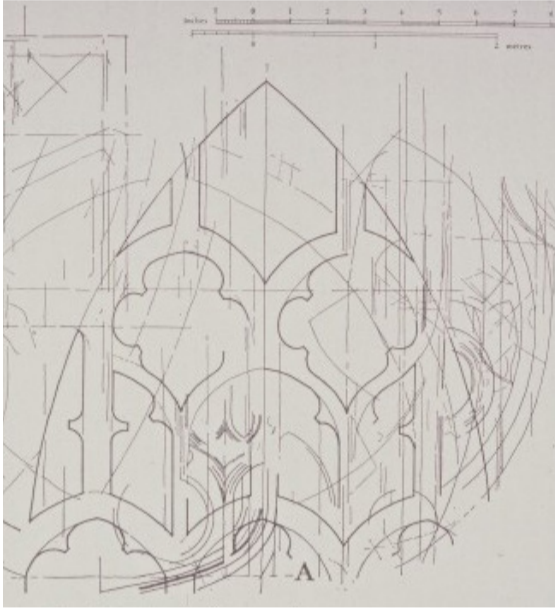
The first aspect which is confronted is the idea that site is a reality containing only presence. To privilege 'the site' as *the* context is to repress other possible context, is to become fixated on the presences of 'the site', is to believe that 'the site' exists as a permanent, knowable whole. Such a belief, as has been discussed, is untenable today. By treating 'the site' not simply as presence but as both a *palimpsest* and a *quarry* containing traces of both memory and immanence, 'the site' can be thought of as non-static [...] a *moving arrow* [...] it contains where it has been and where it is going, i.e., it has a memory and an immanence that are not present to the observer of the photograph; they are essential absences. Theories of 'the site' as present origin presume that the moving arrow and the still arrow are the same; they ignore the subtle but profound conditions of the presence of these absences.<sup>30</sup>

Presence represents the physical "real" form while absence stands for the latent – preceding or future; essentially that which currently belongs to the virtual and hence the verbal or the discursive. This introduction of a time of the site through memory and potential is what brings out a concept of the site that appears to be as dynamic, or perhaps as kinetic, as the conception of drawing as we have seen it through the prism of translation. If we consider the site as a dynamic condition that contains a past, a present and a future, it is possible then to consider it as involving internal re-sittings of its own. Both presence and absence are considered only in relation to site, they are thus *situated* in a milieu that is not fixed but susceptible to change.

<sup>28</sup> Peter Eisenman, *Moving Arrows, Eros and Other Errors: An Architecture of Absence* (London: Architectural Association, 1986).

<sup>29</sup> Eisenman mentions site, program and "representation (the aesthetic object)". The use of drawing instead of representation is used here to contrast drawing as condition, or perhaps situation, to representation as an operation or rather, in Eisenman's words, as a "destabilising agent". The clarification "the aesthetic object" suggests an expansion of drawing from the artefact to a structural framework, however one that appears to be more intrinsic to drawing as a practice rather than to architecture as a way of thinking. *Ibid.*, p. 4.

<sup>30</sup> *Ibid.*, p. 5-6.



[24] York Minster Tracings Drawing, John Harvey (1968)  
[23] Floor Tracings on Plaster Floor at the York Minster (ca. 1360-1500)  
[25] *The Origin of Painting*, Karl F. Schinkel (1830)



Representation is hence drawn into reconsideration as a record of the site where, for the translation from drawing to building to occur, another re-siting, from site to drawing, has to take place, albeit the site stands as a record of not only past, present and future, but also – if we consider it in relation to Kwon’s definition – of physical, discursive and representational ‘situations’ that come to act upon one another through the agency of drawing. In Eisenman’s project the “potential” appears to emerge exactly from this presentation of the site, where the site cannot be stabilised as Verona, or as the fictitious love of Romeo and Juliet. Both site and architecture arise at the conjunction of the two which come to interact through a process of scaling that is no more anchored to the human body but to the intrinsic modalities of the ‘gesture of drawing’, an action that, in Flusser’s terms, is fulfilled on both a material and a conceptual level. The site becomes the drawing and the drawing becomes site.

This close connection between site and drawing can be traced back to a time when the surface of the drawing and the site coincided not only semiologically but also physically. The inscription of scaled or even 1:1 elements upon the site of construction was a common practice since ancient times and until the dissemination of paper and its dominance as the primary printing medium from the 14<sup>th</sup> century onwards. Examples of tracings are found in ancient temples such as the temple of Apollo at Didyma, however they are far more common in medieval structures such as Gothic temples and cathedrals. In the medieval times it was by means of the mason’s tracings, of the *épure*s, which were inscribed on floors such as stonework or, most commonly, on a thin layer of plaster [fig. 23-24].<sup>31</sup> The various elements of the building would be hence conceived and later carved out of stone in situ.

To this day, building always begins with a form of tracing as the site is being marked with the positions of the structures to be erected: the first act of building is therefore a form of drawing – although to be exact, the very first act of tracing can be found in the scanning of the field upon surveying. In the case of these tracing floors, the site of origin became the site of conception, signification, presentation and finally fabrication while gradually transforming into architecture, by means of the bodily movement of the mason/draughtsman across space. This ‘moving across’, this carrying across through one’s own body was more than a translation. It was the literal drawing out of an architectural space from the surface of the site. The drawing was there and then projected outwards *into* relations and formations of materials but also *from* the material and structural processes of craftsmanship, the movement of the draughtsman/mason, the abstractions of representation as well as other external or internal points of reference such as religious tradition or even personal aspiration. Architectural creation was being built up directly from the ground (or was it the drawing?) of its conception.

This projection, so closely attached to the materiality of the site and more specifically to the horizontality of the ground brings to mind again the archetypal projection of the departing lover, and particularly its depiction in architect Karl F. Schinkel’s *Origin of Painting* (1830) [fig. 25].<sup>32</sup> Diboutades there instructs the tracing of the shadow of her lover as it is projected by the sun on a rock. This specific choice of the surface of projection suggests, as do the early delineations of the tracing floors, the attachment to the *ground* as an anchor of both material and meaning. As the transference from the site of presence and origin to the site of projection and representation takes place a separation occurs. As Evans writes, there is entailed in the instruction a chronological hierarchy between drawing and architecture, across the practical and intellectual knowledge that signifies not simply the origin of drawing but also the disciplining of architecture.<sup>33, 34</sup>

<sup>31</sup> Both terms *épure* (from French) and *tracing floor* are used to describe such an inscription. The original French meaning of *épure* refers to an accumulative detailed description of an object in space by means of drawing, specifically, a description that involves projections that describe all three dimensions of the object.

<sup>32</sup> This painting of the fable is one of the two visualizations of the fable mentioned by Robin Evans in ‘Translations’, p. 163-165.

<sup>33</sup> *Ibid.*, p. 165.

<sup>34</sup> A discussion of the origins and ‘disciplining’ of architecture can be found in ‘To Draw a Line’. See also Catherine Ingraham, *Architecture and the Burdens of Linearity* (New Haven and London: Yale University Press, 1998), p. 51.

From the medieval floor tracings, drawing gradually developed through material surfaces that could retain the tracing of the structure to be reused. The wide use of paper, along with the development of a notational schema to represent the structure, allowed for the scaling down of drawing and the further manipulation of the design away from the physicality of the site. The physical detachment, as well as the miniaturisation, moved the process of design further from the structural limitations of the building site, yet deeper into the agency of the conditions that comprise drawing physically, discursively and conventionally.

Eisenman is very apt in pointing out that all three agents of discontinuity, recursivity and self-similarity operate upon representation, as a relationship of repetition and signification is drawn out between the two ends of the translation.<sup>35</sup> Although the material manifestation of the drawing surface is, as has been previously discussed, fundamental to the process of drawing, the deferral that occurs exceeds the physical separation between site and drawing.

The separation between origin and (re)presentation (in Eisenman's terms a discontinuity), Marco Frascari points out as one of the most instrumental virtues of paper as a medium, and, in turn, of drawing as a distinct intermediate "facture" acting between the referent and the representation.<sup>36</sup> By establishing this disjunction architectural representation has led to the emergence of the drawing as an artefact that is a way of remembering (carrying across) but also of forgetting. Although the reasons for this material separation were obviously practical, namely the portability of the medium and the further visual manageability of space offered by scaling, the move from site to drawing of course contributed to a further liberation of drawing from the site of construction which was also paralleled in the overall shift in the establishment of architecture as a discipline and practice – from the anonymous stonemasons to the 'homo universalis' architect/artist of the Renaissance.

Nevertheless, even in the case of on-site designation of the medieval floor tracings, there has always been a gesture of inscription, at once tactile, visual and discursive; bodily and mental. Far from mediated, involving the entire body, these drawings suggested the in-situ recalibration of the site through a form of inhabitation. The translation does not merely entail a repositioning of the site but a repositioning of the architect as well. In both architectures – that of the medieval stone mason and that of the Renaissance architect – the instrumentality of the (re)siting is located in its ability to also produce a re-sighting, a change of perspective and therefore a new meaning. As we have seen through Flusser's interpretation of writing, drawing is inevitably involved with the assignment to the materiality of the surface. As Jacques Derrida remarks in his analysis of Hegelian semiology, the materialisation of the signifier into a "sensory perception" causes resistances against the unity of the signified concept and its material instantiation.<sup>37</sup> The surface is on one hand 'animated' by the inscription, but it is never completely effaced by nor absolutely welded with the effect of the script. In this way is never singular: it is both projected and projective and hence attached to, but not concluded in its material experience.

A series of re-sitings therefore takes place within the very process of figuration of the drawing; re-sitings that are involved in its formulation as well as re-sitings that may occur through its 'inhabitation' by the architect not only as draughtsman but also as reader and interpreter: as designer. This projection may involve but is not limited to the known-to-the-architect forms of orthographic or perspectival projections. In effect, the gesture of drawing exceeds the conventions of architectural drawing not only in terms of inclusion but also in terms of signification, and that is exactly what is at stake in the

<sup>35</sup> Eisenman, *Moving Arrows*, p. 5.

<sup>36</sup> Frascari, 'A Reflection on Paper', p. 23.

<sup>37</sup> Jacques Derrida, 'The Pit and the Pyramid' (1971), in *Margins of Philosophy*, trans. Alan Bass (London and New York: Harvester Press, 1982), pp. 69-109; p. 81-83.

recognition of drawing as a form of space in its own right. It is this act of reterritorialization into and within the drawing that gives meaning and in effect grounds the architectural creation back to its site of not only origin but also destination. An anchoring to reality and at the same time a conquest of this same reality, the situation into drawing re-enacts this original act of drawing by posing as a miniaturization of the earth's ground and a site of signification for architecture. Architectural drawing performs there, for the sake of architecture, the 'domestication' of both the imaginary and the conventional – that is, the appropriation of elements that belong to both – through the intersection of the codes of representation and the locality of the surface.<sup>38</sup>

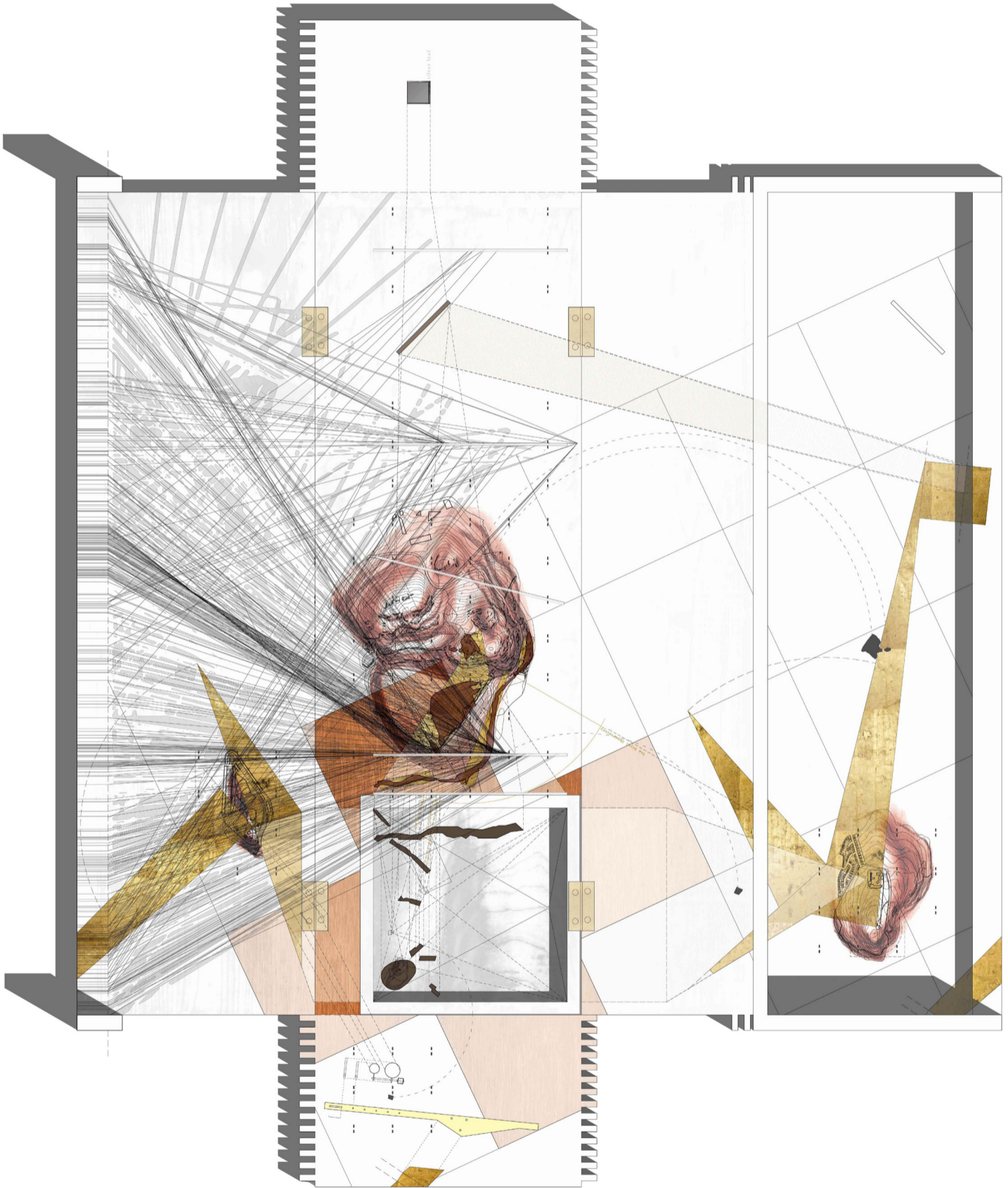
Even in the physical distancing from site to paper, this process of consecutive re-sitings, remains highly introspective, in this way suggesting a recursive relationship between the representation and its object. Every *site* (or to return to Flusser, every "brick") constitutes another origin. Material instantiations, techniques of fabrication, conventions of signification and acts of interpretation 'contaminate' one another, as well as the writing and reading of the drawing in an infinite exchange. Furthermore, every presence is re-presented (is made present in the representation) through the registration of its absence (separation). The drawing hence becomes a *place* where, as Peter Eisenman writes, 'absence and presence operate equally'; where past and present situations come to meet in the materialisation of the notation.<sup>39</sup> By becoming either materially or merely semiologically detached from the site, this 'intermediate facture' acquires its own time and its own space, while maintaining its specificity to site. Morphing into a space that encompasses both the drawing's physical and semiotic presence and agency, drawing does mediate between site and building but not between site and *architecture*. Drawing is ultimately as intrinsic to architecture as an act, as this projected spatiality is intrinsic to drawing.

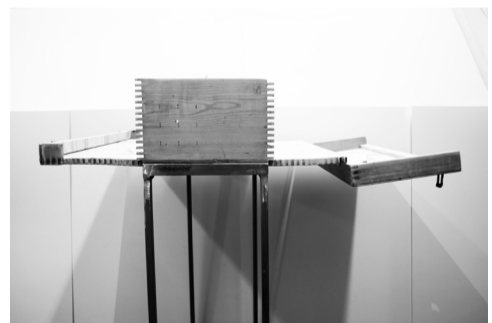
*Draw of a Drawing* was a transcription of the installation *Kaleidoscopic City*, which was in turn a transcription of part of the city of Edinburgh. Lastly, in the end it was also itself a record of the transactions occurring within these transcriptions. As seen through Flusser's analysis, an act of transcription entails the effect of a script as a scraping that is a material recalibration of a surface, while the prefix *trans-* confers upon this action the effect of movement, or more specifically of carrying across. Indeed, what has come to develop into *Draw of a Drawing* has been carried across a variety of localities or sites. From the city to the gallery, and finally to the interior of a wooden box, these re-sitings can be understood as a series of reterritorialisations, where the object of representation was not merely displaced but constantly recalibrated by the agency of new space(s). These transcriptions were always concluded upon surfaces: the volcanic earth carries the city, the pristine floor of the gallery is disrupted by the installation, while the box is cut, engraved and reassembled.

But even the immaterial 'situations' that emerged were always enabled by the surface. Indexical, verbal and figural marks, were not simply situated in the drawing but also placed the drawing itself within the frame of distinct 'languages', while both the material expression of the box and the techniques of fabrication involved (such as the wood workshop, the laser-cutter and even the digital environment of the drawing software) were equally formative of the final result. At the same time the topographical facts and other forms of spatial information about the city upon the box's surface, maintained the attachment to Edinburgh as a site of origin [S11].

<sup>38</sup> The concept of architecture and its linear convention as disciplinary and domesticating actors, is also discussed in this thesis in the essay 'To Draw a Line', through the writing of Catherine Ingraham.

<sup>39</sup> Peter Eisenman, *Chora L Works: Jacques Derrida and Peter Eisenman* (New York: Monacelli Press, 1997).





[S11] *Draw of a Drawing:* Developed Plan

[S12] *Draw of a Drawing:* Side view

#### IV THE SPACE OF DRAWING

It is the reduction to the surface that assigns spatiality to the sign – every line, every little mark acquires a spatial meaning the very moment that it *becomes* as part of the surface. Diverse and previously disparate information find there a place of association, a place of meaning; the surface is where the sign enters space and consequently the realm of architecture. Nevertheless this spatiality is not superficial. Its two-dimensionality is physical but not necessarily affirmed on the experiential level. The dual nature of drawing is not manifested on the surface as a coincidence between two spaces, but as one continuous space that, although partly manifested in, ultimately exceeds its current material state. How then can we begin to understand this space which is rooted in both the mental and the physical, which is both superficial and deep beyond its two dimensions? And furthermore, how can we begin to make sense of the ways in which this space, almost part real, part imaginary, intervenes in the production of new realities, such as architectural designs?

In the essay 'Lapsus Imaginis: The Image in Ruins' Eduardo Cadava poses a similar question with regard to another image – another form of representation – the photograph.<sup>40</sup>

What does it mean to assume responsibility for an image or a history – for an image of history, or for the history sealed within an image? How can we respond, for example, to the image and history inscribed within this strange photograph especially when, before our eyes, it ruins the distinctions it proposes? It bequeaths to us a space – the space of the photograph as well as the photographed space in which we can no longer know what space is. It offers us a time-the time of the photograph and the photographed time – in which we no longer know what time is. We know neither what remains inside or outside the violated space, inside or outside the interrupted time, nor what space and time can be when they are ruined in this way.<sup>41</sup>

In this extract, Cadava points out the paradoxical nature of the photographic image which serves as a testimony of a past, and at the same time as an abolition of this event as past, as other to the image which stands to testify it. The photograph becomes an “image of ruin” thus expressing a clash between these two spaces and times: the space-time of the event and the space-time of the experience of the photograph. It proceeds by means of connection (recollection) and separation (ruin) at the same time.<sup>42</sup> In fact connection is only achieved through this separation, which Cadava very graphically describes as the “implosion of the image”. Cadava’s ruin regards a clash which is the result of an end. The constitution of representation, and of the space-time of representation, is a sign of the end of the moment that it captures. The space-time of the event is fleeting while the time of the space-time of the photograph, the space and time that the photograph stands to signify, is eternal, or at least continuous with the existence of the photograph as an artefact. It is a space-time that borrows from the event while expanding into the experience of the object. Always partial in its account of reality, the space of representation creates space for affects and interpretations that exceed the facts of its origin.<sup>43</sup> The image represents through its incapacity to re-present a totality, by constituting a space of its own which is *other* to the space to which it refers. This space that according to Cadava belongs to representation is thus rooted in reality yet becomes distinct, and in that sense acquires a certain degree of autonomy; as presence as well as representation. The surface of representation stands thus not as an interface, between the space of reality and imagination, but as the tangible expression of this other space of representation.

This concept of otherness we could perhaps trace back to Jacques Lacan’s theory of psychoanalysis

<sup>40</sup> Drawing and photograph are here considered as images as both being visually experienced representations of originals that are grounded in the physically real world. See Eduardo Cadava, “Lapsus Imaginis”: The Image in Ruins’, *October* 96 (Spring 2001), pp. 35-60.

<sup>41</sup> *Ibid.*, p. 36.

<sup>42</sup> “[...] the image is always at the same time an image of ruin, an image about the ruin of the image, about the ruin of the image’s capacity to show, to represent, to address and evoke the persons, events, things, truths, histories, lives and deaths to which it would refer”. *Ibid.*, p. 36.

This is why, we might say, the entire logic of the world can be read here, and it can be read as the logic of the image. Like the world, the image allows itself to be experienced only as what withdraws from experience.” *Ibid.*, p. 36.

<sup>43</sup> This clash, which rather effects a ‘coming together’, is very aptly concluded in Walter Benjamin’s understanding of the image as “dialectics on a standstill” which Cadava refers to through a quotation from *The Arcades Project* text. See *Ibid.*, p. 38, or Walter Benjamin, *The Arcades Project*, trans. Howard Eiland and Kevin McLaughlin (Cambridge: Belknap Press of Harvard University Press, 1999), pp. 462-63.

and to Michel Foucault's philosophical concept of the *heterotopia*.<sup>44</sup> It is interesting that in both theories emerges the paradigm of another surface of representation, the mirror. Of the mirror Michel Foucault writes:

[...] that sort of mixed experience which partakes of the qualities of both types of location [utopia and heterotopia], the mirror. It is, after all, a utopia, in that it is a place without a place. In it, I see myself where I am not, in an unreal space that opens up potentially beyond its surface; there I am down there where I am not, a sort of shadow that makes my appearance visible to myself, allowing me to look at myself where I do not exist: utopia of the mirror. At the same time, we are dealing with a heterotopia. The mirror really exists and has a kind of comeback effect on the place that I occupy: starting from it, in fact, I find myself absent from the place where I am, in that I see myself in there.

Starting from that gaze [...] I turn back on myself, beginning to turn my eyes on myself and reconstitute myself where I am in reality. Hence the mirror functions as a heterotopia since it makes the place that I occupy [...] both absolutely real [...] and absolutely unreal [...].<sup>45</sup>

Foucault's gazing at the mirror is clearly influenced by Lacan's description of the Mirror Stage as a process of identification. In both cases, the surface of the mirror becomes a means of introspection and identification, a reconsideration of the real by means of the panoptic, externalized vision of the mirror image. What Foucault's description offers is the return to the spatial through the recognition of the surface as a locality and as a third space, as an intermediary between the real and its reflection. This space, which for Foucault is both utopic and heterotopic, undermines the stability of the real (of the referent) by challenging the very integrity of the latter through the displacement, the otherness of the reflection. But is this disjunction to suggest a clear separation of representation from the realms of the real and the imaginary? On the contrary, the *thirdness* of the surface can perhaps be found in its capacity to convey what Roland Barthes defines as *the third meaning* of the image: one that emerges in the intersection of the material and the intellectual and fuses "disguise" with "expression".<sup>46</sup> It does not constitute a boundary but a place of synergistic coexistence between the two. The mirror image thus establishes a paradoxical continuity between the real and the imaginary, through effects of discontinuity.

In the Lacanian paradigm of the 'mirror stage', the infant is subject to an imaginary identification with the coherent image provided by the panoptic view of the reflection, as opposed to the fragmented perception of the body that the infant perceives directly.<sup>47</sup> This coherent image is according to Lacan a misrecognition (*méconnaissance*), a false knowledge of an ideal imaginary.<sup>48</sup> Yet, even though illusory and alienated, it is external but not independent from the referent. The mirror image is still formative of a process of knowledge through identification,<sup>49</sup> as it is impregnated with the preconceived effects of the subject's desires.<sup>50</sup> The surface of projection then stands as a place of a fantasmic identification that is carried out through the representation: it is the place of entrance into the imaginary (the ideal) through the mediation of the symbolic (the reflection). Always partial and always other, the mirror image presents us with a locality whose comeback effect binds the real and the imagined in a relation of mutual projection. Both the real and the imaginary exceed the physicality of the surface, yet it is there that they come to engage in a mutually dependent process of transformation.<sup>51</sup> And although Lacan's mirror stage exchange takes place in the pre-verbal stages of the unconscious, we can consider through Barthes' assigning of the image to the linguistic concept of the *signifier*,<sup>52</sup> how this mediating, 'third' place emerges in the encounter of the referent and its notational, symbolic instantiation upon the drawing surface.

Like the mirror, the drawing proceeds through projection functioning between the imaginary and the

<sup>44</sup> "There also exist, and this is probably true for all cultures and all civilizations, real and effective spaces [...] which constitute a sort of counter arrangement, of effectively realized utopia, [...]: a sort of place that lies outside all places and yet is actually localizable". Michel Foucault, 'Of Other Spaces: Utopias and Heterotopias', in Neil Leach (ed.), *Rethinking Architecture: A Reader in Cultural Theory* (New York: Routledge, 1997), pp. 330-336; p. 332.

<sup>45</sup> *Ibid.*, p. 332.

<sup>46</sup> "The obtuse meaning (the third meaning) then has something to do with disguise. [...] it declares its artifice but without in so doing abandoning the 'good faith' of its referent (the historical figure of the czar): an actor disguised twice over (...) without one disguise destroying the other; a multi-layering of meanings which always lets previous meaning continue, as in a geological formation, saying the opposite without giving up the contrary [...]". See Roland Barthes, 'The Third Meaning: Research notes on some Eisenstein stills', in Heath, S. (ed.) *Image Text Music* (Fontana Press, 1977), pp. 52-68; p. 58.

<sup>47</sup> Lacan, Jacques, 'The Mirror Stage as Formative of the I as Revealed in Psychoanalytic Experience' (1949), in *Ecrits* (New York and London: W. W. Norton & Company, 2006), pp. 75-81.

<sup>48</sup> *Ibid.*, p. 76 and 80.

<sup>49</sup> *Ibid.*, p. 76.

<sup>50</sup> *Ibid.*, p. 76.

<sup>51</sup> "We have only to understand the mirror stage as an identification, in the full sense that analysis gives to the term: namely, the transformation that takes place in the subject when he assumes an image -whose predestination to this phase-effect is sufficiently indicated by the use, in analytic theory, of the ancient term *imago*". *Ibid.*, p. 76.

<sup>52</sup> Barthes, 'The Third Meaning', p. 53.

real. Elements of both are assigned in the drawing a meaning which expands beyond, but also from within its superficial physicality and the analogical signification of architectural convention. In this process of signification the inscription may act either denotatively as a figure or connotatively as a symbol, yet always as a material expression of a deeper not yet realized materiality that it represents. The drawing is formed as the accumulation of places (sites) and things where the effect of the whole exceeds the sum of the parts. The surface of drawing thus does not pose as the effect of a deep structure; it is rather the very surface that poses as a system that produces meaning, through its capacity to enact the space of representation in the experience of its material expression. Rooted in but detached from its origins, the surface of drawing poses at once as the signifier and the signified. Although detached from all origins, it can never be detached from the deep space beyond it. Between the site of origin and the site of architecture (the construction) the surface of drawing stands not as a tool of imitation and separation but as a tool of projection as speculation, where meaning is not simply produced but excavated out of the real through a recursive process of re-sitings and consequent re-sightings. The space of drawing constitutes a site of constant speculation within which a rigorous process of, in Mark Dorrian's terms, "architectural forensics" (a close, 'architectural reading' of the sites of architectural production) redefines (a) reality.<sup>53</sup> Ultimately, it is the place through which the relationship between the real and the imagined is also made real through a recursive process of self-reference, for that which cannot be found on the surface cannot be in architectural design: the drawing is sited within the city just as much as the city is sited within the drawing.

We may then conclude that to define the space of drawing merely as a site among others in the act of representation as a series of displacements, is to diminish its importance as a system of signification and its speculative role in assembling the various sites that contribute to its formation. Despite the dispersal of agency that the multiple 'site-specificities' that emerge in the process imply, the drawing maintains, or rather through its establishment asserts, a 'semiotic authority' upon the various sites that are involved in its formation.<sup>54</sup> The drawing is open to external agency but it is the situating within the drawing that enables this agency to act upon this common ground of signification which is, before anything, a material condition. If we consider that the site-specific is that which is intrinsically defined by its association to a site, the situation upon the drawing surface appears to surpass all previous sites and re-sitings.

How are we then to understand this situation of drawing with regard to the real, the speculative, the material and the discursive sites that affect its figuration? Where are we to *locate* this space of representation in relation to these other spaces? We have paralleled the gesture of drawing to a displacement, a *trans*-lation that would probably locate this space as a destination at the end of the gesture. But neither the origins nor the destinations are singular or fixed. In truth, a drawing is not without any, but with multiple origins and open to an equal number of interpretations. As such, a space that is formed through situations, through relations to other spaces, drawing can perhaps be best defined by the prefix *inter*-: the writing of drawing an intertextuality.<sup>55</sup> But, although pointing out the drawing's cumulative and recursive character, *inter*- overlooks its unique status as the expression of all those spaces that define it and which it also defines, and that can only interrelate through the drawing's own spatiality. *Inter*- can thus be considered as the effect of drawing while the situation, the drawing's relational locality, should be concluded in the *hyper*-, as it emerges in Jean Baudrillard's notion of hyperreality: drawing as a kind of *hyper-site*.<sup>56</sup> In myth and literature, the mirror often poses as an authenticator of reality, where for a creature, the lack of reflection, the incapacity of casting a shadow, or the inability to be captured in a photograph signifies the lack of a soul as proof of the

<sup>53</sup> *Architectural Forensics* has been the title of the brief written by Mark Dorrian for the design opening project of the M.Arch, Year 2007-2009 at the School of Architecture, University of Edinburgh. The brief proposed an understanding of the studio as a site of architectural production. The concept of forensics as a process of investigation suggests an interrogative attitude towards the site that places focus on the details that are normatively excluded. At the same time, the site of production is proposed almost as an extension of the original site of investigation, the city. This extension of the enquiry to the studio could be considered as an extension to the drawing itself, through the tracing of processes, materials and inhabitations that, consciously or not, condition its figuration. The act of forensic investigation is in effect paralleled to the 'close observation' that is required not only in the sites without, but also within the same drawing throughout the process of its figuration.

<sup>54</sup> On the notion of autonomy Jason Gaiger writes: "Derived from the Greek words *heautos* (self) and *nomos* (law), the literal meaning of 'autonomy' is the capacity to give the law to oneself, that is, to be self-governing or self-directed. It was originally employed by Kant in the context of his moral philosophy to describe our ability freely and rationally to adopt our own moral imperatives". See Gaiger, 'Dismantling the Frame', p. 52.

<sup>55</sup> Julia Kristeva, 'The Bounded Text', in *Desire in Language: A Semiotic Approach to Literature and Art* (1980), pp. 36-63.

<sup>56</sup> Jean Baudrillard, 'The Precession of Simulacra', in *Simulacra and Simulation* (Anne Arbor: The University of Michigan Press, 1994).

unreal and the inanimate.<sup>57</sup> The projection on the drawing surface is however, not a reflection but a *shadow* that can be traced back to the departure of Diboutades' lover. It belongs neither strictly to the real nor to the imaginary.<sup>58</sup> Yet it is there that the elusive real is conquered through 'transformation' (considering Lacan's idea of identification as transformation of the subject). The drawing poses as the shadow that, detached from its origin, animates the surface while acquiring a "soul" of its own.

Enabling a systematic re-organization of the traces of a reality that marked the presence and absence of an original site, this drawing was also a "drawer" of curiosities. Re-sitings became re-sightings, and even looking was performed as a surface effect. Performed through bodily interaction, this re-organizing was extended to the viewer as re-sightings, which facilitated new 'readings' that revealed new spatialities – in-situ recalibrations of the site that emerge through the experience of the object. In the end, the 'translation' did not merely entail a repositioning of the site but also a 'repositioning' of the architect. With regard to the immaterial 'sites' of the drawings, we can add to Kwon's theorization of the institutional frames of conventions, the conceptual (re)sitings that emerge through sensory processes of 'inhabitation'.

In *Draw of a Drawing*, the physical attachment to the site of presentation implied by installation as a form of practice facilitated the enactment of this performativity. Installation can therefore be considered as a form of drawing in space: of drawing out from the surface the space of representation. The scaling of the transcription within the box allows for the expansion of the field, but what it primarily achieves is to assign representation to the scale of the body. *Draw of a Drawing* is then experienced by the viewer through the "drawing out" of its elements in a choreography of manipulation.

The drawing therefore emerges as something more than a site in this transitive act of representation. If we consider that the site-specific is defined by an intrinsic association to a site, the situation upon the drawing surface appears to surpass all previous sites and re-sitings. Weaved out of the intertextual assemblage of all previous conditions, the drawing surface is constituted as an accumulation of a number of sites. Moreover, this non-hierarchical relationship between these sites as intermediate states of representation undermines the origin of the drawing. At once projected and projecting, the drawing surface reveals a 'reality' that is not yet: rooted in but detached from sites of origin and fabrication, it constitutes a hyperreality. Ultimately, the surface that is the drawing is the place through which the relationship between the real, the absent and the imagined is materialised through a recursive process of self-reference. For that which cannot be found on the surface, cannot be in architectural design: the drawing is sited within the city just as much as the city is sited within the drawing.

<sup>57</sup> Mythical creatures such as vampires are traditionally depicted in fiction as not having a reflection. The adjective *inanimate* refers to the not living, the ones who do not possess a soul (in Latin *anima*). The term however can be projected further to the static, that which is not animated.

<sup>58</sup> The shadow occasionally appears in fiction as a form of projection that is otherwise related to reality than that of the reflection. Instances of this are the characters of Count Dracula in the Francis Ford Copolla 1992 film and J.M. Barrie's Peter Pan. Peter Pan is considered to be a fusing between the real boy Peter Llewelyn Davies and the mischievous imaginary character of Greek mythology Pan. He is a projection of the contingency that literary fiction, where all possibilities are open, entails for a real boy. Peter Pan does cast a shadow, albeit this shadow becomes detached from his body, accompanying him yet acting independently at its own will.

## V DRAWING IN SPACE

The drawing thus emerges as something more than a site in this transitive act of representation. Weaved out of the intertextual assemblage of all previous conditions the drawing surface is constituted as an accumulation of a number of sites. Moreover, the non-hierarchical relationship between these sites as intermediate states of representation, undermines the origin for the drawing. At once projected and projecting the drawing surface constitutes the drawing out of a reality that is not yet.<sup>59</sup> To consider then this site of hyperreality, this space that lies beyond, surpasses the understanding of drawing as a mediative tool in architectural thinking. If the 'subject-matter' of architecture is constructed space, then we can perhaps redefine drawing not as a tool but as the locus of architecture: it is the primary space that is configured through architectural thinking, operative to future projections yet a real field of action for architecture.<sup>60</sup>

Translated through a range of mental and physical sites, the drawing establishes the kind of site relations that can be found in site-specific art: phenomenological, discursive and even institutional. The consideration of site-specificity through the work of Miwon Kwon allows us to consider drawing as a site-specific spatial practice where the surface becomes the final site of representation, and this re-siting constitutes more than a form of installation. Rather, it is a gesture of active placement which occurs in time and across space, and which results in the formation of the space of drawing.

In the essay 'Dismantling the Frame: Site-Specific Art and Aesthetic Autonomy', Jason Gaiger contradicts Kwon's classification by proposing that "the reorientation of recent art practice toward site-specificity is best understood as a progressive relinquishment of the principle of aesthetic autonomy".<sup>61</sup> Gaiger's argument suggests that this form of site-specificity, one that exceeds the function of localized display, diminishes the meaning of the work as a self-sufficient expression. In the case of architectural drawing however, no such diminution of self-sufficiency is at stake. On the contrary, the multiple associations that are produced through these emerging site-specificities are integral to the fulfilment of the drawing's operation as a cumulative and generative agent of architectural thinking. Furthermore, the value and significance of the work is not driven by a teleology of aesthetics but rather by the drawing's ability to assign spatial meaning to the multiplicity of signs that constitute it. The drawing is thus cumulative but self-sufficient in its ability to produce spatial meaning. This effect is projective but it appears to overcome the semiotic potential of projection as defined by architectural drawing conventions as it occurs both figuratively and analogically through a process that is not reductive but transformative. This process of spatial semiosis, of the semiotic production of a space, takes effect in the experience of drawing which occurs both in a material and a mental, projective, level.<sup>62</sup> The surface of drawing becomes a field not of pure analogy but also of contingency and interpretation. Drawing emerges there on the surface as well in the spaces that it signifies, on the lines that purposefully guide the gaze as well as in the 'gaps' of signification that they reveal as a kind of semiotic "espacement" – the typographic opening of contingency as described by Ella Chmielewska.<sup>63</sup> The material inscription of the surface has a semiotic effect and this semiosis, in turn, has a material effect on the space of drawing.

If the semiotic value of drawing is thus driven by the experience of drawing as space through the interaction with the surface, what is at stake in considering drawing as an experience of this space? Marco Frascari concludes his enquiry on the virtues of paper within architectural thinking as follows:

<sup>59</sup> On *hyperreality* see Baudrillard, 'Simulacra', pp. 1-42.

<sup>60</sup> "The subject-matter (the building or space) will exist after the drawing, not before it". Evans, 'Translations', p. 165.

<sup>61</sup> Gaiger, 'Dismantling the Frame', p. 46. Drawing from Kant's *Critique of the Power of Judgement* (1790), Gaiger later defines aesthetic autonomy as "the claim that art is intrinsically valuable and hence not fully subsumable under any other end or purpose", p. 52.

<sup>62</sup> Frascari traces the term in textual biblical exegesis where, introduced as *anagogia* by Augustine de Dacia, it was used to describe one of the "four senses" of the text (literal, allegorical, moral and anagogic), a composite word from the Greek words *ana* (above, high) and *agein* (to lead). These four senses can be considered to describe degrees of interpretation, or rather 'comprehension' of the text. In this sequence, *anagogy* represents the highest sense of the text and thus as Frascari writes, its *telos*. Frascari, 'Reflections on Paper', p. 28.

<sup>63</sup> On the concept of *espacement* as a space of contingency and anticipation of meaning, see Ella, Chmielewska, 'Writing with the Photograph: *Espacement*, Description and Architectural Text in Action', in Anna Dahlgren, Nina Lager Vestberg, and Dag Patersson (eds.), *Representational Machines: Photography and the Production of Space* (Aarhus: Aarhus University Press, 2013), p. 83-105.

What has this tracing on paper got to do with buildings? What makes these sheets relate to what we finally call 'constructed' architecture? Nothing: different matter, different dimensions, another substance. Should we take the real architecture to reside in stones, the bricks, or the paper? Conceivably nothing of these is architecture, it is something that escapes us when we describe it factually. It possesses, exactly, only the substance of a facture plus an extracorporeal essence - a 'subtle body' - foreshadowed by the badly inadequate character of the signs with which we attempt the impossible venture of ineffably representing that which cannot be desired [...].<sup>64</sup>

Frascari's conclusion suggests that both drawing and building are always partial, subtotals of architecture. The essence of architecture is hence found in the conjunction of the factual and this "extracorporeal essence", which is always obscured in the sense that it is never fully revealed by the facture which is the drawing, or even the building. Indeed, any kind of space considered in its pure physicality would be nothing more than that physical presence and thus bound to remain partial as representation; it is pure object. Upon enabling a systematic re-organization of the traces of a reality that mark the presences and absences of an original site, the drawing is a drawer of curiosities, an archive and a display of the traces of these other sites. But any display, will remain partial and sterile while far from observation. The drawing may be separated from the site of origin but it can never be separated from the body. It is in fact a manifestation of architecture, but one which is completed by means of inhabitation. It is inhabitation that will facilitate the experience and interrogation of architectural space: the *animation* of representation. Re-sitings hence become re-*sightings* and even looking is performed as a surface effect. As this reading is performed through bodily interaction, through touch, vision and mental projection, the re-organizing is extended to the viewer and these re-sightings reveal the possibilities of new spatialities.

That is where this constructed space is fully in effect, at the conjunction of facture and inhabitation. Drawing is a superficial installation of writing that intrinsically resists its superficiality. Perhaps drawing could thus overcome its physical two-dimensionality, in order to unfold in a space that would allow for its immersive inhabitation; that would assert its situation and potentially assign material presence to its projections. Nevertheless, it would always remain attached to the surface: its semiotic powers reside more in the superficial rather than the architectural.

<sup>64</sup> Frascari, 'A Reflection on Paper', p. 32.



THE CITY [WITHIN] THE DRAWING

THE CITY [WITHIN] THE DRAWING

## I A THESIS ON MOVEMENT

The installation *The City [within] The Drawing* was presented at the Tent Gallery, at the Edinburgh College of Art, in March 2015 [C1-C2]. The aim of this installation was to respond to the series of drawings/installations that had been produced over the course of the research, and to bring together the various themes that these had foregrounded in a conclusive piece. Unlike the preceding installations this one was not posed as an expanded form of drawing, but as an installation combining drawing with modelled elements.

This thesis set out to question the material and temporal limits of conventional codes of architectural drawing, by drawing connections between the concepts of space and representation through the idea of movement. In this context, movement stood to represent both material and conceptual notions of multiplicity and displacement. For the purposes of this thesis, central to this understanding of movement as oscillating between matter and concept has been the theory of Henri Bergson. This served as an entrance point to the understanding of space-time in modernity, as well as to highlight the contrast between stasis and movement as a kind of ‘illusion’. This illusion – or rather abstraction, according to Bergson, is derived from the limitations of visual perception and shapes our understanding of notions of extensity (and therefore space), as removed and separated from duration (a spatiotemporal concept of becoming). This idea of a ‘false image’,<sup>1</sup> and therefore of a false understanding of movement as being opposed to a condition of stasis has been at the basis of this research. One of the main arguments of this thesis has been that a condition of difference and becoming – as kinds of movement – is inherent and not merely operative but, as we saw through Catherine Ingraham, constitutive of architecture. Throughout the project, this false understanding of movement has been reflected in contrasts of order and disorder – or in Diana Agrest’s terms ‘orderlessness’ – whereby expressions of architecture, both as constructed space and as a conceptual creative practice, are consistently analysed and understood through dualisms of absolute conditions of movement and stasis, such as order and event, the formal and the informal, the individual and the standard, the disciplinary conventional and the arbitrary irrational.

Within the disciplinary realm of architecture the false opposition between movement and stasis, was anchored in this thesis upon another ‘opposition’: the city and its image in architectural representation. The city, posing as an extreme kind of spatial construction, is commonly considered as a place of high complexity, within which emerge ‘illegible’ and ‘opaque’ conditions, whereas architecture and the abstraction of the city in architectural drawing conventions are presented as stable and coherent images of this overwhelming complexity. The transition therefore from the experience of the city to its normative representational counterpart can be considered in this way as a fixing of the city’s movement, thus revealing the discrepancy between the real and the representation.

In the first part of the thesis, this discrepancy was challenged through an examination of the ways in which both city and drawing could be understood as ‘kinetic’ conditions. A series of cultural modes of production were used to map out the changing modes of perceiving of and relating to the city, as they developed out of the technological expansion of vision as well as the transformation of the urban condition across modernity. Eventually these practices sketched out a notion of urban kineticism, where the only emerging opposition was the one drawn in the negotiation between the city and its consistently proliferating mediation through virtual modes of representations, between physical and

<sup>1</sup> This term I am borrowing from Gilles Deleuze’s reading of Bergson and his idea of a ‘false movement’. Gilles Deleuze, *Cinema 1: The Movement Image* (1983), trans. Hugh Tomlinson and Barbara Habberjam (London and New York: Continuum, 2005), p. 2.



virtual modes of inhabitation. These new modalities of perception can perhaps be best summarized through Jonathan Beller's notion of the cinematic mode of production, which ties succeeding media such as television and digital networks to the immersive effects of cinema. The city is therefore drawn as a condition of congested representations where the pursuit of the real, through the intensification of perception is compromised and upended by the displacement of the subject into increasingly dematerialized spatial practices. These, in turn, undermine normative conceptions of presence and representation. The virtual manifestations of space that are forged out of the cinematic and the digital suggest a displacement of modes of inhabitation into a visually consumed virtuality, which is produced out of acts of simulation rather than representation, and in this way construct and formulate not representations but effects of consciousness. The thesis argued that as both the spatial and the urban are being redefined, and particularly through a proliferation of imagery – where notions of language and 'translation' appear as inadequate to convey the 'spectacular' exchanges taking place between the real and the virtual – architecture too needs to redefine its modes of representation, if it is to maintain its role as constitutive agency of space within the urban.

The effects of this recourse to the virtual upon architectural thinking were traced in the thesis through a comparison of the 'cartographic' and 'geographic' strategies of architectural design and representation that emerged over the last forty years. These are considered to reflect the pressure initially exerted upon architectural practice by the so-called crisis of representation drawn out of the philosophical and political debates of the 1960s, through opposing strategies of representation and simulation. On one hand, the cartographic, as defined by Mark Dorrian, can be associated with post-structuralist notions of language and representation that suggest an understanding of drawing itself as a kinetic and spatial process, where the subject is not displaced but dispersed through the participation in a utopic multiplicity of spaces. The abstraction of the representational codes, what Louis Marin describes as the "gap" of representation, becomes operative in a process of signification through difference. On the other hand, the geographic, as introduced by David Gissen, asserts its validity through an iconic semblance, which immobilizes the operative movement of representation as a transition between the real and the virtual. In effect, the geographic and its digital successors remove what Marin frames as the dual register of drawing as representation and territory, as both the description of an exteriority of referents and the interiority of its own narrative.

City and drawing can therefore be understood as being both characterised by such a duality of register. The former due to its textual nature, which is entailed not only in its complexity but also in the processes of representation through which this complexity is structured and enacted. The latter, due to its function as index and icon, therefore as at once same and other to a referent reality. When the discrepancy between the real and the representational is then projected upon notions of legibility and translation, it is this common textuality that has in this thesis been considered as providing a common frame and ground for the transition from city to drawing. The thesis proposed that this transition can be fulfilled not through structuralist notions of translation that anticipate the ideal of an absolute representation, which stabilises the object, but through an understanding of the city and drawing as intertextual spaces, within which operations of description and narrative become interchangeable, equally real and equally imaginary. Louis Marin's notion of the utopic text, points to an understanding of representation that is manifested in the city and in the drawing as a multi-spatial rather than a-spatial condition, which is forged at the interplay of multiple readings and multiple writings. The dual register of 'languages' of representation, such as the codes of architectural drawing, can then be considered as a factor of instability, which is not however a liability for the integrity of meaning.

[C1] Day view through the gallery

[C2] Night view through the gallery

Rather, this duality motivates a process of a representation that is just as (inter) textual as its object. Representation emerges then as operative for the definition of the real and the motivation of the speculative.

## II THE DRAWING WITHIN

The second part of the thesis, the *Speculum*, mapped out the process of representing the city of Edinburgh through a series of transcriptive operations. The understanding of drawing as not merely a representation but also as a distinct intertextual spatiality, was expressed through the physical expansion of drawing into three-dimensional space by means of installation. This move, which was initially an intuitive choice, proved useful in uncovering the process of drawing as a kind of situated experience; where reading and writing the drawing can be understood as an immersive form of inhabitation, while the interiority of architecture's own codes of signification is also revealed as being in a productive exchange with external notions of agency and convention.

Drawing from radical practices of 'documentation' that challenged notions of subjectivity and objectivity, such as Salvador Dalí's paranoid critical methods of perception, or the zero-degree writings of Georges Perec, these 'drawings' sought to challenge the biases that govern normative architectural representations through an alternative form of urban representation. In *Weaving Lines/Looming Narratives*, focus was shifted from the static to the transitive elements of space, thus questioning notions of presence in relation to perception and representation. The idea of a more 'inclusive' representation, consequently raised an issue of semiotic integrity for architecture and its forms of notation. This was further questioned, through text, by reflecting on Catherine Ingraham's theorizing of architecture's own mode of operation, which foregrounded the idea of a concealed constitutive act of movement and displacement as being found at the basis of architectural thinking. Whereas then architecture's 'integrity' and 'propriety' appear to be anchored on notions of convention that present themselves as static and immutable connections to an idea of origin, it has been argued in this thesis – through Gilles Deleuze's questioning of the Platonic subordination of the copy to the original – that architecture's fixing of convention is itself a concealment of architecture's true operation, as a constitutive act of representation that proceeds through difference and invention. As Ingraham writes, "to architect is to *make* [my emphasis] proper", that is to constitute and define the proper from within architecture's own cunning workings, where cunning stands for the craft of invention that is inherent within any kind of textual representation and signification. Thus, *Weaving Lines/Looming Narratives* introduced into the linear code of architectural drawing the transitive aspects of a small urban site by not displacing convention altogether, but its predefined boundaries.

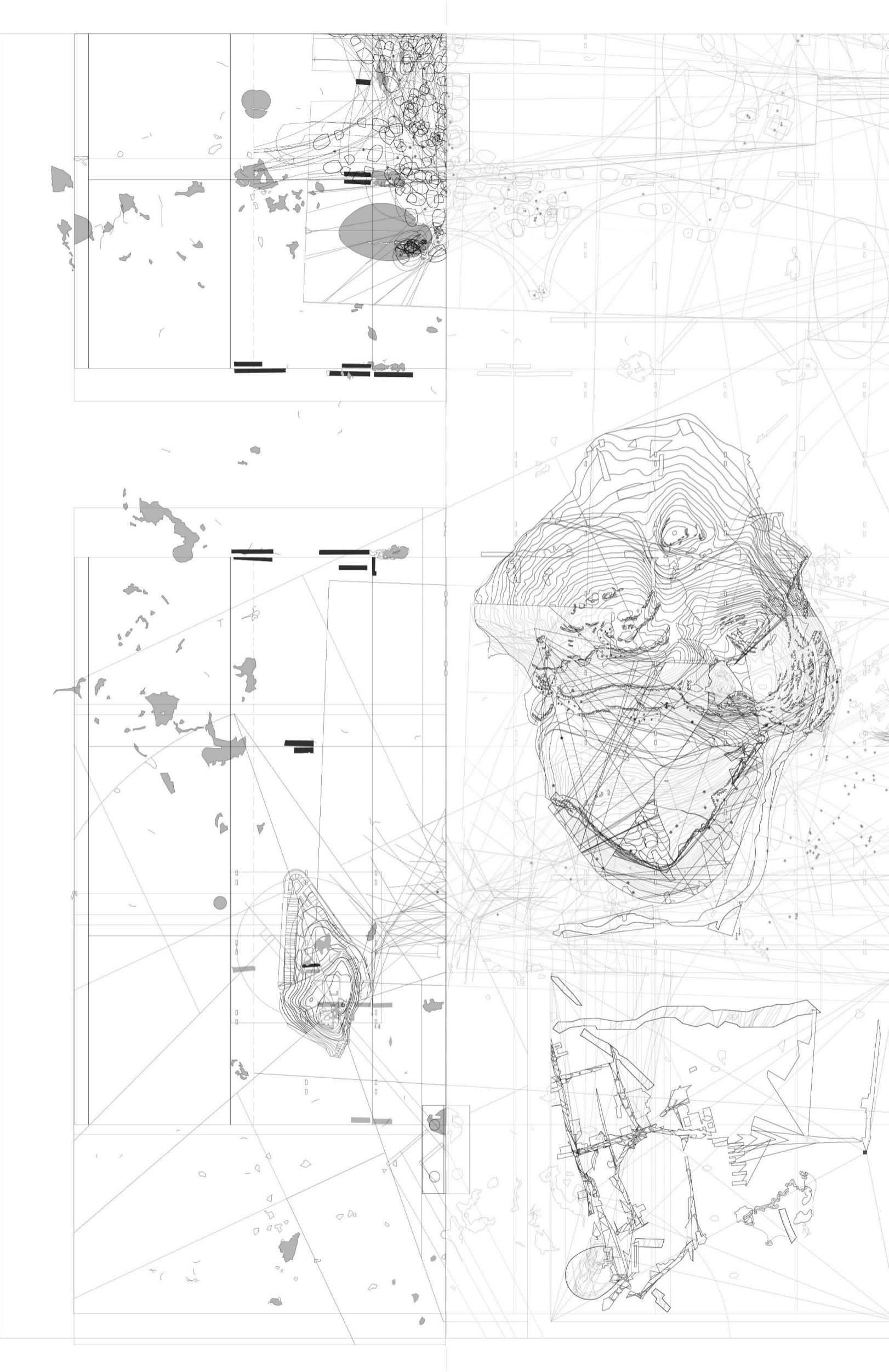
Whereas *Weaving Lines/Looming Narratives*, as a first experiment towards this alternative representation of the urban, focused on processes of notation and inclusion that regarded the internal constitution of the ground of representation, in the two following installations, *Kaleidoscopic City* and *Draw of a Drawing*, issues were raised of the external 'structures' that come to inform and interact with that ground. In *Kaleidoscopic City*, this was expressed through a critical engagement with the scopic regimes that have historically infiltrated the modalities of urban representation with specific ideological and epistemological agendas. This raised questions about the ways in which the image, and by extension what is understood as the very 'presence' of the city, are in fact constructed out of both material and conceptual operations. This was reflected on the false opposition between movement and

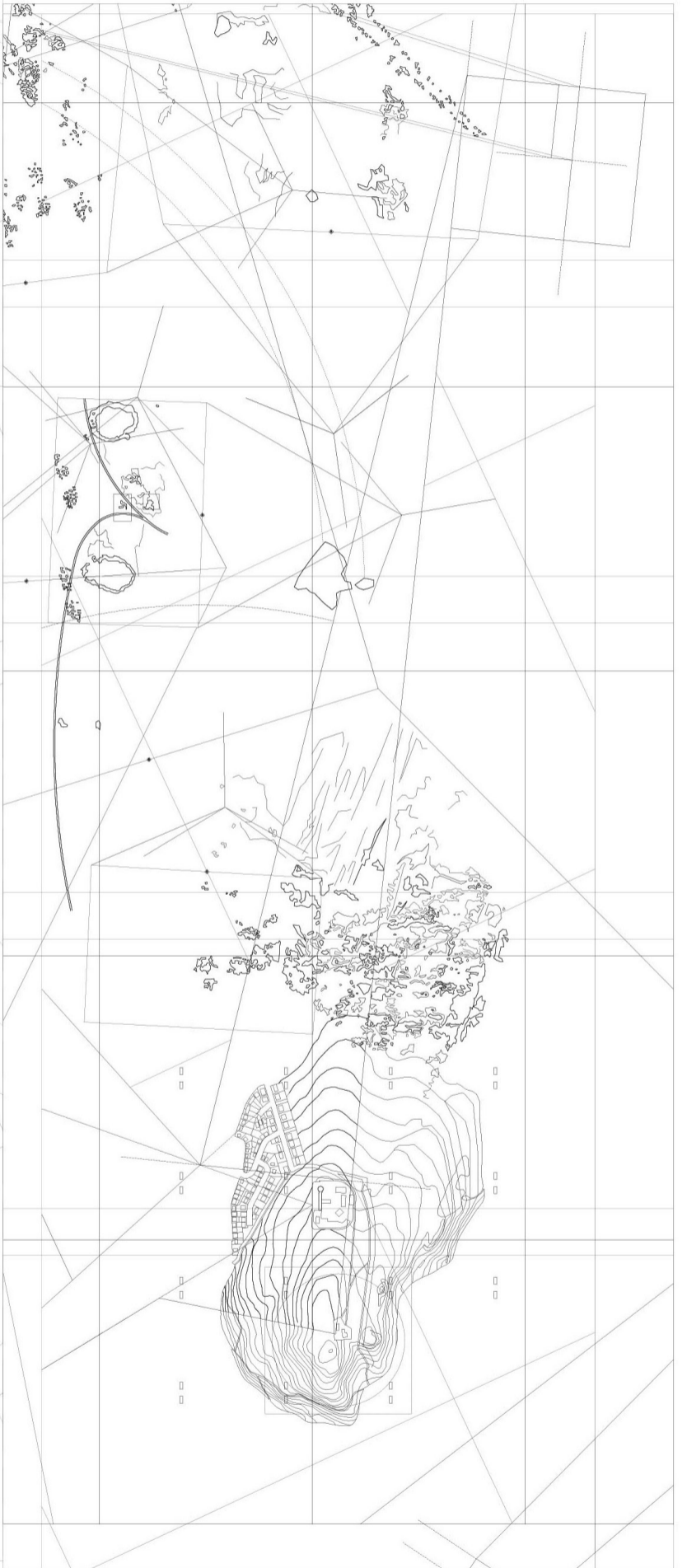
stasis in two ways. On one hand, by revealing the instability of presence as a kind of origin; on the other, by positioning the notion of the scopic regime within a frame of specificity that stretched to include varying attitudes of perception – from individual experience to the collective memory and systemic conventions – as equally operating within the cumulative vision of architectural drawings. By scaling the transcription of the city down to the size of a ‘manageable’ and portable object, and compressing it to the two-dimensionality of the surface, *Draw of a Drawing* brought the drawing of Edinburgh – which had been gradually constructed out of the operations of the two preceding installations – closer to the physical instantiation of normative forms of drawing. This continued the discussion on the exchanges that occur between the material and the mental by framing the concept of specificity through the current discourse on notions of site in contemporary art. Miwon Kwon’s expansion of the site as origin to include phenomenological as well as institutional and discursive frames, helped introduce into the hybrid space of drawing the effects of the multiple spaces that condition its formulation, as distinct *sites* and in a sense as distinct and multiple origins. Vilém Flusser’s analysis of writing as a process in which the material situation informs the concept of signification, foregrounded the material and corporeal aspects of signification, while highlighting within this multiplicity of ‘origins’ the drawing’s function as a continuous spatiality that dialectically expands between the projective and the projected, the material and the conceptual. It is only through the – still partial – material situation of the drawing that the various ‘situations’ that comprise the itinerary from the real to the drawing are capable of forging a cumulative representation, which is capable of ‘bringing’ things to architecture’s ‘field’ of visibility and action. This representation is not then singular nor static, but in turn constituting a mutable site of inhabitation for the architect.

### III THE CITY WITHIN

In the introduction to this thesis I provided a definition of the terms that compose ‘kinematography’, but not explicitly of the term itself. This composite term etymologically could be interpreted in two ways: as a writing *through* and a writing *of* movement. *The City [within] the Drawing*, as a culmination of this thesis is posed as a ‘kinematography’. The three preceding installations, together attempted to forge an alternative kind of urban representation by gradually building upon a reconsideration of not merely previously established conventions but of the overall understanding of convention as an actor of order and stability within architectural representation. *The City [within] The Drawing* is a cumulating transcription within which all installations are embedded and working upon one another [C3].

To write, to draw, or to represent, as has been illustrated in multiple occasions in this thesis, is always in a sense to move and to be moved, to destabilize, to interact and to change position. This has been illustrated in this thesis through Jacques Derrida’s concept of *differánce* as the possibility of difference and deferral of meaning in writing, as well as Roland Barthes concept of the text, and even his analysis of the photographic image in texts such as *Camera Lucida*. Considered as such, drawing is a not only a ‘topical’ but also a ‘tropical’ condition, within which emerge various tropes, various kinds of (what has been at times described in this thesis as) ‘specificity’ – derived from the notion of site-specificity and meaning the condition of referring to specific origins or situations. These have been defined in the context of this thesis in relation to ‘situations’, which may refer to locality, visibility, language and – as we have seen with regard to the disciplinary linearity of architecture – even modes of mobility. If then a condition of movement is indeed inherent within the workings of architectural





thinking and drawing, even if concealed, perhaps the concept of an architectural kinematography as a writing *through* movement is in fact redundant; in the same way that conceptions of order and discipline, when considered through the idea of drawing as a mutable cumulative spatiality can become interchangeable with notions of chance and diversion – for instance, when the chanceful walking of an individual becomes equally important to the designed materiality of a skyscraper, or when the flight of a seagull becomes equally significant to a regime of representation. What this kinematography has offered however, is the writing *of* movement, and thus the registering of this redundancy as proof of the fallibility of representation's – and by extension – architecture's stasis. This does not simply regard the uncovering of the city as a kinetic space that expands beyond its built instantiations. Rather it regards the uncovering of drawing as a space within which this movement is enabled, and which is also itself enabled by the inhabitation of the architect/reader. Such an understanding of drawing offers the possibility of displacing the ideal static: the convention as the stronghold of both the real and the discipline.

The consideration of drawing as a central space of action for architectural practice thus opens up convention as a field in its own right, which cannot be bypassed but can be, respectively with drawing, not only inhabited but, consequently, reconfigured. The projective and linear core of architectural representation has persisted, as a sign itself of the integrity of architecture as discipline, despite the impact upon architectural thinking and making of cultural inventions and media (such as paper, the print or even cinema). Already from the brief references that have been made in this thesis to digital modes of representation, the effect of their relevant media and modes of operation upon architectural practice is evident, and anticipated in the use of their computational and simulative abilities in architectural representation and design. An investigation of the possibilities offered for informing convention and the respective 'domestication' of the digital field as a medium of architectural representation – as opposed to either a skeumorphic simulation of pre-existing modes, or a means to modelling and computational calculation – could present an opportunity for the continuation of these explorations.

This last installation cumulatively addressed the negotiations that emerge between the actuality of the city and its representations. Drawing from the previous installations it engaged with representation as an act of inhabitation, which involved the spatial experience of both city and drawing. *The City [within] The Drawing* explored the issue of the 'material' trace of not only the city, but also the observer and the notation itself. Upon embedding its preceding acts, it addressed the urban as a transitory condition between order and event.

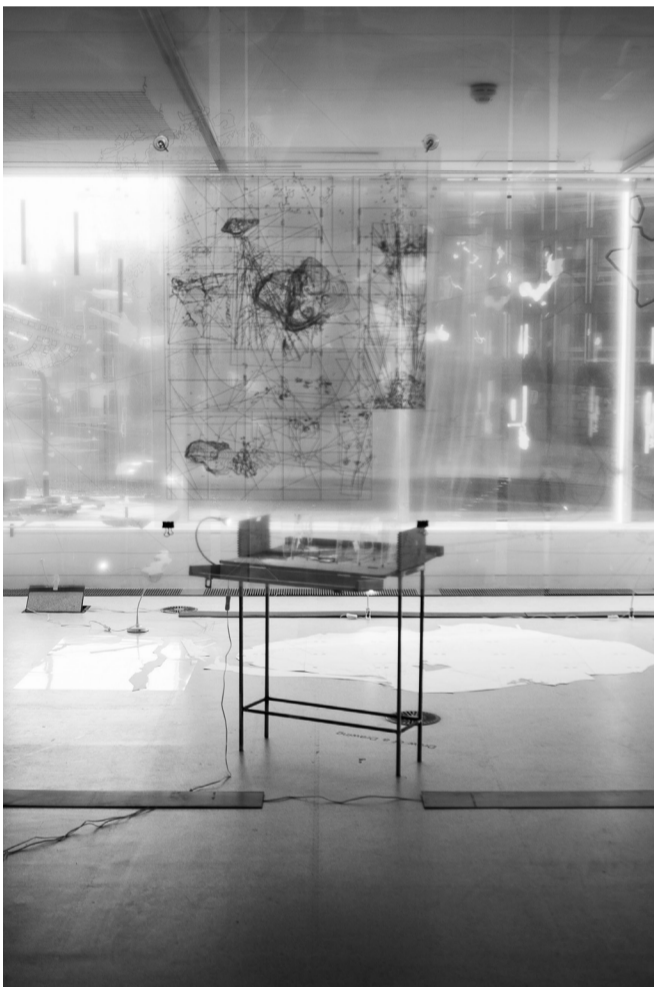
Inscribed elements printed across suspended layers of clear acetate presented a constellation of marks that corresponded to specific trajectories, relationships of vision, and transformations of the materiality of both the city and the preceding installations, which as we have seen grafted conventional codes from dance notation, geological mapping and celestial cartography into architectural convention [C4-C5].

Reterritorialized in a provisional way upon a transparent substrate material, these signs were constantly repositioned against the city and the space of the gallery through the relational movement of the viewers. The nesting of the drawing's earlier phases within one another, through the layering of the transcribed traces, was extended to the city, through the transparency of the drawings and the gallery [C6-C7]. The multiple layers of the drawing carried the presence of the previous installations,

not as mere signs but as distinct situated spatialities, collating their graphic marks with markings and scars from their previous physical locations. Stenciled-on polyester sheets introduced the elements of these previous situations as opaque areas that fused the transparent layers with the neutral 'white' of the gallery; the locality of this last installation. On the floor, lacking transparency, the signs of the various layers became fixed upon the surface of the gallery, yet were once more transformed by coming together upon a single surface [C8-C9]. It is there, on the single surface of the floor, that part of the cumulative drawing came to be seen. From there, modelled elements 'pushed through' the two-dimensionality of the surface, to reveal in space the 'city' that emerged from within the drawing: one which is at once other and same to its onlooker [C8-C10]. *The City [within] The Drawing* did not pose as one drawing, but was rather concerned with the situating of the city and the drawing in relation to one another. Its main contribution to the representation of the city was rather a model than a drawing, which did not propose a representation but instead sought an affirmation of presence; of the presence of the drawing's concealed spatiality and movement. The city that is situated within the drawing, unlike Borges' map it does not attain its hyperreality through exactitude but through difference and separation.

As relations are persistently reconfigured by observation, a condition emerges where city and spectator are mutually situated in shifting relations to one another through the agency of the installation, which acts as a 'mediating object' [C11-C12]. In this recursive process between sites of origin and sites of representation, the installation offered an opportunity to immerse oneself in, or rather inhabit, a 'space of representation' as the material recoding of the city within an expanded field – that is, within a representational field that now incorporates the kind of objects and conditions upon whose exclusion its coherence had previously depended. This space of the drawing is ever-singular, ever-specific and therefore unrepresentable. Like the city within, it is 'situated' in the real city as an origin, but it is also situated in a number of other sites that have informed its making. These installations have not substituted drawing but have instead extended its understanding by offering insights into this notion of drawing's projective spatiality. For this, they can never be considered as anything other than views into my own 'specific' movement into a space of drawing, yet views that in their physical instantiations can be themselves inhabited and reanimated.





[C4] *TheCity [within] The Drawing*: Planar traces of the preceding installations on the transparent surfaces

[C5] *Draw of a Drawing in The City [within] The Drawing*

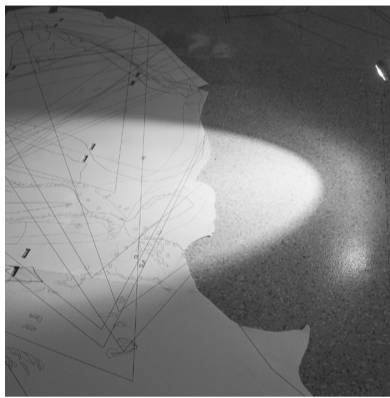
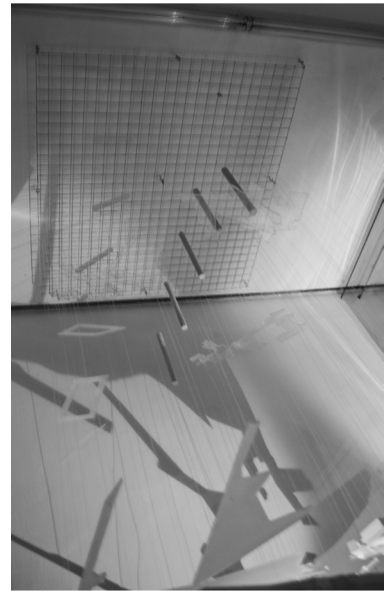




[C6] *TheCity [within] The Drawing*: Interior view

[C7] *Draw of a Drawing* was embedded in *The City [within] The Drawing* not by transcription on the transparent acetate sheets but also by standing physically as a key for the installation





[C8] *The City Within* where surface elements are materialized in plaster and visual relations are concretized in sanded acrylic, emerging from *The Drawing* on the floor

[C9] *The Drawing* detail

[C10] *The City Within* details





[C11] Views of *The City [wiltin] The Drawing* from the city

[C12] View from the installation to the city through *The City Within* model

Timeline

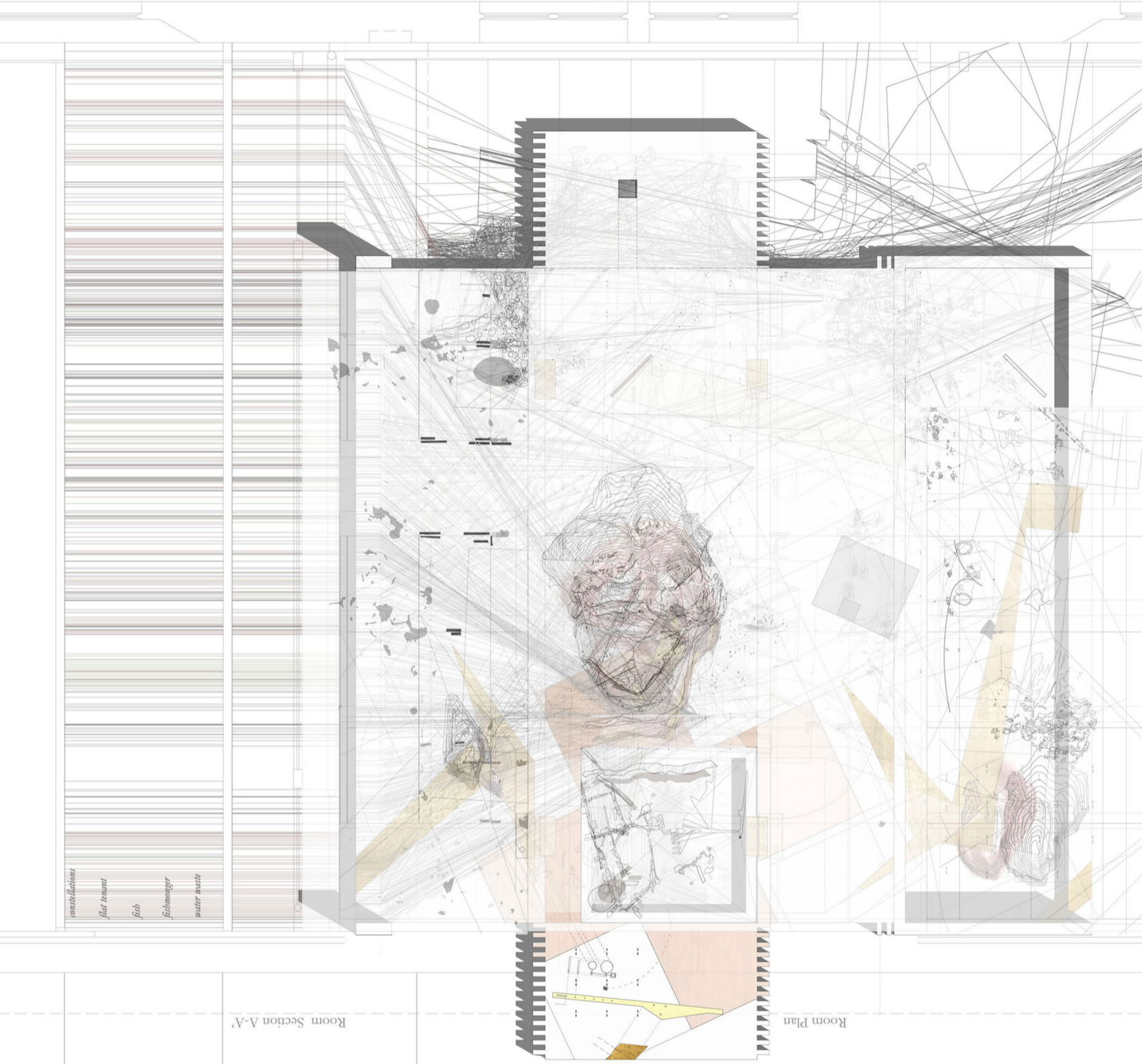
Room Section A-A'

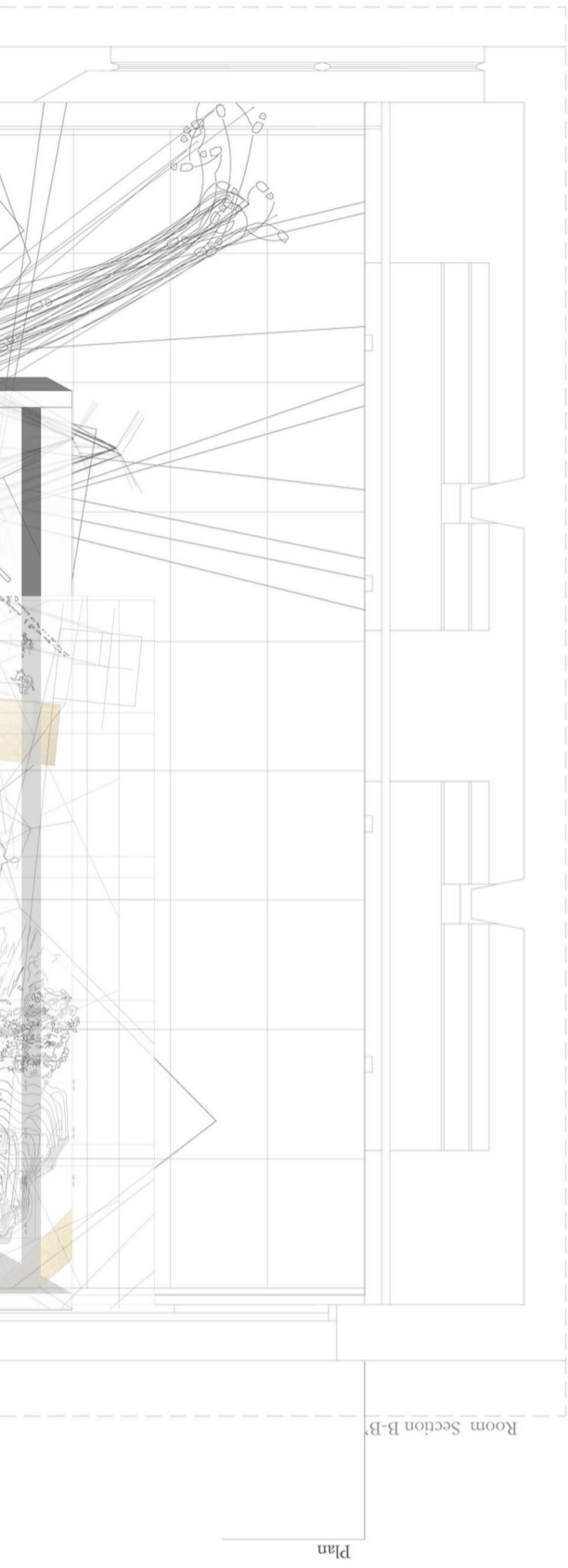
- constellations
- flat tenant
- fish
- fischinger
- water waste

A

B

Room Plan





[C14] *The Installations Within the Drawing*

## LIST OF FIGURES

1. 'Aristipp after a happy landing', from Jacques Ozanan, *Recréation mathématique e physique* (1778). In Oechslin, Werner, 'Geometry and Line: The Vitruvian "Science" of Architectural Drawing,' *Daidalos* 1 (1981) pp. 20-35; p. 20.
2. *Perspective Machine*, Albrecht Durer (1525) <http://www.gettyimages.co.uk/detail/news-photo/perspective-machine-draughtsman-making-a-perspective-drawing-news-photo/463980589>
3. Animal Locomotion, Eadward Muybridge (1877). <http://www.imaging-resource.com/news/2012/11/27/eadward-muybridge-the-photographic-pioneer-who-froze-time-and-nature>
4. Decent of Inclined Plane, Etienn-Jules Marey (1882). <http://www.artinsociety.com/pt-1-changing-concepts-of-time.html>
5. '*Chronocyclograph of golf champion- Francis*', Frank and Lilian Gilbreth (ca. 1915). [http://we-make-money-not-art.com/the\\_chronocyclegraph/](http://we-make-money-not-art.com/the_chronocyclegraph/)
6. Untitled, Moholy-Nagy (ca. 1936-1946). <http://www.nyartbeat.com/event/2015/6BEA>
7. *Rigadoon Dance Notation*, Feuillet (1721). [https://commons.wikimedia.org/wiki/File:Feuillet\\_notation.jpg](https://commons.wikimedia.org/wiki/File:Feuillet_notation.jpg)
8. Labanotation, Arm and Leg Gestures. <http://user.uni-frankfurt.de/~griesbec/LABANE.HTML>
9. Labanotation, Rudolph von Laban. <http://microcities.net/portfolio/measuring-space/>
10. Amsterdam, Daniel Stalpaert (ca. 1670). <https://commons.wikimedia.org/wiki/File:Amsterdam1662.jpg>
11. Map of Paris, Jacques Gomboust (1652). [https://commons.wikimedia.org/wiki/File:1652\\_Gomboust\\_Map\\_of\\_Paris,\\_France\\_%28c.\\_1900\\_Taride\\_reissue%29\\_-\\_Geographicus\\_-\\_ParisSm-gomboust-1900.jpg](https://commons.wikimedia.org/wiki/File:1652_Gomboust_Map_of_Paris,_France_%28c._1900_Taride_reissue%29_-_Geographicus_-_ParisSm-gomboust-1900.jpg)
12. Plan of Rome detail, Giambattista Nolli (1748). <http://catasterist.com/2010/01/my-own-personal-nolli-map/>
13. Ordnance Survey Map of Edinburgh detail (1948). [http://www.edinphoto.org.uk/0\\_maps/0\\_map\\_edinburgh\\_1948\\_morrison\\_street.htm](http://www.edinphoto.org.uk/0_maps/0_map_edinburgh_1948_morrison_street.htm)
14. Ordnance Survey Map of Edinburgh detail (2016). <http://digimap.edina.ac.uk/roam/os>
15. Google Street View, Looking towards Site I in Marchmont, Edinburgh. [https://www.google.co.uk/maps/search/marchmont/@55.9381524,-3.1920043,3a,75y,281.38h,87.59t/data=!3m7!1e1!3m5!1s5a3nsUsvYKs1FTPH77GSIA!2e0!6s%2F%2Fgeo1.ggpht.com%2Fcbk%3Fpanoid%3D5a3nsUsvYKs1FTPH77GSIA%26output%3Dthumbnail%26cb\\_client%3Dmaps\\_sv.tactile.gps%26thumb%3D2%26w%3D203%26h%3D100%26yaw%3D75.748627%26pitch%3D0!7i13312!8i6656](https://www.google.co.uk/maps/search/marchmont/@55.9381524,-3.1920043,3a,75y,281.38h,87.59t/data=!3m7!1e1!3m5!1s5a3nsUsvYKs1FTPH77GSIA!2e0!6s%2F%2Fgeo1.ggpht.com%2Fcbk%3Fpanoid%3D5a3nsUsvYKs1FTPH77GSIA%26output%3Dthumbnail%26cb_client%3Dmaps_sv.tactile.gps%26thumb%3D2%26w%3D203%26h%3D100%26yaw%3D75.748627%26pitch%3D0!7i13312!8i6656)
16. Rome's Invisible City, 'The temple of the Divine Claudius and its Underground Quarry', ScanLAB (2015). <http://scanlabprojects.co.uk/projects/bbcrome>
17. View of Venice, Jacopo de Barbari (1500). [https://commons.wikimedia.org/wiki/File:Jacopo\\_de'\\_Barbari\\_-\\_Plan\\_of\\_Venice\\_-\\_WGA01270.jpg](https://commons.wikimedia.org/wiki/File:Jacopo_de'_Barbari_-_Plan_of_Venice_-_WGA01270.jpg)
18. Panorama of Edinburgh from Calton Hill (extract). <http://www.edvec.ed.ac.uk/html/projects/panorama/index.html>
19. Robert Barker's Leicester Square Panorama, London (1793). <https://regencyredingote.wordpress.com/2012/08/03/robert-barkers-leicester-square-panorama-the-rotunda/>
20. The Hopetoun Chest in the Library at Newhailes House. [Image by the author]
21. Hopetoun House, Elevation, Claude Comiers (1680). From Rock, Joe, 'John Hope's House in Edinburgh, 1680', Joe Rock's Research Pages. <https://sites.google.com/site/joerocksresearchpages/home/john-hope-s-house-in-edinburgh-1680> [Accessed 19 March 2015].
22. Hopetoun Chest Drawer. [Image by the author]
23. York Minster Tracings Drawing, Jihn Harvey (1968). <http://www-users.york.ac.uk/-arch40/plasterfloor.htm>
24. Floor Tracings on Plaster Floor at the York Minster (ca. 1360-1500) <http://www-users.york.ac.uk/-arch40/plasterfloor.htm>
25. *The Origin of Painting*, Karl F. Schinkel (1830). <https://projectionsystems.wordpress.com/2009/09/06/the-origin-of-painting/>

## BIBLIOGRAPHY

- Alberti, Leon Battista, *On Painting* (1435), trans. John R. Spencer (New Haven: Yale University, 1966)
- Alberti, Leon Battista, *The Art of Building in Ten Books* (1485), trans. Joseph Rykwert, Neil Leach and Robert Tavernor (Cambridge Mass.: MIT Press, 1988).
- Alberto Perez-Gomez and Louise Pelletier, 'Scenographia and Optical Correction from Vitruvius to Perrault', in *Architectural Representation and the Perspective Hinge* (Cambridge, Massachusetts: MIT Press, 1997), pp. 97-104.
- Allen, Stan, 'Notations + Diagrams: Mapping the Intangible', in *Practice: Architecture, Technique and Representation* (London: Routledge, 2009), pp. 41-67.
- Apter, Emily, 'En- Chôra', *Grey Room*, 20 (Summer 2005), pp. 80-83.
- Ballon, Hilary and David Friedman, 'Portraying the City in Early Modern Europe: Measurement, Representation and Planning', in Woodward, David (ed.), *History of Cartography Vol. 3: Cartography in the European Renaissance* (Chicago: The University of Chicago Press, 2007), pp. 680-703.
- Barozzi da Vignola, Giacomo, *Canon of the Five Orders of Architecture* (1562), trans. John Leeke (New York: Dover Publications, 2011).
- Barthes, Roland, 'The Photographic Message', in *Image, Music, Text* (London: Fontana Press, 1977), p. 15-31.
- Barthes, Roland, *Camera Lucida: Reflections on Photography*, trans. Richard Howard (London: Vintage Books, 2000).
- Barthes, Roland, *S/Z*, trans. Richard Miller (Oxford and Cambridge Mass.: Blackwell, 1990).
- Barthes, Roland, 'The Third Meaning: Research notes on some Eisenstein stills', in Heath, S. (ed.) *Image Text Music* (Fontana Press, 1977), pp. 52-68.
- Barthes, Roland, *Writing Degree Zero*, trans. Anette Lavers (New York: Farrar, Straus and Giroux, 1977).
- Batchen, Geoffrey, 'Palinode: An Introduction to Photography', in Geoffrey Batchen (ed.), *Photography Degree-Zero*. Boston: MIT Press, 2009), p. 1-30.
- Baudelaire, Charles, 'The Painter of Modern Life' (1863), in Jonathan Mayne (ed.), *The Painter of Modern Life and Other Essays* (London: Phaidon Press, 1995), pp 1-41.
- Baudrillard, Jean, 'The Precession of Simulacra', in *Simulacra and Simulation* (Ann Arbor: The University of Michigan Press, 1994).
- Beller, Jonathan, 'KINO-I, KINO-WORLD: Notes on the Cinematic Mode of Production', in Nicholas Mirzoeff (ed.), *The Visual Culture Reader: Second revised edition* (New York and London: Routledge, 2002) pp. 60-85.
- Benjamin, Walter, 'Central Park', *New German Critique*, 34 (Winter 1985), pp. 32-58.
- Benjamin, Walter, 'Little History of Photography', in Michael W. Jennings, Howard Eiland, and Gary Smith (eds.), *Walter Benjamin: Selected Writings Vol. 2 1927-1934*, trans. Rodney Livingstone (London and Cambridge Mass.: Harvard University Press, 1999), pp. 507-530.

Benjamin, Walter, 'Paris – Capital of the Nineteenth Century (Exposé of 1935)', in *The Arcades Project* (Cambridge, Massachusetts: Harvard University Press, 1999), pp. 3-13.

Benjamin, Walter, 'Paris Capital of the Nineteenth Century', *New Left Review* 1 (1968), pp. 77-88.

Benjamin, Walter, 'The Task of the Translator' (1928), trans. Steven Rendall, *TTR: traduction, terminologie, reduction* 10 (2) (1997), pp. 151-165.

Benjamin, Walter, 'The Work of Art in the Age of Mechanical Reproduction', in Hannah Arendt (ed.), *Illuminations*, trans. Harry Zohn (London: Fontana Press, 1992), pp. 211-244.

Benjamin, Walter, 'Toys and Play', in *Selected Writings: 1927-34*, trans. Rodney Livingstone (London and Cambridge Mass.: Harvard University Press, 1999), p. 120.

Benjamin, Walter, *The Arcades Project*, trans. Howard Eiland and Kevin McLaughlin (Cambridge: Belknap Press of Harvard University Press, 1999).

Bergson, Henri, *Creative Evolution*, trans. Arthur Mitchell (New York: Henry Holt, 1911).

Bergson, Henri, *Matter and Memory* (1896), trans. Nancy Margaret Paul and W. Scott Palmer (London: George Allen and Unwin, 1911).

Bergson, Henri, *Time and Free Will: An Essay on the Immediate Data of Consciousness* (1889), trans. F.L. Pogson (New York: Dover Publications, 2001).

Brewster, David, *The Kaleidoscope: Its history, theory and construction* (London: John Murray, 1858).

Buck-Morris, Susan, 'The Flâneur, the Sandwichman and the Whore: The Politics of Loitering', *New German Critique* 39 (1986), pp. 99-140.

Burns, Karen, 'Topographies of Tourism: "Documentary" Photography and "The Stones of Venice"', *Assemblage* 32 (April 1997), p. 22-44.

Cadava, Eduardo, "'Lapsus Imaginis": The Image in Ruins', *October* 96 (Spring 2001), pp. 35-60; p. 36.

Carter, Paul, *Dark Writing: Geography, Performance, Design* (Honolulu: University of Hawaii Press, 2009).

Chmielewska, Ella, 'Writing with the Photograph: *Espacement*, Description and Architectural Text in Action', in Anna Dahlgren, Nina Lager Vestberg, and Dag Patersson (eds.), *Representational Machines: Photography and the Production of Space* (Aarhus: Aarhus University Press, 2013), p. 83-105.

Conley, Tom, 'Foreword: The King's Effects,' in Louis Marin, in *The Portrait of the King* (Minneapolis: University of Minnesota Press, 1988).

Crary, Jonathan, *Techniques of the Observer: On vision and modernity in the nineteenth century* (Cambridge, Mass.: MIT Press, 1992).

De Certeau, Michel, 'Introduction', in *The Practice of Everyday Life* (Berkeley: University of California Press, 1988), pp. xi-xxiv.

De Certeau, Michel, 'Walking in the City', in *The Practice of Everyday Life* (Berkeley: University of California Press, 1988), pp. 91-110.

Deleuze, Gilles and Felix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia* (1972), trans. Robert Hurley,

- Mark Seem and Helen R. Lane (London and New York: Continuum, 2004).
- Deleuze, Gilles, 'Plato and the Simulacrum', *October 27* (Winter 1983), pp. 45-56.
- Deleuze, Gilles, *Difference and Repetition* (New York: Columbia University Press, 1994).
- Derrida, Jacques and Peter Eisenman, *Chora L Works* (New York: Monacelli Press, 1997).
- Derrida, Jacques, 'Structure, Sign, Play in the Discourse of Social Sciences' (1967), in *Writing and Difference* (London and New York: Routledge, 2005).
- Derrida, Jacques, 'The Pit and the Pyramid' (1971), in *Margins of Philosophy*, trans. Alan Bass (London and New York: Harvester Press, 1982), pp. 69-109.
- Derrida, Jacques, 'A Letter to Peter Eisenman' (1989), trans. Hilary P. Hanel, *Assemblage*, 12 (August 1990), pp. 6-13.
- Derrida, Jacques, *Of Grammatology* (1967), trans. Gayatri Chakravorty Spivak (Baltimore: Johns Hopkins University Press, 1997).
- Dorrian, Mark, 'Architectural Design Opening A: Architectural Forensics' [unpublished studio brief], M.Arch. Year 1, 2007-2009 (Edinburgh: School of Architecture, University of Edinburgh, 2007).
- Dorrian, Mark, 'Architecture's Cartographic Turn', in Frederic Pousin (ed.), *Figures de la Ville et Construction des Savoirs* (Paris : CNRS Editions, 2005), pp. 61-72.
- Dorrian, Mark, 'On Google Earth', In Mark Dorrian and Frederic Pousin (eds.), *Seeing from Above: The Aerial View in Visual Culture* (London and New York: I.B. Tauris, 2013), pp. 290-307.
- Eisenman, Peter, 'Representation of the Limit: Writing a 'not-architecture'', in *Chamber Works: Architectural Meditations on Themes from Heraclitus*. London: AA Publications, 1983), pp. 5-8.
- Eisenman, Peter, *Moving Arrows, Eros and Other Errors: An Architecture of Absence* (London: Architectural Association, 1986).
- Euclid, *Elements of Geometry* (ca. 300 BC), trans. Richard Fitzpatrick (Richard Fitzpatrick, 2008).
- Evans, Robin, 'In Front of Lines that Leave Nothing Behind' (1984), in Neil Leach (ed.), *Rethinking Architecture: A Reader in Cultural Theory*. New York: Routledge, 1997), pp. 482-489.
- Evans, Robin, 'Translations from Drawing to Building', in *Translations from Drawing to Building and Other Essays* (London: Architectural Association, 1997), pp. 153-193.
- Evans, Robin, *The Projective Cast* (Cambridge, Massachusetts: MIT, 2000).
- Foster, Hal, *Vision and Visuality* (Seattle: Bay Press, 1988).
- Foucault, Michel, 'Of Other Spaces: Utopias and Heterotopias', in Neil Leach (ed.), *Rethinking Architecture: A Reader in Cultural Theory*. New York: Routledge, 1997), pp. 330-336.
- Frascari, Marco, 'A Reflection on Paper and its virtues within the Material and Invisible Factures of Architecture,' in M. Frascari with J. Hale and B. Starkey (eds) *From Models to Drawings* (London: Routledge, 2007) pp. 23-33.

Gaiger, Jason, 'Dismantling the Frame: Site-Specific Art and Aesthetic Autonomy', *British Journal of Aesthetics* 49 (1) (2009), pp. 43-58.

Gibson, James, J., 'On Constancy and Invariance in Perception', in Gyorgy Kepes (ed.), *The Nature and Art of Motion* (New York: G. Braziller, 1965), pp. 60-70.

Goodman, Nelson, *Languages of Art: An Approach to a Theory of Symbols* (Indianapolis: Hackett Publishing, 1969).

Hague, Cliff and Paul Jenkins, 'The changing image and identity of the city in the 21st century: 'Athens of the North' or 'North of Athens'', in Brian Edwards and Paul Jenkins (eds.), *Edinburgh: The Making of a Capital City* (Edinburgh: Edinburgh University Press, 2005), pp. 217-230.

Ingold, Tim, *Lines: A Brief History* (London and New York: Routledge, 2007).

Ingraham, Catherine, *Architecture and the Burdens of Linearity* (New Haven and London: Yale University Press, 1998).

Innis, Robert E., 'Techniques and the Bias of Perception', *Philosophy and Social Criticism*, 10 (1) (Summer 1984), pp. 76--77.

Jacques Derrida, 'Khōra', in Thomas Dutoit (ed.), *On the Name*, trans. David Wood (Stanford: Stanford University Press, 1995), pp. 89-130.

Jay Martin, 'Disciplinary Prisms: Responding to my Critics', *Comparative Studies in Society and History* 38 (2) (April 1996), pp. 388-394.

Jay, Martin, 'The Noblest of the Senses: From Plato to Descartes', in *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought* (Berkeley: University of California Press, 1993), pp. 21-82.

Jay, Martin, 'The Scopic Regimes of Modernity', in Hal Foster (ed.), *Vision and Visuality* (Seattle: Bay Press, 1988), pp. 3-23.

Jay, Martin, *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought* (Berkeley: University of California Press, 1993).

Kristeva, Julia, 'The Bounded Text', in *Desire in Language: A Semiotic Approach to Literature and Art* (1980), pp. 36-63.

Kwon, Miwon, 'One place after another: Notes on Site Specificity'. *October* 80 (Spring 1997), pp. 85-110.

Lacan, Jacques, 'The Mirror Stage as Formative of the Function of the I as Revealed in Psychoanalytic Experience' (1949), in *Écrits* (New York and London: W. W. Norton & Company, 2006), pp. 75-81.

Laurenti, Jean-Noël, 'Feuillet's Thinking', in Laurence Louppe (ed.), *Traces of Dance*, trans. Brian Holmes (Paris: Editions Dis Voir, 1994), pp. 81-108.

Leavy, John, P., 'Preface: Undecidables and Old Names,' in Jacques Derrida, *Introduction to Husserl's Origin of Geometry* (1962), trans. John P. Leavy (Lincoln and London: University of Nebraska Press, 1989), p. 1-21.

Levin, David Michael, *The Opening of Vision: Nihilism and the Postmodern Situation* (New York: Routledge, 1988).

Libeskind, Daniel, 'Unoriginal Signs', in *Chamber Works: Architectural Meditations on Themes from Heraclitus*.

- London: Architectural Association, 1983), pp. 4-5.
- Libeskind, Daniel, 'Versus the Old-Established Language of Architecture', *Daidalos* 1 (1981), pp. 97-102.
- Lynch, Kevin, *The Image of the City* (Cambridge, Mass. And London: MIT Press, 1960).
- Macarthur, John, 'The Figure from Above: On the obliqueness of the Plan in Urbanism and Architecture', in Mark Dorrian and Federic Pousin (eds.), *Seeing from Above: The Aerial View in Visual Culture* (London and New York: I.B. Tauris, 2013), pp. 188-209.
- Marin, Louis, 'The City's Portrait in its Utopics', in *Utopics: Spatial Play* (New Jersey: Humanities Press 1984), pp. 201-232.
- Marin, Louis, 'The King and his Geometer' (1981), in *The Portrait of the King* (Minneapolis: University of Minnesota Press, 1988).
- Marin, Louis, 'The City in its Map and Portrait', in *On Representation* (Stanford University Press, 2001), pp. 202-218.
- Metz, Christian, 'The Passion of Perceiving', in *The Imaginary Signifier: Psychoanalysis and Cinema*, trans. Celia Britton (Bloomington: Indiana University Press, 1982), pp. 58-68.
- Mirzoeff, Nicholas (2006). 'On Visuality.' In *Journal of Visual Culture*, Vol 5(1), pp. 53-79.
- Moholy-Nagy, László, *Vision in motion* (Chicago: Paul Theobald and Company, 1947).
- Morgan, Eleanor, E., 'Derrida's Garden', *Fillip* 2 (Winter 2006).
- Nuti, Lucia, 'Mapping Places: Chorography and Vision in the Renaissance', in Dennis Cosgrove (ed.), *Mappings* (London: Reaktion Books, 1999), pp. 90-108.
- Oechslin, Werner, 'Geometry and Line: The Vitruvian "Science" of Architectural Drawing,' *Daidalos* 1 (1981) pp. 20-35.
- Oechslin, Werner, 'From Piranesi to Libeskind: Explaining by Drawing.' In *Daidalos* 1 (1981), pp.15-19.
- Pai, Hyungmin, 'Scientific Management and the Discourse of the Diagram: Architecture, Discourse, and Modernity in America', in *The Portfolio and the Diagram* (London and Cambridge, Mass.: MIT Press, 2002), p. 162-197.
- Pallasmaa, Juhani, 'Part I', in *The Eyes of the Skin: Architecture and the Senses* (London: Wiley, 1996), pp. 15-37.
- Panofsky, Erwin, *Perspective as Symbolic Form* (New York: Zone Books, 1991)
- Perez-Gomez, Alberto and Louise Pelletier, *Architectural Representation and the Perspective Hinge* (Cambridge, Massachusetts: MIT Press, 1997).
- Pinto, John A., 'Origins and Development of the Ichnographic City Plan', *Journal of the Society of Architectural Historians* 35 (1) (1976), p. 35.
- Plato, 'Sophist' (ca. 360 BC), in *Dialogues Vol. 4*, trans. Benjamin Jowett (Oxford University Press, 1892.). pp. 217-408.

Plato, *Cratylus* (ca. 360 BC), trans. David Sedley (Cambridge: Cambridge University Press, 2003).

Ricoeur, Paul, *Memory, History, Forgetting* (Chicago and London: The University of Chicago Press, 2004).

Rivlin, Robert and Karen Gravelle, *Deciphering the Senses: The Expanding World of Human Perception* (New York: Simon and Schuster, 1984).

Rock, Joe, 'The Hopetoun Chest at Newhailes House', *The Burlington Magazine*, Vol. 129, No. 1013 (1987), pp. 516-518.

Schulz, Juergen, 'Jacopo de Barbari's View of Venice: Map Making, City Views, and Moralizing Geography before the year 1500', *The Art Bulletin* 60 (3) (1978), pp. 425-475.

Vitruvius, *On Architecture* (ca. 30 BC), trans. Richard Schofield (London: Penguin Books, 2009).

Wheatstone, Walter, 'Contributions to the Physiology of Vision Part the First. On Some Remarkable, and Hitherto Unobserved, Phenomena of Binocular Vision'. In *Philosophical Transactions of the Royal Society of London*, Vol. 128 (1838). pp. 371-394.

Wolfreys, Julian, 'Justifying the Unjustifiable: A Supplementary Introduction of Sorts', in *The Derrida Reader: Writing Performances* (Lincoln and London: University of Nebraska Press), pp. 1-49.

## WEB SOURCES

*Dance Notation Bureau*, <http://dancenotation.org/Inbasics/frame0.html> [Accessed 12 January 2016]

Didi-Huberman, Georges, 'Connaissance par le Kaléidoscope: Morale du joujou et dialectique de l'image selon Walter Benjamin', *Etudes Photographiques* 7 (2000). <https://etudesphotographiques.revues.org/204?lang=en> [Accessed 10 October 2013]

Diller, Elizabeth and Ricardo Scofidio, 'The withDrawing Room: Versions and Subversion, Artist's Statement' (1987), Capp Street Project Archive, [http://libraries.cca.edu/capp/elizabeth\\_diller\\_ricardo\\_scofidio.html](http://libraries.cca.edu/capp/elizabeth_diller_ricardo_scofidio.html) [Accessed 14 December 2015]

Ewing, Suzanne (curator), *Saltcities: Drawing the City of the Unsure Ground, Shrinking Cities/Expanding Landscapes*, <https://expandinglandscapes.wordpress.com/exhibitions/saltcities/> [Accessed 10 September 2016]

*Flight Radar*, <https://www.flightradar24.com/55.63,-1.15/6> [Accessed 10 January 2016]

Flusser, Vilém, 'The Gesture of Writing' (1991), *FlusserStudies.net*. <http://www.flusserstudies.net/sites/www.flusserstudies.net/files/media/attachments/the-gesture-of-writing.pdf> [Accessed 27 March 2015]

*Geology of Britain Viewer*, *British Geological Survey*, <http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html> [Accessed 10 January 2016]

Latour, Bruno and Emilie Hermant, *Paris: Invisible City* (Paris: La Découverte-Les Empêcheurs de penser en rond 2006). <http://www.bruno-latour.fr/sites/default/files/downloads/> [Accessed 7 December 2011]

Miller, Angela, 'The Panorama, the Cinema and the Emergence of the Spectacular', *Wide Angle* 18 (2) (1996), pp. 34-69. [http://muse.jhu.edu/journals/wide\\_angle/v018/18.2miller.html](http://muse.jhu.edu/journals/wide_angle/v018/18.2miller.html) [Accessed 15 January 2016]

Minkowski, Herman, *Space and Time: Minkowski's Papers on Relativity*, trans. Fritz Lewertoff and Vesselin

Petkov (Montréal: Minkowski Institute Press, 2012). <http://www.minkowskiinstitute.org/mip/> [Accessed 25 April 2013]

Otto, Peter, 'Between the Virtual and the Actual: Robert Barker's Panorama of London and the Multiplication of the Real in late eighteenth-century London', *Romanticism on the Net* 46 (May 2007). <http://www.erudit.org/revue/ron/2007/v/n46/016130ar.html> [Accessed 15 January 2016]

Polak, Esther, Jeroen Kee and Waag Society, 'Amsterdam RealTime' [installation], in *Maps of Amsterdam 1866-2000* (2001). <http://www.li-ma.nl/site/catalogue/art/17300#> [Accessed 20 November 2015]

Rock, Joe, 'John Hope's House in Edinburgh, 1680', *Joe Rock's Research Pages*. <https://sites.google.com/site/joerocksresearchpages/home/john-hope-s-house-in-edinburgh-1680> [Accessed 19 March 2015].

*ScanLAB Projects*, <http://scanlabprojects.co.uk/> [Accessed 10 December 2015]

Stellarium, [http://www.stellarium.org/en\\_GB/](http://www.stellarium.org/en_GB/) [Accessed 15 January 2015]

Wood, Peter, 'Eating in Bed', in *Tracey: Drawing and Visualisation Research Journal*, <http://www.lboro.ac.uk/microsites/sota/tracey/journal/perf/wood.html> [Accessed 10 July 2015]