Drawing in Landscape Architecture: Fieldwork, Poetics, Methods, Translation and Representation

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Declaration

I declare that this dissertation is my own unaided work. It is being submitted for the degree of Doctor of Philosophy at MIRIAD, Manchester Metropolitan University in the field of Landscape Architecture.

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Abstract

By analysing landscape architectural representation, particularly drawing, the thesis contribution will develop the mode and process of making - *poesis*: between production and representation. Extending the work of James Corner on drawing within landscape architecture (1992), the thesis will develop a positive hermeneutics from the novelist Italo Calvino (1997) in which this agency of drawing can be understood and conceived. From this framework of operation, a number of drawing methods are to be developed - particularly heuristics and scoring which creates a positive valence for landscape architectural production. The focus will lie within the process or translation of drawing into landscape, or its process of 'becoming' (Vesely 2006, Evans 1996, 2000, Deleuze 1992). This focus will be contextualised amongst others by the work of: Paolo Soleri (1919- 2013), Wolf Hilbertz (1938-2007) and Lawrence Halprin (1916-2009). The agency of drawing is to be situated in broader theories of space and 'everyday life' particularly by extracting critical neo-Marxist notions and readings of social productions of space as found in Henri Lefebvre (1901 -1991) (De Certeau 1984, 1998, Lefebvre, 1991, 1996, 2003, Soja 1996, 2000 & Harvey 1989. 1996). The thesis contribution to knowledge will thus chart drawing use, communication, alternative strategies, and new concepts of urban environments; a 'poetic mediation on existence' (Kundera 1987). This very movement & 'becoming' whilst containing analysis, in each separate component, has yet to be collectively discussed in a constructive and meaningful way. This inturn will reflect back on the role of representation in the shaping and conception of space – this is the role of drawing in landscape architecture. This knowledge is enabled using methods of interdisciplinary exhibition, educational modules, oral history interviews and the history of professional landscape architecture practices, as well by deploying a visual literacy method within the thesis (Dee 2001, 2004).

Introduction

0.1.A - Research Questions & Aims

Landscape Architecture as a design discipline functions in both the arts and sciences. Design drawings for landscape architecture need to communicate to audiences the intent for a site. This communication must be clear at different levels from clients, collaborators, contractors and to the public. This communication therefore is a process, an *operation* in design. However, research discussing the methods and understanding of this communication has not been undertaken to a great extent. The landscape architect James Corner wrote an article on drawing within landscape architecture (1992), discussing this process calling for a wider variety of methods and activities for drawing by landscape architects,

> Techniques of representation are central to any critical act in design. If it is true that there can be no concept of landscape without prior imaging [...] then innovations in image projection are necessary for the virtual to be conceived and actualised (Corner 1999, p.8).

This call is interesting but post-Corner has not resulted in any substantive research work exploring the issues raised. By concentrating on drawing the focus would allow the creation of a wider variety and greater understanding of landscape. The assumption of a positive valence in these drawings is explored and addressed in the thesis. The focus of research therefore is based on two intertwined questions:

1. Between representation and production of landscape; how does a drawing in its many manifestations work or operate in landscape architecture?
2. Can a number of drawing methods create a positive valence for landscape architectural production?

The thesis contribution to knowledge directly addresses the operation (making - *poesis*) of landscape architecture drawings and also builds a positive framework in which differing methods can be charted for the creation of productive landscapes (positive valence). James Corner has developed a hermeneutic landscape – a plotting of landscape that is strategic, political as well as relational and physical, that is to say we write landscape and it writes us (Corner 1991; Corner 1990). This can be understood as a process according to Richard Weller,

> Taking into account, or trying to trace, the multifarious interpretations involved in the creation, location and subsequent interpretation of a design is then to register the work's hermeneutic valency. Hermeneutics finds a corollary in landscape architecture

> because both seek to understand and account for the distance between the subject/object, a divide that characterises western scientific, philosophical and environmental traditions (Weller 2001, p.5).

These methods and strategies, as I will demonstrate, have an *impact* on space but require further elaboration. Drawings and conceptual ideas have both negative and positive impacts in their role of the construction of places and spaces. Given this theorem the aim of the thesis is to first create a drawing hermeneutics which charts the creative process in which a landscape drawing is created. The Second aim will be to survey a number of professions in which drawings manifest themselves which can enrich our understating of drawings *operation*. Thirdly a discussion of representations and their impact on space will provide a context in which to understand these processes. Fourthly, two specific sites are to be discussed in which the *impact* of design drawings can be traced. These site studies allow us to analyse the complexity of landscape, both in form and in social use. From this we can locate the original intent of designers for the space, discussing the relationship from representation to production. Finally, discussion of a range of methods in which to approach landscape architecture drawing is to be discussed, developed out of, tested and applied contexts from other practioners.

The contribution to knowledge is therefore the identification of the operations of design drawings charting a positive valence for the creation of productive landscapes. The thesis builds directly from James Corner's initial study, developing a framework and evidence in which we can understand the implications, process, methods and translation of landscape architectural drawing; from representation to production. Thus the thesis operates to establish *Drawing in Landscape Architecture its Fieldwork, Poetics, Methods, Translation and Representation*.

In order to establish this contribution a specific range of themes needed to be applied in the research, as the thesis needs to address both the creative process of the landscape architect, the creation of design drawing and the impact of that drawing on the creation of space. The thesis thus initially introduces a brief history of landscape architectural representation and surveys contemporary representation. This survey is important as it establishes a ground in which to give context and meaning why the thesis questions and other researchers have sought to approach the issue of representation. By way of a literature review is a discussion of the research issues and contexts of drawing for landscape architecture and its translation from representation to production. From the establishment of contemporary issues in landscape architectural drawing and the survey of research conducted, the thesis develops and is divided into four thematic sections covering

the operation of landscape drawing; conceptualisation, drawing, responding, developing, presenting, interpreting, translation and impact. In order to mark each area the thesis analyses **Context, Case Study**, **Pedagogy** and **Heuristics and Scoring**. These themes thus address the various stages of the two research questions. Chapters are in numbers by decimal and sections are in alphabetical denotation to cover this *operation* of drawing.

- **Context** – This area discusses and establishes a framework in which the creation of landscape architecture drawings can be understood. The context section also discusses the uses of drawing in other professions and develops a theory of representation and production based on the work of Henri Lefebvre (**Chapter 1.1 - 1.3**)**.**

- **Case Studies** – This thematic area discusses the agency of mapping for landscape architecture and analyses London Southbank and the contested space discussing both original design studies and possible alternatives. The design of Milton Keynes is then discussed in order to extend the agency of drawing and the creation of landscapes. Both sites are selected on the basis of material which evidences the translation from drawing to landscape (**Chapter 2.1 -2.3**).

- **Pedagogy** – This area discusses student landscape architectural drawings and charts the modes in which the student is immersed in landscape to make their studies and the educational implications of such processes. Further discussion of digital design drawing is also discussed in which a number of possible methods are charted in order to extend the creative and experimental possibility of the medium (**Chapter 3.1 – 3.2**).

- **Heuristics & Scoring** – This thematic area discusses and extends the context, case studies and pedagogy of drawing for landscape architecture by discussing the heuristic and notational possibilities of drawing, which have potential to enrich the positive valence to which the thesis argues. This work discusses Wolf Hilbertz, a seascape architect and the architect Paolo Soleri, both of which use drawing as a problem solving device and both of whom have tested and constructed their ideas. Lawrence Halprin's notation system is also discussed in its participatory potential. These contexts establish an argument for landscape architectural drawing to involve heuristic and scoring processes (**Chapter 4.1 – 6.1**).

Thus the thesis creates a framework understanding the operation of landscape architectural drawing and then discusses the enrichment of these drawing methods. As drawing in the thesis is seen as part of a cycle of design, it is appropriate to construct a suitable theme which covers the points of the cyclic operation. The thesis intention is the establishment of both theoretical and practice based outcomes for the Landscape Architecture profession involving representation.

0.1.B - Research Methods

The research strategy (motivation)[1] is to extend and develop our understanding of landscape architectural drawing, its process, impact and effect on built landscape. In order to achieve such a goal, the following research methods are employed for the thesis to address the various strands and themes needed to be covered which are visual emphasis in thesis construction, exhibition, interviews and oral history and case studies. This research design (overall structure) allows the development of a number of strategies which cover the extent of the thesis questions. These approaches are combined as there is a danger of the research question being over scaled. The operation and valence of drawing in landscape architecture requires differing approaches and techniques to gather and evaluate material between representation and production.[2] These techniques are adopted in order to reflect the diversity and applied discipline of landscape architecture. The practice and theoretical base of landscape architecture is a wide discipline which requires combination and assimilation of various methods.[3]

The landscape architect and academic Catherine Dee (2004, p.16) discusses the role of visuals in landscape architecture research and cites the Jesuit philosopher Michel De Certeau. Dee addresses the marginality of the visual in academic discourse on landscape, which she argues remains as an *Other*[4] marginal and side lined. She reads De Certeau and identifies a possibility for "wild reserves of knowledge" (De Certeau 1998, p.65). To further expand on this reading of De Certeau,

> [...]the 'idea of method' has progressively overturned the relation between knowing and doing [...] the fundamental schema of a discourse of organising the way of thinking as a way of operating, as a rational management of production and a regulated operation on appropriate fields. That is 'method', the seed of modern science (De Certeau 1998, p.65).

[1] A research strategy is the overall conceptual logic and motivation for inquiry (Swaffield 2011).
[2] Such an approach was made cautiously as Simon Swaffield states, "Postgraduate research education in landscape architecture maybe limited by the Institutional settings within which it occurs rather than being compelled by discipline wide agendas or protocols. Which and whose knowledge survives becomes legitimated and eventually reproduced may shape the discipline by default rather than b design" (SwaffieldandDeming 2007).
[3] As Swaffield and Deming state, there is yet to be established sufficient research protocols, operational frameworks for research due to the breadth and elasticity of the discipline. There is also no promoted specific guidance for research design, methods and thesis preparation. (SwaffieldandDeming 2011).
[4] See also Michel Foucault (1972, p.8 - 19).

This method, or in this case thesis production discusses the role of drawing in landscape architecture and thus requires 'visual critical research'. Dee suggests that such research is not 'mute' or side lined (Dee 2004, p.18). Dee terms this 'dialogic drawing' which,

> provides the researcher with a more concrete critical position (through lived experience) with which to examine visual conventions that these studies differ from written critiques of images and their use (Dee 2004, p.22).

This dialogic-drawing involves the author re-drawing in parts, as a method of understanding the landscape architect's intent. This method is applied in particular cases (**Chapter 2.2, Chapter 4.1**); moreover the thesis is constructed with extensive illustrations throughout. These illustrations run tangentially to the developing arguments, give context and explanation and also allow the author to deliver commentary throughout.

A number of exhibitions formed the research structure; *Without the Walls Which Do Not Last*, University of Northampton 2008, *The 43 Uses of Drawing*, Rugby Art Gallery & Museum 2011 and *Rhythm / Presence*, Centre for Recent Drawing, Institute of Art & Design Dublin and CUBE Gallery Manchester 2013. The curated exhibitions allowed the gathering of new resources and drawing examples for the purpose of the thesis. These materials were edited and some are analysed for their ability to answer the components of the research questions. In addition to this approach, interviews with practioners took place in order to understand the practice of drawing in their professions. The practice of curating allowed the framing and gathering of sources to develop the thesis question (O'Neill 2012).

Two sites were selected; London Southbank and Milton Keynes. These case studies were chosen for their ability to elaborate on the research question.[5] London Southbank has undergone major redevelopment and a number of drawings were produced to satisfy and inform planning applications. Milton Keynes, a new town is a city developed involving one of the largest landscape architecture projects in the UK (Walker 1982), and thus was useful to analyse the extent with which to study the *operation* of drawing in creating space. The combination of exhibition, interview and site analysis allowed the development of the context for the thesis.

The drawings by students at the Department of Landscape Architecture at Manchester Metropolitan University provided material and understanding of the uses, and applications of drawing by students which informed the second research question of developing positive drawing methods for landscape architecture (Corner 1991). This positive valence was also

[5] Mark Francis cites the case study method as one of the most fruitful approaches for landscape architecture research, as Francis remarks, "case studies often serve to make concrete what are often generalisations or purely anecdotal information about projects and processes" (Francis 1997 p.1).

developed in the selection of practioners who use drawing as a heuristic medium. This selection was based on the ability of the practioners to test and build their ideas, therefore giving evidence to the ideational ability of drawing (Dee 2010; Swaffield and Deming 2011).

Given the discussed research questions, aims, structure and methods it is worth discussing the current contemporary practice of landscape architecture representation and its current form. This is important as such a visual survey establishes the motivation and need (for professional practice) of the research strategy. In the novel by English schoolmaster Edwin A. Abbott, *Flatland* from 1884, there is a discussion of various geometries and it leads us to the question in the thesis of the role of representation in Landscape Architecture, what is known and what is seen or visible. In *Flatland* the square, the main protagonist, tries to convince the monarch of Flatland that there are other dimensions, one-dimension (lines), three dimensions and even a fourth. A sphere from another dimension visits the square to ask him to provide an education of the other dimensions to the flatland authorities.

> When I talk to them about the unrecognized Dimension which is somehow visible in a Line — say, 'Ah, you mean brightness': and when I reply, 'No, I mean a real Dimension,' they at once retort, 'Then measure it, or tell us in what direction it extends'; and this silences me, for I can do neither (Abbot 2008, pp.31–33).

Abbott's text leads to the first theorem that there is a deficit in the representational practices of landscape architecture. This theorem was developed by the landscape architect James Corner[6], and it is worth gathering sources to develop a ground to explore such work. In *Flatland* an important question is developed how is it possible to describe representational practices and forms? The novel continues in the arguing of different spatial configurations and possibilities. What is suggestive here is not that landscape architecture representational practice is ignorant of dimensional possibilities; some representations are multidimensional, but moreover faced with a contemporary dominant representational paradigm which is also analogously found in *Flatland* which needs interrogation. Stuart Hall defines a dominant representational paradigm as a photographic approach which portrays people, events and spaces, which is also illustrative and commercial which is also the purpose of the visuals shown in this **Introduction** (Hall 1997, p.76).

This dominant representational paradigm is in place arguably through professional accreditation (LI, ASLA, AILA, IFLA et al)[7] and the educational practices of accredited

[6] See Literature review for discussion of James Corner.

[7] The Institute of Landscape Architects (LI) was formed in 1922, and incorporated through Royal Charter in 1997. The American Society of Landscape Architects (ASLA) was formed in 1899. The Australian Institute of Landscape Architects (AILA®) was formed in 1966. LE:NOTRE was founded in 2002 to include stakeholders and Universities in Landscape and related disciplines. The European

Universities (CELA, Le:Notre, ECLAS et al) within the United Kingdom and other countries which mimic the accredited body model. As well as professional requirements, the landscape design discipline rests on certain assumptions on its make-up, just as the inhabitants of flatland assume knowledge of their world, “design criticism in any mode ... [therefore] ... assumes a point of view within a theoretical infrastructure” (McAvin et al. 1991, pp.155–156). Representations of landscape architecture rest on certain cultural values, symbols and understandings of the mode in which they work. This can be evidenced in a brief historical exploration of landscape drawings and a contemporary visual essay. This historical discussion and visual essay will develop the idea of the contemporary dominant representational paradigm of landscape architecture. Through this understanding we can begin analysis of the relationship between representation and production of landscape. From the establishment of a contemporary dominant representational paradigm of landscape architecture we can also identify drawing methods which have a positive valence for landscape architectural production.

Council of Landscape Architecture Schools (ECLAS) has fostered scholarship in landscape since 1991. The Council of Educators in Landscape Architecture (CELA) traces its beginnings since 1920. The International Federation of Landscape Architects (IFLA) was founded by Geoffrey Jellicoe in 1948 and represents Landscape Architecture globally. CAAP - Argentine Centre for Landscape Architects. ABAP - Brazilian Association of Landscape Architects. CSLA - Canadian Society of Landscape Architects. APAP - Peruvian Association of Landscape Architects. CLARB - Council of Landscape Architecture Registration Boards (US/Canada). ÖGLA - Österreichische Gesellschaft für Landschafts-Architekten (Austria). BVTL-ABAJP - Belgian Association of Landscape Architects. MARK - Finnish Association of Landscape Architects. FFP - Fédération Française du Paysage (France). BDLA - Bund Deutscher Landschafts-Architekten (Germany). FILA - Association of Icelandic Landscape Architects. ILI - The Irish Landscape Institute.
AIAPP - Associazione Italiana di Architettura del Paesaggio (Italy). NVTL - Netherlands Association for Landscape Architecture. NLA - Norske Landskapsarkitekters forening (Norway). APAP - Portuguese Association of Landscape Architects. ASOP - Romanian Landscape Architects’ Association. ALA - Association of Landscape Architects (Serbia and Montenegro). BSLA - Bund Schweizer Landschafts-Architekten (Switzerland). PMO - Turkish Chamber of Landscape Architects. AEP - Spanish Association of Landscape Architects. ELASA - European Landscape Architecture Students Association. EFLA - The European Foundation of Landscape Architecture. ISALA - Israeli Association of Landscape Architects. LA-CYCU - Department of Landscape Architecture, Chung Yuen Christian University. ISOLA - Indian Society of Landscape Architects. KILA - Korea Institute of Landscape Architecture. NZILA - New Zealand Institute of Landscape Architects. SILA - Singapore Institute of Landscape Architects. TALA - Thai Association of Landscape Architects. PALA - Philippine Association of Landscape Architects. HKILA - Hong Kong Institute of Landscape Architects. CHSLA - Chinese Society of Landscape
Architecture. ILASA - Institute of Landscape Architects in South Africa. AAK - Architectural Association of Kenya.

0.1.C - A Brief History of Landscape Architecture Representation.

To discuss landscape architecture representation and its current dominant paradigm, it is worth highlighting several inventions and graphical standards as well as breaks to these standards. Landscape Architecture as a discipline or professional body has inherited its drawing methods from architectural practice, garden design and landscape design over a number of centuries. The professionalisation of landscape brought graphic standards to the variety of representational methods. Current drawing and conceptualisation is not static, and such a study shows a number of fluid and radical re-inventions of drawings in themselves as well as the final design that has emerged. These drawings are bound to the final landscape products; they may have been abandoned on technical grounds, reworked, unrealised, or directly translated, but they mark a process in shaping the earth. In landscape architecture work stages in the UK there are three areas; *Illustrative, Qualitive and Quantitive*[8]. Illustrative drawings will vary, depending on stages, though they are required to communicate effectively with all members of the design and construction team. Forms of contract agreement JCT, ICE, GC Works and JCLI refer to measurement and specification to standardise landscape design production (Garmory et al. 2007, p.231; Clamp 1999).

[8] Illustrative: drawings plans and details. Qualitive: specification and Quantitive: bills of quantities/ schedules and rates.

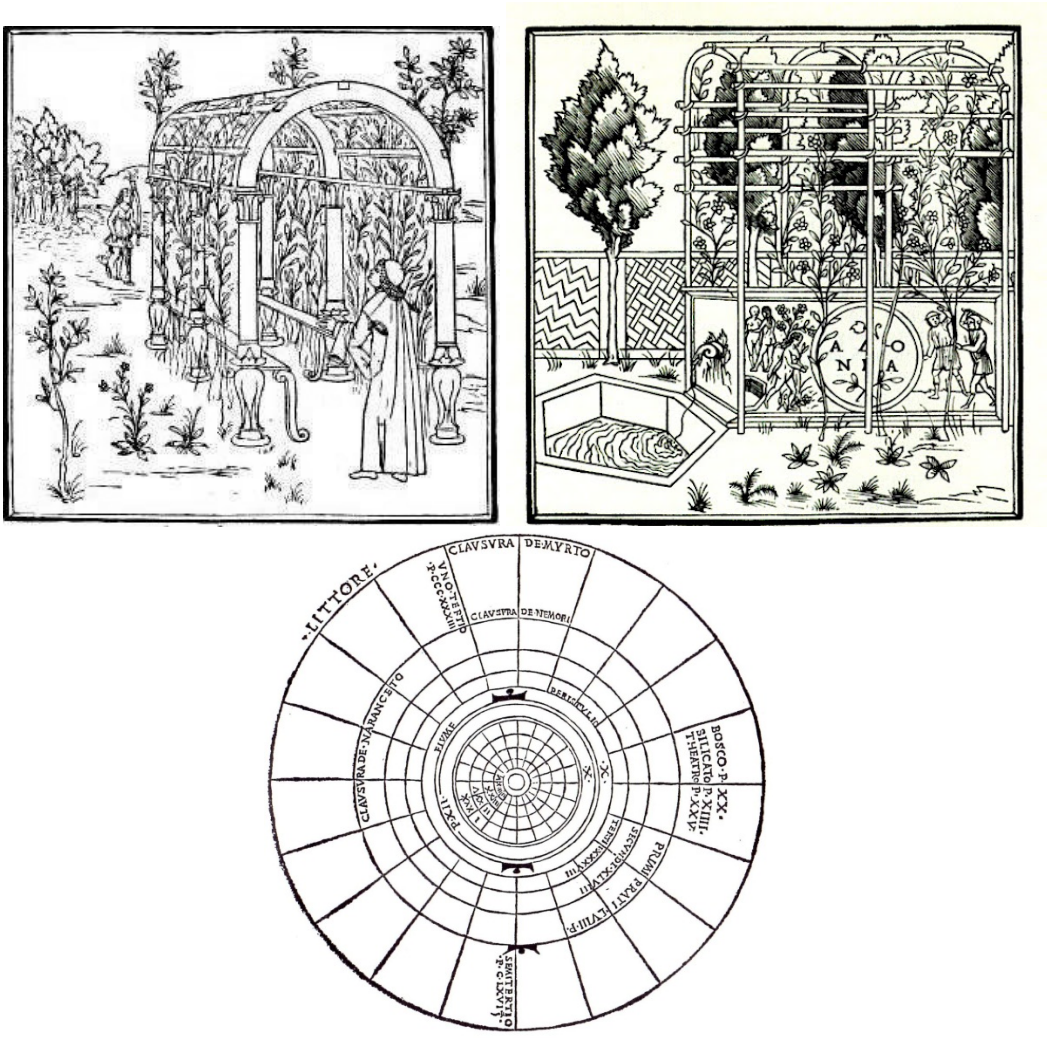


Figure 2: Francesco Colonna, Hypnerotomachia Poliphili, Woodcuts, Venice, 1499. In these woodcuts, two perspectives of the Quattrocentro garden are illustrated; two pergolas and vines feature both ornate spaces of contemplation and framed view. Fountains feature attesting to the special quality of waters. Further on in the text is a map of the island of Cythera, common cartographic technique in which centres are located of each major geographic feature, and to which surroundings at various distances are laid out. The technique mimics Platonic harmonic proportions influenced from *Timaeus*, as well as Dante's Inferno, a sort of period aesthetic in which the body is located centre, and its buildings are body extensions which are centred as 'heaven on earth' (See Segre 1998 for a full analysis).

The *Hypnerotomachia Poliphili* (Strife of Love in a Dream) was produced in 1499 by Francesco Colonna, though some scholars suggest that it is a product by Leon Battista Alberti. The author of the illustrations is also debated. The novella contains a love story, but also an erotic architectural treatise. As Liane Lefaivre states, two hundred of the three hundred and seventy pages of the text are devoted to architectural description (Lefaivre 2005, p.9). Sixty pages describe botanical lore and represent the renaissance 'encyclopaedia' of plants known. The planting and Quattrocento designs within the novel

evoke Greek mythology with medieval courtly romance (Segre 1998). The line drawings (engravings) represents ephermal dreams of an ideal garden, giving supportive visualsiation in plan and persepctive which relate to wider cartorgaphy describing the island of Cythera (see **Chapter 2.0**). The diagram of the island within the novel relates to the division of the king's gardens and sub divisions that take place within it (Segre 1998). The *Hypnerotomachia Poliphili* therefore is representative of perspectival view of gardens and the development of renaissance landscape geometries, moreover the design of the typography creates a synergy of word and image, in which each support. The influence of the text is hard to quantity; however the text is an interesting reference to Quattrocento ideas of the garden.

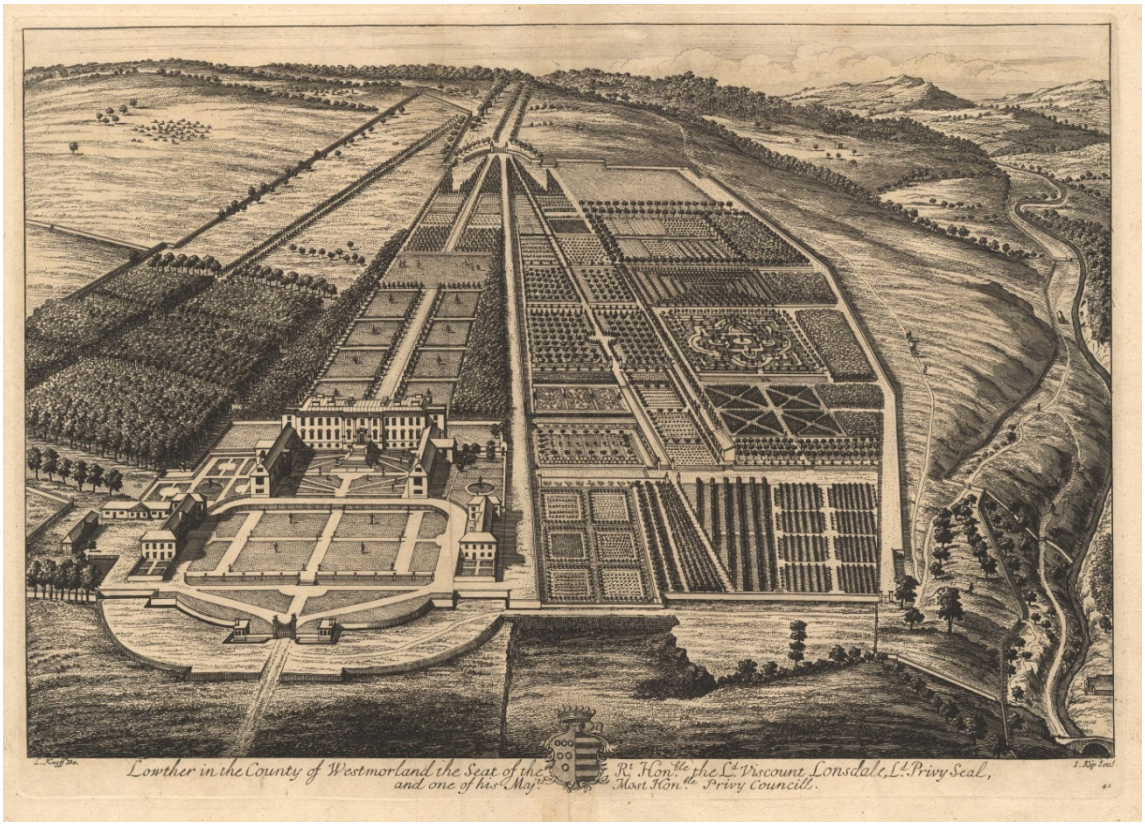


Figure 3: Knyff and Kipp, Lowther Castle, Book, Britannia Illustrata, prints from drawings by Leonard Knyff, engraved by John Kipp, published London, 1719.

Such drawing formations would develop into panoramas and carographic inventions, such as found in the dutch mapping pair Kynff and Kipp for the development of the aerial persepctive which would become the 'must have' memonto for the 18th century gentry in which to display landscape magnificance, garden fashion and power. Power in terms of the exactness and scale of design for the Royal Family and gentry, dipossesions of the peasantry, and enclousre of common grounds (Brewer 1997; Hunt 1989; Kane 2004; Withers and Ogborn 2004). Appearing significantly in the *Britannia Illustrata* with foldouts,

the drawings provide unseen view of the landscape, between maps and perspectives, describing the topography and architecture of the land. Survey techniques by Knyff and Kipp would bring a certain accuracy to such views of dutch-french gardens[9] and distinguish themselves from artistic persepctives which would sometimes rely on a certain degree of invention[10]. The presentation drawing or painting would make a distincition between drawings that instruct for construction, compared to a drawing of reflection of social relations and power (Harris and Jackson-Stops 1984).

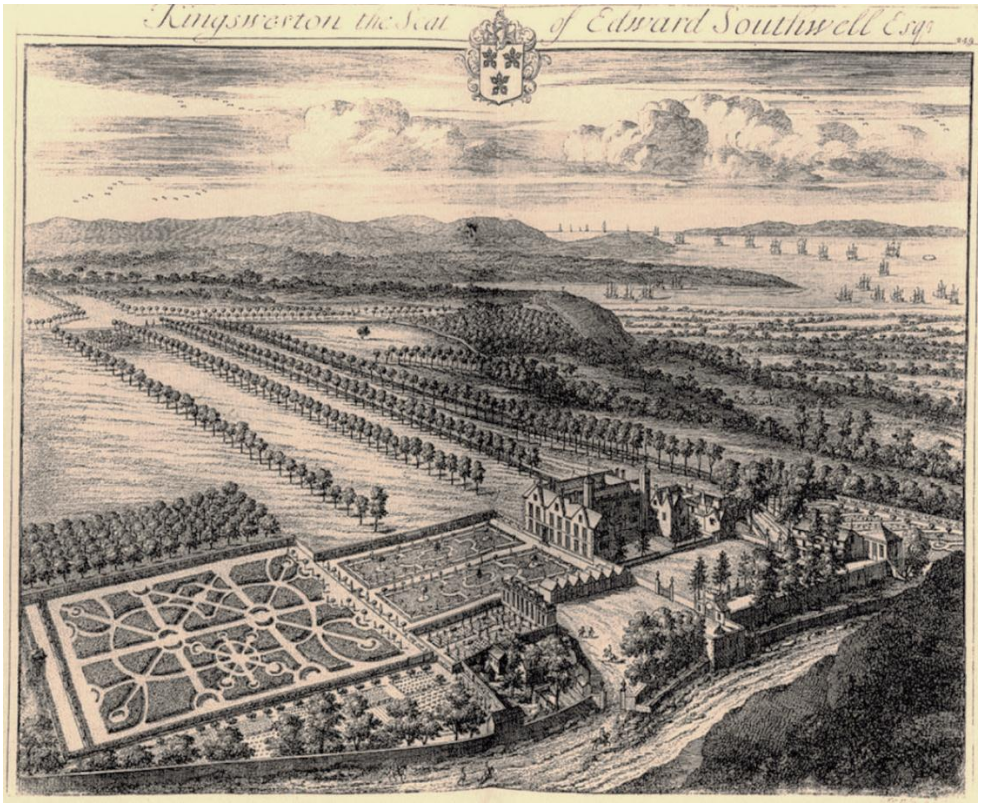


Figure 4: Johannes Kipp, Birds-eye view of the Kings Weston estate from The Ancient and Present State of Gloucestershire, first published 1710.

William Mitchell's influential text *Landscape and Power* suggests that landscape is mediated by culture, both a represented and presented of space, which is a signifier and signified; "both a frame and what a frame contains, both a real place and its simulacrum, both a package and the commodity inside the package" (Mitchell 2002, p.5). Kipp and Kynff's work gives cultural expression to ideas of landscape, as in the aerial view, the topography can be surveyed from a neutral 'all Seeing Eye' to the horizon, it is a form according to Mitchell of

[9] Summarised in extensive use of Parterres, topiary, water features, orchards and tree lined avenues projecting into the countryside.
[10] "The history of nature, in two parts : emblematically express'd in near a hundred folio copper-plates : wherein are also represented all the operations, facultys, and passions of the mind, &c. according to the manner of the most celebrated poets and philosophers" (1720)

scientific rationality in which stylism and aesthetics begin to be neutralised for the goal of a greater depiction of reality (Mitchell 2002, p.16).[11]

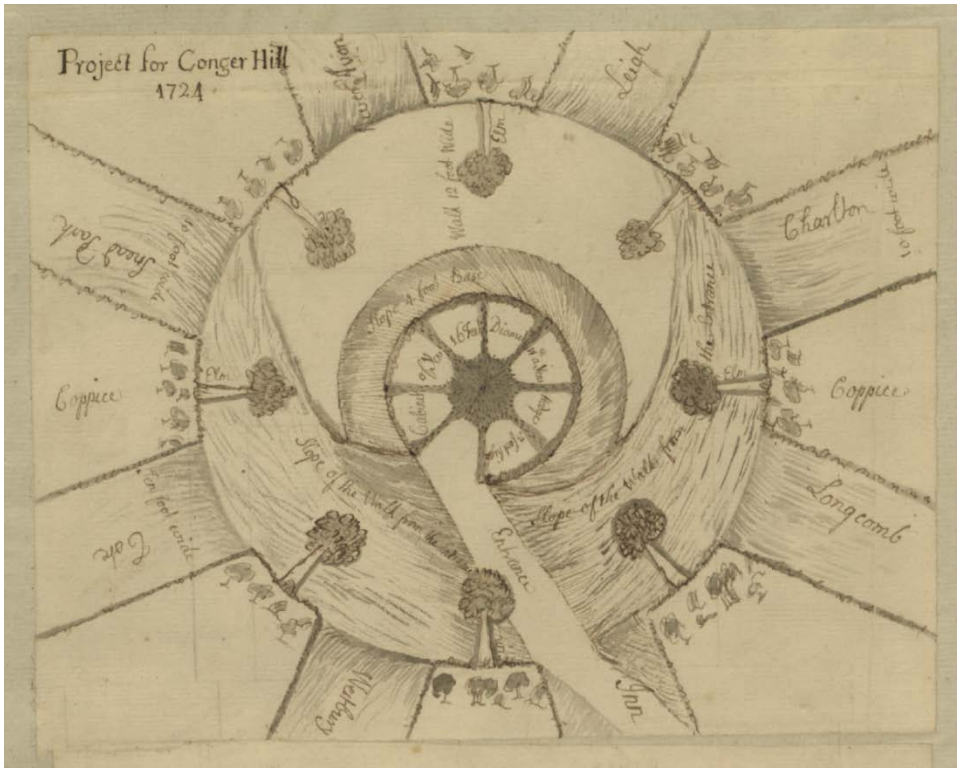


Figure 5: Unknown, Landscape design for Conger Hill on the Kings Weston Estate, Bristol, dated 1724.

Documenting the conceptual drawings in landscape design, over the finished presentational works reveals certain hybrid techniques for example here in **Figure 5**, a plan and tree section for *Corner Hill* on the Kings Weston Estate. These more humble documents were drawn before changes to the estate, in which Johannes Kipp completed an aerial perspective in Robert Atkyns' *The Ancient and Present State of Gloucestershire* (1712). The working drawing is thus defined over the presentational representation. The tendency for the lack of preservation of construction drawings and plans has skewed the representational history of landscape drawing. I mean that the lack of such documents and the preference over the presentational arguably effect our understanding of drawing as a dialogue and process for design. This process is hard to understand and can contribute to a mystification of the design process. The importance of these plan-o-metric views, maps of the landscape

[11] What is meant is that the drawing is rethought as an instrument in which information is carried, other than a document open to interpretation and multiple meaning. By striving for rationality the idea is that this brings a greater connection between drawing and reality. However, this mode is a misunderstanding of the different relationships between paper and landscape space.

without relief acted as intermediaries between paper and construction on the ground (Jong and Bertram 2008, p.22).

The Eighteenth century expansion and development of country house in the United Kingdom is symbolic of the desire to reshape and re-present English landscape and re-present the form of relation with landscape and display imperialist and colonial power. These drawings are therefore bound first in interpreting what nature represents, and creating new representations of how the landscape should be understood and is indicative of the importance of landscape drawing.

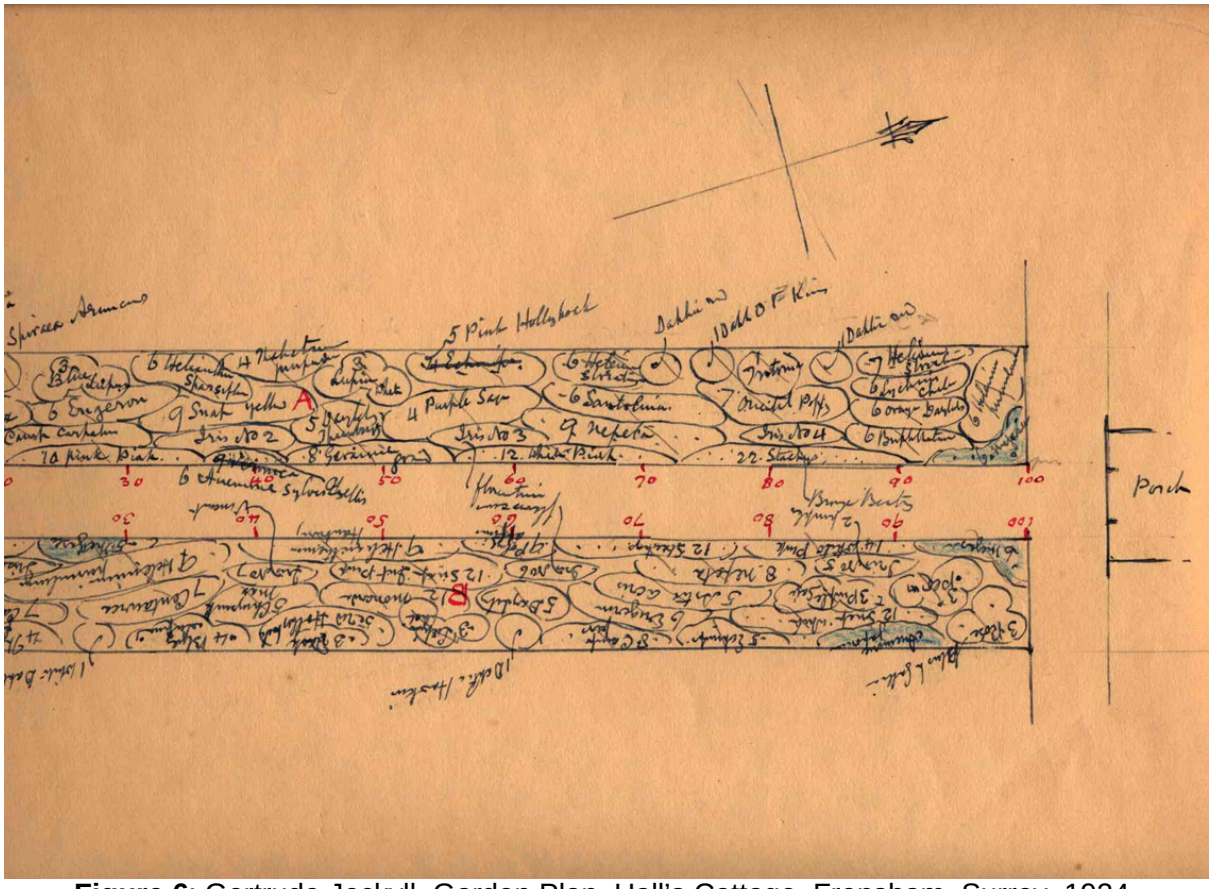


Figure 6: Gertrude Jeckyll, Garden Plan, Hall's Cottage, Frensham, Surrey, 1924.

Gertrude Jeckyll's work **Figure 6**, is suggestive of the importance of the gardeners notebook, her specifics and drawings for planting were highly detailed, re-design and patterning are thought through all to complement the work of rural architecture. Jeckyll is a garden designer who uses experimental drawing, evidenced in the changes, and crossed out planting decisions, thinking of the time and fragility of plants creating supportive combinations and demonstrating a will of control and understanding of texture and the visually unexpected, it is drawing time and planning the drift of plants' growth in time (Jekyll 2001; Wood 2006). The movement between Jeckyll as a painter and as a garden designer

reveals the importance of relationships between fine arts, craft and design of landscape form, the garden as craft and the utilising of tools to shape it; this sentiment is expressed by Jeckyll.

> There is a lovable quality about the actual tools. One feels so kindly to the thing that enables the hand to obey the brain. Moreover, one feels a good deal of respect for it; without it the brain and the hand would be helpless (Jekyll 2011, p.116).

The relationship between garden design and the haptic movements of pencil, create representational schemes in which the phenomenon of landscape starts to become more pressing. To evidence this, the role of the Garden manual demonstrates this relationship, as Grace Kehelr argues, Jekyll's garden books (*Wood and Garden* 1899, *Home and Garden* 1900) are synonymous with a wider Victorian development of an "idealised presentation of the gardener as an exemplar of self-disciplined creativity" (Kehler 2007, p.617).

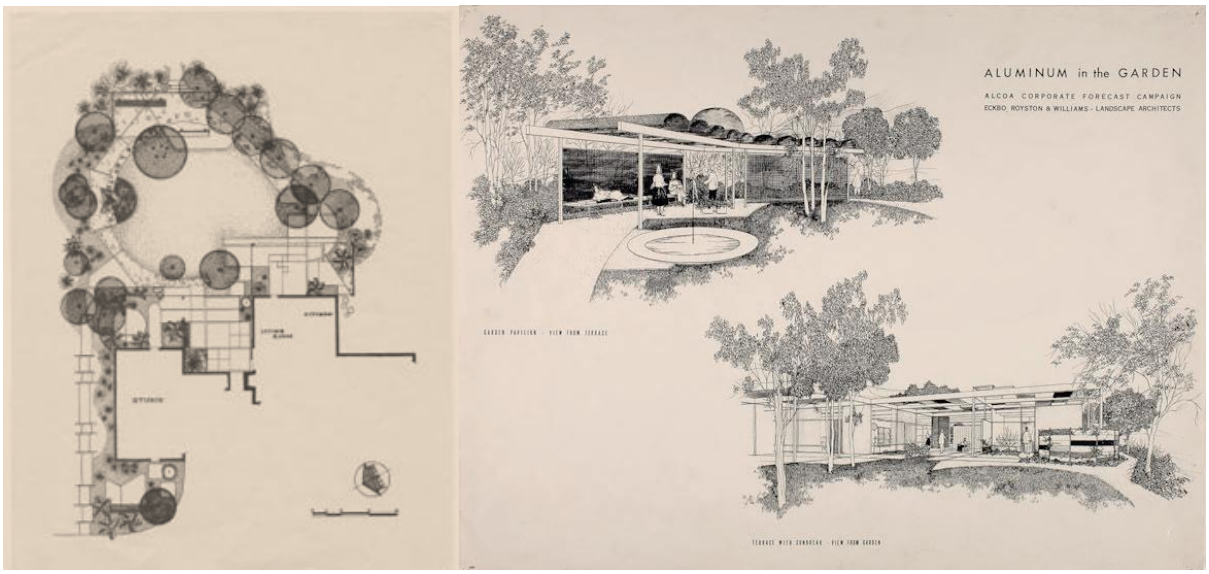


Figure 7: Garrett Eckbo, ALCOA Forecast Garden, Perspective & Plan, California USA, UC Berkley Environmental Archives, 1959.

In **Figure 7**, Garret Eckbo draws and promotes the ALCOA (Aluminium Company of America) *Forecast Garden* designed for a residence in Los Angeles as a way to promote domestic uses of new materials in this case aluminium. Eckbo is one example of modernist garden designers instigating an aesthetic vocabulary (Treib 2005). The garden uses aluminium for sunbreaks and trellises as well as a centrepiece fountain. Here perspectives are used to showcase Eckbo's new modernism for gardens rejecting the Beaux Art tradition and Eckbo's landscape education (Eckbo 2009, pp.45–47). The concerns of Eckbo were surface, and enclosure which creates a shell for enrichment of living. This is meant not in terms of arranging pictures or compositions, but creating volumes and backgrounds for human activity. Surfacing to Eckbo is both hard and soft landscape, that is not overly

cultivated but enables three dimensional features, rather than formalised surfaces. Influenced by Wassily Kandinsky, Eckbo created compositions, in which his drawn geometries would support spatial division of the garden (Treib 1994). The relationship between arts and landscape thus continued with varying ideologies. Eckbo's perspectives were a vehicle in tangent with the plan to best represent this surface and enclosure, modern philosophies that show the depth in which the modern garden was laid *open*.

Figure 8: Roberto Burle Marx, Boca de Mato, 1993, Lithograph, signed and numbered in pencil.

Roberto Burle Marx paintings and drawings are a peculiarity to Landscape Architecture, in that the drawing or painting sometimes acted as an extension of that process, plants and landscape materials were an extension of his painting and drawing palette, seeing plants as colours and forms in which to manipulate (Berrizbeitia 2004; Cavalcanti et al. 2011; Doherty 2013; Montero and Schwartz 2001; Silva 2006). Marx created low lying beds, what seemed like singular planting hues. As the modernist landscape architectural historian Mark Treib comments, his work was created without need to foreground elements and the need for creating perspective gardens, his painted gardens do not derive a shape from the profile of the topography (Treib 1994, p.53). Marx explains, quoted in Treib,

> That the plant is, to a landscape artist, not only a plant – rare, unusual, ordinary, or doomed to disappearance – but it is also a colour, as shape, a volume, or an arabesque in itself. It is the paint for the two dimensional picture make of a garden on a drawing board in my atelier; it is a sculpture or arabesque in a garden (Marx in Treib 1994, p.57).

The abstract work, was therefore not as distant from the landscape product, they were constructed with the same concerns and artistry.

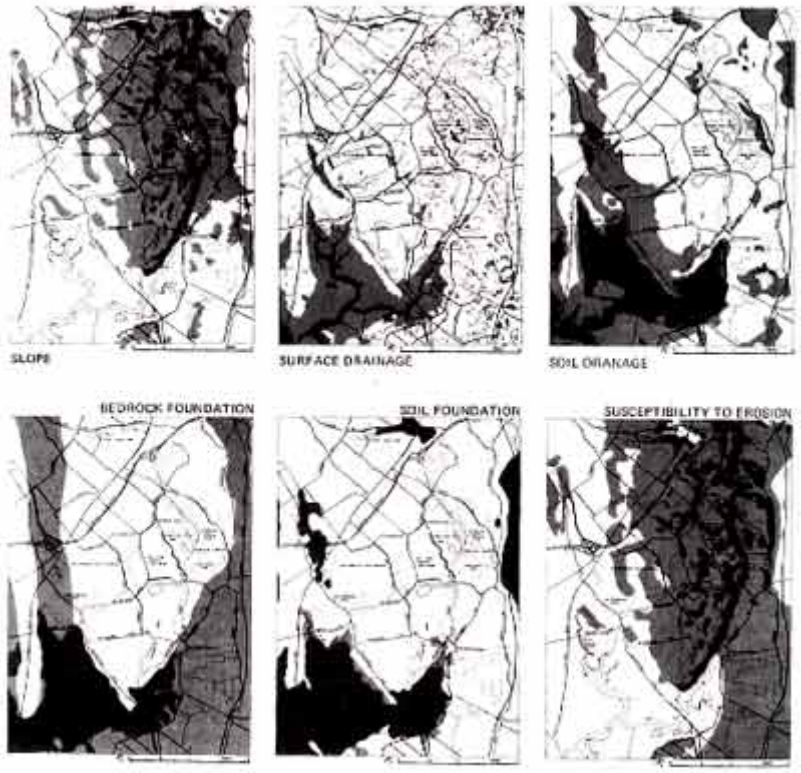


Figure 9: Ian Mcharg, Richmond Parkway, New York, Design with Nature, 1969.

In 1968 the landscape architect Ian Mcharg encouraged planners to consider land use and consider ecology[12], concerned by a lack of a method to describe ecosystems, Mcharg created map overlays in which bodies of information could be synthesised (McHarg 2007). In the *Richmond Parkway*, **Figure 9**, engineers proposed a straight cost effective highway between two ends of Staten Island, New York. Mcharg created overlays which married social impacts with geological considerations, enabling a multi-criteria evaluation to take place, compared with the engineer's narrow remit of cost-effectiveness (McHarg 1995). McHarg's vision would be fundamental for the realisation of Geographic Information Systems that can manipulate any number of data sets and focus analysis to generate maps; in other

[12] As Anne Whiston Spirn describes Mcharg, he conflates ecology as a science, as a cause and an aesthetic (Conan 2000, p.112).

words the cartographic development of mobilised, layered, time maps. McHarg created the layering principles; Roger Tomlinson created the first computer system for the government of Canada. This work by McHarg and Tomlinson established GIS, which is geographic information, combined with data overlays, from retail locations, housing densities, populations and ethnicities or geographic, statistical information on computer systems. However, as Richard Weller notes, the aerial image can seem to provide solutions, though this is not always the case, laying bare the terrain for programming. The aerial image loses our connection; it becomes an artefact though detached.

> The most powerful narrative of landscape architecture that of socially and ecologically reconciling modernity with place, finds its main frame in the aerial photo or the satellite image. But, as soon as we think about it, aerial images become contradictory representations. Contradictory, because they conceal the real socio-political and ecological relations of the working landscape they purport to lay bare. In viewing an aerial image one is confused by seeing everything but knowing nothing. One is excited by the powerful overview but equally crippled by its detachment. If at once Faustian, the aerial image is also disempowering, effectively reminding the individual viewer of their incapacity to affect the vast spread of mass culture and its landscape. In the aerial view, individuality is effaced by the obvious prospect of being a speck in a larger system (Weller 2001, p.16).

While Weller recognises certain difficulties, the aerial image does not have to be affected by detachment and masking of social-political relations. The difficulties of the use of these images can be mitigated by additional overlays, and further information. However, this is reliant on the viewer making connections between overlays, connecting information and reliant that such landscape features can be clearly separated into discrete layers. This representational motif continues in professional practice. Can aspects of landscape be separated into discrete chunks; can these be read and understood for greater understanding of the landscape phenomenon?

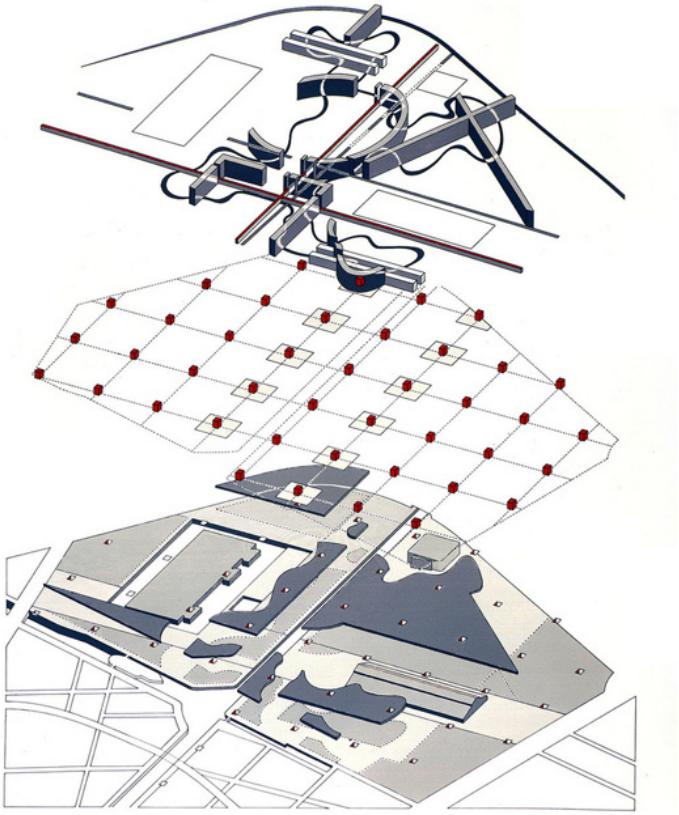


Figure 10: Bernard Tschumi, représentation axonométrique des trames superposes, 1982.

Bernard Tschumi was an architect who graduated from ETH Zurich. Tschumi was interested in film and literary theory and its relationship with architecture, particularly Michel Foucault and Roland Barthes. His interest was creating architecture constructed against singular meanings and revealing tensions of social effects of architecture, and the creation of a post-structuralist architecture. It followed that texts shape our readings and are more open multifarious creations, and architecture that sought this multifarious layering laid bare political and socio-relations of architecture and created new ones. Tschumi won an international competition in 1982-83 to revitalise underdeveloped land and a meat market and slaughterhouse in the north east district of Paris. This marked his first major public work. Informed by Jacques Derrida's, deconstruction[13], and cinema[14], *Parc de La Villette* was designed with principles of organisation; *Points, Lines and Surfaces*, creating a vacuum of

[13] The focus on the way oppositions and statements are constructed to make sense of something, must be analysed or deconstructed, marking indifference and changing a 'hierarchy' in reading objects (Norris 2002; Derrida 1998).
[14] See the Russian Cinematographer Sergei Eisenstein and the works; Strike (1924), Battleship Potemkin (1925) and October (1927).

spaces in which individuals drift and create their own meaning (Hardingham and Rattenbury 2011). *Parc de La Villette* was intended to culturally layer its visitors over a formalised park experience. Koolhaas & OMA also submitted an entry for the competition, a complex grid form in which successive stages of design results in horizontal bands, layered by fixed point features and an architectural element 'round forest'. Essentially a socially condensed floor of artificially programmed space in marked difference to Tschumi's vision of dislocated multifarious objects of flexible meaning.

Tschumi's lines feature as the main movement paths across the park, the points are thirty five red follies, each unique and the surfaces are the green expanse each to give their own independence and logic 'no rhythm, no synthesis, no order' (Tschumi 1989). The axonometric vertically divides the space, where emphasis falls on the architectural follies and walkways.[15] It divides the space into a pure visible form in which all of the terrain can be viewed. The importance of multiple forms of drawing is revealed in Tschumi's storyboards, landscape elements and architectural follies (Tschumi 1982).

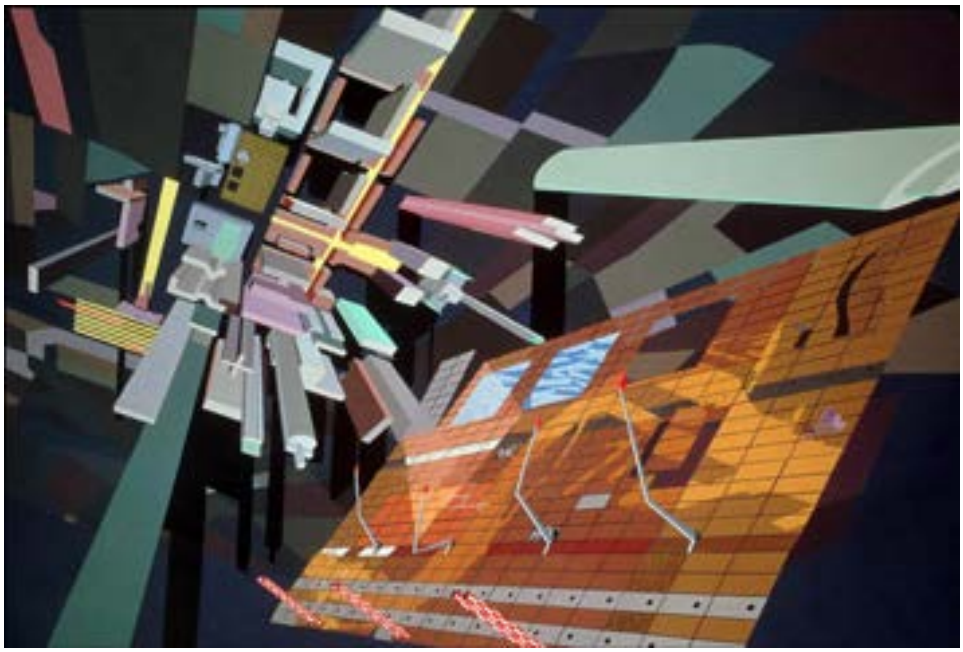


Figure 11: West 8, Shouwburgplein, Adrian Geuze,
collage with pantone paper in colour, digital manipulation, 1991.

In the work of the Dutch urban and landscape design team, West 8 formed in 1987, experimental collage is used for presentation **Figure 11**. This is called *Mosaics* (Geuze 2000). In this illustration for a theatre square called the Shouwburgplein, Rotterdam, lights

[15] The work and drawings influenced James Corner heavily, see (Steiner 2012).

feature, shaped as cranes, which users can operate and move to position (Ibelings et al. 2007). The square in the design is raised to create a space like a theatre and therefore make its surrounding visitors its audience. The collage is an important representational scheme in which literal layering of landscape can take place. Mimicking the flap of Humphry Repton's *Redbooks*, before and after schemes can be visualised, Adrian Geuze's collage represents a design at a point of computational development and the onset of graphic manipulation programmes becoming more readily available. Possibilities of hybrid representational techniques emerge.

Figure 12: Gross Max, Orchard, Parklandschaft Tempelhof, Berlin, Germany, 2011.

Gross Max experimented heavily with Adobe Illustrator and Photoshop[16] to create layered collages, which restrained complete hyper-reality, in the layering of objects which did not share the attributes of other images, giving a sense of design intent in the combination of things in landscape. A sort of digital realism emerges (Gross Max 2007), which would develop further as software packages became more readily accessible. The digitisation of perspective became the major way in which to communicate to non-design professionals. This brief discussion highlights some of the representational schemes developed over centuries, and the changing relationship between humans and landscape. Ideal landscape are drawn, landscapes are drawn as object of power, landscape and art became intertwined, landscape would become the surface in which philosophies would act out and the digital world would communicate the intentions of designers.

[16] The development of Adobe systems graphical editing packages became design standards, whilst many other GUI's were released; Adobe became the dominant choice for graphic professionals. The prominence of the package is similar to previous representational histories of perspectives, drafting tables and stencils of earlier landscape and architectural drafting.

0.1.D - Perspective Visualisation - Trapped in 'Virtuality': Perspective Representation Visual Essay

The brief history of landscape architectural drawing shows a wider typology of ideas and cultural understandings of landscape. In light of this history it is worth comparison to establish the validity of the theorem of a contemporary dominant representational paradigm of landscape architecture. Adopting a technique of a visual essay allows the surveying of landscape professional practice drawing. The presentation or competition drawing has a representational history of technical pen and hand coloured graphics, to the digital image as seen in the previous examples. Such schemes have developed borrowing from a number of disciplines, more recently developments in computer game design. As Kingery-Page and Hahn state, such aesthetics can result in a kitsch which is unhelpful,

> When ultra-realistic renderings are accepted as the ultimate design graphic, the result can be kitsch; designers have an ethical obligation to avoid the pitfalls of such easily-accepted landscape kitsch (Kingery-Page and Hahn 2012, p.58).

Considering the implication that such digital work fails to distinguish between image and reality reflects the work by Jean Baudrillard, on simulation in *Simulacra and Simulation*, 1981, the danger is that such modelling becomes accepted, innovation becomes redundant in terms of the use of a variety of toolsets and the use of landscape photography as the accepted lens in which the experience of landscape is formed, creates ethical questions. Such caution has been encouraged by Catherine Dee for landscape architecture students (Dee 2010)[17], in a call for a move between digital and analogue production and site, rather than a linear process to develop a digital model. Photo-realistic work present a unified view closer to 'reality' than rough handed collage, which shows a more obvious assimilation of ideas and concepts.[18] These works are divorced from the actual time in landscape it takes to establish such visions, making photorealistic works actually further from visualising the intent. Presentations of the reality of uncertainty, of what the landscape is to become over time, might address this issue. That is to say the designer may understand the presentation of their concepts as a rough assemblage, of points in time, but a fundamental shift in reception and understating of the work takes place with a photorealistic image. The surface

[17] See also 'Plus and Minus: Critical Drawing for Landscape Design'. In M. Treib (ed.) Drawing/Thinking: Confronting an Electronic Age (London: Routledge), 60–71.

[18] As the environmental philosopher Don Gifford states, "separation is urged upon our eyes by the camera lens, the photoframe, and the glance-and-move-on way we have learned to read photographs on a page and have carried over to the way we read paintings on a gallery wall and the way we read the passing landscape" (Gifford in Kemal and Gaskell 1995, p.136).

is taken as a representation of a solid possibility rather than a container of ideas. Often there is a leap towards the finished digital output over the sourcing and assimilation of information, testing, rejecting and thinking involved in landscape architecture design.

Selecting twenty two perspective visualisations from design competitions around the world, establishes the validity of the claim of a contemporary dominant representational paradigm for landscape architecture. The proceeding collage was based from recent entries from 2012-2013, the works were compiled on their prominence and feature by the landscape architectural press[19]. Figures in the visualisations are retrieved from stock catalogues; gender, culture, race and ethnicity are sometimes sacrificed and the perceptive gives a sense of a westernised view of urban space. Moreover, the representations according to Rekittke and Paar fail to accommodate localised flora and fauna (Rekittke and Paar 2006). Representations are instrumental towards landscape; they are purposeful towards it, borrowing the aesthetic of game environments however is generally an aesthetic of imagination it has no relationship and the subject is separated (Boyer 1996). Figures are transparent, giving fleeting glimpse of how the space is to be used; they are transparent in order not to distract from the pristine nature of the view. Seasonality is generally unthought-of in the visualisations (Olwig 2005) which present sun kissed rolling landscape, though some examples challenge this. Planting is manicured to perfection, no sense of invasive species, grasses glowing in the most vivid green of health. Shadows are peculiar, either non-existent or too directional to be real, as if landscape lighting were like that of a film studio.[20] These observations are repeated by James Corner who suggests such perspectival schemes “overlook the ideological, estranging, and aestheticising effects of detaching the subject from the complex realities of participating in the world” (Corner 1999, p.156).

Such criticism must be held in context in that such perspectives are generated for economic means, firms are competing to win tenders, it is what the public accept, the perspective is understood over different representational schemes that can seem complex, or biennial; the simulation works. The design aesthetic, in some cases, must show the intent rather than possible, landscape idealism is present. As the landscape architect Noel Van Dooren (Van Dooren 2012) has argued, such work does little to demonstrate the important aspect of time

[19] Landscape Urbanism, World Landscape Architecture Magazine and (ASLA) Landscape Architecture Magazine. As publications they represent design news from across the sector internationally. The editorial rationale is to showcase best practice, thus practices are presented as exemplars of the sector and is indicative at the representational range in which digital perspectives are created.

[20] Such work can be seen as generic in light of digital instruction manuals (Cantrell and Michaels 2010).

in production, trees are rendered mature, perennials in bloom, as if the static can narrate and summarise the landscape.

Whilst the concept drawing may still remain as a more speculative work, the plan and the diagram or information graphic supportive of ideas on understanding of landscape, Building Information Management (BIM) (Eastman et al. 2011) and the Tendering Process (LI, UK) encourage digital processes further, relegating the role of such ideational drawings. For example in the Landscape Institutes guidelines for Photomontage for Visual Impact Assessment,

> The objective of a photomontage is to simulate the likely visual changes that would result from a proposed development, and to produce printed images of a size and resolution sufficient to match the perspective in the same view in the field (LVIA, Landscape Institute 2011).

Perspective is a loaded representational scheme, and does not contain such objectivity (Panofsky 1997; Damisch 1995) (see **Chapter 1.2**). The view in the field is fundamentally different from a drawn perspective view. The perspective has become the vehicle and container for design communication, which I would argue has relegated the history of invention and play that landscape drawing has involved. This can be evidenced in the gathering of twenty two sources of landscape digital drawings from around the world, from student drawings to professional practices of various scales **Figure 13 - 34**. This visual evidence matches with theoretical discussion of drawing in landscape found within the next chapter, the **0.2 - Literature Review**. As Holly Getch Clarke argues,

> Definitions of perspective in landscape restricted to linear perspective, as representative of the persistence of Cartesian subject/object duality, or to picturesque views, are therefore unable adequately to engage an exploration of potential complex landscape space (Clarke 2005, p.50).

The prevalence of digital formulaic perspectives (Corner 1992, p.252; Corner 1999, p.155) is indicative of what I would argue as a representational paradigm and crisis in which broader representations of operations in the landscape and display of designer's intent would be more fruitful, over landscapes of framed appearance (Groth 1998, pp.85–99). This is a communicative issue of great importance to the thesis, not perspective *per se* but the limiting of representation compared to the unique peculiar and complex phenomena of landscape. Not that perspective in itself is a limiting output but the elimination of its structural skeleton, masked with photographic objects is an illusory conceit and simulation that is more real than real or hyper-real (Baudrillard 1994). In the brief historical examples we can see particular innovations, new ways of apply the drawing medium to communicate ideas. These

innovations maybe small but make significant difference, with combinations of plan and section, medium, surface treatment and mapping of space. The image cannot be taken as a neutral force, but a cultural product of reflection and imagination. The perspectives illustrated in the visual essay are important documents for the practices, there is a sense of the 'sell' landscape idealism is that the best method of securing clients and the brief. Collective production by landscape architects of photorealistic landscape idealism means essentially that those not complicit in this mode risk losing business or may look peculiar to clients.

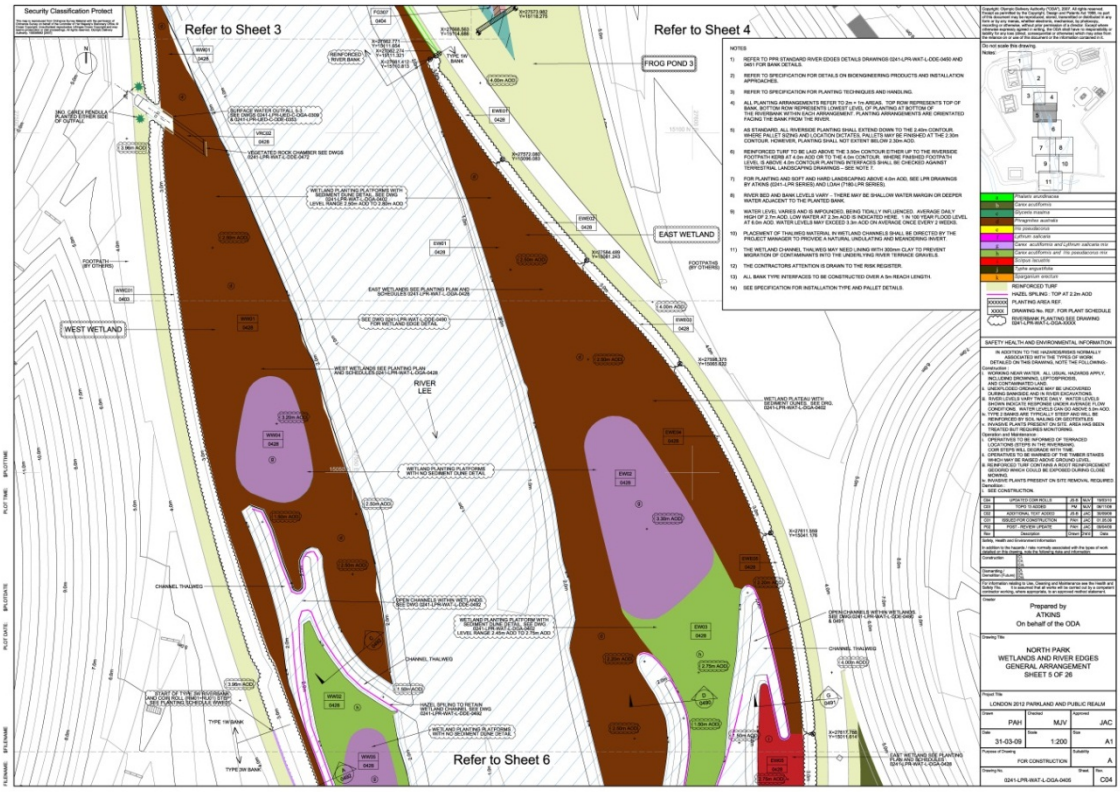


Figure 13: Atkins, Wet Woodland south outlet structure (sheet 2 of 3) sections London 2012 Olympic park infrastructure 29/7/09 Mike Vaughan. This drawing for contractors shows the locations were to plant along a river's edge, and contains information to create and maintain the surrounding wetlands, which has ability to maintain its form over time. Contractor WS Atkins conducted engineering for the Olympic Park for the London 2012 Olympic and Paralympic Games, in a large scale greening project for the Lower Lee Valley. Site analysis showed half a century of mixed industrial land use and contamination. Imported fill was also used to reclaim marsh land during the industrial revolution. Building waste from WW2 and rubbish tips also contributed towards the difficult site conditions. Around 2 million m3 of cut and 2 million m3 of fill were undertaken in the bulk earthworks operations, which predominantly retained on site. Two Soil hospitals were used to treat soil through physicochemical technology (Ian Mead et al. 2011, p.5).

Considered in this way the image has an impact, an influence and it translates from its surface to something else, i.e. it becomes built, **Figure 13**. This is an important fundamental

and is argued in architecture by Robin Evans; “The subject matter (the building or space) will exist after the drawing, not before it” (Evans 1996, p.165). This is called ‘reverse directionality’, of the projection of drawing. Such a principle can be evidenced with construction drawings which purport to translate exactly the design on a paper surface to reality as in the work of Atkins. In the proceeding perspective visualisations what is the impact based on the ‘reverse directionality’ principle? What does it say about the designer’s connection and understanding of the landscape space? The following visual essay will conclude with and remark on twenty two digital works.

Figure 14: Perspective Collage, Twenty Two Perspective Visualizations from International Landscape, Architecture and Urban Design Firms & Students, 2012-2013.

Initial viewing of **Figure 14** shows how figures are used as framing devices and as foreground elements which introduce a landscape vista. Every image is constructed in this way. Sometimes trees are used as a structuring element for this view, often mature and at peak growth.

Figure 15: Herzog & de Meuron, Naturbad Riehen, Riehen, 2007.

This work by Herzog & de Meuron is for a natural swimming pool for the municipality of Riehen, the site can be viewed by the top photograph. A perspective is accompanied by an aerial view. With projections of up to 2000 bathers a day, the pool visualisation is sparsely populated. Sun glare casts strong shadows on figures and the manicured grass shows no sign of wear. What is interesting here is the marked difference from a photograph.

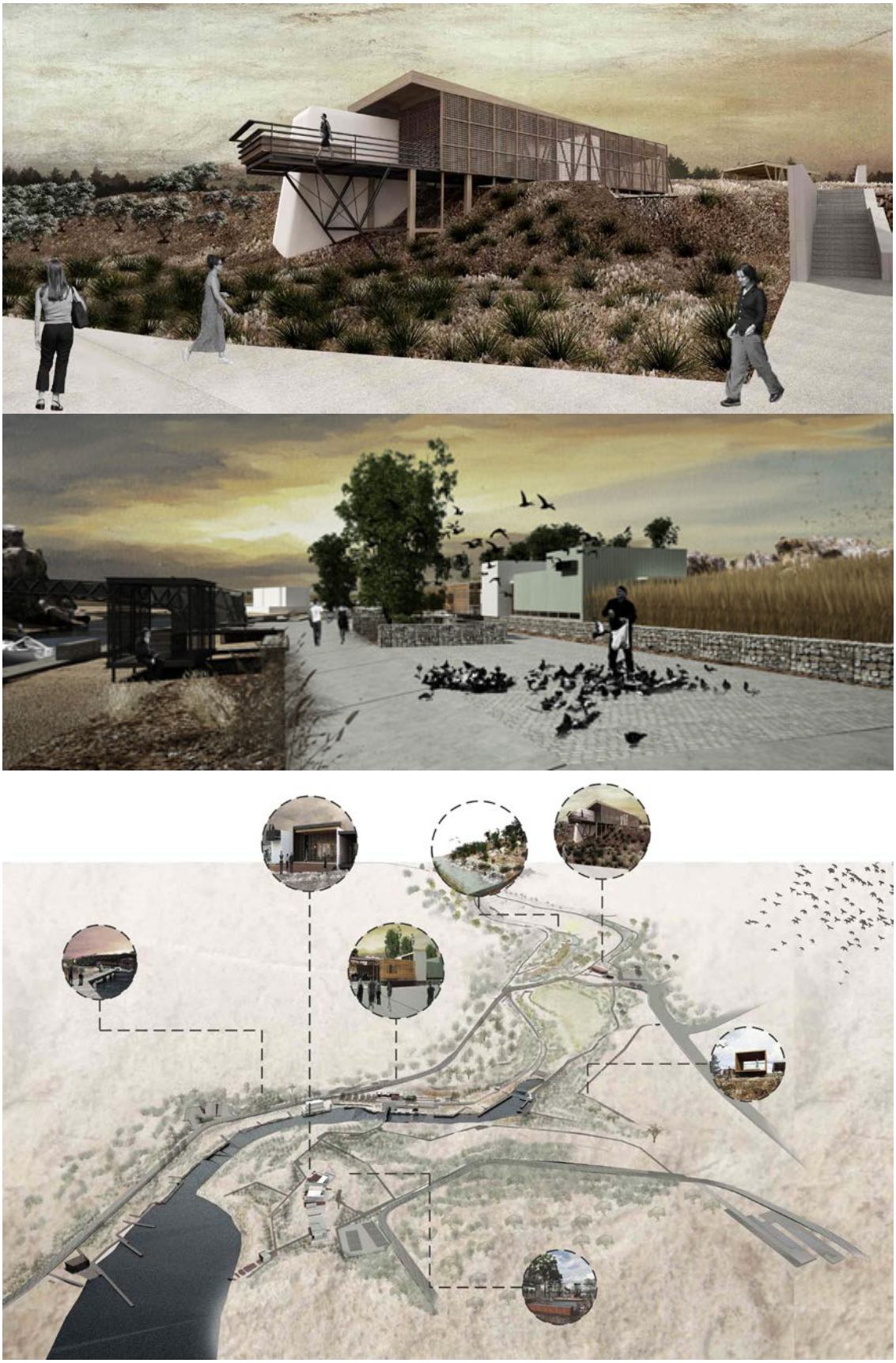


Figure 16: Lereidis Vasilis, Michael Aimilios, Zomas Alexandros, Mitakou Eleni, Raisi Alexia, Hatzopoulos Dimitris, Fanou Paraskevi, Lada Anastasia, Fishing Boat Harbor, River of Liopetri, 2012.

In **Figure 16**, the entrance view and general park view are of a harbour, between Larnaca and Agia Napa in Cyprus. The intentions of the design are not in question, though of nice light conditions, with muted and restrained colour depth. The figurines are crudely cut out, with evidence of edges from the original image. Shadows do not appear and the figures are out of scale which distracts from the architectural intent. The overall effect is a simulation akin to a computer game environment which is sterile. The perspectives do not assist with the communication of their ideas; these emerge to a higher degree in the plans and sections which are well designed info-graphics (bottom).

Figure 17: Ecarch & IND, Koç Primary School Campus Indoor Swimming Pool, Istanbul Turkey 2012.

In these visualisations, **Figure 17**, of an embedded green roof with reflective inverted dome for a swimming pool complex, a strange peculiarity is present. The evidence of root structures with the turf seems to dislocate the perspectives. The pool depth is hard to gauge and the structure itself incomprehensively massive and hard to read its scale between the two perspectives. Such reading and criticism appears as a photo-realistic finish is applied which invites us to criticise these strange nuances.

Figure 18: Christopher Counts Studio with Jay Lee, 2013,
China International Garden Expo, Beijing China.

The 'Path Garden', **Figure 18** is visualised to expand a sense of wonder through various chromatic landscape features. A physical model was constructed to communicate the sense of meandering in the design to a high degree. In the perspective, the figures seem dis-interested, whilst a couple meander face-first towards a tree. Whilst this is less photo-

realistic and close to montaged roots, the coloration is an extreme and plastic rendering of flora and fauna.

Figure 19: Edward Krafcik, Cumberland Corner, Nashville USA, 2012

Figure 19, the Cumberland Corner perspective for a brownfield development is a well-intentioned design phase with interesting re-programming and realignment of a river. The accompanying plan is descriptive of the intention to create a new vibrant community. However, like the previous example artificial figurines create distractions to the design. The introduction of gulls in the upper right of the image is indicative of a generic application of landscape digital perspectives to simulate depth on the picture plane.

In comparison in **Figure 20**, a more playful application and diversity of figures gives a sense of naturalness to the image. However, as the architects give emphasis to the gleaming materiality of the structures, the light reflections are overly harsh and surreal.

Figure 20: Stewart Hollenstein, Colin Stewart Architects,
Green Square Town Centre library and plaza, Sydney, 2013.

In **Figure 21 & 22**, two super trees are visualised in perspective by Maxthreads and Aecom; one with climbers, one reflective. The use of essentially the same landscape component in two different countries raises some ethical questions. However, again we find generic figures 'enjoying' the space to contemplate, bathed in sunlight.

Figure 21: Maxthreads, Eco-Transitional Urbanism, Tainan Taiwan, 2012.

Figure 22: AECOM, Buro Happold, The Plaza, Mumbai, India, Visualisations: Oaker Ltd. 2013

Figure 23: Christopher Counts Studio, Elevated Ground, Raleigh USA, 2013.

In **Figure 23** Christopher Counts Studio's present regeneration for a four acre square in North Carolina from an original plan from William Christmas. Figures here have various transparencies and are more illustrative and contain a greater ethnicity and profession than previous renders. Seasonality is very similar to the previous perspectives, though one perspective does present a winter scene, as part of the square which converts to an ice rink. The finish is more thought through. However, water foundations seem to have no puddles, the water indicative of the static view and idealism present.

The figurines use is much better in **Figure 23** than in **Figure 24** which presents a strange virtuality, edges are blurred to mask the disconnection, plants seem derived from only one or two original sources. The figure on the bottom right of the visualisation is skewed and seems one dimensional. A convention of directional sunlight again fixes the same summer seasonality and high cast shadows.

Figure 24: Enlace Arquitectura, Pista Viva (Alive Runway) – Revealing the landscape of the "Carlota", Caracas Venezuela, 2013.

Figure 25: James Corner Field Operations, Piet Oudolf, ARUP, Make Architects, Olympic Park Legacy, graphics by tomato, 2012.

The similarity of studio finish is evident in Field Operations between **Figure 25** and **Figure 26.** Two distinct locations, London and Chicago, seem connected. Gulls feature in both and the lighting finish is also the same. High vivid, near acidic greens feature. Each of the scenes seems dictated by a certain number of people that the space is never empty, nor full, timelessly vibrant sun soaked landscape where people and groups stay, always a metre or so apart. The Aerial of the Olympic park demonstrates the scopic eye of eighteenth century aesthetics of Kipp & Kynff, **Figure 3**, in which the grounds can be surveyed and laid bare, a near impossible feat given London's pollutants. A magic clarity pervades and calm waters meet perfectly ordered landscape, more telling, as trees become reused in the render with slight modifications. The perspective is simulation and static. Such catalogue use of elements creates an artificiality far removed from landscape experience.

Figure 26: James Corner, Field Operations, Navy Pier, Chicago, USA, 2013.

Figure 27: Latz + Partner, St Peter's Square, Manchester, 2012.

Figure 27, Latz & Partner architects won a competition for an urban square (St Peter's Square) in Manchester. Decorative trees are to be planted, though unspecified and seem purple, showing their addition to existing tree lines. The visualisations describe the existing architecture and the render adds a hand drawn feel. The different colouration continues in **Figure 26**, for Mid-town Detroit an area of surface parking, vacant properties, and inward-facing layout. These visualisations create black and white figurines and enhance colour, to sell the idea of creating a new vibrant community. Ethnicities are well represented and there is a sense of some seasonality evidenced in the final snow scene. The overt sense of collage in these works comes from the fact that communities were involved in the consultation on how this main square was to be programmed, resulting in a wide variety of mixes in the creative industry sector. Gulls appear and there is a sense of generic perspective layout, though improved overall with the stark juxtaposition of activity.

Figure 28: Sasaki Associates, TechTown District Plan, Detroit USA, 2013.

Figure 29: Stoss Landscape Urbanism: STREAMLINES, Minneapolis Riverfront Design, 2011.

In **Figure 29**, perspective visualisation conventions are continued, however, three seasons of use are presented here showing a sense of depicting landscape time. However, each season is idealised and the migratory birds still seem to be migrating through all seasons.

Figure 30: BDP, Parade Watford Town Centre, 2013.

In **Figure 30**, BDP show a night time scene in a Parade designed to showcase the lighting features. However, the design is not shown to its full extent, features look muted as they move towards the vanishing point. Figures disguise the empty spaces of constant paving.

Figure 31: BIG & West8, Fentess, JPA, Miami Beech Square, Graphics: Squint Opera, MIR, Kennedy Fabrications, 2013

Figure 32: TLS/KVA, RIVERFIRST, Minneapolis Riverfront Design, 2012.

Figure 33: ASPECT Studios, Ultimo Pedestrian Network, Sydney Australia, 2012.

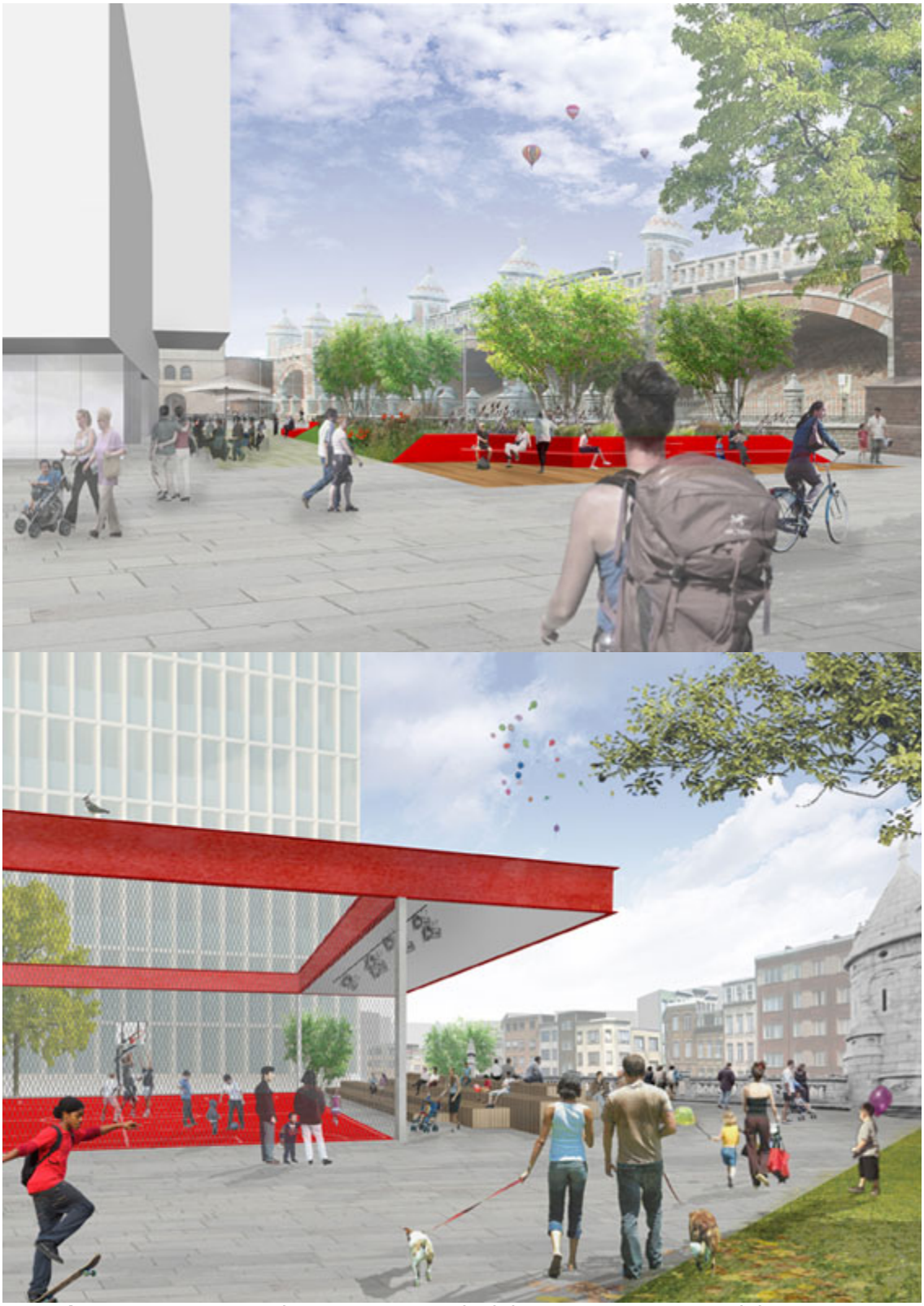


Figure 34: BUUR and Hosper, ARA, Kievit in Green, Antwerp Belgium, 2012.

Figure 35: Michael Van Valkenburgh Associates with Thomas Phifer & Partners wins Waller Creek Design Competition, 2012.

Figures 31 to 35 again repeat the same described motifs, scaling devices, view and layout of the other perspective visualisations (Van Dooren 2012). Whilst this visual essay may seem overly critical, it echoes similar criticism previously discussed. In light of the aforementioned history of landscape representation, periods of innovation and hybridity, these perspectives seem formulaic and generic (Corner 1999). Their ability as a communicative medium is hampered by what could be called 'Kitsch' or hyper-real finish (Kingery-Page and Hahn 2012). The ability to describe the complexity of landscape is questionable as is the site specifity when visualisations describe locations with the same

treatment (Olwig 2005). Whilst these works have been isolated from additional graphics of plan, section, axonometric, and many other forms the presentation of works with such hyper-real finishes present themselves as ‘real’ world results. Viewers can become confused and translate the digital or paper surface as direct to landscape itself. Whilst this *translation* is part of the thesis (Evans 1996) the closeness between an abstract concept and space is one not of merit but of deceit.

This visual essay demonstrates a contemporary dominant representational paradigm for landscape architecture. It is worth conducting a literature review in light of this paradigm to establish the critique and discussion of landscape representation two establish two axes. The first axis is the identification of the specific areas and contribution to knowledge of the relationship between representation and production of landscape. This involves identifying the literature which discusses manifestations of drawing and how drawings work or *operate*. The second axis is the survey of literature which discusses drawing methods for landscape architectural production.

0.2 - Literature Review

Introduction

The thesis question is to explore the relationship between representation and production of landscape. This relationship rests on the identification of drawing and its many manifestations. As we have seen in the previous introductory chapter, the history of landscape representation could be seen as a history of invention. However, in the visual essay we have also viewed homogeneity, that is, perspective visualisations which are constructed with the same compositional layouts and finishes. This is illustrative to what I would argue as a current representational crisis which is the result of a contemporary dominant representational paradigm in landscape architecture. Given this assertion, it is worth exploration of literature which discusses the role of design drawing. It is also important to identify a number of drawing methods which create a positive valence for landscape architectural production. These two claims and explorations rest on a number of important research activities to which the thesis extends and appropriates. This literature review establishes the ground on which further work is undertaken to address the two intertwined research questions. This involves an understanding of the *translations* of drawing, which is what a design drawing does, its process and communication.

This transitory review of academic works is then situated within a wider theory of how space is produced by the philosopher Henri Lefebvre who wrote that a society produces its own space, therefore it is worth exploring Lefebvre's theories in the identification of representation within this process. The practice of Landscape Urbanism is also reviewed as this theoretical and practical repositioning of landscape architecture has implications for the reorientation of representation in landscape architecture. Finally discussion of the ideas of design drawing and conceptual processes identify academic research and the various understandings of the role and processes of drawing. Thus the literature review discusses the following sections, **Translations of Drawing**, **The Production of Space**, **Landscape Architecture Drawing & Education** and the **Implications for Research** these areas chart the various coordinates and research conducted in the operation of drawing.

0.2.A - Translations of Drawing

> Research into the development of projection, notation, and representation *vis-a-vis* the effective and artful construal, construction, and sustenance of built landscape form has still yet to occur in a vibrant and imaginative way (Corner 1992, p.274).

To review the place of drawing and to mark out the literature which brings the Landscape Architect James Corner to remark on a call for research, is to first mark the nature of this type of image (*graphic*). Within architecture, as defined by the architectural historian Robin Evans, drawing has a 'reverse directionality': "the subject matter (the building or space) will exist after the drawing not before it" (Evans 1996, p.165) (though not all architecture can be formed in this medium). Evans' formulation appears as a working definition in other texts (Moore 2009) in which to locate this mode of drawing - projection. As James Corner (Corner 1992, p.243) suggests, in a landscape architecture perspective there is something to be *made* from landscape and designed, or what is termed "the art and science of creating open-air spaces as environments for human life" (Honour et al. 1999, p.328).

Corner's article and proposal for the introduction of a wider variety of drawing techniques which in turn could improve the quality of the designed built environment is of central importance for the thesis questions. Corner goes further to define landscape architecture drawing as "a textual medium which is secondary to the actual landscape – [it] can never be simply and alone a case of reflection and analysis; it is more fundamentally an *eidetic* and generative activity, one where the drawing acts as a producing agent or ideational catalyst" (Corner 1992, pp.243–244). The nature of making is a *poesis*, or production, Corner calls it a generative agent, and ideational catalyst for the making of poetic landscapes. Corner is reliant here on Martin Heidegger and his appropriation of sources is well discussed by Richard Weller (Weller 2001). Corner places 'eidetic' in terms of the visual formation of ideas, derived from *Edios*, or *seen;* "To refer to a mental conception that may be picturable but may equally be acoustic, tactile, cognitive, or intuitive" (Corner 1999, p.193). Similar sentiment is reflected by the renaissance architect Leon Battista Alberti when he states,

> And we can in our thought and imagination contrive perfect forms of buildings entirely separate from matter (Alberti 1987, p.V1.1).

A possible extension of Corner's remarks lie in the poetic - agency of drawing. This is termed that drawing is an agent for production, the drawing communicates a design. This agency is also found in Robin Evans: "projection operates in the intervals between things. It is always *transitive*" (Evans 2000, p.366). So the drawing in landscape architecture carries and communicates a set of ideas. So in that transition a remarkable activity takes place between drawing and production. This in-between space could be found in the writings of Gilles

Deleuze and Félix Guattari; the *Rhizome* a philosophical theory; an image of thought which includes multiple meanings*;* "has no beginning or end; it is in the middle, between things, interbeing, intermezzo" (Deleuze and Guattari 1988, p.25). This can be understood in the cartographic context where an image is a map of things, not a trace of reality. The map is an image of thought, which as an artefact communicates understanding and multiple descriptors transferred to reality. This in-between space could also be associated with Gaston Bachelard's *The Poetics of Space* (Bachelard 1992), a philosophical investigation into domestic space which is a well-regarded phenomenological[1] analysis of the use and psyche of the home. Again similarity exists in the *uncanny* a freduian term applied by the architectural theorist Anthony Vidler: "it is not a property of the space itself nor can it be provoked by any particular spatial conformation; it is, in its aesthetic dimension, a representation of a mental state of projection that precisely elides the boundaries of the real and the unreal in order to provoke a disturbing ambiguity, a slippage between wakening and dreaming" (Vidler 1994, p.11; Vidler 2002). Thus a number of scholars have identified an agency and in-between from representation to production, however this work has not been extended to any degree in landscape architecture.

Corner bases his analysis from Heidegger (Heidegger 1975, pp.17–87) and looks at the actual work of making or revelation of what is disclosed. To Corner this allows a hidden truth or human agency - the notion of agency of mapping appears later (Corner in Cosgrove 1999, p.252). Corner admits the obscurity of this area, as the agency of drawing must act as a mediator between the designer and the wider construction team, teams which work in a different medium – landscape itself is something always in flux. Landscape architecture is to be located as *artistic production* and *cultural agent,* an agent that has capacity to "enrich the cultural imagination and provide a basis for rootedness and connection, for home and belonging" (Corner 1999, p.12). This could be evidenced in the work of the eighteenth century theorist on the sublime, Richard Payne Knight whose aesthetic theories he directed to garden design. The picturesque, understood in his terms as painting was being transcribed directly into garden design when Knight commissioned Thomas Hearne. Here drawing is an agent which was directly transcribed. The question then is – *Between Production & Representation,* but to recount Heidegger "let us go to the actual work and ask what and how it is" (Heidegger 1975, p.18). As Italo Calvino has discussed in *Invisible Cities* (Calvino 1997), the same question appears in Calvino's postmodern novel which is

[1] "Phenomenology involves the understanding and description of things as they are experienced by a subject. It is about the relationship between Being and Being-in-the-world. Being-in-the world resides in a process of objectification in which people objectify the world by setting themselves apart from it" (Tilley 1997, p.12).

discussed in **Chapter 1.0**. The production and representation formulation by Corner involves translation in the consideration and interpretation by construction teams themselves. The line between representation and production is blurred - given a Vitruvian notion of *ichnographia* – or 'foot marks' (Vitruvius 2009, p.13), what Paul Emmons has called 'Drawing in the Dirt' (Ewing et al. 2010, p.120). A modern interpretation is shown by Chiles & Butterworth in a bricklayer's scratch note, a mark detouring from the plan which disappears and becomes buried in the construction (Ewing et al. 2010, p.129). This also manifests itself in Pliny's Natural History, through the story of Diboutades or the 'deceitful' painting of Zeuxis and Parhasius (Elder 1991, pp.35–65). This work helps us to understand the role of drawing in landscape architecture, though further refinement of the process in which it works needs undertaking.

Corner presents a useful tripartite categorisation of drawing; he talks of three characteristics of drawing, 1. The designer's indirect and detached, remote access to the landscape medium, 2. The abstractness of drawing in relation to subject i.e. the actual phenomena of landscape experience, 3.The function of drawing and its generative role (Corner 1992, p.245). Containing both positive and negative notions, essentially there is a belief in the message of the medium. As Evans states for architecture in seminal text the *Projective Cast*,

> Without the architect's faith that geometrically defined lines will engender something else more substantial yet discernible through the drawing, without faith in the genetic message inscribed on paper, there is no architecture (Evans 2000, p.xxvii).

Thus, there is *faith* in the medium of drawing to carry ideas to production. These theorists support arguments for the agency of drawing in landscape architecture. As the landscape architect Ian Mcharg stated about landscape "the place is because. It is in the process of becoming" (McHarg 1995, p.106). This becoming is like the agency of drawing which is also in transition. The notion of agency is essential to establish the thesis question of drawings *operation.* Though a suitable framework in which to understand Corner's characteristics of drawing is required and further context will allow such work.

0.2.B - The Production of Space

If drawing in landscape architecture has an agency further identification of the research on the understanding of representation is essential. It is also worth locating notions of representation - a working definition is useful in the French post-Marxist Henri Lefebvre,

> We may be sure that representations of space have a practical impact, that they intervene in and modify spatial textures which are informed by effective knowledge and ideology. Representations of space must therefore have a substantial role and a specific influence in the production of space (Lefebvre 1991, p.42).

Yet at the same time, Henri Lefebvre criticises certain reductive visuals that 'degrade space', as he states the architect "has a representation of space, one which is bound to graphic elements" these are thought to be *true* (Lefebvre 1991, p.361).This text critiques the *belief in the message* of drawing. Lefebvre here theorises a description of space which is divided between abstract, perceived and lived. That is to say that for example Cartesian space has no connection with lived space, it is a construction of abstract mathematical co-ordinates. This division assists capitalist power structures and dominant orders programme space, even though to Lefebvre the production of space has a profound impact on society. Lefebvre argues that we need to connect our various notions of space, and by doing so makes society have a greater ability to shape how space is produced and provide what he calls the *Right to the City*. The text is useful to extract the notion of *Other*, or exclusion is best represented in Lefebvre and Michel De Certeau's analysis of dominant orders, spaces of resistance and vague terrains. Lefebvre's overall project is to re-unify the spatial, and provide *wholeness for society* in the whole participation of the production of space, his critique thus discusses specialisation, alienation and fragmentation. Whilst Lefebvre is a critical Marxist, possibilities exist in the extraction of urban theories from his texts on the idea of everyday life[2]. Whilst this proves a fruitful project for the thesis, *The Production of Space* is fragmentary in chapters, opaque, and contains certain leads that are unfulfilled. The first chapter, however, becomes the most productive; this criticism is echoed in Soja (Soja 2011; Soja 1996; Soja 2000) though Soja's writings are heavily indebted to Lefebvre. The central tenet is,

[2] As Hayden Lorimer notes, "... the focus falls on how life takes shape and gains expression in shared experiences, everyday routines, fleeting encounters, embodied movements, precognitive triggers, practical skills, affective intensities, enduring urges, unexceptional interactions and sensuous dispositions. Attention to these kinds of expression, it is contended, offers an escape from the established academic habit of striving to uncover meanings and values that apparently await our discovery, interpretation, judgement and ultimate representation. In short, so much ordinary action gives no advance notice of what it will become. Yet, it still makes critical differences to our experiences of space and place" (Lorimer 2005, p.84).

> (Social) space is a (social) product [...] the space thus produced also serves as a tool of thought and of action [...] in addition to being a means of production it is also a means of control, and hence of domination, of power (Lefebvre 1991, p.26).

Establishing a three part interaction; perceived space; the concrete and lived - and conceived space; imaginary, representational and creative, Lefebvre viewed everyday life as the zone for liberation and the area in which resistance to technocrats, system and domination could be played out (Lefebvre 1992, p.8-10). He discusses the privilege of the visual over the sensory, everyday and lived, or the 'multiple times and rhythms of everyday life' (Goonewardena et al. 2008, p.9). His work moves towards first identifying the mode of capitalist production, and then to identify new possibilities for the hotly debated *Right of the City*- "it cannot be conceived as a simple visiting right or as a return to traditional cities. It can only be formulated as a transformed and renewed right to urban life" (Lefebvre 1995, p.156). The fundamental *Right to the City* is taken up as a central tenet in David Harvey's work (Harvey 2008; Harvey 2013; Harvey 1991; Harvey 2009). Similarly Michel De Certeau's text *The Practice of Everyday Life* (1984) contains possible notes of mapping practices to build upon and analyses 'ways of operating' (1984, p.XiV) *Metis* (1984, p.XiX) what is termed-"the innumerable practices by means of which users re-appropriate the space organised by techniques of sociological production" (1984, p.XiV). This idea was developed from Michel Foucault's 'panopticism' (De Certeau 1984, p.36, 201-2002, Foucault 1975). Both texts could be seen to call for a new politics and action for the inhabitants of the city, which has implications for the city space itself. Within Landscape architecture readings and possibilities from these texts seldom appear, though these have implications and criticisms for the discipline itself, and much discussion falls within geography – 'earth describe-write' and social science (Purcell 2002). As the American landscape architect Lawrence Halprin states, "Landscape design is about social relevance, it can become poetic and symbolic, but, perhaps most importantly, it can articulate a culture's most spiritual values" (Halprin 1970, p.69). Through the aforementioned focus with increasing debates of globalisation and urbanism, there has been little involvement in the landscape architecture discipline and discussion of the role of representations, translation and political space as a whole *movement or journey* (Anheier and Isar 2012; Nas 2011; Florida 2003). Thus building on Corner's articulation of the agent of drawing, and the theories of Lefebvre we can map the role of drawing in its contribution to the creation of space and see how drawing within the design process has created or mitigated disconnection with city space. These theorists are useful in addresses the potential of drawing methods as a positive valence for landscape production. This positivity can be seen in the identification of 'the everyday' as a subject enriching design processes.

The potential of drawing as projection, as cultural artifice could then contain positive modes to be employed in the method of both the role and impact of spatial production. That is to say the current literature makes clear the question, though looking at the area, by analysing whole movements of the agency of drawing may shed further light within this invisible realm. A parallel to this argument is found in De Certeau “to see things in that way, in the movement that opens up another space for them, is to see metaphorically” (Certeau 2002, p.18). Notions of agency appear in the anthropological study by (Gell 1998) defined by the distinctive function art plays in advancing social relationships through the abduction of agency. Gell in his text presents the following functions; agency, index, prototype, artist and recipients. Agency is mediated by index of materials which motivate responses, or interpretations. Indexes can stand in a variety of relationships with their prototypes, artists and recipients. Prototypes are the objects or persons that indexes represent or stand for. Recipients are those who are or are intended to be affected by the indexes. Artists are those persons considered to be the immediate cause or authors of the existence and properties of the index. Michel de Certeau’s important text *The Practice of Everyday Life* (Certeau 2002) examines the way individuals appropriate and use mass culture and habitation. The text is of particular interest in its discussion of the use of space, particularly walking and mapping (**Chapter 2.0**). Evading capitalist Marxist relations whilst also bearing in mind the very particular Parisian urban history theory interest in unitary theories of space, and the everyday as subject, to which De Certeau has emerged and is arguing, what is useful here is to De Certeau spatial configurations have an impact on everyday practices. These very movements of people are difficult to represent, but could enrich consultation processes for landscape architecture and allow people to have a stake in shaping space. For landscape architecture texts that discuss anthropological and spatial practices can greatly inform the understanding and use of designs.

0.2.C - Landscape Urbanism

The concept of Landscape Urbanism moves landscape architecture away from previous forms of the eighteenth century picturesque, beautification and mere green interface in-between design of 'proper' structures of modernist architects (Treib 2007; Giedion 2008). Landscape Urbanism can be seen as a movement to revitalise the profession and to instigate a greater role with similar professions in the production of the built environment. This North American trend appeared through the text *The Landscape Urbanism Reader* (Waldheim 2006). This emerging field tries to connect landscape and architecture professions and also connect ecological considerations with cultural, social, political and economic environments, to reform landscape architecture as part of a complex inter-relationship. These concerns within the text align though for different ends, with theories of social relations developed by Lefebvre and De Certeau. The geographer Carl Troll who was interested in the power of the visual coined 'landscape ecology' in 1939 and stated that,

> Aerial photo research is to a great extent landscape ecology. . . It is the consideration of the geographical landscape and the ecological cause-effect network in the landscape" (Turner et al. 2003, p.10).

This representative form created a basis for an emerging sub-field, *Landscape urbanism*. Inheriting such innovations as Ebenezer Howard's *Garden Cities of Tomorrow* (Howard 2009) and with Ian Mcharg's emphasis on graphic importance, ecology, system and pioneering of GIS (McHarg 1995) along with developments in urbanism led Charles Waldheim et al at Harvard Graduate School of Design alongside James Corner, Anuradha Mathur, Mohsen Mostafavi, and Dilip da Cunha, Alex MacLean, et al in the 1990s' to coin the term *Landscape Urbanism*. Landscape Urbanism is a landscaping of in-between void and disenfranchised areas within American cities to have the 'ecology' restored to these voids through native seeding, an "interstitial design discipline, operating in the spaces between buildings, infrastructural systems, and natural ecologies. These were 'unseen,' residual *terrain vagues*" (Shane 2004, p.4). An example is the current *Fresh Kills*, landfill to park project which runs for thirty years in Staten Island, New York, by Field Operations (2003 -). This thinking is at once the basis to locate the thesis mode of landscape architecture in its current role change and Landscape Urbansim's emphasis on the importance of innovations in imaging to realise these changes, emphasizes the pressing need for the investigation of the role of representations within the thesis. However, the emphasis on imaging is in landscape datascapes, generally creates more questions than it provides for a manifesto for Landscape Urbanism, in particular the identification of built projects resulting

from the theorisations. Within architecture, moves for New Urbanism in the 1990s likewise projected and patterned new system flows and connections and the two emerging disciplines are at once tangent and counter to each other. Each field moved to address disregarded terrain and beg the question on the nature of the terrain. Through these fields a move and connection between critical or neo-marxist analysis of the politics of place in the city and the actual interventions of landscape architecture in these domains in the thesis is not wholly differentiated.

The difficulty in case studies in which to locate Landscape Urbanism leads to another dilemma of existing literature. Primarily, available texts discuss architectural drawing (Cook 2008; Cook 1999) rather than landscape architecture. Catherine Dee's *Form and Fabric* 2001, *To Design Landscape: Art, Nature & Utility* (Dee 2012) are two exceptions though need further support, one a primer the other a more theoretical treatise on the economy of drawing and design for landscape. The architectural drawing texts are highly useful though must be noted as a simple difference lies in the dynamic and phenomenological landscape, and also the living nature of sites themselves, architecture can function to a different time than a landscape. However, such a distinction is difficult given the move towards greener living spaces and organic structure, and the mix of landscape architects being involved more in traditional architectural spaces, e.g. *The Highline* 2010. Brought again within a broader position of urbanism (and its increasing 'isms of a genus of modernist unitary theory e.g. Mohsen Mostafavi *Landscape Urbanism: A Manual for the Machinic Landscape* (Corner et al. 2003) lines become blurred between built projects, though the literature on representation for these practices seems more compartmentalised. The work on Landscape Urbanism demonstrates a theoretical shift in our understanding of the process of landscape architecture; such discussion allows us to identify the notion of representational positive valence. How can areas be improved in the adoption of different representational approaches?

0.2.D - Landscape Architecture Drawing & Education

Drawing that is understood as hand drawing has widely declined in the architectures and has been mentioned and declared as early as 1989 by the architectural theorist William Mitchell as the *Death of Drawing* in architecture (Mitchell 1989). Partly due to the emergence of computer aided design[3] which has certainly overtaken presentational and technical representation, it has, however, and still remains a proven medium in conceptual / idea forming stages and collaborative communication (Bafna 2008) – meant in terms of the design method of working out and progressing (Lavoie 2005). As Mark Treib who has edited two texts on representation in Landscape Architecture, *Drawing / Thinking* and *Representations in Landscape Architecture* (Treib 2008; Treib 2007) states,

> The image begins to tell us more than we have projected into it; new or unrecognised relationships or ideas emerge that stimulate creativity. Perhaps for this very reason the drawing has remained the primary vehicle for conceptualisation in architectural and landscape design (Treib 2008, p.15).

Such assertions can be seen given the role of the drafting table found in the journal *Pencil Points* (Hartmann and Cigliano 2002). The drafting table declined as an activity with the onset of mass production and fabrication of architecture, which by association required rigorous and time saving technical drawings. As Thorbjorn Andersson also suggests in Treib's edited volume, there is always a requirement for graphic vehicles for the architectures with which to mediate ideas (Andersson in Treib 2008, p.78). Common debates create a quite formulated and contrived comparison between computer aided design and the hand drawn. This basis of debate could be argued to centre on the specific education point of entry of the now fully trained practitioner, (Merleau-Ponty 2002; Merleau-Ponty 1969; Merleau-Ponty 2008; Merleau-Ponty 2011) (of those trained in traditional draftsmanship (Roncken, Szanto, Van Etteger 2008) and those accustomed to computer rendering emerging out of more contemporary architectural education. I would suggest that an intermediary method is possible combining and hybridising digital and analogue utilising potentials in both mediums to address Corner's question of graphic invention.

The preferential position is certainly destructive in both cases, as firstly CAD itself is programmed in its interface to mimic traditional techniques of representation such as perspective and 'drawing styles i.e. watercolour skins'. CAD also brings forward production time and modelling complexity. That hand drawing is termed and connected and thought of

[3] Maybe CAD could be seen as what Paul Virillo describes as a vision machine? (Virilio 1994, p.56).

as a ‘skill’ further accelerates the divide over CAD technicians often derivatively called in industry ‘Cad Monkeys’. Phenomenological thought ((Merleau-Ponty 2002; Merleau-Ponty 1969; Merleau-Ponty 2008; Merleau-Ponty 2011) places certain forms of drawing to the fore. Notational systems – such as Laban notation, apropros Lawrence Halprin (1916-2009) (Halprin 1963; Halprin 1970; Jost 2010) all contain possibilities for program and event for architecture & urbanism, with attention toward “the intangible properties of real that cannot be set down in graphic form” (Allen 2008, p.43). Essentially such activity is to resist what Pallasmaa calls “stage sets for the eyes” (Pallasmaa 2005, p.30). Or similar alternative strategies can be found in the drawing storyboard systems of Bernard Tschumi (Tschumi 1989; Hardingham and Rattenbury 2011).

Corner’s ‘metaphoricity of drawing’ contains a strategy for free associative imaginary construction, speculation exampling amongst others Carlo Scarpa (1906-1978) and Mario Ridolfi (1904-1984) (See **Chapter 1.2)**. This metaphoric and poetic drawing is the source of focus to identify an answer to Corner’s call for a “synaesthetic and communicative medium [which] might better afford a richer realisation of ideas within the built environment” (Corner 1992, p.275). This is a shared and central precept, further examples from practice are needed and Corner’s own collages seem at odds with what his design practice produce overall**.** This note and possibility does not appear in any other landscape architecture text to the author’s knowledge, but sits rife within other disciplines. It can be understood as a range of drawing techniques which aim to both be poetic and technical as well as instrumental for the enabling of projects.

Drawing fieldwork has been enriched by certain associations, operating with wider activities such as writing as a mode of understanding site. Holly Clarke who teaches landscape at Harvard School of Design argues for perspective representation as a “body institution, as a modality of vision supported by other senses and conditioned perceptions.” (Clarke 2005, p.52) subsequently arguing that it allows an understanding of Deleuzian ‘becoming’ as bodily thought, similarly this argument can be found in (Grosz 2001). Clarke then visits Deleuze in the *Rhizome* ‘in-between’ potential of perspective and landscape. This analysis is useful given the visual critique found in the **Introduction**, rather than a distanced view, perspective visualisation can be re-thought and presented as a phenomenological operation. Whilst Clarke identifies this Deleuzian in-between the notion of positive perspective representation is hard to maintain given critiques found in environmental aesthetics and the initial phenomenology of Merleau Ponty, where the body is the primary conditioner of experience. Nethertheless, this highlights the problem of emerging from a graphic procedure to ‘become’ - *not to stay within it*. Most importantly Clarke fails to locate such ‘revised ontology’ (Clarke

2005, p.52) within the political real space of landscape design itself and its impact for everyday life. Indeed it was only some seventy years that R.W Hepburn's his seminal article *Contemporary Aesthetics and the Neglect of Natural Beauty* (1966), managed to pry aesthetics post-Kant to concern itself with perceptions of nature. This particular emerging field has done much to lay critical insight into picturesque framing aspects in landscape experience, something that pervades and remains in landscape architecture itself post-Brown & Repton (Carlson 2009; Carlson and Berleant 2004; Kemal and Gaskell 1995). The picturesque was an image that paradoxically became an instrument of urbanisation and modernisation (Conan 2000) - that the *Claude glass* acted as a medium to *see* paintings in the landscape (Andrews 1990) is still something under-critiqued and could be seen as a form of Baudrillardian simulation; "no longer that of a territory, a referential being or substance. It is the generation of models of a real without origin or reality: a hyperreal" (Baudrillard 1994, p.1).

The making of image and moving *outside it* (nor mere fidelity in construction) is one problem for the thesis question. A more constructive operation could be found by the geographer Yi-Fu Tuan where in the text *Topohillia*, a study of environmental perceptions and attitudes, Tuan suggests that seeing and thinking are closely related processes, where environmental stimuli are organised creatively (Tuan 1990, p.10). If this theory is true then representing the environment with fidelity is near impossible, recognition as such makes representations understanding as a culturally selective activity. In the work of Linguist George Lakoff we find amongst other things questions of realism, our minds are embodied and we function a neural beings, in *Philosophy in The Flesh* "In order to function realistically in the world, our categories and our forms of reason must 'work' very well together; our concepts must characterize the structure our categories sufficiently well enough for us to function" (Lakoff and Johnson 1999, p.21). Lakoff's criticism of western philosophical thought contains some possibilities in the reading of metaphors, and their everyday use. To Lakoff metaphors are primarily conceptual (Lakoff & Johnson, 1999 p.129). Such theories can be assistive if bring to light the transitive role that images play and communicate. Potentials for fieldwork inscription with a landscape site and mapping out of, offer interesting avenues of research given the environmental artists Helen Meyer Harrison & Newton Harrison's practice (Harrison and Harrison 1993) and De Certeau's essay (Certeau 2011; Certeau 1986; Certeau 1997) as visiting a landscape as moving around it, as a metaphor, to map and to change.

Looking at specific landscape architecture texts however, whilst the previous theories and uses are defined, Mark Treib's text fundamentally fails to mark out the boundaries of the

medium and its productive role. Likewise in Treib's edited volume *Drawing/Thinking: confronting an electronic age* (2008) the chapter structure and contributors fail to present a constructive and joined up argument beyond the digital and hand drawn duality. Kathryn Moore's text *Overlooking the Visual* (2010) also locates drawing as a primary educative tool. Moore rejects rationalistic and 'mystery' of design in favour of pragmatic approaches and theories of John Dewey. By doing so design can be understood, the 'genius' of the creative power of the designer masks the implicit ideas contained in the design communication. The text's standpoint aims to move the 'metaphysical wilderness' away from the visual, and ground such making in a more utilitarian approach to place making (away from the *genius loci* (Norberg-Schulz 1980) and evaluating – working out ideas. Further development in the text and the critique of instrumental planning practices also re-dresses the balance, between these scopes much can be gained for landscape. This to an extent extends where Treib does not cover in his representation texts. Such representational critiques can be found in the data presentation work of Edward R. Tufte's work (Tufte 2001; Tufte 1990; Tufte 1997) which also makes calls for more critical data use and presentation of information graphics that in combination make a unified call for new emergent critical dialogues. However, as Corner remarks efficient data use in itself will not lead to a 'logical credible synthesis' (Corner 1991, p.117) and Tufte's work is not landscape specific and does not create in-depth readings of cases.

Contemporary and fine art practices certainly yield interesting aspects and can enrich these debates. However, the marked difference is that landscape architectural drawing is a mark of *action*, in difference to mainstream fine art practices concerned with the object itself. This action can become blurred post-Krauss (Krauss 1979) when constructed using the Klein diagram, or refigured through (Meyer 1997) and (Jacobs 1991) in the form of *environmental art*. Possibilities exist in Berger's notion of drawing as "…burrowing in the dark, a burrowing under the apparent" (Berger 2007, p.77). Though as Anita Taylor reminds us in her introduction to *Writing on Drawing* (Garner 2013, p.11), the danger in claiming that drawing can be anything presents the corollary that it is "also nothing – or at least nothing special." Deanna Petherbridge's *The Primacy of Drawing* (Petherbridge 2010) charts the practice of drawing throughout western history. The text whilst useful for the thesis question focuses on the object itself. The concern for the thesis is that drawing in this case is one instrumental and the other aesthetic, though not to allow either part to overcome the other. Within baroque architecture a similarity is found in Dalibor Vesely's *Architecture in the Age of Divided Representation* (Vesely 2006) were Vesely identifies divided representation; the tension between the instrumental and the communicative roles of architecture.

Alberto Perez–Gomez and Louise Pelletier's *Architectural Representation and the Perspective Hinge* (Perez-Gomez 2000) questions the dogmatic and reductive process of architectural drawing (in all forms) calling for a move against standardisation; "Projection evokes temporality and boundaries. Defining the space between light and darkness, between the beginning and the beyond, it illuminates the space of culture, of our individual and collective existence" (Perez-Gomez 2000, p.6). This is moving from Lefebvre's question of "what exists, between the shadows and the light, between the conceived (abstraction) and the perceived (the readable/visible). Between the real and the unreal" (Lefebvre 1991, p.390). Perez-Gomez & Pelletier, thus call and mark out, like Lefebvre, the transitive role of projection, geometry and its abstractness, an abstractness which can enrich architectural production[4]. These readings can be related to critical post-modern studies which for landscape architecture, revolve around ecological emphasis in the wake of mass urban expansion best exampled in Geoffrey and Susan Jellicoe's study of landscape of twenty eight cultures spanning across centuries;

> Within this biosphere, and only dimly aware of its fragility, the historic civilisations grew and prospered. Until the present day there has been no challenge to its authority (Jellicoe and Jellicoe 1995, p.12).

As previously mentioned, Landscape Urbanism, or the changing role of landscape architecture has the potential to address marginal, displaced areas and instigate positive change and re-instigate ecological solutions post industrialisation. Perhaps this is a type which Gregory Bateson in *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution and Epistemology* and the promotion of system thinking, calls a "pattern which connects" (Bateson 2000, p.8) also (Alexander 1978). The call for something 'new' or 'better design' in this field is certainly possible (Jacobs 1961), in light of a change that demands action for environment. Environment in Raymond William's *Keywords* is termed - 'encircle' & 'circuit' (Williams 2004, p.111) this is well documented in Peter Hall's *Cities of Tomorrow* (Hall 2002) a critical reader of twentieth century urban planning carrying forth the precept that certain forms of drawing & designing are liberating, and image constructive for finding new solutions to urban planning. The text identifies a positive valence in representation.

[4] Maybe this temporal transitive space is found in William Gibson's Virtual Light, that within computational design when concentrating upon the object, (in the 'Republic of Desire' using the 'Dream Walls' software) beyond it "[…] you get this funny sense that you were leaning out, over the edge of the world, and the space beyond that sort of fell away, forever" (Gibson 1994, p.266).

Though it is worth noting, that from such histories such representations can also entrap, to recount the renaissance painter's perspective system, according to Robin Evans in *The Projective Cast*,

> [it] gave them [artists] a second order of freedom within a second order of confinement. Inside the rigid cage of central perspective they developed unbridled, graceful bodies, conceived without any recourse to geometry but directly on it for the intuition of their liberated form (Evans 2000, p.43).

The thesis study fits not within inventing new graphic procedure but in *what arises from* it, a focus on process, movement and journey. Indeed the perspective system to Henri Lefebvre is a question of a code, that was "at once architectural, urbanistic and political, constituting a language [...] which allowed space not only to be 'read' but also to be constructed" (Lefebvre 1991, p.7). Such codification can be read in Erwin Panofsky's *Perspective as Symbolic Form* and Hubert Damisch's *The Origin of Perspective* (Panofsky 1997; Damisch 1995) is perspective a symbolic mode of discussing perceptions of space, or is perspective a mode closest to perception of space. Perspective to Damisch is a heuristic which has had much influence in many domains. In comparison Massimo Scolari's *Oblique Drawing: A History of Anti-Perspective* (Scolari et al. 2012) discusses parallel projection and the importance of the embodied drawing, that is projections which are containers of cultural ideas and programmes. Notions of language and reading landscape appear in Spirn (Spirn 2000) which in the case of study represents a 'linguistic turn' from representation to landscape. The way we read, the way we decode images provides the critical body of analysing landscape. For example landscape as a metaphor similarly found in text. In the text *Lines: A Brief History*, Tim Ingold states that "so long as writing is understood in its original sense as a practice of inscription, there cannot be any hard-and fast distinction between drawing and writing..." (Ingold 2007, p.3). This again shows how distinctions between drawing and writing, between reading texts and reading landscape can become blurred; the nature of that reading will require further expansion.

As the geographer Dennis Cosgrove argues the reading of landscape is at once culturally specific and exclusional, serving interests (Cosgrove 2012; Cosgrove 1998). William Mitchell also reads landscape as "a process by which social and subjective identities are formed" (Mitchell 2002, p.1). A negative aspect of these readings for example is in the plans of the landscape designers Leonard Knyff (1650 - 1721) and Johannes Kip (1653 - 1722) certainly a form of colonial assertion of the cultural power of the English gentry, a pictorial assertion of formal gardens that later transformed into the pastoral landscape styles. These pastoral landscapes were realised through Enclosure acts in the structured analysis of Eighteenth Century culture by John Brewer; "between 1750 and 1830 no fewer than 4000 acts of

parliament permitted the enclosure of 6.8 million acres or about 21 per cent of the land" (Brewer 1997, p.625).

The images exemplify a 'civilizing mission' of landscape and on topography; this is one but negative of the image itself and its impact on the city (Fishman 1982). The movement of drawing to production then has a political impact on the landscape itself, reviving, serving particular interests or joining Diasporas, forming identities and representing cultural ideals or ideas. Examples are rife, but could be understood in the French *Terroir* or sense of place. Thus landscape architecture has an impact on the spatial texture of the city and its agency, in terms of artistic production has both liberating and creative possibilities. In the text *ME++: The Cyborg Self and the Networked City*, William Mitchell describes the connectivity of digital networks to the urban fabric, and the influence and configurations that take place, likewise such production is also an agent on the spatial texture of the city (Mitchell 2004; Mitchell 1999). This research helps to identify the basis on which a framework to understand the operation of landscape architecture drawing can be understood. It also identifies two possibilities which may have a positive valence for landscape production, namely heuristics and scoring.

0.2.E - Literature Review Implications for Research

The literature review shows the possibility in extending the work of James Corner, providing more substantive work in which experimental modes of landscape architectural drawing can be found. Thus, landscape researchers have charted and discussed a deficiency in landscape representation which the thesis addresses. Given this shortfall in the catalytic effects (or Valence) of landscape drawing, such work needs to be set within a context in which the social effects of the built environment can be understood, **Chapter 1.1**. This is essential in the identification of limited research in social effects of landscape architectural production. The work of Henri Lefebvre and Michel De Certeau will require the analysis and selection of a number of case studies which demonstrate the impact and transitive agent of drawing to landscape production and its social effects. In addition to this requirement cases are to be selected based on the literature of finding and creating new forms of imaging to which James Corner called for. However, real possibilities exist in the context and works of Frank Lloyd Wright (1876-1959); 'organic architecture', Richard Buckminster Fuller (1895-1983); 'Dymaxion projections', **Chapter 1.3**.

The positive valence of representation for landscape production has been identified in the methods of heuristics and scoring. Selecting three practioners who use these approaches will further develop this argument. In the work of the seascape architect Wolf Hilbertz, viewed 'CYBERnetics and archiTECTURE' in combination to visualisation of a coral garden city called *Autopia Ampere*. Each example uses constructive and alternative methods in envisaging landscape through drawing and 'working out' solutions and also demonstrates the breadth, application and possibility of the medium itself, **Chapter 4.1**. In the work of architect Paolo Soleri, who views 'architecture coherent with ecology' and created numerous visualisations of dense superstructures which are hoped to solve issues of urban sprawl. Soleri constructed his ideas in Arizona and his work is interesting in relation to literature calling forth for innovations and heuristics and futurological drawing, **Chapter 5.1**. Specifically, the work of landscape architect Lawrence Halprin, in his texts *Cities* and *RSVP Cycles* (Halprin 1970; Halprin 1963), considers drawing as a participatory tool for understanding and designing landscape. Halprin creates a landscape choreography and awareness of environment using notation; 'totality continuous with the participant'. Likewise the sociologist and landscape architect Randolph Hester describes the importance of community based drawing as an enriching process for landscape design (Hester 2010). To Hester, drawing is an enabling agent for democracy in the urban environment, **Chapter 6.1**.

A framework as a thesis objective in which the practice of drawing can be understood in landscape architecture is required which evidences the ideational and catalytic stage that James Corner charts. This objective will uncover relationships between representation and production of landscape; in the mode of drawing and its many manifestations, its *operation*.

On the establishment of a working framework in which we can understand landscape architectural drawing, the next stage and objective will require the establishment of a number of drawing methods which create a positive valence for landscape architectural production.

Context

Context – This area discusses and establishes a framework in which the creation of landscape architecture drawings can be understood. The context section also discusses the uses of drawing in other professions and develops a theory of representation and production based on the work of Henri Lefebvre (**Chapter 1.1 - 1.3**).

Chapter 1.1 - Of Blood, of Trade, Authority, Agency:
Sought After Forms and Drawing Today

Introduction

A research exhibition entitled *Without the Walls Which Do Not Last* was devised in 2008 in collaboration with Craig Staff, University of Northampton. This was the first of three exhibitions. Without the Walls was a drawing exhibition that aimed to re-examine the idea of drawing as a vital means of communication. The project was devised as a method of addressing the thesis question of examining the relationship between representation and production of landscape; how a drawing in its many manifestations works or operates. This involves as we have seen the establishment of a framework to understand the process of landscape architectural drawing. This exhibition method of inquiry was repeated in two further shows titled *The 43 Uses of Drawing*, Rugby Art Gallery & Museum 2011 and *Rhythm / Presence*, Centre for Recent Drawing, Institute of Art & Design Dublin and CUBE Gallery Manchester 2013.

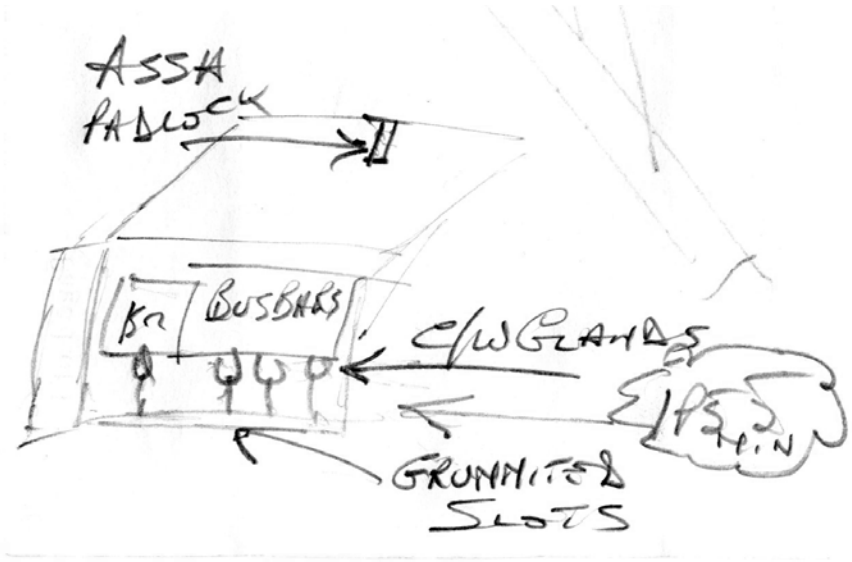


Figure 36: Patrick McDermott, Electrician, *Busbars*, Pencil on Paper, 2008. Patrick McDermott, an electrician draws his intentions for the installation of a new consumer unit, calculating the required amount of slots and pins. He here draws to work out, but also to demonstrate and communicate what is required and to be installed. The simple diagram, led us to the idea of developing an exhibition showing the work of both artists and non-artists who use drawing in their respective disciplines and professions.

These exhibitions provide visual evidence in which to develop a framework for understanding landscape drawing and will be discussed here. This discussion also includes

various theories and research that enhance the curatorial strand. Thus this chapter blends curatorial practice with theory. The exhibition idea was not new; much context had already been laid and explored in the form of exhibitions and publications, in particular, *The Drawing Book* (Darwent et al. 2007) and *Vitamin D* (Dexter 2005) *Drawing the Process* (Davies 2005). The aim of '*Without The Walls*' was to provide a forum on the nature of drawing, through a website hosting resources, and a number of educational workshops delivered within the gallery space[1]. The workshops were delivered in an attempt to change current perceptions of drawing as primarily a fine art medium, and to show that drawing permeates many other areas.

The title of the exhibition *Without the Walls* was taken from a passage in Italo Calvino's *Invisible Cities* (Calvino 1997). The novel explores the communicative relationship between the explorer Marco Polo and his descriptions of cities to Kublai Khan. The cities described are imagined, though we do not find this out in the text until Khan starts to quiz Polo in their dialogue. In these dialogues are descriptions of the cities - therefore the novel is a story in itself, or a story within a story[2]. Invisible cities and the telling of each, is left to the reader to codify. Polo and Khan do not share the same language, leaving the reader and Khan to construct the city in their own imagination. Kerstin Pilz even considers Invisible Cities as a form of 'map-making' in a postmodern labyrinth (Pilz 2003, p.229) as the text itself defies rigid structuring. Calvino's own text is somewhat evasive in analysis, but something that covers the subject, or at least according to Federica Pedriali;

> In *Invisible Cities* he had managed to say *the most*. Previously he had called it a last poem to the city, for soon there would be cities no more: a neat mathematical poem where one symbol fitted all, thoughts, theories, as well as a life history, in the least space (Pedriali 2005, p.168).

Would it be possible to say *the most* on what drawing is? Would it be possible to cover these forms of drawing to chart or map out the various co-ordinates of drawing?

The thesis' method is to research outside of the field of landscape architecture, examining a kind of poetics of drawing, in its many manifestations, to start beyond the standard repeated logical order of the mainstream landscape discipline (Amoroso 2010; Corner 1999). The overall ambition of the thesis is to create a framework in which the role of drawing in

[1] Websites are www.ExpandingDrawing.co.uk and a space on the Times Educational Supplement
[2] Hence some academic debate on whether the text is a novel, short stories or parables, it is of course depending on literary analysis, and runs analogously to Calvino's own prose aims rethinking form and content, through sophisticated fairy tales and self-conscious epics (De Lauretis, 1975, p414).

landscape architecture can be understood as an agent. From the basis of this frame, a positive valence for landscape architectural drawing is to be formed. In *Architecture in the Age of Divided Representation*, Dalibor Vesely explores changing states of representing architecture. What happens between a built space, and a representation of that space as a diagram, or axonometric? What is different between the modes, what can we learn form the difference, and what truths are given in representational schemes? Such a project as Vesley has stated exists in, "the tension between the productive and the creative reality of architecture may be better understood if we examine more closely the nature and role of representation" (Vesely 2006, p.24). Assumptions on the role of representations will be qualified in greater detail in **Chapter 1.2**, but in at least there is an identification that such an area is worthy of investigation; *between things*, of relationships of making. Thus in this context representation,

> more or less coincides with the essential nature of making, and in particular with the making of our world. In the original Greek sense, making as poesies is the bringing into being of something that did not previously exist (Vesely 2006, p.32).

This making has become divided as architectural development for autonomy, architecture free from all natural references. From the abstract drawing come architectures which through juxtaposition seem at odds with their surroundings. This displacement to Vesely is what has caused the 'crisis of representation' as the structures do not reflect the complexity of everyday life and the people that use them. The instrumentality of architecture judged in scientific and technical terms, devoid of meaning, therefore must locate itself within broader human and cultural terms. Vesely suggests an architectural poetics to address this tension,

> The aim of the new poetics is not to become a new theory but to formulate a limited set of creative principles, articulate in the fullest possible way the content and structure of the typical situations, and establish the basic orientation of design (Vesely 2006, p.408).

That poetics revolves around design which reflects visually on similarities, analogies, and metaphors in understanding the visible world. Thus, in the case of visual representation, there is a power for the imagination, to be created in the symbolic realm, to create any meaning. It is important that we can see beyond, that there is a specific form of knowledge created, if that knowledge still retains instrumentality, the ability to make real the imaginative[3] then there is much to be gained and this can be achieved through collaboration. Vesley suggests that there has been a sense of cultural loss with the onset of enlightenment modern science, introducing rationality and theory over the poetic (the situatedness of the

[3] See also Elizabeth Grosz, *Architecture from the Outside: Essays on Virtual and Real Space* (Grosz 2001).

results in the communicative space of culture) and creative act of making architecture (Vesely 2006, p.393).

The *Invisible Cities* text plays a doubly coded role, developing narrative (White 1980) and seriality (James 1982, pp.144–161) framed as a conversation between the ageing and overloaded emperor Kubla Khan and explorer Marco Polo. There essentially is much reflexiveness in the text; we think about the characters, question how the story develops - however we are held in check by the serial progression and description of the cities. Calvino is interested not in the narrative of the novel but the story that the reader creates (Phelan 1989, chap.5). The novel structure contains nine sections though there are eleven thematic groupings each containing five cities per section (fifty five cities in total). Carol James argues that seriality is a way of constructing art, without focus on the object (James 1982, p.144). Drawing seriality occurs for example in the work of the artists Constantin Brâncuși and Eva Hesse. Mel Bochner commented on this seriality and defined it as the application of rigorous governing logics rather than personal decision making. In this case Calvino can be examined through Bochner's definition;

> Seriality is premised on the idea that the succession of terms (divisions) within a single work is based on numerical or otherwise predetermined derivation (progression, permutation, rotation, reversal) from one or more of the preceding terms in that piece (Bochner in Battcock 1995, p.100).

Given such narrative function, it is apt that a seriality of sorts may prove appropriate for a real scale analysis of the use, process, or communicative function that drawing plays in landscape or the journey between producer and landscape production[4] in for example, responding to landscape by a set distances, grids or angles. More importantly *Invisible Cities* marks signs of thinking of the city to consider another 'form' and another function (**Chapter 6.1**).

In Calvino's account of the city 'Ersilia,' the people who live in this city establish various relationships with each other by

[4] Such numerical precision appears in the second exhibition title 'The 43 Uses of Drawing' is both a device of unsettlement and critique, and those within the drawing discipline, so clearly seeking nothing but singular narrative.

> ‘stretch[ing] strings from the corners of the houses, white or black or gray or black-and-white according to whether they mark a relationship of blood, of trade, authority, agency. When the strings become so numerous that you can no longer pass among them, the inhabitants leave: the houses are dismantled; only the strings and their supports remain...Thus, when travelling in the territory of Ersilia, you come upon the ruins of the abandoned cities, without the walls which do not last, without the bones of the dead which the wind rolls away: spider-webs of intricate relationships seeking a form (Calvino 1997, p.76).

Beyond the fact that the strings which Calvino describes become analogous with drawn pencil lines, the final line of ‘Ersilia,’ – “spider-webs of intricate relationships seeking a form” - seems to articulate an understanding of potentially what any ‘drawing’ attempts to do, namely, to “seek a form” (Berger 2007, p.77). The quotation essentially formed the idea and curatorial rationale of *Without the Walls Which Do Not Last.* To begin with Calvino allows us to chart or at least define a range of views and debates which inform contemporary drawing. And in this wider context thus inform and define drawing within landscape architecture. Assuming that drawing could be defined by at least the very literary structure that Calvino presents, we could extend the dream states of city form by configuring drawings as marking relationships of ‘Blood’, ‘Trade’, ‘Authority’ and ‘Agency’ in landscape itself and landscape architectural design. The structure of this chapter will be based on ‘Ersilla’s’ four markings of relationships using string (or analogous drawn pencil lines - delineating).

- ‘Blood’ will consider the historical inception of drawing as an expressive tool, and, moreover, how we might possibly construe the continued role of ‘expression’ within drawing today.
- ‘Trade’ will briefly explore what one might call drawing’s heuristic dimension.
- ‘Authority’ will consider the pedagogical impetus behind drawing and some of the problems that adhere to and inhere within its teaching and dissemination.
- ‘Agency’ will attempt to formulate an account of what we mean when we say drawing today.

Figure 37: Sergio Cittolin, CMS-PHO-OREACH-Data Network, Mixed Media, 2009. In the CERN physcist's drawing for *The 43 Uses of Drawing* exhibition 2011, Cittolin draws world wide computer farm data networks. The drawing is analgous to Mediveal Portolan (Ports or Harbour) charts, maps with directions via compass and estimated distance which Edward Casey gives a thorough account of in *Representing Place: Landscape Painting and Maps* (2002, chap.7–9). Casey presents the idea of a map as chorography of qualitive mapping through practice. Cittolin's drawing and Casey's descirption run analogously with Calvino's city of Ersillia; networked, practiced maps and forms.

Anita Taylor states that there is a danger of writing about drawing, expanding the boundaries so far that it becomes meaningless to write about (Taylor in Garner 2013, p.10-11). Just as

the city is at once graspable as in Calvino's descriptions, it is also impossible to arrive at its form, Calvino shrouds the description; there is always a sense of seeking in the prose[5].

To grasp the relationship of drawing is just as difficult as analysis falls on the object. In *Invisible Cities* postmodern escapism is framed as a series of what seems like a rational division of thematic numbers each describing a city. Again Carol James states that in a text this number sequence,

> When associated with proper names which are also perceived as having no intrinsic meaning, make us uneasy when they are removed from their strictly arithmetic, symbolic terrain and used as ordering devices in a (fictional) context where the meanings of words and actions are over determined
> (James 1982, p.147).

In Calvino's text the thematic division is taken to have *meaning,* the numbering is over-read; the thematic sectioning of the novel is read as a logical sequence. Analogously we can compare Invisible Cities to the previously mentioned questions about drawing, does it have to have meaning? Is drawing over-determined? Are the drawings marginalised in this very questioning, like the painting taking preference over the drawing leaving us with nothing but the sense of seeking? These questions surface by re-orientating the way drawing research is conducted. Calvino and Vesely look at relationships between representation and rephrase the method by which things are made; narrative for Calvino, poetics or architectural representation for Vesely. This chapter looks at drawing as being researched as marking a relationship of 'Blood', 'Trade', 'Authority' and 'Agency' based of Calvino's descriptions of string in the city of Ersilla, it looks at the transactions between things rather than the 'object'. If you are looking for the meaning of the 'thing', it is always between.

In the *Poetics of Space* by Gaston Bachelard (Bachelard 1992), Bachelard delivers a phenomenological enquiry on poetry, discussing everyday interior spaces and architecture. The text is written by Bachelard to enlighten certain poetic moments in which variations of poetic images 'flicker' to thought (imagination) and to view. Bachelard states that we are "offered a veritable cure of rhythm-analysis through the poem, which inter-weaves real and unreal, and gives dynamism to language by means of the dual activity of signification and poetry" (Bachelard 1992, p.xxxviii). When Bachelard states "I am the space where I am" (Bachelard 1992, p.137) such expression is only understood in correlations within abstract

[5] Like Calvino, Tim Ingold (Ingold 2007) explores the anthropology of line, and activities that make them, weaving, walking, place making, he sets out a typology that is not exhaustive and explores threads which are lines with a medium and traces which are lines on a surface. The notion of lines as weaving and place making is very important here and runs to the Ersilla construction.

thought, and in this context is about being in corners and making it the space of our being. Bachelard is talking of a poetic movement, different to the form seeking of drawing, but both develop out of a transitive position. Bachelard encourages and seeks interior spaces which evoke a sort of daydreaming in which the space creates imaginative and poetic readings. The text is useful in its potential for the analysis of the correlations of drawing. Drawings create and allude to imaginative realms and enrich landscape description. Bachelard enables an uncovering of their relationship. For example in this description,

> Old houses can be drawn; we can make a representation that has all the characteristics of a copy. An objective drawing of this kind, independent of all day-dreaming, is a forceful, reliable document that leaves its mark on a biography. But let this exteriorist representation manifest an art of drawing, or a talent for representation and it becomes insistent, inviting. Merely to judge it as good, well executed likeness leads to contemplation and daydreaming. Daydreams return to inhabit an exact drawing and no dreamer ever remains indifferent for long to a picture of a house (Bachelard 1992, p.49).

The image is inviting, what Bachelard calls fortifying. It is not a mere image, but one that acts as an *agent* to daydream. A mode of metaphorical landscape drawing contains real possibilities. Phenomenology in relation to landscape architecture will be explored further in **Chapter 2.1**. In *Invisible Cities*, Khan and Polo do not speak the same language, understanding is achieved (like drawing) through their own interpretation of what they are saying, that communication is the major force and power of the text, - “Calvino playfully rehearses our own struggle as empirical readers to disambiguate the text in which we become entangled” (Springer 1985, p.289). It is important to look at this communicative role. Drawing arguably is over-determined; we can seek meaning, sometimes rational, technical description (for example in construction drawings). We need to analyse the construction of the text that Calvino presents as it teaches us the consciousness of our own reading. Calvino connotes a dialogic reading, we read, critique, escape, a multitude of operations embroiled. Calvino presents according to Teresa de Lauretis’

> …poetic and ideological vision: human activity is at once "doing" and "saying," praxis and poiesis. Its freedom is asserted in the permanence of dis-course which paradoxically exists only denying it-self as escriture, continually violating its own system and reconstituting itself in the dialectics of signification (de Lauretis 1975, p.423).

If we accept such Derrida influenced praise of his prose as found in the De Lauretis quotation, we could re-examine the readings, journeys, and form seeking of drawing. This

very analysis allows us to grasp the operations of drawing, in this context, in landscape architecture. Such a grasp has wide implications for the production of designed landscape. Through a hermeneutics of *Blood, Trade, Authority* and *Agency* we can identify the significance that drawing plays, bringing focus to an operation, poetics or becoming which is an evasive, fleeting, signifying and inscriptive practice.

1.1.A. - Of Blood

> And what drawing wants in terms of its current goals is just to know nature intensely and to embrace nature with such strength that it can render faultlessly the relations between forms, and reflect the inexhaustible diversity of character. (Duranty in Harrison et al. 1998, p.582).

> Drawing in the landscape creates an awareness of place that is a distinct form of information gathering and of understanding the landscape setting (Lavoie 2005, p.13).

The first quotation by Edmond Duranty, in *The New Painting*, was originally published as a pamphlet in 1876. As a writer closely associated with a number of the Impressionists, Duranty's emphasis upon the accurate registration of empirical data rehearses what was still the most pervasive understanding of drawing's role, the observation of all aspects of the environment in which 'he' (deliberate masculine clause as per Impressionist context) evolves and develops, a 'truthful depiction' or 'artistic vision' of modernity. Likewise within Lavoie's contemporary understanding in the second quotation as a landscape architect, such understanding is repeated and reformed, that a particular practice evokes such similar 'truth'.

However, elsewhere within *The New Painting*, Edmond Duranty states a different set of possibilities presented by drawing. Having claimed that the "artist's pencil will be infused with the essence of life. We will no longer simply see lines measured with a compass, but animated, expressive forms that develop logically from one another", Duranty then claims that "drawing is such an individual…means of expression…" (Duranty in Harrison et al. 1998, p.582).

In comparison with Lavoie, such privilege of individual expression can be found within her article, which is qualified through a phenomenological addition and individual body logic within 'space' – or again fidelity is lost to what Pallasmaa calls the skin reading the "texture, weight , density, and temperature of matter" (Pallasmaa 2005, p.33). This introduces a more complex and deeper debate on body, inhabitation and sensory perception. But for the purpose of the term 'Blood', it demonstrates an oscillation between drawing's fidelity to nature against what is, a much more individuated and internalised fidelity which could certainly be a factor to the notion of drawing as *meaning* something.

Today, such an understanding of drawing is moribund if not entirely obsolete, particularly within landscape architecture and a 'scientific revival' (McHarg 1995). Although to a certain extent drawing is still conceived of in terms of the "negotiation between internal rumination and external pronouncement" (Naginski 2000, p.65). Particularly through Roger Scruton (1990,1979) the privileging of the expressive, individuated author has been subject to a sustained and wholesale critique by the exigencies of both postmodernism and post-structuralism.

A connective idea of expression between drawing and landscape runs alongside the idea of authorship. Clues, hints, and decoding of drawings takes place within any landscape garden historical analysis and drawings with apparent fidelity. This notion even pervades subsequent criticism and discussion of such actual physical restorative work. The poet William Mason reported to Gilpin on Humprhy Repton's 'fidelity' stating that between paper and landscape,

> …[he] can draw in your way very freely . . . by this means he alters places on Paper & makes them so picturesque, that fine folks think that all the Oaks &c he draws on Paper will grow exactly in the same shape and fashion in which he has delineated them, so they employ him & at great price (Daniels in Treib 2008, p.43).

An example of such expression can be found in the preface to Humphry Repton's biography published in 1840, lamenting landscape change and seasonality as the landscape develops over time. Within the preface is the sense of the loss of the landscape designer, "in the course of years leaves no trace of that master-hand which had first laid the foundation of future improvement" (Daniels in Treib 2008, p.43). The space within which a drawing emerges should perhaps be understood as some form of an occlusion within which a particular form is sought (Berger 2007). Indeed, one could relate this idea to Berger's own description as drawing being a form of "…burrowing in the dark, a burrowing under the apparent" (Berger 2007, p.77). In this respect, the form that is sought necessarily entails processes of "leaking, rupturing, re-emerging, [and] re-connecting" (Barnes and Kemp, 2006, p7). And as James Elkins states "That is the crucial sadness of drawing: it is unsurpassable close to the object, but always separated from it" (Elkins in Berger 2007, p.112). Expression, fidelity. Making drawing - poetics of *Blood*.

1.1.B. - Of Trade

What was perhaps one of the most interesting categories of drawing which were included within *Without the Walls Which Do Not Last* were those that fell beyond the purview of being understood as being somehow linked with or to a 'Fine Art discipline'. Alongside works that readily fell within the received categorical boundaries of the medium, Cureton & Staff wanted to include within the exhibition examples of what one might call demotic or vernacular drawing[6]. Appearing to echo Delacroix's observation that to draw is to have "one's thoughts at the tip of one's pencil, like the writer has his at the tip of his pen" (Naginski 2000, p.70) the commonality of these drawings centred upon the fact that they were all geared towards visually elucidating a particular idea, system, or concept for the sake of the recipient. Thus, perhaps echoing representational practices for clients found in Landscape Architecture.

Figure 38: Anne Richley, Midwife, *Favourable/Unfavourable Cervix*, Pen, 2008. A drawing made by a practising midwife on the back of a patient's notes. The two shapes respectively denote the shape of a 'favourable' cervix and a 'non-favourable' cervix. In what is a wonderfully direct and economical use of both line and form, the midwife is able to succinctly convey the fundamental difference between the two as a means of explaining the implications of the latter.

[6] In the sense of the contributor displaying an unique understanding and familiarity through drawing with their own environment. I.e. a scientist drawing his science. Not an artist's interpretation.

Figure 39: Will Alsop, Architect, *Ferry Terminal Dubai,* Mixed Media, 2008.

In Alsop's **Figure 39** 'Ferry Terminal in Dubai' the work functions as an ideas board, becoming replete with a general 'everyday' drawing which retains the elements of an architect's practice. Coffee spillages, telephone numbers, ideas and budgets, even wine stains are recorded on the drawing. The drawing features as a working board for posing the question 'what if'? His ideas attempt to create objects of curiosity, in this case to something designed for industrial transitive purpose, to hold visitors attention to the architecture.

In fact, the idea of economy plays a crucial role within the remit of this second category. Rather than simply putting this down to a requisite lack of technical skill, I think we should construe this visual economy.

Edward Tufte (Tufte 2006; 2001; 1997; 1990) has written popular texts on information design and display, discussing layout, aesthetics and exhibition of quantitative and qualitive data. In *Visual Explanations* he describes a design strategy of the smallest effective difference rephrased from Medieval Philosophy:

> Relevant to nearly every display of data, the smallest effective difference is the Occam's razor ("what can be done with fewer is done in vain with more") of information design. And often the happy consequence of an economy of means is a graceful richness of information, for *small* differences allow *more* differences. (Tufte 1997, p.73)

Such a strategy is repeated in Catherine Dee's text *To Design Landscape: Arts, Nature & Utility* (Dee 2012). An economy of drawing is articulated and 'reinvented', rehashed in which an economic drawing method is applied to landscape which is termed "aesthetics of thrift" (Dee 2012, p.21).

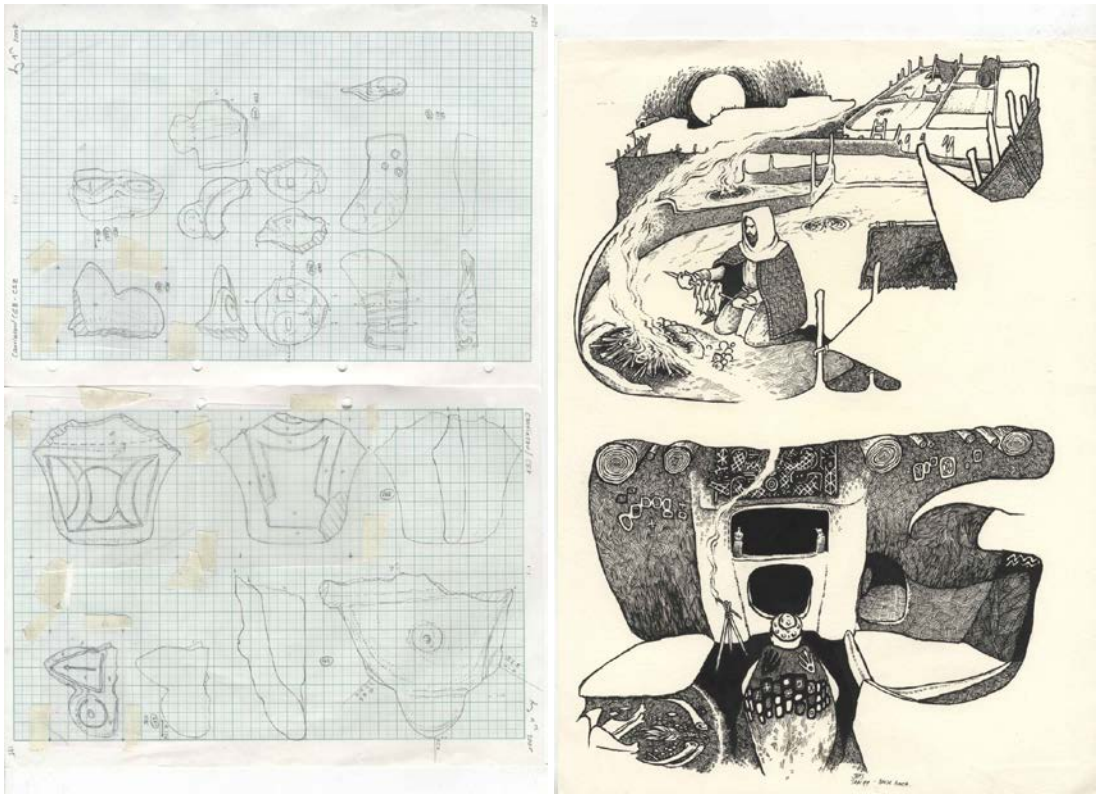


Figure 40: John Swogger, Transect Object Study & Reconstruction drawing (illustrations Çatalhöyük East produced in the field for exhibition in site visitor's centre), ink on paper, *The 43 Uses of Drawing*, 2010.

Rather, it seems to me that implicit within these types of drawing is one attribute one might credibly claim attends to all drawing, namely its heuristic dimension (**Chapter 4.1**) (Polya 1990).[7] George Polya, a mathematician developed heuristics for the goal of changing and improving thinking and problem solving skills. This is structured as understanding a problem,

[7] To this end it seems far from coincidental that in George Polya's 1945 book, *How to Solve it*, he advocates drawing a picture as one 'heuristic' when a difficult problem is encountered.

obtaining a plan, executing the plan and then reflecting on the solution. When understanding a problem, Polya requires a drawing, and notation. In **Figure 40**, the archaeological illustrator John Swogger makes transect studies on graph paper, of the Neolithic site *Çatalhöyük* (East Section) in Turkey.[8] From this basis Swogger thinks through considering how the artefacts could have been used and in what context, then assembles and illustrates possible images of the uses of the finds in everyday life. In a sense drawing as a heuristic or as a means of aiding understanding applies equally to both the author and the recipient.

In **Figure 41** *The Ministry of Cooperation* by Terra Politica, in Jules Guesde in central Marseille, draws various configurations of structures for an urban zone in which the public and their political associations, adapt and configure the structures to their ideologies. Here the line is reduced first as a ideological container, but then further developed for the testing of various geometrical structural configurations. The difficulty of political space here is reduced to line and configuration.

[8] The Neolithic site of Çatalhöyük in Turkey was first discovered in the late 1950s and excavated by James Mellaart between 1961 and 1965. The site rapidly became famous internationally due to the large size and dense occupation of the settlement, as well as the spectacular wall paintings and other art that was uncovered inside the houses. Since 1993 an international team of archaeologists, led by Ian Hodder, has been carrying out new excavations and research, in order to shed more light on the people that inhabited the site. John Swogger is the site illustrator. He divides his time between drawing the archaeological finds and producing reconstruction drawings of what we think Çatalhöyük might have looked like in the Neolithic.

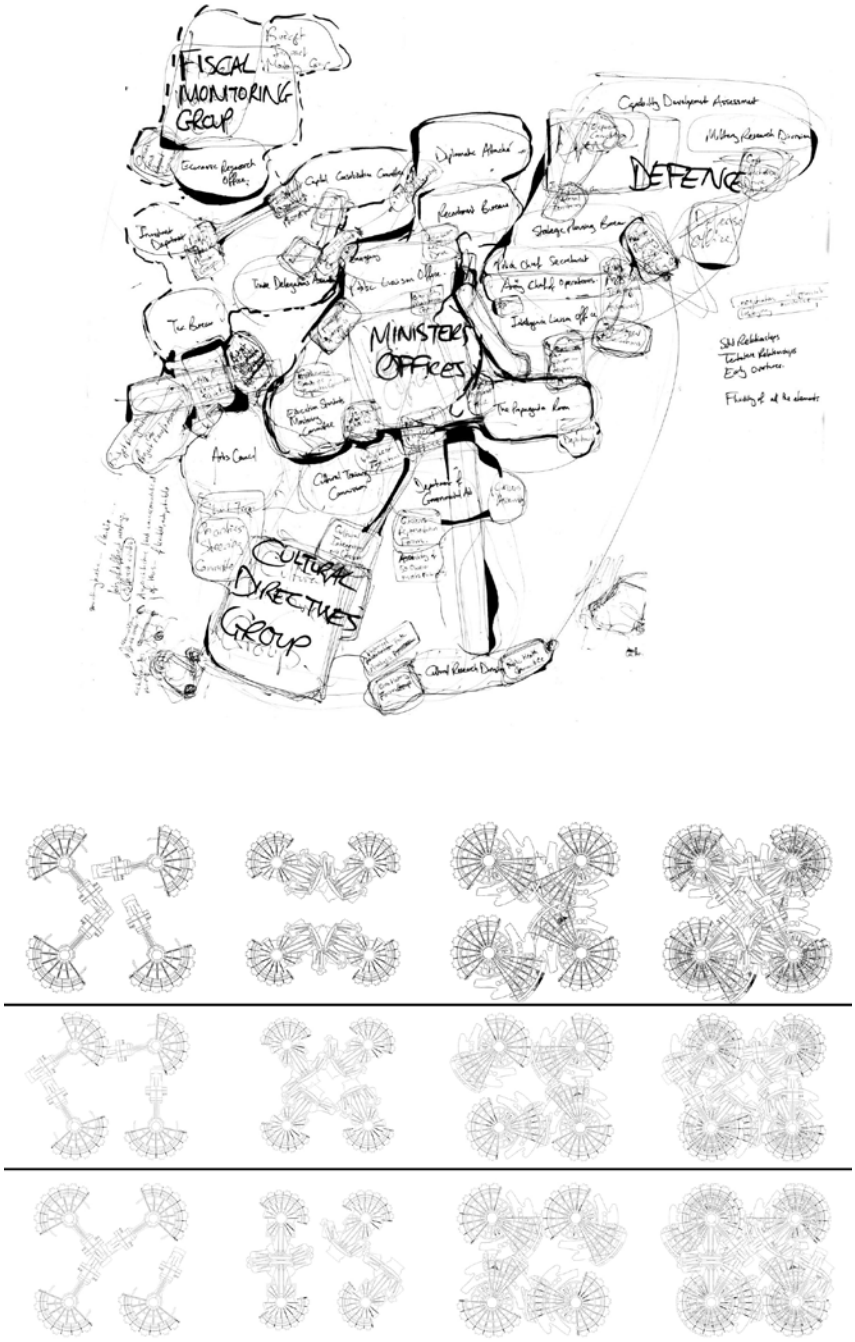


Figure 41: Terra Politica, Ministry of Co-operation – Digital Marseille 2012.

When Richard Serra claims that “drawing is a concentration on an essential activity and the credibility of the statement is totally within your hands… It's one of the few conditions in

which I can understand the source of my work" (Serra in Weyergraf et al. 1978, p.223) Serra seems to be conferring a fundamental role upon the medium of drawing.[9]

In its applied sense, heuristic drawing is geared towards the recipient or reader of a particular drawing, it shows approaches and problem solving of particular issues (Gilovich et al. 2002; Moustakas 1990). For example cognitive maps, internal representations of a place are formed, this mental image is then communicated to another person, say to navigate to a landmark, the practice of the map then is more crucial (Sternberg 2006). The implications of heuristics in cognitive mapping have cultural associations and practices. Of course there are orthodox prescriptions to this fundamental idea. Philip Rawson in *Drawing* (Rawson 1987) cites the example of the Egyptian *Book of the Dead* which was designed to instruct "the deceased in the ritual conduct necessary in the Next World" (Rawson 1987, p.290). However, the drawings made by the midwife, or Alsop, one of several included in *Without the Walls Which Do Not Last* or by Swogger in *The 43 Uses of Drawing* beg the question as to whether the form which is sought should be understood, apropos Krauss, in relation to a set of cultural terms rather than solely in terms of the medium of drawing (Krauss 1979, p.42).

[9] This can be seen in (Schon 1992) – Graphical conversation with the materials of design, (Rowe 1987), recording design moves, (Schmchmidt 1991), tangible speculation (Graves 1977), semiotics as an aid to understanding design drawing (Ashwin 1994); Drawing Design, Semiotics.

1.1.C - Authority

Figure 42: Brian Fay, Fine Artist, After Jean-Baptiste-Siméon Chardin, *Return From The Market*, Charcoal, 2008. **Figure 43:** Jean-Baptiste-Siméon Chardin, *Return From The Market,* 1738.

The category of 'Authority' will briefly consider the problems that adhere to the delivery and teaching of drawing and the context in which this is delivered in the National Curriculum, United Kingdom. In **Figure 42**, Brian Fay leaves fragments of the artist, questioning the authority of the original motif. Fay traces the cracks on the Dammar varnish surface of the Chardin painting to leave an oblique silhouette of the figure. His drawings analyse pre-existing artworks and objects and their complex relation to time. If we begin by revisiting Calvino's city of Ersilia we can further attempt to form the authority of drawing today over time,

> From a mountainside camping with their household goods, Ersilia's refugees look at the labyrinth of taut strings and poles that rise in the plain. That is the city of Ersilia still, and they are nothing (Calvino 1997, p.76).

Just as the people of Ersilia seek a form in their city, drawing seeks a form[10]. Michel de Certeau's text *The Practice of Everyday Life* (Certeau 2002) examines the way that individuals appropriate and use mass culture and habitation. The text is of particular interest in its discussion of the use of space, particularly walking and mapping, and De Certeau's

[10] Of course, depending on the discourse of its possible limits, markings and territories.

work is explored more extensively in **Chapter 2.1**. These tactics of re-appropriation are worthy of mention in the way that representations are used and created as well as reformed. In the chapter *Walking in The City*, the essay runs parallel to our very argument, discussing the role of walking.

> The ordinary practitioners of the city live 'down below,' below the thresholds at which visibility begins. They walk - an elementary form of this experience of the city; they are walkers (…) The paths that correspond in this intertwining, unrecognised poems in which each body is an element signed by others, elude legibility. It is as though the practices organising a bustling city were characterized by their blindness (Certeau 2002, p.93).

The essay discusses the capitalist mode for the spectacle and survey of these movements of power relations and capitalist control; we do not see these overlays and trajectories other than through 'capitalist' power structures, to see below, to survey, to see the grid (De Certeau talks of being on the Twin Towers). Placing aside for the moment the Capitalist-Marxist relations of De Certeau's work, whilst also bearing in mind the very particular Parisian urban history in which these observations were made, in the text what is analogous here is that those walking in the city, those very movements which are described, are difficult to represent. Just like Calvino, in the stated analogy of the form seeking of drawing, it echoes De Certeau's description of body movement.

If an artist, geographer, or architect was asked to draw the landscape each may use their educational basis to draw; a perspective for the artist, map for the geographer, and plan for the architect. Maybe each would draw out some sort of description with a particular convention and highlight. Thus, the landscape becomes re-interpreted – constructed and layered. The sense of re-appropriation which De Certeau postulates is interesting in this case. In the institutional context, research on drawing has become an issue. There is evidence of a desire to maintain the status quo on the use of drawing (**Chapter 3.1**). Drawing has been of course labelled as the primary mode of art and design instruction (Petherbridge 2010). However by its very conceptual and procedural quality it has often been placed within a hierarchy of image consumption, particularly in fine art, consumption concerned with ends[11]. This value of drawing as 'drafting' can be found and traces still remain as in a statement by Anne-Claude-Philippe de Tubieres, Comte de Caylus (1692-1765) on drawing.

[11] Could imitative art practice be the modern parsimony in that it is the reduction of the ontological possibilities of the visual through its very societal preference and infatuation of image consumption?

> They (we) have neglected painting to attach themselves solely to drawing. They have yielded entirely to the pleasing attraction of quickly tossing their ideas on paper (*A Documentary history of art*, 1981 pp322-6).

Whilst an example of the hierarchal value in play, repeated in a landscape context between those who privilege hand drawn or digital outputs (Mitchell 2002), this ideational and procedural quality found within some modes of drawing still remains subsumed. Whilst Sculpture through Krauss (Krauss 1979) sought a new widened definition defined from apparent culturally rooted oppositions, painting too has formed a specific argument in the same vein. However, as Morgan Falconer states this is perhaps due to a fear of the irrelevance of drawing in an increasingly fast paced and image saturated world (Falconer 2003). Drawing however, cannot be placed wholly as a fine art practice, it defies such comparative identification processes, permeating many other disciplines and its very territory and authority make drawing a cross-disciplinary activity. The problem we have is that sometimes emphasis is on the drawing itself, the drawing becomes the prized artefact and then becomes the focus, rather than the quality of actual production or experience of landscape (Corner 1992, p.243). The idea of producing a drawing in itself as a discrete document is a different goal to that of a landscape architect, who needs to create drawings that are transitive to an actual built thing. Such work would ideally draw in time, for while working with flora and fauna, changes need to be recorded, and a drawing of time needs to be created.

However, the 'objective' and 'measurable' became the settled authority for drawing and other art forms. Essentially as Raymond Williams states, "For the culture which is then being defended is not excellence but familiarity, not the knowable but only the known values"(Williams 2010, p.8) this is explored further in (**Chapter 3.1**). The post-modernist erosion of principal values, movement towards 'otherness' and processes of comparative identification, created a juxtaposition of uncritical relativity. This makes the practice and teaching of drawing difficult as it brings forward a number of competing practices and critical doubt.

In the pedagogic power relations in play, drawing teachers must be conscious of the values and power relations imposed and the contribution that this makes on student and teachers' pedagogic identities (Atkinson 2001). If for education as Paul Ramsden states "to teach is to make an assumption about what and how the student learns: therefore, to teach well implies learning about student learning" (Ramsden 2003, p.6). Specifically, within drawing

workshops for landscape architecture how does this question apply, which methods are appropriate? The testing of appropriate teaching methods appears in the 'Rapid Earth' studio module developed and discussed in (**Chapter 3.1**). Notions of student learning are a great research field, though a particularly useful analysis of student learning has appeared by John Biggs and Noel Entwistle in which surface level and deep level learners are identified, with the goal of the teacher to work towards conversion of surface level learners to deep level practioners (Biggs and Tang 2011). However, the text's strength lies in its identification of the issues of learning rather than appropriate strategies and in particular those for Landscape Architecture. Nethertheless, the identification of learning and levels rests on recent ideologies of 'reflective practice' which have emerged since the 1970s. There is much literature on reflective practice; one of the most popular definitions is offered by Donald Schon:

> When someone reflects in action, he becomes a researcher in the practice context. He is not dependent on the categories of established theory and technique, but constructs a new theory of the unique case. His enquiry is not limited to a deliberation about means, which depends on a prior agreement about ends. He does not keep means and ends separate but defines them interactively as he frames a problematic situation (Schon 1991, p.68).

These wider educational issues need to be considered specifically for landscape, specific examples need to be evidenced assuming such reflectivity. However, we must be careful in its application and context as David Boud and David Walker state:

> The ideas about experience and reflection in the literature on which teachers draw are particularly challenging in that they question the conventional role of teacher as authority. This has led some practitioners to translate reflection and reflective practice into such simplified and technicist prescriptions that their provocative features such as the importance of respecting doubt and uncertainty and distrust of easy solutions become domesticated in ways which enable teachers to avoid focusing on their own practice and on the learning needs of students (Boud and Walker 1998, p.192).

The role of reflective practice is to move, as the educationalist John Biggs states, for higher level engagement in cognitive processes, though the issues identified by Boud make the authority of drawing instruction a difficult issue. In light of the broader educational texts, the measurement of the reflective learner and the students who are able to use 'higher' level process becomes difficult to evaluate. However, the potential of drawing mapped by the work of Howard Riley (Riley 2002) as a domain of reflection is unrecognised by some practitioners. The notion of 'reflective practice' has become an important area of research in

Higher Education pedagogy, for drawing has real potential: both through its heuristic mode and speculative, communicative, ideational form.

The procedural, instructional, qualities found in drawing will always attempt to filter thoughts into a symbolic system and as a potential medium for an eidetic (Corner 1999, p.153) operation (particularly within landscape architecture). An example of this filtering process can be found when drawing to live music in which intuitive marks are made from listening to the sounds and their various changing forms and arrangements. So, to the question of what knowledge can the instructor draw from? The idea of primarily using the hand for drawing still remains a Western case; we can also draw on one of our great disciplinary traditions, perspective. Geometric perspective for example was the *modus operandi* of the architect until the call for a more poetic translation from the productive drawn mark to the building, which ran counter to the systematic procedure of previous practice (Perez-Gomez 2000). Alberto Perez-Gomez and Louise Pelletier read the history of architectural perspective as a technological project; the nineteenth century allowed the systematisation of drawing methods - for example descriptive geometry reduced 3d to 2d, architectural drawings to equations, the codification of architectural features, styles and decimal measurements while enabled modernism also created an instrumental architecture with limited experimentation. Developments in axonometric drawing featured to an extent as an addition to a further objectivity of architectural drawing - essentially “the process of maturation from the idea to the built work has been transformed into a systematic representation that leaves no place for the invisible in the process of translation” (Perez-Gomez 2000, pp.83–85). This invisibility found in the process of translation the text charts and then calls for drawing processes which are speculative, creative, eidetic and human centred, and this is important to original architectural production. The text recognises the transitive role of architectural drawing in a historical sense, in terms of periods of drawing invention and innovation, which is supportive of the arguments outlined in the **Introduction 0.1**, and moreover shows the role that education and drawing ‘authority’ have had in the shaping of knowledge. This will be explored further in **Chapter 1.2**.

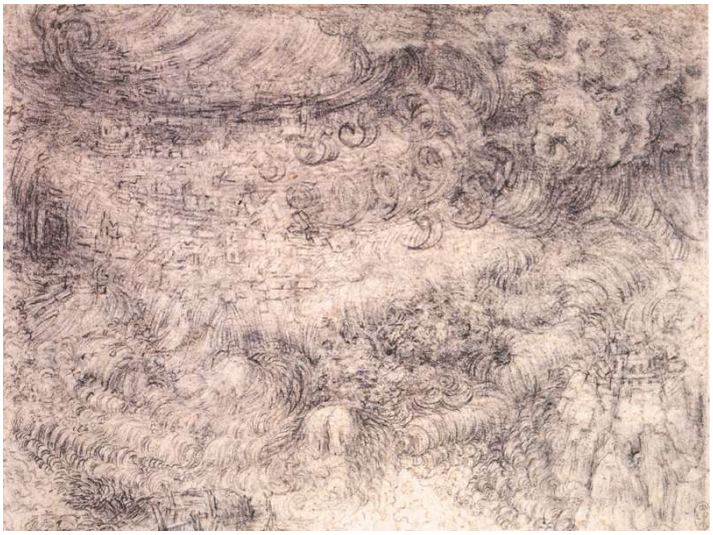


Figure 44: Leonardo Da Vinci, *Deluge over a City*, c.1517-18.

Finally for the category of Authority, what authorities are being drawn on for pedagogic drawing research? In one example for a drawing workshop plan delivered by myself to Level 4 students, in Fine Art & Illustration, for duration of three hours in the drawing studio, Leonardo's *Deluge* **Figure 9** was used as primary data. It presented a number of imaginative qualities of a deluge which went beyond natural description – deluge – a potential existed there to continue that human imaginative quality of nature as a teaching activity. For Leonardo, Nature, "In her inventions nothing is lacking, and nothing is superfluous" (Da Vinci 2008, p.XiX). Thus, the scene was set and a small extract of the Deluge was presented to the student for them to continue like the approach of Brian Fay. The student reflected in their own space of the continuing form of the Deluge, developing their drawing vocabulary, and it expanded and their drawings mimicked the 'flow ' of water. If the authority of drawing lies in its procedure, then the knowledge is not derived from the instructor but from the student through doing: a very real way of reflecting: A 'Dialogical pedagogy'(Duncum 2002) between student and teacher, which, when combined with a discussion of the original work, brings forward essentially the idea of teaching with context, but constructively and reflectively for the students to use, appropriate and shape to their outcomes. Such issues are expanded in (**Chapter 3.1**) & (**Chapter 3.2**).

1.1.D - Agency

Finally, the category ‘agency’; Alfred Gell’s anthropological study of *Art & Agency*, looks at how works of art elicit responses; “material entities which motivate inferences, responses or interpretations” (Gell 1998). Ross Bowden critiques Gell’s theory, given that “'indexes' (i.e. artworks) 'motivate' (i.e. prompt) 'patients' (viewers) to make 'abductions' (inferences) about 'social agency'” (Bowden 2004, p.309). An agent to Gell is “Whenever an event is believed to happen because of an "intention" lodged in the person or thing which initiates the causal sequence, that is an instance of 'agency'” (Gell 1998, p.17). Drawings are extensions and mediums of a person and thus are indirect agents to Gell. However art is an agent, and the definitions of art are difficult to ascertain. Drawings for landscape have a different purpose, and assuming James Corner’s position of landscape drawings which mediate between instrumentality and artistry, make the catalytic qualities of the work slightly at odds to Gell’s formulation. We will consider the various processes artists and designers have recently adopted in order to examine and extend the received vocabulary of drawing. Gell’s text looks at the performative aspect of artworks and the impact they have in shaping social relations. However, Gell assumes agency on the basis of artworks capable of escaping purely passive and symbolic terrains. The nature of artwork is difficult to ascertain, though the transitive exploration that Gell offers, unlike Calvino, Vesley and Ingold, proves more useful in considering the relationship between design drawing and built landscape and the reception of that landscape. The notion of landscape design drawing and its agency and the relations it creates is the basis for the thesis. Perhaps the greatest issue derived from art making is that to some audiences a landscape is viewed as a picture, framed and needing composition. The audience search for pictures of landscape rather than the all-encompassing phenomenon of landscape itself. This is most prevalent in landscape through picturesque aesthetics and framing tendencies (Carlson and Berleant 2004). Drawing’s agency has in its very possibility a corrective action to the aforementioned tendencies to look at work and be aware of its presence, in the very mode of immersion - perhaps through the field of phenomenology (Merleau-Ponty 2008; Merleau-Ponty 2002; Merleau-Ponty 1969; Merleau-Ponty 1964) a form of decoding by practitioners which requires exploration (**Chapter 2.1**).

But this possibility remains fragmented by the difficulties of ‘criticism’, the spoken word or written discussion of drawing itself which sometimes have pleonastic tendencies. To visit Richard Serra, to attempt to carry this notion of ‘doing and decoding’, was certainly a valid process in his work, “Anything you can project as expressive in terms of drawing – ideas,

metaphors, emotions, language structures – results from the act of doing" (Serra in Hoptman 2002, p.11). The method remains unclear, and requires further analysis, the doing and decoding are taken as existing states, and a practice does not automatically reveal intent of the practice. This needs further elaboration and is explored in (**Chapter 6.1**).

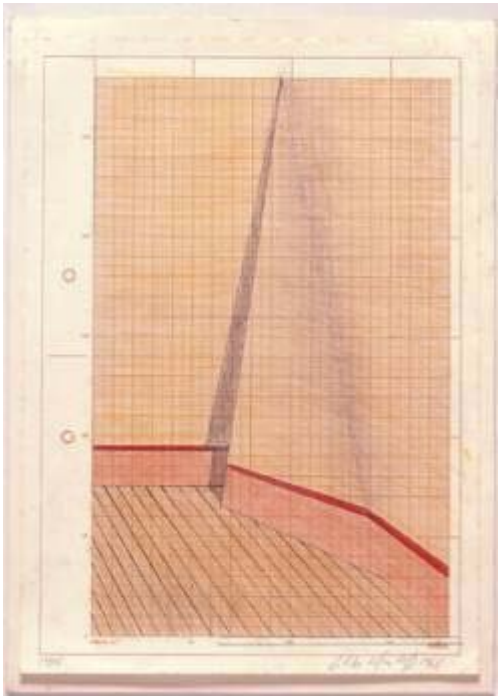


Figure 45: Cildo Meireles, Virtual Spaces: Corners, 1968.

In the case of Cildro Meireles **Figure 45**, his overall work is described by Guy Brett as a 'poetics of physics' (Brett in Meireles 2008). Brett suggests that Meireles' drawing is an exploration of Euclidian space (Gray 1989) competing with wild imaginations from childhood, but is of course typical of such claims in exhibition catalogues. In the drawing *Virtual Spaces* which seems a discrete project in relation to his wider body of work, we can visualise Meireles working through, reconstructing, working within the realms of the vectors presented in this chapter, attempting to express, to *Trade*. There is of course the danger of over-reading, and applying romantic artistic attributes. But with the drawing in question, if it has if any function for Meireles, is a mode of discovering what sort of childhood space he was interested in, the perspective space is ruptured by the wall tear which leaves an inviting mystery in the shadows. In the text *In Praise of Shadows* by Junichiro Tanizaki (1886-1965), written and responding to the onset of Japanese modernism and the observations of states of the traditional Japanese home, Tanizaki provides a sort of delight in the everyday, reflecting on various elements of the home and writes on the various fleeting poems that a

space evokes; essentially the shadows allowed Tanizaki to give moments to thought like Meireles. This spatial daydreaming is different from Bachelard in his writings on corner spaces ('Corners', Chapter 6), or Calvino "cities are like dreams" (Calvino 1997, p.44), or Meireles ('Virtual Corners'). A more subtle form of decoding, his work speaks of the importance of shadow in the interior, which reveals but little, the beauty and subtlety (and by implication time).

> The quality that we call beauty, however, must always grow from the realities of life, and our ancestors, forced to live in dark rooms, presently come to discover beauty in shadows ultimately to guide shadows towards beauty's ends (Tanizaki 2001, p.29).

The shadows are visible, but through the opacity and mystery of the darkness of the corner spaces comes an invisible and Tanizaki's particular beauty, for Meireles, the space he draws contain his emotion: his *Blood*, and the *Agency* of his pencil is the route to that articulation, to *Trade* and to tell that story and time.[12] This example demonstrates a subtle agency and decoding of interior space, it remarks on a particular phenomenon in which the artist or writer has thought, situated themselves and reflected. Bachelard, Tanizaki and Meireles in different forms communicate their poetic readings of interiors, text, novel or drawing is the agent of their poetic observation.

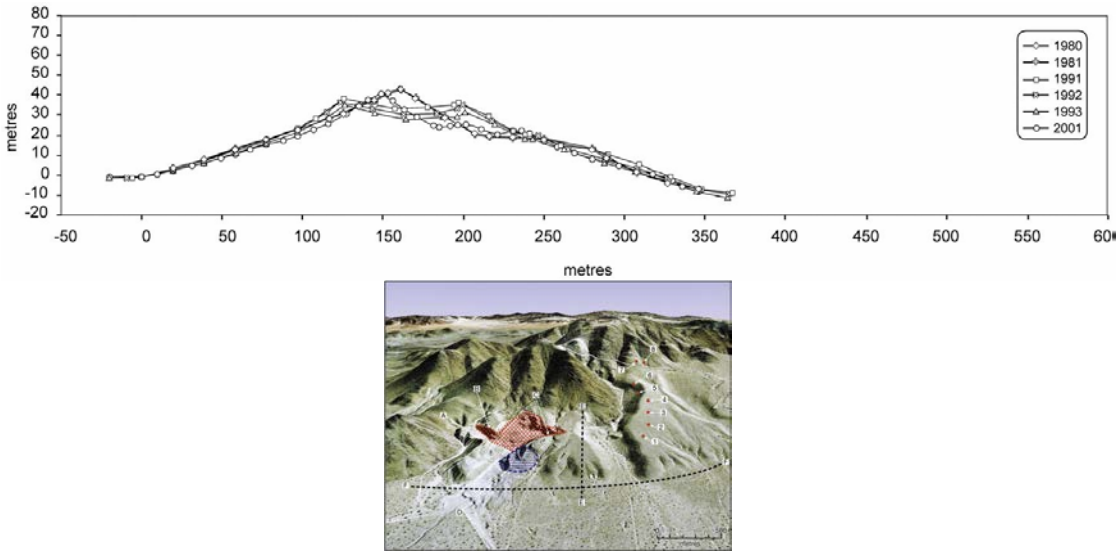


Figure 46: Ian Livingstone, Physical Geographer, *Ian Livingstone, Sand Sea 1980-2001, Mojave Desert*

[12] Our categorical boundaries rely in their formation on agency as the unifying force of the paper, at the same time the agency of drawing lies in its very operative ability to permeate societies and activities - an example being Berger's visual conversation with Latife Tekin. Berger, John., *Berger on Drawing*, (Ireland: Occasional Press, 2005) pp44-45. However, the very agency of drawing depends on its recognition in the brief moments that it filters and in the mutual operation of the four vectors of *Blood, Trade, Authority, and Agency:*

In geographic representation, scale, visualisation and projection method and symbology all need to be considered. The aim of which is the display of invisible qualities of the terrain. Essentially geographic maps create a space processing information and reporting and communicating. This agency is complex given that extension to such representational space has sought to include time and also social representation. Such difficulties are well expressed in Alan MacEachren's *How Maps Work*, (MacEachren 2004) which discusses visualisation methods and issues in a theoretical context. The difficulty of drawing time which Meireles attempts can be seen in the survey of sand sea phenomenon in the Mojave desert **Figure 46**. Ian Livingstone records the movement of giant sand dunes over time and their periodic shift over the course of twenty years. The sought after form of drawing could be an invisible in-between - not the constellation itself, but the very movements to constructed like the dune itself, regardless of its ubiquitous nature or its propped static value.

For example, to revisit De Certeau and the Calvino metaphor, when he asks "Is the immense texturology (of the city) spread out before one's eyes anything more than representation, an optical artefact?" (Certeau 2002, p.92). De Certeau here talks about the spectacle of New York City viewed from the twin towers, that removes the connection of being and living within that space. Aloof connection is lost, phenomenology is important here. Landscape architecture and disciplines in the built environment have this connective position, as there is not just analysis, but also something to be made… physical manipulation of land and resource. It is the realization of an external culture. Thus, landscape representation in landscape architecture operates through and with landscape itself.

Drawing for Landscape Architecture must therefore be a medium that acts as an agent or idea catalyst, but by that abstract notion requires further qualification of the make-up of its agency. We have already mapped the world for example, but have not truly acknowledged the power of the geometric line and drawing's agency through cartography (Corner 1999), and its continued point of reference and sometimes unnoticed movement of peoples through space. Unlike the fictional people of Ersilia who map the very real movement using various coloured string, to seek an ever elusive form, eventually leaving a spider web of intricate relationships, once those relationships become impossibly dense they leave the city: The *Agency* of drawing, is comparable to De Certeau's formation of the movements of people in the city: "Itself visible, it has the effect of making invisible the operation that made it possible" (Certeau 2002, p.97). **Chapter 2.1** develops this further.

1.1.E - Marking Relationships: A Method for Blood, Authority, Trade, Agency

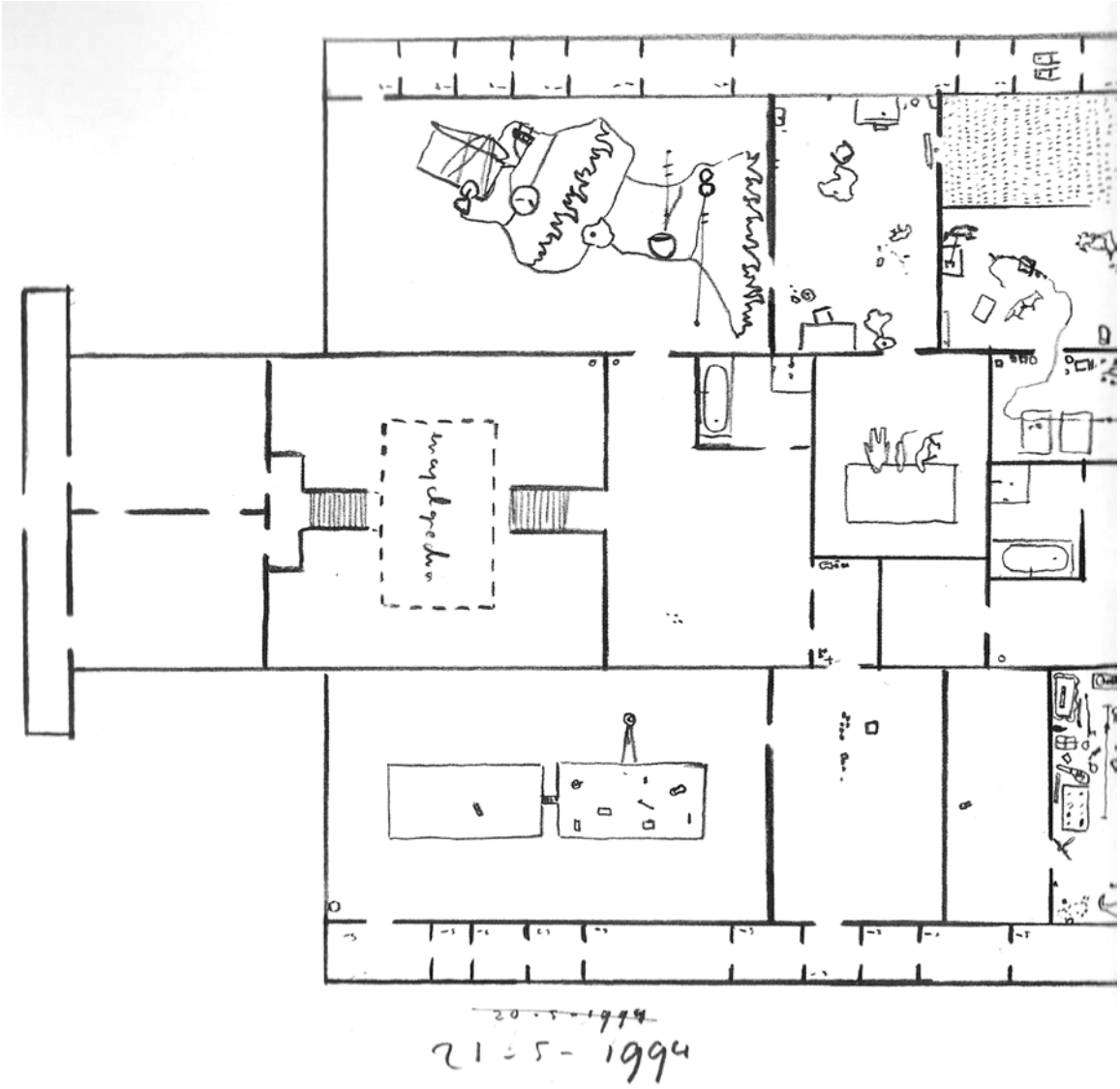


Figure 47: Mark Manders, Drawing with Shoe Movement / Two Consecutive Floor Plans from Self-Portrait as a Building Detail (2002).

In the work of the artist Mark Manders, **Figure 47**, he creates installations of various objects, then draws a self-portrait in the form of a building. The building is fiction, but everything inside exists in reality. By this very method it is worth articulating the four states of *Blood, Trade, Authority & Agency* of drawing. The act of making and conceiving drawing – *Blood*, the (landscape design) communication, of expressive intent - *Trade*, the way in which drawing communicates an idea and its heuristic possibility – *Authority*, and it's the way drawing carries something – its *Agency*. To enable such an endeavour is to create what Mander's attempts,

> I would like to see my drawings as a spectator does. As a spectator, I think it's interesting to try to retrace the mental process of the person who made the drawing. A drawing is a transparent skin suspended between the artist and the spectator for comparison (Manders 1998).

Given the 'skin' of suspense, the use of drawing requires exploration from a variety of disciplines creating a fictional space in which actual objects exist to demonstrate the functions of drawings. This method is like Italo Calvino's 'map making' of the various states of space, in which a drawing describes its conception, communication and reception – "spider-webs of intricate relationships seeking a form" (Calvino, 1997 p89-90). These terms are not just construction for the basis of a hermeneutics but the establishment of initial methods for the role of landscape representation.

This approach would enable the enrichment of landscape architectural representation, showing and evidencing the various communicative functions that drawing plays 'out' from a wider base. Thus Calvio's terms can act as a working method in which landscape drawings are to be produced. The first function, 'Blood'; rests on the ideas of drawing as an expressive tool, and the continued role of 'expression' within drawing in landscape architecture today. This resolves around expressive activity in responses to the landscape phenomenon including material expression. It is also recognition of the human tendencies and connection to the medium and that such response to landscape rest on individual and spiritual drivers which create culturally layered responses. This connection would resist technicist and pure instrumentality in production and address James Corner's balance of tendencies. The second function of 'Trade' and drawing's heuristic dimension rests on the method of exchange, the mode in which these drawings are transmitted. Trade for landscape means the sharing of information and strategies for a site which are fluid malleable ideas. This exchange is on the basis of dialogue and communication, not authoritative prescription of designs. The adoption of this method would allow greater representation of bodies and enable and democratise people in having a stake in the way in which space is constructed. The third function of 'Authority' and the teaching of landscape architecture involve a method of creating workshop and studio activities through which students can assimilate context and reflect and shape materials independently for the creation of landscape designs.

And finally, the fourth, 'Agency' of drawing in the social relations that occur from design conception to production. This involves recognition of the cyclic mode of representation, to view not just in design terms, but the role which drawing process plays in the production of

spaces. It is not to say drawing is essential through all stages of production, but to state that concentration on the way landscape is read, thought through and drawn requires analysis. It is at this point that we need to assume and recognise the other principles of *Blood, Trade & Authority*. Through this concentration we can arrive and approach an answer to the frustratingly open question that Corner suggests;

> Research into the development of projection, notation, and representation *vis-a-vis* the effective and artful construal, construction, and sustenance of built landscape form has still yet to occur in a vibrant and imaginative way (Corner 1992, p.274).

Issues of authorship, technique, representing time, concepts, environment, surfaces and reception of drawing are difficult to explore. A further examination of the uses of drawing will generate evidence in which to articulate Calvino's four categories as a framework, showing drawing application across a number of professions. Applying a broader analysis of representational techniques will allow us to articulate the *Agency* of drawing today, and to populate such theoretical methodologies develops evidence and expands and clarifies these hermeneutics.

Chapter 1.2 - The 43 Uses of Drawing

Introduction

The 43 Uses of Drawing (2011) at Rugby Art Gallery & Museum was an exhibition curated by myself and Craig Staff which explored the practice of drawing beyond the paper surface and via the work of forty three practitioners working in a number of different areas. The title was based on the idea of providing a rationally objective number, referring to the various applications of drawing across professions, following from Calvino.[1] The curation of the exhibition developed visual outputs for the establishment of a framework in understanding the process of drawing in landscape architecture.

The aim of the exhibition was to ignite debate and discussion by mapping the different practices and uses of drawing across disciplines and beyond the boundaries of fine art. In its many forms, from the digital to the hand drawn, the understanding of drawing as a communicative medium remains a compelling idea central to the thesis. Two different strands emerge from drawing within the chapter. First, drawing works as a vehicle for the generation of ideas, an embodied process of 'Blood'. Drawing can also work as a transitive medium (or 'Agency' as previously extended from Gell's terms), taking those ideas to the point of realisation, creating social relations and making the audience aware of the presence or time relation in which the work was produced. In many respects drawing could be understood akin to the act of writing (Dillon 2009) (Davidson 2011). Drawing belongs to a particular facet of human communication. However, we must be cautious of making such claims, for writing and technology remove the importance of hand gestures in authorship. Many claims about drawing rest on the idea of the artist's hand as a special force of production, as stated in **Chapter 1.1.** Writing is an inscriptive practice, though based within a defined set of terms (of course subject to change). Writing works on a surface not in an attempt to change the meaning and space of the surface, unless there is deliberate typology or postmodern methods are applied[2]. Thus, claims of a parallel of writing being like drawing are focused on creative acts of bringing thoughts into form, not the reading of the written or drawn work. Serge Tisseron suggests that in the manuscript, writing and drawing follow the same creative logic and time of tracing (Tisseron 1994, p.37). The inscription of drawing shares the same motive system, though similarities exist at this point between writing and

[1] It was an aim that readers become unsettled and create their own narrative from the inferences.

[2] *Crash* by J.G Ballard (1973), *Watchmen* by Alan Moore (1984), *Foucault's Pendulum* by Umberto Eco (1988) plus many others.

drawing, as the process continues, and the text and drawing is assembled, very different vectors are taken.

The idea of the exhibition was to create a space to consider what drawing is and what it does thus sought to challenge the tendency for drawing to be overlooked and often misunderstood. The number forty three, as if there was an explicit, numerical measurement was an unsettlement device, just as Calvino constructs in *Invisible Cities* (Calvino 1997). Calvino's writing in *Invisible Cities* perches the reader between Khan and Polo, as there is a language barrier; symbols are used in which the individual reader creates form.

Thus, myself and Craig Staff wanted the audience to decide what drawing is, how it works and where it manifests itself. The drawings that the exhibition encompassed were from a number of different disciplines and contexts, including geography, architecture, journalism, the built environment, political illustration, mathematics, music, geometry and medicine. *The 43 Uses of Drawing* contributors were:

Ben Fry (Computational visualisation)
Anthony Browne (children's illustrator)
Bobby Baker (Art Therapist/performer)
Dominic Cole (Landscape Architect)
Morgan O'Hara (Artist)
Martin Rowson (Political Cartoonist)
Pushwagner (Graphic Novelist)
Bill Rankin (Geographer)
West8 (Urban designers)
Mario Botta (Architect)
Alex Villar (Performance artist)
Molly Crabapple, Peter Bolte (Illustrator)
MVRDV (Architects)
Laurie Olin (Landscape Architect)
Moose (Graffiti Artist)
Dr Tariq Ahmad (Plastic Surgeon)
Renato Alarcao (Graphic Designer)
Catherine Anyango (Fine Artist)
Trisha Brown (Dance Choreographer)
Richard Buckminster-Fuller (Engineer/Mathematician)
Ana Cannas Da Silva, Victor Guillemin, Ana Rita Pires (Mathematicians')
Sergio Cittolin (Physicist)
Simon Elvins (Graphic Design)
Brian Fay (Fine Artist)
Oivind Hovland (Illustrator)
Laura Laine (Fashion Illustration)
Veronica Lawlor (News Illustrator)
Anton Lukoszevieze (Music Composer)
Tony Maidment (Bank Note Designer)
Anthony McCall (Sculptor)
Eleanore Mikus (Fine Artist)
Eamon O'Kane (Fine Artist)
Tom Piper (Set Designer)
Marisol Rendon (Fine Artist)
F.M Sharman (Engineer)
Tomoo Seki (Fine Artist)
Lauren Simkin Berke (Illustrator)
Julie Small (Botanist)
Rae Smith (Set Designer)
John Swogger (Archaeological Illustrator)
Vier5 (Graphic Design)

Mark-marking in all of its manifestations is a medium for education, so to test such claims a number of workshops were delivered across the show to all ages in order to extend the exhibition dialogue.[3] *The 43 Uses of Drawing* demonstrated both the breadth of drawing today, and its continued relevance to contemporary artistic practice and the wider creative industry. Given this rationale and thesis, the exhibition achieved significant acclaim in *Artists Newsletter* and *Studio International* amongst others.

The exhibition located itself within such recent scholarly debates on the form of drawing as those found in the work of Deanna Petherbridge's *The Primacy of Drawing* (2010) John Berger's *On Drawing* (2007), Peter Cook's *Drawing: The Motive force of Architecture* (2008), Steve Garner's *Writing on Drawing* (2013) and Tim Ingold's *Lines: A Brief History* (2007) and within a context of previous exhibitions which have attempted to locate these very co-ordinates such as Centre Pompidou-Metz, *Lines: A Brief History* (2013), MOMA's *Drawn for Life* (2011) and Kettles Yard, *Lines of Enquiry: Thinking Through Drawing* (2006). These shows, however, whilst demonstrating the currency of drawing, have not employed such breadth in their curatorial remit, rarely reaching beyond the discipline of Fine Art in their choice of contributors[4].

The 43 Uses Exhibition and curatorial brief concerned itself with not being a show about classification and display, of defending and representing the fine art context of a contemporary gallery space (Bennett 1995). The shows rationale was to collate works in which associations were made through audience, in the hope of re-presenting the idea of drawing as a wider medium used throughout many areas of work. This in turn was to be collated for the focus on representations in landscape. The show attempted to answer the direct quandary posed by some drawing researchers. Maryclare Foá stated that,

> The trouble with drawing researchers [is that], as a diverse community, we look for the similarities to the exclusion of the differences. We could usefully celebrate the differences in drawing and drawing research from various disciplines (Foa 2012).[5]

If we are to accept this critique then perhaps this can be further substantiated in the process of creating and designing a bank note. In the work of Tony Maidement, **Figure 48**, he selects a representative symbol of a country, in this case a statue for Uzbekistan of a Turko-Mongol

[3] These resources can be viewed on the TES website: http://www.tes.co.uk/mypublicprofile.aspx?uc=656585#
[4] As evidenced in curatorial remit and displayed artists.
[5] Stephen Farthing, Anita Taylor, Avis Newman, Aileen Stackhouse, Phil Sawden, Eileen Adams, Jayne Bingham, Steve Garner, Kelly Chorpening, 'Summary of Discussion by Group 5', Steve Garner (chair), Maryclare Foa, James Faure Walker, Tanya Kovats, Marie-Claire Isserman, Angela Rogers, Charlotte Hodes, Freya Smith, Paul Bowman, Rebecca Man, in Drawing: The Network, a one day forum on drawing research. Wimbledon College of Arts University of the Arts London, Tuesday 20th March 2007, Chelsea Space: 2007, p. 61 .

ruler. From this photograph, Maidment sketches, then creates large scale line drawings which are then transferred to a plate for engraving. Security features such as pattern elements have to be thought through and embedded as well as the colour choices and layout. Thus, the drawing becomes a symbol of value, something else from the process of creating fine art.

Figure 48: Tony Maidment, *Designs for Bank note (500 Sum Statue of Amir Timur in Tashkent, Uzbekistan)*, photograph, pencil sketch, black ink and colour etching.

The rationale behind the exhibition was thus to bridge, connect and draw out differences[6]. Such a strand of research was recognised in the analysis by the art historian Slavka Sverakova, when reflecting on drawing in a wider sense,

> The homonyms, a verb and a noun as in "drawing a drawing", do not share the same lexical class. Like a chameleon, the seven letters adapt to contexts. When they denote a process the range of meanings grow: drawing a breath, a sword, a lucky number, a conclusion, a mark on a ground. In a purposeful lack of hierarchy and with a quiet authority, drawing subsumes even writing, not just calligraphy… The self-regulating power of the verb renders taxonomy, classification and definition inadequate, letting the other homonym, the noun, to care for itself amongst equally vulnerable definitions of art (Sverakova in Cureton and Staff 2011, p.3).

[6] Exhibition Review Extract from Maryclare Foá "It is more constructive to appreciate that drawing has broken loose from its fine art confines and is now beginning to be recognised as a valuable process with interesting cross and multi-disciplinary repercussions… Igniting debate by mapping different uses of drawing is exactly what this exhibition so eloquently achieves, by-passing the screen versus handmade old chestnut by navigating the uses of drawing through examples of excellent practice from very diverse disciplines" (Foa 2012).

Such a position on defining drawing beyond fine art is extended in her critique expanding upon the 'reach' that drawing could arguably contain in its definition,

> The argument that drawing is making mark on a ground is undermined by too many vested interests. Would a tractor ploughing a field or pulling a pole over a muddy ground count? To draw means both to pull and push, which meaning would allow such extensions? If so, must such a drawing be art? No, and there are drawings with classical materials which are not art and which are nevertheless highly valuable, like Dr Tariq Ahmad's surgical corrections of disfigured lips (Sverakova in Cureton and Staff 2011, p.6).

Indeed such a position is well placed in the argument by the art historian James Elkins, in *The Domain of Images* –"most Images are not Art" (Elkins 1999, p.5). By that extension such removal of the theorisation of 'art' and the contentious movement of contemporary art and its co-ordinates, brings forward a more open and honest appraisal and a more transparent analysis of images, without such vested interest of attributing 'value' (Thompson 2012, p.2) (Dossi and Nori 2008) or 'genius' (Barker 1999) in its maker. Economics and art, value and market drives are a contentious subject, but through the '43 Uses' a space for showing images as not Art, to paraphrase Elkins, assisted a clearer dialogue and functionality on relationships and agency of drawing. For example such an approach, is evidenced in the anthropologist and artist Amanda Ravetz when remarking on drawing,

> On most days, my attention wanders, my head is full of scattered thoughts and my hand works like an automaton on the keys. But sometimes, just sometimes - if I can find the space between, if I can slip into the present, if I can remember the fundamental wildness and levity of life - I can draw when I write when I type (Ravetz in Cureton and Staff 2011).

The consciousness of such activity and awareness of making, drawing and communicating and framing such an exhibition was not without curatorial problems. Groupings and associations had to be created, allowing visitors to move and transfer between professions, and each of their respective drawings, seeing and making connections. This was not always as successful as the guestbook revealed, as audiences selected works to some varying aesthetic taste, forgetting the context in which the drawings where assembled. In that sense, it was important to develop a communique between Cureton and Staff on each drawing position, or to write and express particular points of interest within the medium.

Interviews with exhibitors took place to develop rationales of drawing particularly in landscape and urbanism. A number of methods were adopted to ensure clarity, consistency, methodology and interview skills (Abrams 2010) (Perks and Thomson 2006) (Ritchie 2005). In a landscape context, it was about exploring the medium beyond its position. Particularly fruitful areas of development came in the form of investigation of Dominic Cole, West 8 Urban Design, Laurie Olin, and Mario Botta. Additional contributors feature in further chapters developing various representational schemes (**Chapter 2.1**).

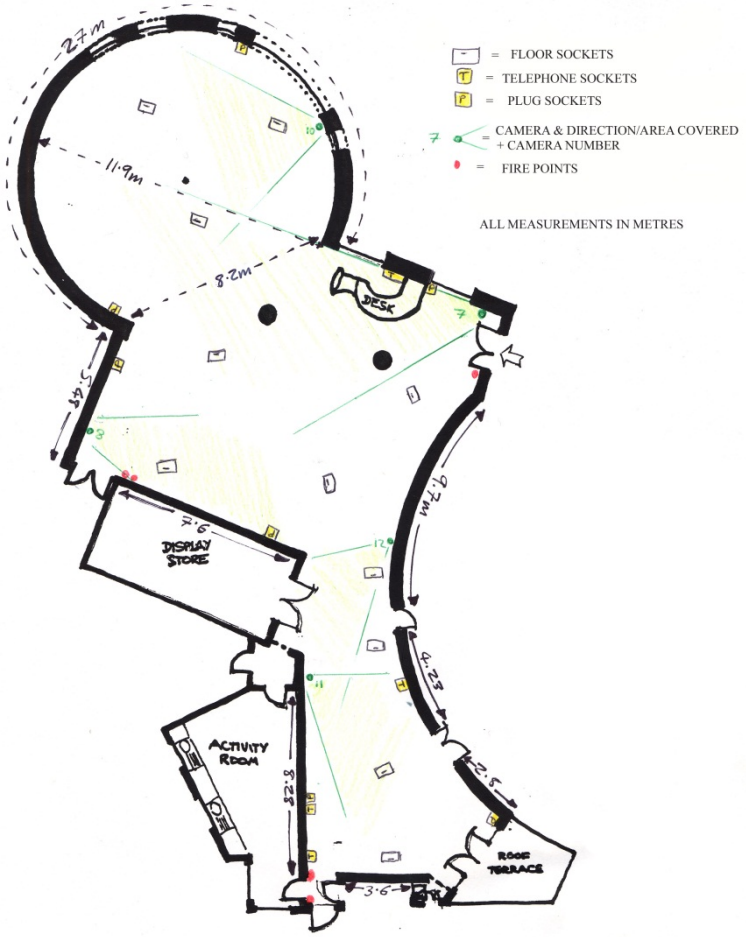


Figure 49: The 43 Uses of Drawing Exhibition Rugby Art Gallery Plan, 2011

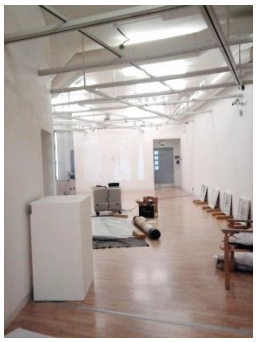


Figure 50: Exhibition Installation Shots & Rugby Art Gallery Plan, 2011.

The space itself featured a ‘drum’ (**Figure 49**) in which to hang work, thus ensuring an interesting transitory movement of audiences. Where possible, works without specific insurance stipulations where hung pinned or clipped directly to the wall. As an effect, the drawings could have a greater and more direct contact with visitors. The removal of frames also contributed towards the exhibition rationale of removing where possible ‘fine art’ contexts and its associated issues. Trackrail walls also allowed a more open configuration, rather than set exhibition spaces and fixed walls. This allowed views across the space making connections between drawings from differing professions.

1.2.A - Lowther Castle & Gardens

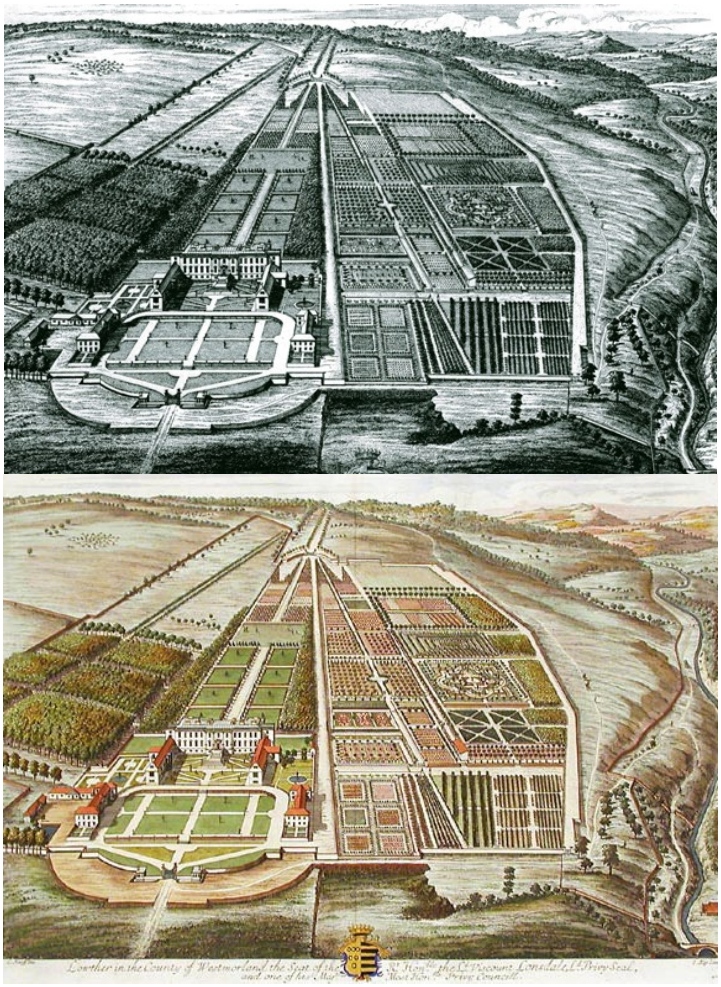


Figure 51: Jan Kipp, Lowther Gardens & Castle, Engravings, 1833.

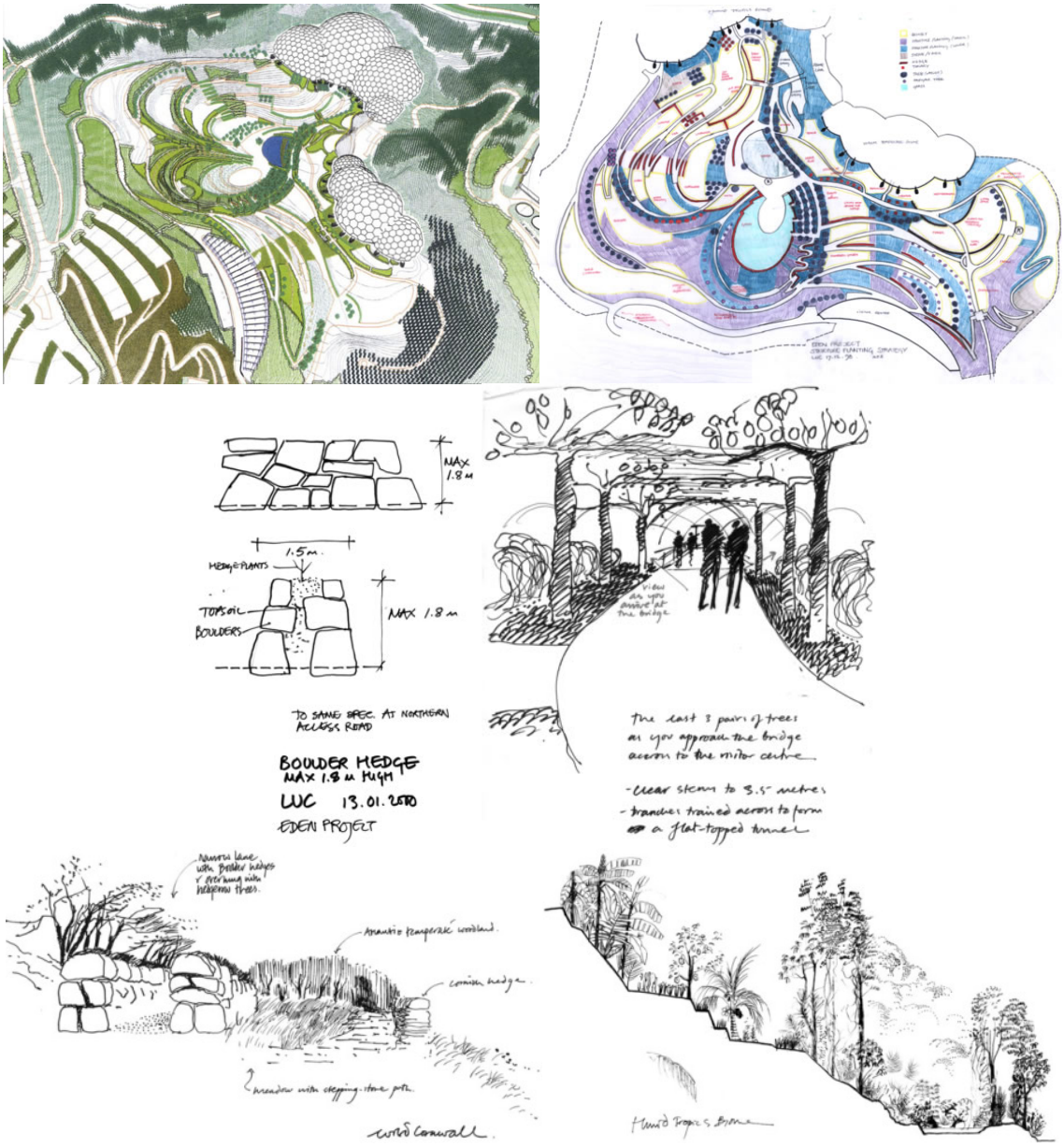


Figure 52: Dominic Cole, Aerial View, Preparatory Drawings for Eden Project.

The Landscape Architect Dominic Cole, of the firm Land Use Consultants (LUC) who was the lead designer on the Eden Project, said that he will often deliberately not take a camera when surveying a site, but instead rely on site sketches.[7]

> I find I am looking more purposefully and am starting to build a relationship with the site [by drawing]. Because you have to work quickly, you are also analysing and starting to audit the site's resources – good views, bad views, topo features, colour, sound. These sketches are not the exquisite black & white delights of Hugh Casson

[7] The following description is extracted from an interview (Cureton 2/2/2010).

> or others whose original site sketch that becomes the project ICON, they are notes to self which help me to build a 3D picture of the site in my head, which I need because site-visits tend to be a luxury (Landscape Institute 2011).

For Cole, this '3D model' has to sustain him for quite a time, until the project is realised: "When I worked on the Eden Project I carried, in my head, the original site plus my idea of how it was going to look." He added:

> When I am in the design process, I find it only possible to hand draw – anything else constrains my ability to think. Plans, sections, axonometrics, all hand drawn can be rapidly produced, constantly updated and discarded if it is not working. If I were to use computer – even via a third party, the process removes the essence & creativity. I feel embarrassed that a [core design] drawing, which has taken so long to create as an electronic entity, might then have to be changed completely (Landscape Institute 2011).

Figure 53: Lowther Castle, Photographic Aerial, development, 2012.

Such a drawing method was applied while working on the Grade II listed site Lowther Castle and Gardens, which sits on a limestone escarpment. Much of the 17th Century gardens remained intact though much of the site remained inaccessible and was covered in vegetation. LUC, and Cole in particular, began to form a 'site picture' by assessing ground evidence and the extensive archives and drawings documenting the gardens. Research was hampered by recent use, particularly during the Second World War, where the site was used as a secret tank testing ground. Once decommissioned, much of the site was concreted over and the gardens remained abandoned. Cole commented on the site,

> I was bowled over by the setting and subsequently read a quote by Lord Macartney- c.1794- "if any place can be said in any respect to have similar features to the western part of Van-shooquen (in China, where he was ambassador 1793-4) it is at Lowther hall" --- the extent of prospect, the grand surrounding objects, the noble situation... etc. In the eighteenth Century aesthetes and garden critics began to look beyond the garden wall and to consider the context and views beyond - previously 'nature' was considered rough, terrifying and somewhere to be avoided. Part of the unlocking of this fear was the concept of 'sharawadgi' - the borrowed view that was

> used in Chinese gardens. Lowther has a quality of light & magnificence of setting that puts it into a league of its own (Cole, Dominic, Personal interview, 20th Jan, 2010).

Lowther was of a particular importance to Eighteenth century gardens and the hope of LUC's programme was expressed by Cole, though such an area had been discarded, was in a state of disrepair and been subject to commercial interests over preservation,

> I was amazed to see the callous disregard for the garden in the straight lines of commercial forest trees planted as a complete overlay - across boundaries, through rock pools, etc. However, the underlying seventeenth century structure of the garden (below) is so powerful that it survives, remarkably intact and able to be revealed. It is certainly hoped that the bones of the garden will be clear and understandable - levels, banks, rides, enclosures, etc - and that they will be considered one of the great gardens to visit in the UK (Cole, Dominic, Personal interview, 20th Jan, 2010).

Cole's drawings and each of the remaining seventeenth century plans, bird's eye view or perspectives were layered and given orientation points, scaled and overlaid. This process of layering all the historical drawings in a software package showed first the accuracies and inaccuracies of each successive drawing, secondly the changes in garden design, natural growth and time. The final part of the process and the most important was to create an overall drawing created by Cole's synthesising all of the information to decide the course of action for LUC (**Figure 54**).

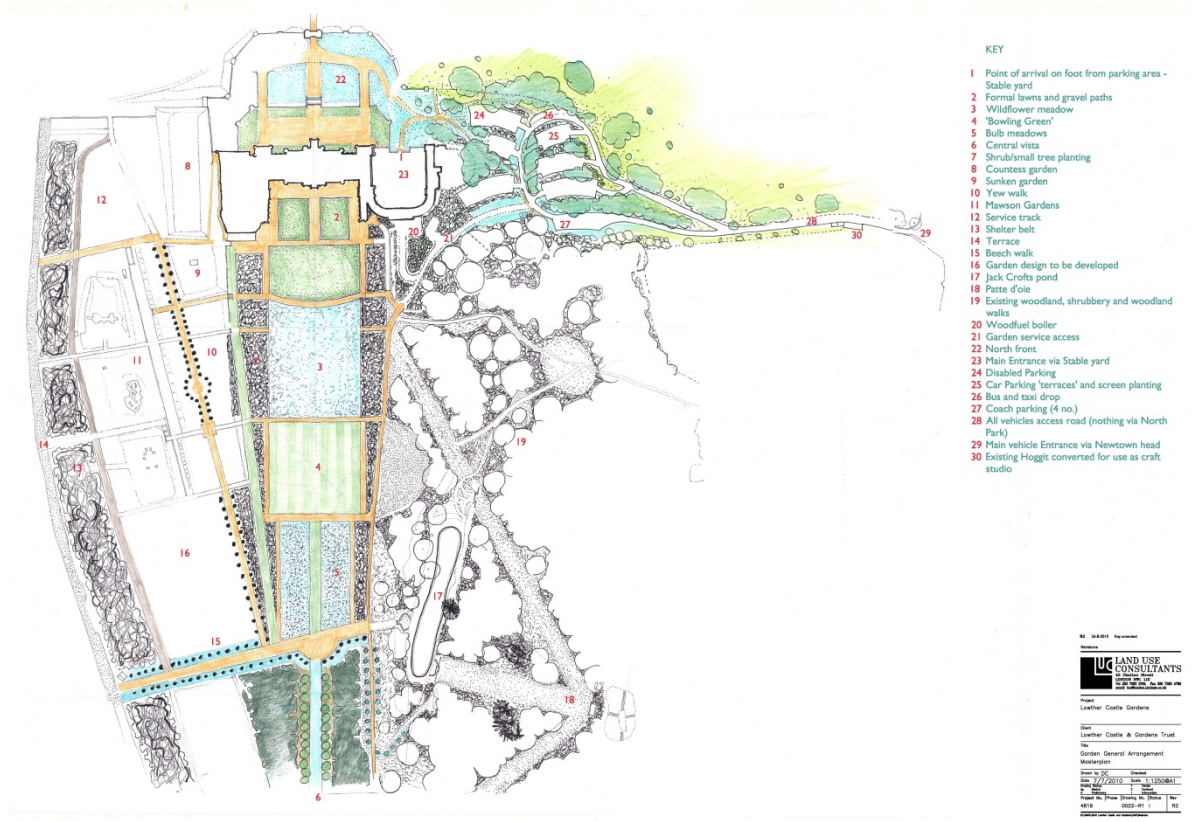


Figure 54: Dominic Cole & LUC, Lowther Gardens Masterplan, 2011.

Further exploring the role that Cole's drawing played within this planning process - Cole developed a 'forensic' approach. By researching the designers, certain styles emerged and certain renderings could be understood. For example an oblique drawing by Kipp produced of Lowther Castle was redrawn by Cole. These're-drawings' have shown some of the inaccuracies when compared to other historical works. Through this process, the drawings can be understood, as their purpose needs to be decoded, whether they were proposals, surveys or plans or a combination. The drawings in this project were not embellished, more descriptive works for physical attributes. A combination of digital and analogue assisted Cole in this project where the historical plans were draped on 3d contours. This can be understood further when Cole conducted studies of Stowe gardens, Kilkhampton, Buckinghamshire.

1.2.A - Stowe Gardens

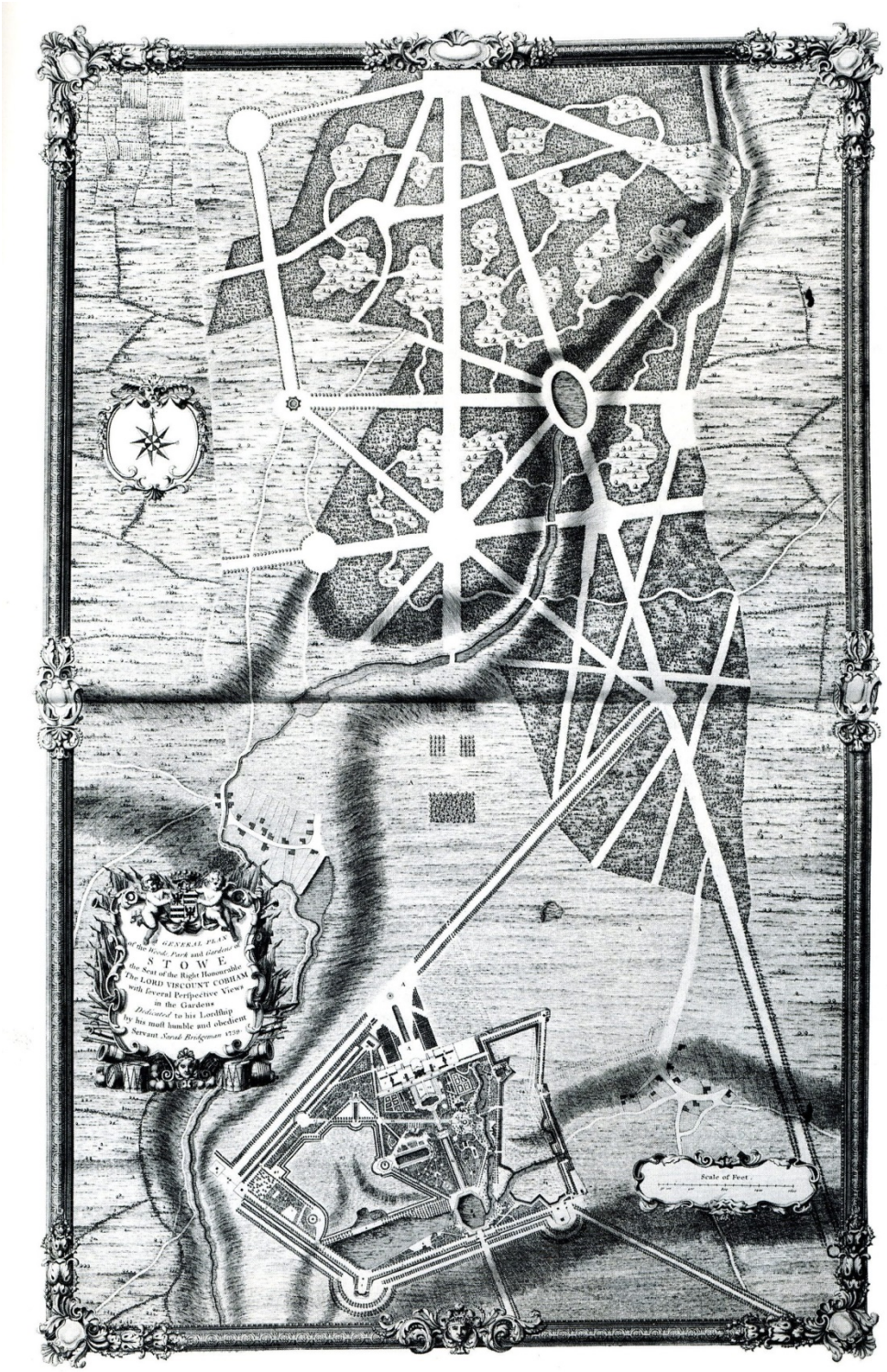


Figure 55: Charles Bridgeman, Stowe Gardens, as it appeared in *Views of Stowe*, 1739, by Sarah Bridgeman. Bridgeman designed Stowe using a mixture of geometrical Dutch canals and parterres, long avenues link Forest style bastions in the upper section. The Ha-Ha can be viewed in the relief on the plan.

For example when Cole and the LUC conducted an analysis of the drawings at Stowe Gardens, Kilkhampton, Buckinghamshire (see **Figure 55**) they used the overlay process and found evidence of a Vanbrugh Pyramid[8] and two Ha-Ha's[9], a hollow that had been smoothed out for a golf course, but clearly had been a Ha-ha. Then there was a bump with some scrub and trees growing on it. LUC conducted a scrape and Vanbrugh's pyramid was on it. By creating a grid system the historical drawings could be aligned and the geography trued. Whilst to Cole the use of CAD allows some understanding, it will not think in itself. This involves the Calvino *Blood* method of digital expressive cultural layering and thinking which is purposeful to landscape decisions. It is the human connection to hand drawing which in this case, enables discoveries in combination with digital layering. A hybrid method brings this knowledge to light. LUC when communicating these findings used different presentational techniques, using photographs over plans, as this assisted the public's understanding. In this activity it is revealing in the way that the original forensic works were supplemented with material that was more understandable. From the photograph a reality can be gleamed, the drawing is converted to a representation more indicative of actual landscape. LUC side-line these drawing methods in external presentation in favour of the photographic thus, drawing agency is limited in this case.

Cole's response shows a forensic application of historical drawings, in personal research, but also how they are re-interpreted or supplemented when presented to a wider public. Cole's response also contributes towards the framed debate of analogue drawing versus digital drawing, but this is irrelevant. Cole demonstrates a range of routes necessary for final the presentational results for these landscape architectural projects. Such a response contributes towards the theory of the agency of drawing, as an expressive, heuristic agent for site. The ability that LUC place in the public to 'read' a drawing is also interesting, in that such communication is assisted by prefacing photographic evidence for understanding, as drawing is seen as too vague and speculative. Cole's drawings have certainly had an important effect in LUC's activities on the site but are less 'useful' in wider presentation. What can be drawn from this case is an Ian McHarg like representational scheme of overlays. Cole's drawings and historical plans feature like GIS in which knowledge emerges of the former design and layout of Lowther and Stowe through juxtaposition. It is what is seen between things in the drawing, in comparison, which provides the knowledge of the terrain.

[8] A pyramid created in Stowe gardens by the architect Sir John Vanbrugh.
[9] A turfed ditch with one sloped side, the vertical is normally a masonry retaining wall. The feature provides a perspectival effect and illusion of an uninterrupted vista for surveying of lands.

1.2.B - West 8 – Fountain with the 1,000 Jets

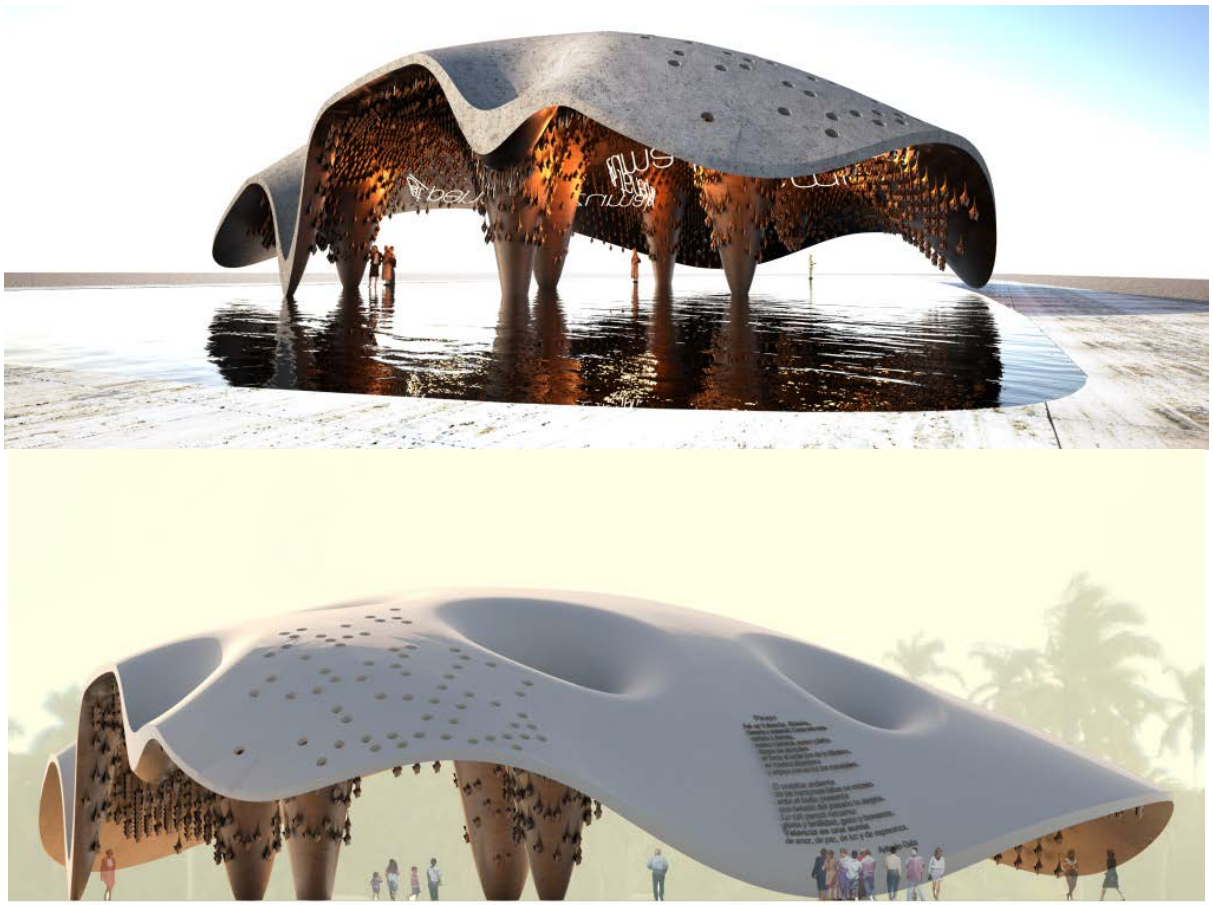


Figure 56: West 8, Fountain with the 1,000 Jets, Valencia Parque Central, 2011

The Fuente de Los Mil Chorros (Fountain with the 1,000 jets, **Figure 56**) is the name of the grotto part of a design proposal by West 8 for the Central Park design competition in Valencia in 2011. The 66 hectare site attracted many international entrants and was won by the firm Gustafson Porter. West 8 designed a grotto feature for the park which would feature one thousand water jets. The jets in the grotto are in the shape of bats which are the symbol of Valencia. According to the local myth, a bat saved Valencia form the Moors in the 13th century. These 'mythological' bats bring back water replenishing Valencia's ditches thus carrying the notion of fertility and passion into the city centre (Hemans 2012). This precedent was used by West 8 for the Grotto design. Beginning with a bat roosting form in a 3d computer model, the model is developed and skinned with a texture mimicking cave conditions which then hang on the grottos curved form. It is worth discussing the context of West 8's proposal as this formulates a relationship between the process of representation and the mode in which they sought to instigate meaning on the terrain.

Figure 57: West 8, Development stages, Fountain with the 1,000 Jets**,** Valencia Parque Central, 2011.

This competition entry attempts to develop a series of water atmospheres as a unifying element throughout the park. The sense of abundance, given in the metaphor of water as a replenishing natural force and life source (Eliade 1991), is underscored by crop planting, in particular fruit trees and the idea of carrying the aroma of oranges throughout the park. The famous poet Antonio Gala, created a poem titled 'Piropo a Valencia' which helped the West 8 team to establish the narrative of this new park in the heart of Valencia, recovering the tradition of linking park design and poetry, adding further meaning and a cultural dimension to the design. A poem of Gala adorns the outside of the grotto. Here drawing is used as a form finding device, as an expressive tool to iterate the symbols of Valencia. The drawings

produced develop over a series of revisions, in which the narrative that West 8 wishes to integrate becomes refined into competition form.

Figure 58: West 8, Development stages, Fountain with the 1,000 Jets**,** Valencia Parque Central, 2011.

The Parque Central proposal has its foundation in the historical evolution of gardens and patios of Valencia. The park design consists of a sequence of different gardens where water, trees and flowers are elevated to what West 8 call the 'highest expression of Valencia's garden history'. The entry idea rests on bringing an atmosphere of fertility and pleasure.

These experiences are articulated against the proposal of a continuum of a lush, shady central promenade. The many small gardens are laid out in a pattern and in relief, inspired by the orange groves of Valencia (**Figure 58**). This work is interesting in that abstract poetry and cultural themes are brought together in the design, the intention is not masked, it makes clear poetic observations, decoding them in the drawing and configuring them in a space. The sense of experimentation in the projection is evident in this combination. This work

evidences a positive valence for landscape production through its heavy landscape symbolism.

Figure 59: West 8**,** Valencia Parque Central, 2011.

Water features by means of lakes, reflective pools, islands, fountains, streams and waterfalls across the site. The idea was to link the historical centre and the river, as well as the Valencian orchards, what is termed a ‘meadow of oranges’. At each entry point a flow is envisioned, reusing a railway reserve, creating a linear path to centralised park features. Such work is essential in establishing traditions of convergence, history and community and

is analogous to any such generated solution to greater and more educated land management and resource use. Water management was well considered in the entry, and there was the idea of an educational experience with nature. However, to achieve such goals requires community led consultation and research to envisage a collective representation of the areas in question. Whilst the work is a competition entry, the success of such work could be in the collective representation and symbolism that the grotto provides. Such public consultation may have resulted in the scaling back of such sculptural work. Essentially such images and designs can help us consider the celebration of the particular. What is of interest is the way that mythology and precedent is used in this case to develop design staging, from one bat form to groups, then fitted within the cave form. The grotto is then located as a central convergence point. Additional ideas of orange meadows and water atmospheres, which permeate the site, give an interesting design development from a simple visualisation of Valencian mythology. What's more, the idea of integrated park design alongside poetry is of interest in a broader study of the *poetics* of landscape.

Figure 60: West 8**,** Valencia Parque Central, 2011.

1.2.C - Laurie Olin

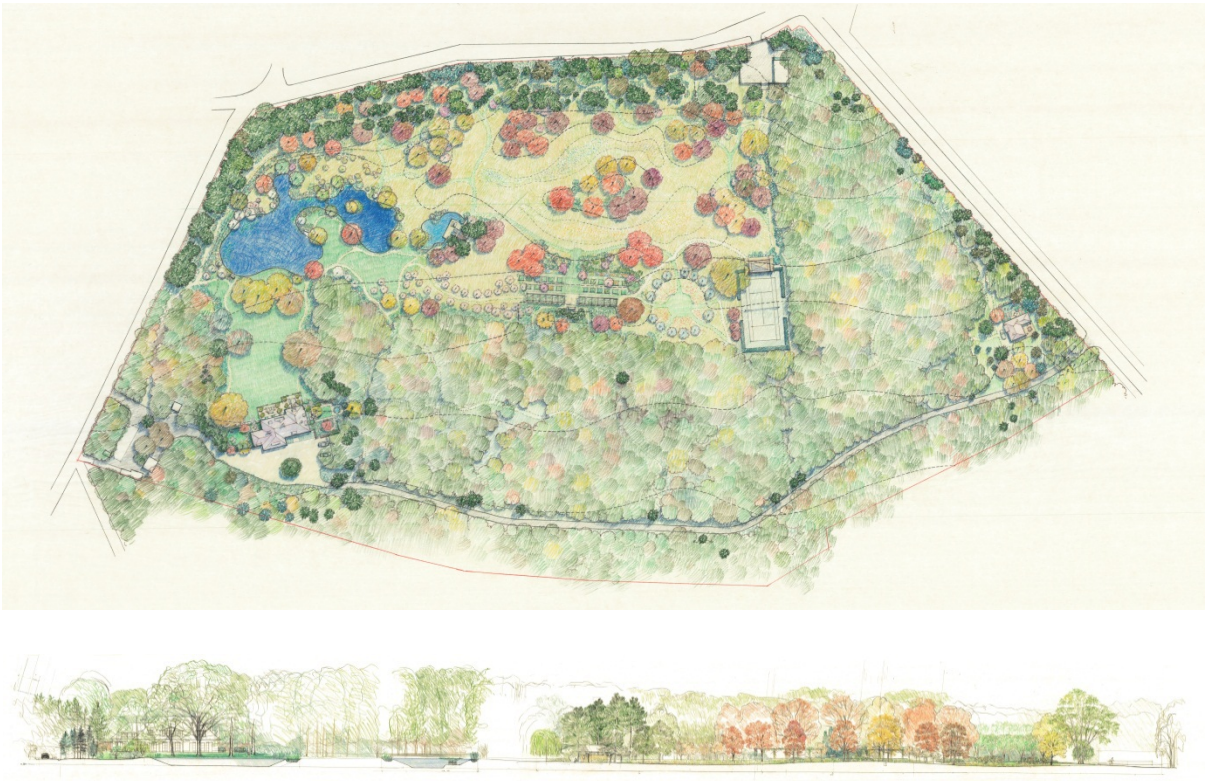


Figure 61: Laurie Olin, Site plan & Section, Private Residence, France, 2010, coloured pencil.

The landscape architect Laurie Olin suggests that the range of landscape design forms are derived from nature, translated into artistic forms and expressions and these forms do not come from words (Olin 1988, p.149). Given Olin's assertion, he suggests that it is due to formal limitations which are held by cultural norms that landscape architecture faces such restricted creations. He suggests that the design process should be a metaphoric method of not the imitation of nature, but one that looks at understanding and emulation within the context of historical designs. Olin searches for form, meaning and expression in his article, to call for a familiarity with natural forms, before we operate. Landscape architecture to Olin must generate metaphoric devices which go beyond imitation of nature, but show understanding and context of environment. Landscape to Olin requires stewardship, in the protection and management of flora and fauna, rare and protected. The field of landscape architecture must address some of the globe's greatest challenges: a compromised ecology, an aging infrastructure and the pressure faced by architects and planners to house growing populations. By orchestrating the complexities of the modern landscape, Olin's designs promote community, building and inspiring engagement with the natural world. These are very much the aims of his article about

landscape design expression. In *Drawing / Thinking Confronting an Electronic age* (Treib 2008) Olin states,

> Our work, these drawings—the products of our hands, eyes, and imaginations—are really only the instructions upon which others base their work, which is the product of their hands, their eyes, and their understanding (Olin in Treib 2007, p.141).

Olin's drawing with a repetitive hatching of colour pencil, highlights the site, in colour strength, and in the section we can see the various trees growth to maturity in lighter shades. The accompanying section emphasis the various tree heights and the natural colour palette of a season. Forms are drawn using contour information, various groves and shelters appear, and the meandering garden flows towards the lake at the western edge. The drawing belongs to a particular Princeton aesthetic of landscape graphics which has had a profound influence, due to the role of Landscape architecture in some of the major centres; Harvard, Princeton, Pennsylvania, which developed the landscape profession considerably in the United States (Newton 1974) (Mann 1993) (Mcguire 1994) (Steenbergen and Reh 1996) (Birnbaum and Foell 2009).

1.2.D - Mario Botta

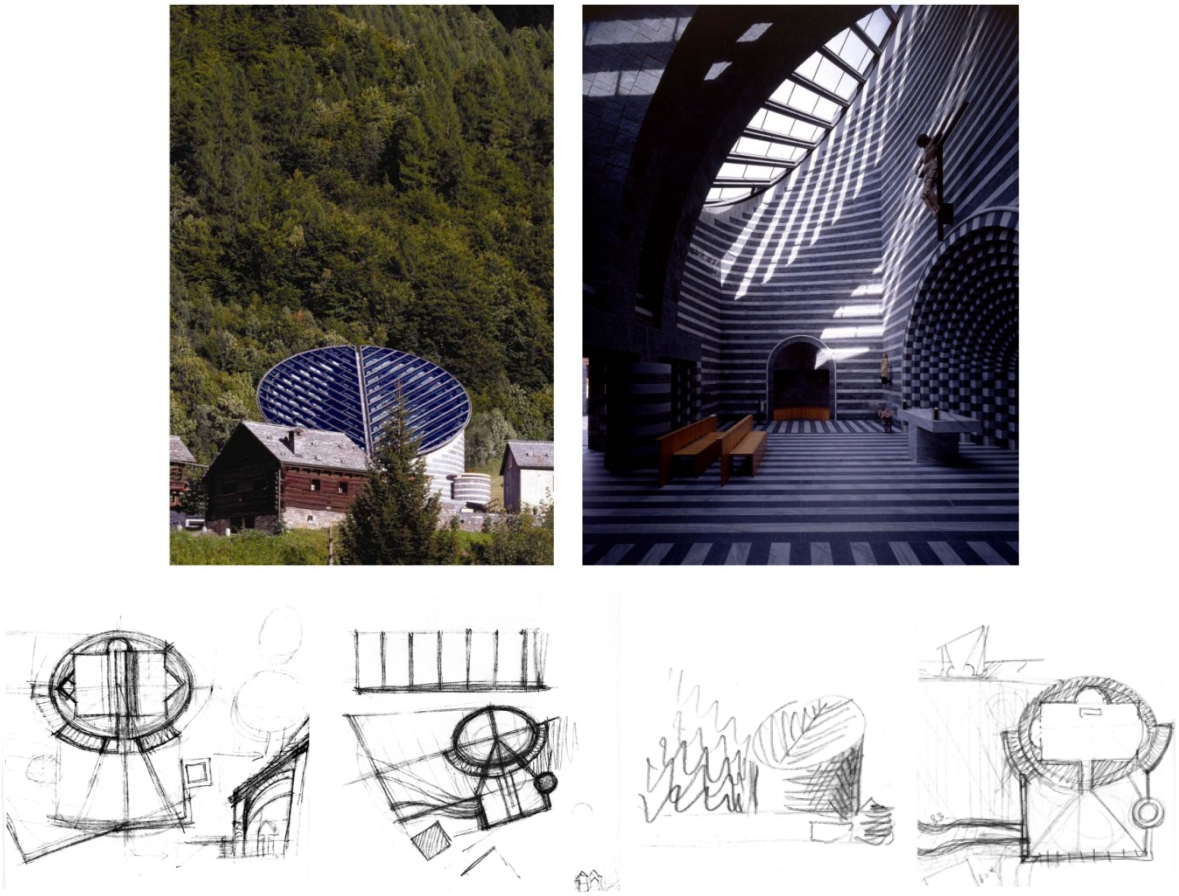


Figure 62: Maro Botta, *Four Preliminary sketches for the Church of St. John the Baptist (Chiesa di San Giovanni Battista) in Mogno, (Maggia Valley) Ticino- Switzerland, 1986*, pencil on sketching paper.

The small church stands high in the Maggia Valley, Switzerland and has been carefully integrated into its environment. In 1986 a snow avalanche destroyed half of the local village and its 17th century church. Botta's approach to his design was to mediate between building and the dangerous threat in the local environment of persistent avalanches (Press 2010). The approach was to create a bulwark stone wall for the church which would protect the wider village. The base of the wall's thickness is tapered on each successive course towards the upper sections which are finished with a glazed roof. Two colours stratify and reflect the mountain geology. Botta has consistently mediated and reflected on how Light generates and articulates space. The interior is a rectangle, surrounded by an ellipse. As the ellipse tapers upwards through the courses, the form changes to a circle. Two buttresses support this design choice (Coppa 2009).

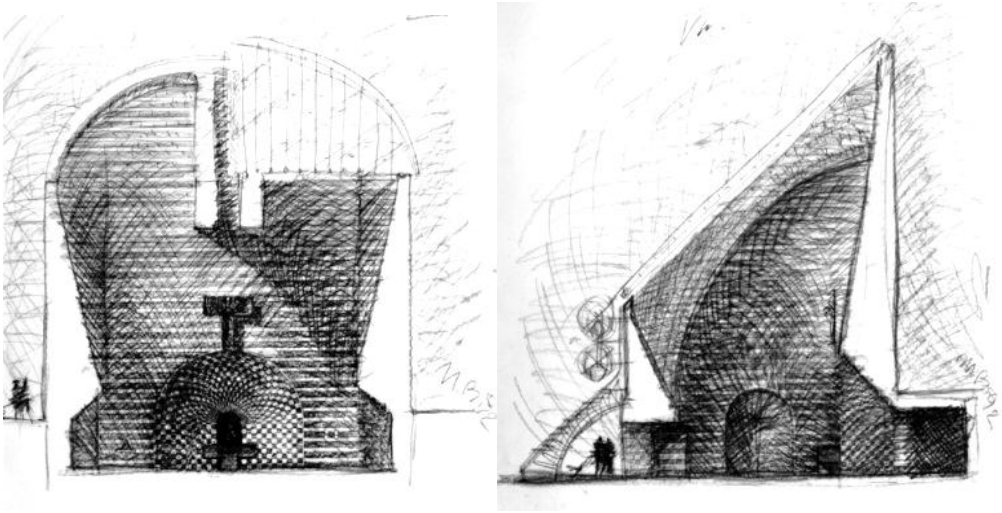


Figure 63: Section sketches, *Church of St. John the Baptist (Chiesa di San Giovanni Battista) in Mogno, (Maggia Valley) Ticino- Switzerland, 1986*, pencil on sketching paper.

In Botta's drawing, the sketch's main activity is an inquiry of the textures that he wishes to establish. In **Figure 63** the very relationship between the façade and light is marked out *as if they* existed, in actual states. Hatchings mark light conditions which overlay the two colour façade. The drawing is built, in this state, as architecture itself, foundational elements and courses are created. Atmospheric conditions are then drawn and planned out, on top of the material layer.

1.2.E - Form Finding

The case studies of Cole, West8, Olin & Botta, in themselves all contain methods of what Olin termed 'form finding' (which is also akin to Berger (Berger 2007)). Dominic Cole and the LUC developed a forensic technique for Lowther Castle and Gardens. This involved the gathering of historical images, the layering and truing of their geometry and the generation of an overall master plan synching all of this information.

This information brought new discoveries and uncovered lost site information. West 8 developed a concept based on Valencian mythology, and developed design stages in which the bat image would become scaled to permeate the park itself. The addition of poetry and permanent crops made the visual assets important in realising and creating the synergy of landscape and poetry. Laurie Olin's form finding highlighted the important visual asset as the only transitive medium in which the design could be carried to production. Olin's oeuvre has become highly influential on landscape graphic 'standards' which actually belong to a particular Princeton modernist American aesthetic. Nethertheless Olin's work demonstrates the currency of standardised visual representations of plan and section. Though in Olin's drawing, he considers the effects of time and growth in his planting design. Olin's drawing projects into the future (**Chapter 1.3**). Mario Botta's church sketches' 'form finding' develop a structured approach layering and texturing, then evaluating light conditions effects upon the geometry. These examples approach the task of (**Chapter 1.1)** "spider-webs of intricate relationships seeking a form" (Calvino, 1997 p.89-90). The approach of the urban designers, architects and landscape architects enabled the enrichment of landscape architectural representation, showing and evidencing the various communicative functions that drawing 'plays out'. Whilst these examples provide an insight into the process or use of drawing in relation to the framework of understanding developed from Calvino, their ability to enrich landscape architecture practices remains limited through an exhibition methodology. Wider associations outside of landscape architectural practice, coupled with investigations in design education will offer further development and enrichment. In all cases the use of plan as a 'truthful' vehicle in which to transmit ideas needs further investigation. A development of the context and particular role of perspectives and cartography may allow us to develop a further investigation of root ideas contained within these visual communications. Such aesthetic questioning is important for this investigation. The representative value of each drawing was not covered within the exhibition. What is representational space in relation to the origin of the initial design, i.e. from concept to production? Further work on the cultural impact of built space is important in an assessment of the agency of drawing and positive valence, and the role it plays within this process. *The 43 Uses of Drawing* started to

undercover some of the relations in play in the previous chapter, specifically at the formation stages of drawing. However, the exhibition worked on the connection between drawings of different disciplines, and the lived representational space was under-discussed. *The 43 Uses of Drawing* as a research activity could not look at public perceptions of the designs and their impact on a broader urban fabric. Further research which explores this Calvino idea of *Agency* will support this initial drawing survey and investigation. The success of the exhibition and research lies in the generation of case studies which support the initial representational invention developed by James Corner - and the hermeneutics established from Calvino - for the purpose of generating methods evidencing and extending Corner's claims.

Chapter 1.3 - Representations, Henri Lefebvre and Three Spatial Histories.

Introduction

What can be derived from *The 43 Uses of Drawing* cases discussed in the previous chapter is that each work marks out an idea or solution, communicated through drawing. As the landscape historian Erik de Jong states, in landscape design,

> Any execution is preceded by a vision and an idea, calling for knowledge and imagination, part of a culture that holds distinct views about landscape and urban environment, mankind and nature (Jong and Bertram 2008, p.7).

Considering the cultural mileu in which marks are made is important as through the act of drawing we can analyse perceptions and culturally located solutions to landscape design. It is an artefact of current knowledge, of a time of production[1]. Seen in this way, representation is a cycle, we can read its formation. What is to be discussed is the process of translation, between drawing and production, developing from the 43 Uses in a wider context. Henri Lefebvre in *The Production of Space* suggests that space and representation has been divided into separate areas, he suggests that "representational Space is alive: it speaks" (Lefebvre 1991, p.42). Lefebvre's theory suggests looking at representational history and looking at relationships between these histories - analysing practice and ideology. This claim correlates with the cycle mode of drawing or its *Agency*. In that *Agency* of drawing; it speaks, makes statements. How can we uncover the spatial relations & scales between the conceived, perceived and the directly lived – between presentation, representations and representational spaces? What is the journey, the transition between a design representation, built space and the representation of that space? A framework establishing the process of landscape architectural drawing has been established; however its agency requires further discussion.

This chapter marshals three fundamental examples of American representations of landscape, in the hope of relaying the cultural impact of such questions on representations - to take up the challenge of discussing the 'liveability' of imagery or 'ideology in action' (Lefebvre 1995, p.308). This chapter examines three broad interests – drawing, space and environment (which I would position as imperative for landscape architecture, as Thorbjorn

[1] The term landscape design is used in preference to landscape architecture as, the latter marks a 20th century association, over previous centuries which terms such activity as garden design, or landscape design.

Andersson suggests, in light of a requirement for graphic vehicles for the architectures with which to mediate ideas (Andersson in Treib 2007, p.74). Examining examples at various disciplines and scales of intervention, this paper draws upon theories of Edward Soja, David Harvey and other urbanists & geographers, but particularly on Henri Lefebvre's *Production of Space,* locating visual representations within Lefebvre's wider formulation that,

> (Social) space is a (social) product [...] the space thus produced also serves as a tool of thought and of action [...] in addition to being a means of production it is also a means of control, and hence of domination, of power (Lefebvre 1991, p.26).

As a process of *implication & explication* between things (Lefebvre 1991, pp.292–351) we would arguably be in a position to gauge the nature of visualisations and their actions and contribution to landscape itself. Lefebvre is important as the text states that there is a cultural condition of fragmentation of knowledge, whilst in a post-Marxist vein; Lefebvre recognises the need for a greater connection and understanding of space and its function (particularly in an urban context). This work is a useful theory in considering the power relations evident in the case studies to be discussed in (**Chapter 2.2, 2.3**). By extension what Lefebvre is actually discussing is *translation* or agency, or in this case the lack of. To take up part of Lefebvre's philosophical project he states,

> Between implication and explication – we would be in a position to grasp both the transformations brought about by the active elements within space and the genesis of space as an ensemble that is at once social and mental, abstract and concrete. (Lefebvre 1991, p.295)

Lefebvre in *The Production of Space* writes of three moments of history in spatial production; perspective, modernism and abstraction. Given the structure of his theorisations, three cases can be employed to explore this discussion. The first spatial history is the American Sublime as the 'art of deceit' in perspective painting. The second spatial history can be seen in the modernist work of Frank Lloyd Wright as the 'hope' for architecture in architectural draftmanship. Wright is a communitarian, deriving from a biblical and protestant tradition according to Lefebvre, in comparison with Le Corbusier's approach which Lefebvre describes as a technicist, scientific and intellectualised representation of space (Lefebvre 1991, p.43). The final spatial history is exampled by the polymath and engineer Richard Buckminster Fuller who is known not just for geodesic structures but also for the unitary possibilities of cartographic representation. Specifically, we will discuss the drawings of Frederic Edwin Church (1826-1900) and the Hudson River School, Frank Lloyd Wright's

(1876-1959) drawings, and Richard Buckminster-Fuller's (1895-1983) drawings of the *Dymaxion Map*. These works are social-spatial practices.

These popular examples arguably contain radical visual representations at various scales addressing the local to the global, mediated through drawings of landscape that 'work out' and provide an impact on the real.

> We may be sure that representations of space have a practical impact, that they intervene in and modify *spatial textures* which are informed by effective knowledge and ideology. Representations of space must therefore have a substantial role and a specific influence in the production of space (Lefebvre 1991, p.42).

In this case Lefebvre's statement refers to the central aim of this thesis in the evidencing of the *Agency* of drawing for landscape architecture. The examples to be discussed each reflect a period or influence of spatial history and social production and are discussed by Lefebvre, marking periods of American urbanisation and are selected to fit within it (Lefebvre 1991, pp.229–291). Lefebvre discusses a perspective space, a modern abstract space and a *whole* space as Lefebvre's overall project is to re-unify the spatial, and provide *wholeness for society* in the whole participation of the production of space, his critique thus discusses specialisation and fragmentation.

Lefebvre viewed everyday life as the zone for liberation and the area in which resistance to technocrats, system and domination could be played out (Lefebvre 1991, pp.8–10). He discusses the privilege of the visual over the sensory, everyday and lived or what Kanishka Goonewardena calls the "multiple times and rhythms of everyday life" (Goonewardena et al. 2008, p.9). His work moves towards first identifying the mode of capitalist production and secondly to identify new possibilities for the hotly debated *Right of the City*[2] - this involves greater participation in the design professions and the increase in participatory design process, increasing the stakeholders in the shaping of space and the activities set within it. This call is not one for unification but the creation of space that allows such conflict of interest. It moves the city away from technocratic processes and modes of domination. The renewal of urban life, involves the everyday life (Purcell 2003), the way people utilise urban spaces to become more active, rather than passive. David Harvey's work builds directly from Lefebvre, developing the idea of the *Right to the City*,

[2] "it cannot be conceived of as simple visiting right or as a return to traditional cities. It can only be formulated as a transformed and renewed right to urban life" (Lefebvre 1995, p.158).

> Of what kind of city we want cannot be divorced from the question of what kind of people we want to be, what kinds of social relations we seek, what relations to nature we cherish, what style of daily life we desire, what kinds of technologies we deem appropriate, what aesthetic values we hold. The right to the city is, therefore, far more than a right of individual access to the resources that the city embodies: it is a right to change ourselves by changing the city more after our heart's desire (Harvey 2008, p.23).

The *Right to the City* is important as it offers a critique of what can be seen as increasing disenfranchisement with cities, to Lefebvre this also means a lack of connection with landscape and environment. The idea of the right to the city correlates with landscape architectural theory, particularly Landscape Urbanism, to make meaning and intervene in modern cities with "the ability to shift scales, to locate urban fabrics in their regional and biotic contexts, and to design relationships between dynamic environmental processes and urban form" (Corner in Waldheim 2006, p.26). 'Everyday life' as a subject arguably has rich potential for landscape architecture in the human relationships with environment.

Within this scheme that Lefebvre develops, images in their isolation confuse our understanding of space in particular certain modernist architects. They make space passive, they do not help with his overall project of unifying practices within space, abstract space and social space. This division according to Lefebvre is a means of maintaining a dominant order in the production of space. The domain of images is certainly marginal to Lefebvre's overall project, but by extending Lefebvre's theoretical cases and discussion of Picasso & Frank Lloyd-Wright we can analyse the reductive nature of the visual realm. This arguably and paradoxically could even contribute to the current productive space through images in which there is a misunderstanding, in which we think of a drawing as the reality – "substituting a mental and therefore abstract space for spatial practice" (Lefebvre 1991, p.389).

For architecture Lefebvre criticises certain reductive plans and visuals that are produced which 'degrade space'. He states that the architect has a representation of space, one which is bound to graphic elements - elements which are thought to be *true* (Lefebvre 1991, p.361). This reading is complex and aimed at capitalist critique and modernist architecture[3], however what is meant here is that linear perspective and the fetishism of the façade by the architect was to see and be seen as a model of social standing, this to Lefebvre was the imitation of discourses of power[4], Le Corbusier's work is cited as a moral discourse on

[3] A critique of the contradictions of this space can be read in Jane Jacobs (Jacobs 2011).
[4] This is elaborated by Lefebvre "The Visible and the visual are already in command. The façade, designed both to be looked at and to provide a point of vantage, is organised, with its sculptures,

straight lines, thrusting built volumes to abstraction without dialogue with the surrounding land or peculiarities. The architect and urbanist to Lefebvre is complicit in the production of space which supports the dominant order of capitalism and examples movements which failed to create new alternatives to which they originally professed to enact (Lefebvre discusses Soviet Constructivists as one such failure (Lefebvre 1991, p.59)). For example Haussmann created a military strategic space for Paris and this drastically reshaped Paris' historical context and Oscar Niemeyer's *Brasilia* became a space of extreme state bureaucracy. To Lefebvre architecture is a discipline that he hoped can contribute towards the right to the city.

While this may divert our attention to the realisation of the possibilities of real space, it is precisely because of the reductive power of images that such unity can occur, to enable the transition between the conceived and the built. As Edward Soja has demonstrated, we know Los Angeles through visual representations before we actually visit, though this imaginary mode does not always help in decoding the spatiality of the city and its underdevelopment and marginalisation (Soja 2011, p.222).[5] The visual has translational properties in which different understandings of space abstract, perceived and lived are unified and communicated.

Though the question is - can such other phenomenological and sensory roles still be maintained within the visual realm? Lefebvre's final unfinished work *Rhythmanalysis* (1992) explores urban rhythms and the everyday rhythms of inhabitants; this is developed further in the thesis (**Chapter 6.1**). Moreover, can the reception of images resist such passive abstraction and confusion? Are all images part of a totalising visual simulacrum - particularly in the architectures, inextricably bound within a self-sustaining mode of capitalist production? Lefebvre's argument cannot be sustained, as Treib rightly states,

> the image begins to tell us more than we have projected into it; new or unrecognised relationships or ideas emerge that stimulate creativity. Perhaps for this very reason the drawing has remained the primary vehicle for conceptualisation in architectural and landscape design (Treib 2007, p.15).

balustrades and mouldings, around balconies. The street's contintuiy, meanwhile, is founded upon the alignment of juxtaposed facades… A perspectivist rationality still governs the ordering of streets and avenues, squares and parks."(Lefebvre 1991, p.315).

[5] See for example the influence on the director Fritz Lang of New York skyscrapers in the film Metropolis (1927).

It is not for the choice of examples to argue their impact as the ‘cause or ratio of space’ (Lefebvre 1991, p.304) moreover to discuss these examples as part of a wider ephemeral change of course in spatial history - as signifiers which are part of or have been *appropriated* by a group or faction, that generate a built space. As Lefebvre states,

> Ideas, representations or values which do not succeed in making their mark on space, and thus generating (or producing) an appropriate morphology, will lose all pith and become mere signs, resolve themselves into abstract descriptions, or mutate into fantasies (Lefebvre 1991, p.417)

The analysis considers representations which have made a mark, in these respects, as Harvey describes, of topology which “deals with the holistic properties of objects and in particular is concerned with connectedness” (Harvey 1969, p.218). Between the perceived, conceived real to the visual unreal - to the creation of representational spaces that are alive.

1.3.A - Lefebvre's First Spatial Moment: Perspective Space, Ideology & Urbanisim

Figure 64: Sebastian Serlio, *Setting for Comedy,* Sette Libri di Architettura, 1545.

One example of representations of space, which Lefebvre discusses, is classical perspective. For example interpretations of Aristotelian and Ptolemaic conceptions of space would be translated into physical space, church and city form would mimic such concentric layouts and have an impact on social space in what Lefebvre calls "an organic mediation between heaven and earth" (Lefebvre 1991, p.271). Filippo Brunelleschi's 'perspective' demonstrations[6] mark a point between the development of perspective artificalias (Classical perspective) and perspective naturalis (vision that cannot be replicated on a plane

[6] "During the same period he propounded and realised what painters today called perspective, since it forms part of that science which, in effect, consists of setting down properly and rationally the reductions and enlargements of near and distinct objects as perceived by the eye of man: buildings, plains, mountains, places of every sort location, with figures and objects in correct proportion to the distance in which they are shown." (Manetti 1971, p.117).
"Since it is almost certain that linear perspective was discovered with the aid of plan and section (still preserved in Alberti's method) they must have played a part in Brunelleschi's demonstrations. The question is how large a part? Were the profiles simple cuts, act as stepping stones to the discovery of the vanishing point? Or were they fully developed orthographic projections capable of surveying spaces?"(Evans 2000, p.176).
"Both the structural affinities of the Brunelleschian schema and its earliest known applications suggest that what Brunelleschi initially devised was a transcriptive procedure for topographic purposes. Since the actual operations involved in transcriptive and in fictive perspective drawing are of necessity sharply distinct, such an origin has definite implications for a developmental reconstruction."(Kuhn 1990, p.117).

surface)[7][8]. Drawing would be the vehicle through which these conceptions would 'work out' or even become encoded, for it was Brunelleschi and Donatello's probable formative excavations in Rome in which "They drew the elevations on strips of parchment graphs with numbers and symbols which Filippo alone understood" (Manetti 1971, p.52). These surveying or mapping techniques using possibly mirrors and graphs, could have contributed toward to the later Brunelleschi demonstrations that are well documented and also much disputed. Could the Brunelleschi experiments, as Lefaivre claims, even contribute towards Alberti's reported mysterious camera obscura instrument, his sunny & nocturnal *Dimostranzoni*[9] one box for the 'constellations', one for the 'mother light' Aurora? For Alberti, he comments on the use of mirrors, and notes, "I do not know how it is that paintings that are without fault look beautiful in the mirror; and it is remarkable how every *defect* in a picture appears unsightly in a mirror" (Alberti 1991, p.83). This technological invention would create the cosmological representation in physical form, maps used for military and city planning purposes would utilise such invention. Such invention would also be used in theatre design as seen in the architect Sebastian Serlio's illustration, **Figure 64.**

As Damisch states, in Manetti's *The Life of Brunelleschi* the text is a "re-presentation, even a *model*, for such can be the meaning of the word *innanzi* in the 'elevated' style" (Damisch 1995, p.67) for perspective activity therefore making such scholarship difficult.

[7] "You will take three mirrors; and place two of them At equal distance from you; a third, further away And so that you see it between the other two turning towards them, arrange that behind your back. There is light which shows in the three mirrors and is reflected back to you from them all. Although the size of the image will not be as great In the most distant mirror, you will see that it will shine just as brightly as the others"(Alighieri 2012, pp.97–103).
Also in Giotto, reported by" Fillippo Villani (1325-1405) "With the aid of mirrors, he also painted himself and his contemporary Dante Alighieri, the poet, on the wall of a room in the Palazzo dell Podesta" (Burckhardt 1990).

[8] "Whilst it is therefore possible to indicate the sources for this in Euclidean optics and geometry and in the late medieval versions of, and commentaries on, Arabic works on optics, this stripping down of those theories to a simple working system, and their transfer from the realm of physiology, philosophy and theology to that of painting is really what constitutes Alberti's originality" (Alberti 1991, p.12).
"Whereas perspective naturalis demonstrates the how and why of the apparent diminution of objects in proportion to distance, perspective artofocialis would seem to have been a development of it – an unforeseeable one? – intended to subject representation to the law of optics, or again, in the ancient sense of the word, to those of vision, the clear, distinct kind of vision that is understood in ancient discourse on geometry" (Damisch 1995, p.68).

[9] "The Dimostranznoi were of two kinds, and he called the one sunny and the other nocturnal. There one could see Arcturus, the Pleiads, Orion, and similar sparkling constellations, and the moon rising from the crests, craggy mountains and the morning stars. In the sunny one the orb of the earth was resplendent and amply illuminated, with a surface, to quote Homer, that shines like Aurora, the mother light" (Lefaivre 2005, p.144).

Nethertheless, for Alberti's glory, the painter's perspective system, according to Robin Evans,

> Gave them [artists] a second order of freedom within a second order of confinement. Inside the rigid cage of central perspective they developed unbridled, graceful bodies, conceived without any recourse to geometry but directly on it for the intuition of their liberated form (Evans 2000, p.236).

Classical perspective would be enveloped with cartographic advancements in describing landscape.

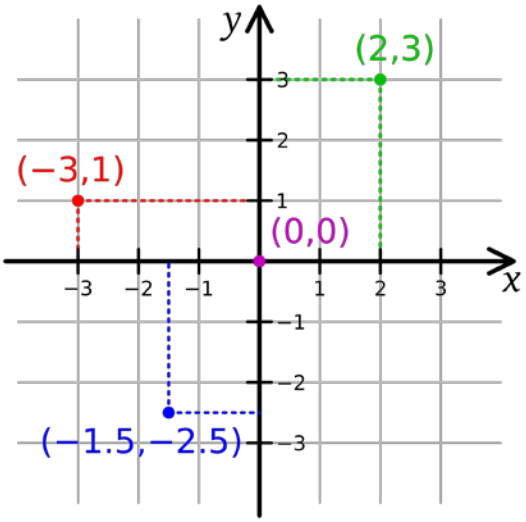


Figure 65: Cartesian coordinate plane.

Rene Descartes's observations and invention of the Cartesian coordinate system specifies points on a plane with numerical coordinates signifying distances; this allowed the specification of any point in a three dimensional space. Such precision would turn space into a mathematical model, giving 'precision' to vision and classification of space (Descartes 2001). This visual geometry would act out and become a politicised order for the arrangement of space (Versailles). This abstract space creates homogeneity, because in this case, landscape is read through its lens. As Lefebvre states the eye,

> Tends to relegate objects to the distance, to render them passive. That which is merely seen is reduced to an image – and an icy coldness. That which is seen is reduced to an image – and icy coldness. The mirror effect thus tends to become general. Inasmuch as the act of seeing and what is seen are confused, both become impotent. By the time this process is complete, space has no social existence independently of an intense, aggressive, and repressive visualisation (Lefebvre 1991, p.286).

This is fundamentally important for the discussion of landscape drawing; such reduction reduces the phenomenon of landscape itself. Moreover this process does not show concepts; it just mirrors a seen image, a response that can be seen in contemporary landscape architecture perspectives. Drawings confuse space, but they are a vehicle that carries different notions of space, one that should not be discarded and can be inclusive of a range of senses that recognises that a drawing and its components are illusory.

Figure 66: Frederic Edwin Church, Mount Ktaadn, Oil on canvas, 1853.

> [...] we would have preferred to have had the grassy lawn in the centre of this picture continued into the shadow of the foreground: it would have given the spectator a more *agreeable* position, and been more in *harmony* with the scene (Anon 1849).

It is clear that the Hudson River school painters represented spaces of apparent fidelity which masked actual specific cultural codes of seeing. The perspective painting developed a naturalism with the paint masking the perspective lens (Casey 2002). Frederic Edwin Church's paintings attempt to bridge John Ruskin fidelity to nature (Ruskin 2009), with a Christian idealism and philosophy. The Hudson River school embedded future visions, ownership and nationalism – the local with the national. The quotation above also hints at the way in which the receptions of these works were *measured* as a representation of space. This certainly is applicable to Lefebvre's criticism of reductive visuals as mentioned earlier,

blurring reality/ illusion, though it is not to say that Church himself was versed with mere representational skill, he is as much a surveyor and prolific traveller, constantly sketching and engaged in the natural sciences as an avid follower of Alexander von Humboldt (1759 - 1869).

These landscape representations are peopled in the foregrounds, they are the locators to propel landscapes of infinite and magnificent scale between the local & national. The fully worked paintings are often rendered with enhanced atmospherics and shadow – Pallasmaa suggests in his account of haptics that the shadow disrupts depth and vision provoking tactile fantasy (Pallasmaa 2005, p.46). **Figure 66**, Church's *Mount Ktaadn*, 1835 is a pastoral Idyll with probable saw mill & cupola in the middle ground with dam and waterwheel for productive ends. Here we find small scale agrarian communities decades after tree clearance: a balance of 'progress and preservation' it was commented on in the *Knickerbocker* for a "correctness of everything represented. An elm or an oak , six or eight miles off, is as individual as the model tree in the foreground" (Wilton and Barringer 2002, p.128). Though to note, as Andrew Wilton states the elm and oak are not typical of Maine woodland! These paintings re-rendered;

> Adjustments in topography spoke of social rifts smoothed over, and formal harmonies blunted the sharp edge of technology. Such aesthetic accommodations offered an ideal mirror of a longed-for social condition (Miller 1992, p.209).

It was with reference to the representative body that 'nature' could be situated and scaled. This work could be seen as Lefebvre states, as "spatial practice (which) is lived directly before it is conceptualised" (Lefebvre 1991, p.34) These works mark a practice at the end of the production of what Lefebvre calls the perspective space – (which) is not separate from an economic change (Lebas and Kofman 2006, p.210). Perspective can be considered as the basis of a social practice which was itself the result of a historic change in the relationship between town and country through the planning process (Lefebvre 1991, p.41). Perspective employment allowed the projection of a magnitude of resources on an infinite logical plane. This projection of landscape promoted the idea that its resources could be *owned* and appropriated using the mental equipment of the sublime.

Figure 67: Thomas Cole, The Oxbow (View from Mount Holyoke, Northampton, Massachusetts after a thunderstorm), Oil on canvas, 1836 & Detail.

Travel drawings were collected and formed into a composite, these composites were then painted. These drawings helped formulate the human identity of early America, snapshots of an urban space-time axis (Lefebvre et al. 2003, p.123). In the painting *The Oxbow* (1836) by Thomas Cole (Church's tutor) **Figure 67**, we view the appropriation of wilderness, in which we view a figure encountering, confronting the translation of wilderness to metropolis. Cole remarked of those,

> Who regret that with the improvements of cultivation the sublimity of the wilderness should pass away; for those scenes of solitude from which the hand of nature has never been lifted, affect the mind with a more deep toned emotion than aught which the hand of man has touched (McCoubrey 1965, p.102).

Perhaps this sentiment reflects in Lefebvre as he states, "The countryside knows it is in the service of the city, and the city poisons nature, it devours it while recreating it in the imagination so that this illusion of its activity can survive" (Lefebvre in Elden 2004, p.143). Lefebvre's concern with the natural environment and increasing urbanism continues when he states,

> The fact is that natural space will soon be lost to view... Nature is also becoming lost to thought. For what is nature? How can we form a picture of it as it was before the invention of humans with their ravaging tools? (Lefebvre 1991, p.31).

Lefebvre's concern with environment was formed in his initial research on French agricultural reform. Like the American sublime painters, Lefebvre witnessed vast changes in political power structures and urbanisation (Merrifield 2006, p.3). Thomas Church was the epitome of the materialisation of the American wilderness - for the increasing urban populace, the wilderness could be bought in picture form and it would be a sign of the antithesis to emerging urbanism. The majority of demands for these artworks were based came from New York and other major cities. Church lapsed into the spectacle with custom exhibitions and engravings, accompanied by much marketing dedicatory writing and even musical composition (Kelly et al. 1987, p.14) - as a celebrity he was much maligned by the press – James Jackson Jarves in 1864 criticised Church that he allowed his art to lapse into capitalism (Kelly et al. 1987, p.14)[10]. And this translation thus provided fits within Lefebvre spatial theorisation - "the metaphor of plenitude that informed nineteenth century images of nature which has found a new home in corporate capitalism" (Lefebvre 1991, p.212).

That is to say these representations make a mark on the social formulation of space, they affect how landscape is seen and viewed; in this case passively, and this is what is meant when Lefebvre talks of a *spatial texture* of an American landscape. The paintings became consumed as a 'sign of nature'. This can be evidenced in picturesque tourism and the objectification of sites in later 'National parks'(Grusin 2008) as well as the privilege given to such imagery - an emergence of the fetishism of nature and of landscape itself viewable as images - landscape through a lens (Lefebvre et al. 2003, p.27). Thus to Lefebvre, between the presentation which is the perception, grouping and factual creation and representation which is the interpretation of the facts, is a blindness. As Lefebvre writes "between these two moments and in each of them, there are misrepresentations, misunderstandings" (Lefebvre et al. 2003, p.30). Drawing for landscape design then, is anything but a neutral activity, but of critical importance in the communication of true ecologies and states of our environment today. We must therefore be cautious of the lens of representation in landscape architecture.

[10] His endurance remained in the Sotheby's (New York) auction of the painting *Icebergs* (1861) on the 25th of October 1979 dispersed in three minutes and forty-five seconds, the hammer falling at $2.5 million – wilderness and spatial plenitude as a product and appropriated to within a capitalist schema.

1.3.B - Lefebvre's Second Spatial Moment: Heralds of Modernity and Abstract Space

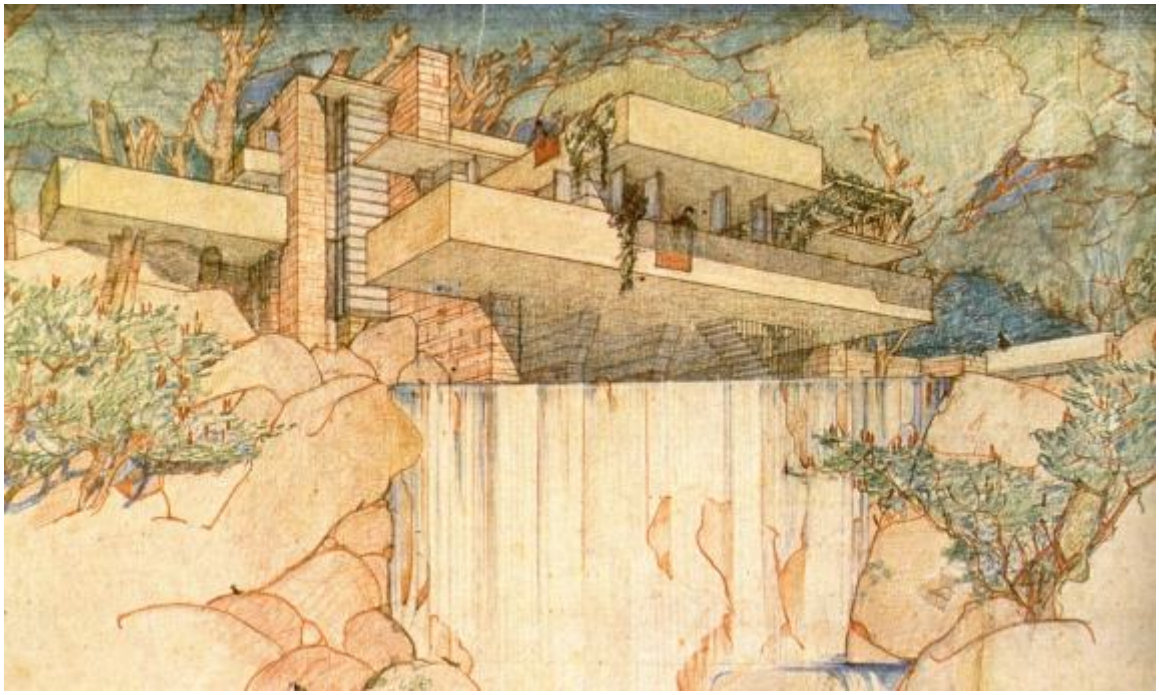


Figure 68: Frank Lloyd Wright, Edgar J. Kaufmann House, Falling Water, Bear Run, Pennsylvania, Pencil and coloured pencils on tracing paper mounted on board, 1936.

Wright's communitarian approach was different in his later work to some of the modernist calls of CIAM (International Congresses of Modern Architecture) which he was involved in, which sought the advancement of architecture and urban planning for social change through segregated zoning and the mobilisation of urban space to be reconfigured at scale (Mumford 2002)[11]. Lefebvre was concerned with the role of urban space; the architect was instrumental in this, from the renaissance city, to modernism, what was the practice of architecture?

> If architects (and urban planners) do indeed have a representation of space, whence does it derive? Whose interests are served when it becomes 'operational'? (Lefebvre 1991, p.44)

[11] Eric Mumford's *The CIAM Discourse on Urbanism 1928-1960* (2002) discusses the rise of CIAM as an Avant garde group towards a syndicate of architects interested in the concentrated city. While Wright was involved, in the 'Functional City' in 1933, Le Corbusier called for urban reconfiguration towards a concentrated city, which through glass and steel must have height and urbanists must have control on the design and configuration of work, dwelling and leisure (Mumford 2002, p.91-94).

While through Church we could see the formation of nature as 'national sign', appropriated through perspective space, for Frank Lloyd-Wright his concept of organic architecture uses scale to create synthesis using 'blended' and local metaphors. His numerous drawings per project are "both an operative and critical instrument which serves to create and interpret architecture" (Izzo 1977, p.1). His drawings did not fracture the picture's unity, but break the picture plane enough to remind us of the architectural concept. The concept was organic to the landscape - exterior and interior became dissolved.

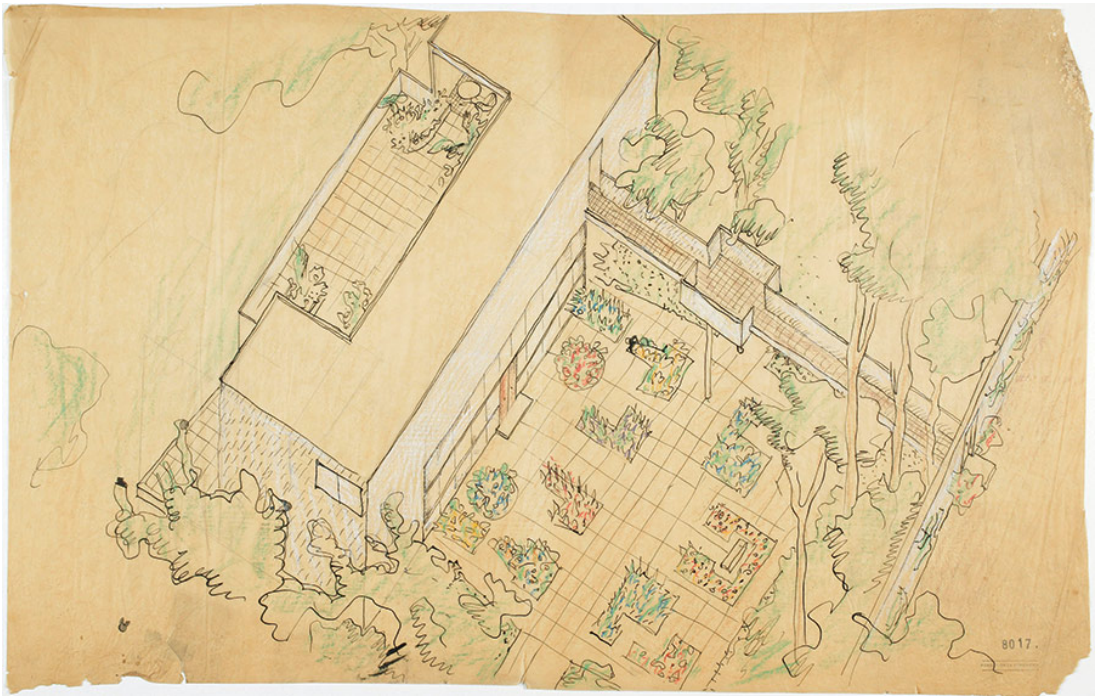


Figure 69: Le Corbusier: Music Pavilion for Villa Church, 1927-1938.

Wright saw the Renaissance period of urbanism and centrism as an archaic practice which some of his contemporaries believed was a solution to contemporary issues.[12] Following Lefebvre's critique, he states that the perspective space gave way to an abstract space of fragments and violence, as signified in Picasso – between the separation of the subject and object,

> Following the tendency of philosophy, of art and literature, and of society as a whole, towards abstraction, visualisation and formal spatial relations, 'architecture strove for immateriality' (Lefebvre 1991, p.303).

This immateriality distorted the time and rhythms of the structures themselves. Lefebvre discusses Le Corbusier in which Corbusier's freedom between façade and interior aimed at

[12]Frank Lloyd-Wright, *The Decline of the Cornice*, Modern Architecture Conference, (Princeton: University of Princeton, 1930), 61.

creating a 'dwelling machine',[13] which in fact resulted in a disordering and fragmentation of elements. These elements were aligned to habitation of hygiene and sunshine, and green in-between space. Lefebvre here is critical as the Bauhaus and Soviet Constructivist architects he viewed as revolutionary, but in his critique fell into the service of state capitalism. Lefebvre's criticism could be understood, in that Le Corbusier separated structure and landscape, the connection is removed, best thought of in the elevation and use of pillars, physically extracting the building form from the landscape space. There is never any specific landscape description in Le Corbusier's drawing, what seem like landscape observations, are in fact developed from tendencies to record aerials whilst on a plane, which Jean-Louis Cohen, Barry Bergdoll in their recent survey of his work arguably conflate (2013). This aerial scopic eye, was a useful device in enabling his well-known urban axonometric, more than in recording landscape details. Such work was indicative of the abstraction or urbanism, specific programming of housing lots, activities, prescriptive dehumanised rationality.

In comparison Wright embedded his architecture within landscape. As Scully argues of Wright's design, he developed an abstraction of space that both strove for "use and to form it into a rhythmically geometrical pattern" (Scully 1960, p.13). Though for Wright, what was organic? While in the Hudson River School shadow and light were balanced. For Wright, "when organic architecture is properly carried out no landscape is ever outraged, but is always developed by it" (Wright 1953, p.304). Wright's site specific mode allowed his drawing to be part of a space, a continual becoming - "invisible foundation from which all the rhythms flow and to which they must pass. Beyond time or infinity" (Scully 1960, p.11). Thus, Wright's drawings created a transition of 'nature' and architecture (Wright 1953, p.60).

Edgar J. Kaufmann commissioned the famous, structurally dubious and highly mythologised project *Fallingwater* 1934 – 1937, Bear Run, Pennsylvania **Figure 68** which provided a synthesis of site and structure, Wright remarked to Kaufmann in the planning stages "a domicile has taken shape in my mind to the music of the stream. When contours come you will see it" (Wright in Levine 1997, p.227). His drawings reflected this integration in its rendering; it is as Neil Levine remarks,

> ideal and recapitulative, collapsing the disparate perceptions of experience into one. To understand the house, then, we should not start with it, but end with it, building toward it 'step by step (Levine 1997, p.243).

[13] A mechanistic function for the house, designed with precise functioning, dimension and efficiency of layout. See (Gans and Corbusier 2006).

This particular perspective (Wright completed a number of studies) was drawn from the waterfall bank opposite, and marks the final spectacle of a journey through the building which gives way to the waterfall. Thus the image is the thing experienced last as Levine suggests, you travel through the structure before you encounter the image or symbol. This image is also superseded by the waterfall and natural phenomenon; it becomes unimportant in relation to the experience of the place. It attempts to override visual dominance, like the building, not everything is revealed.

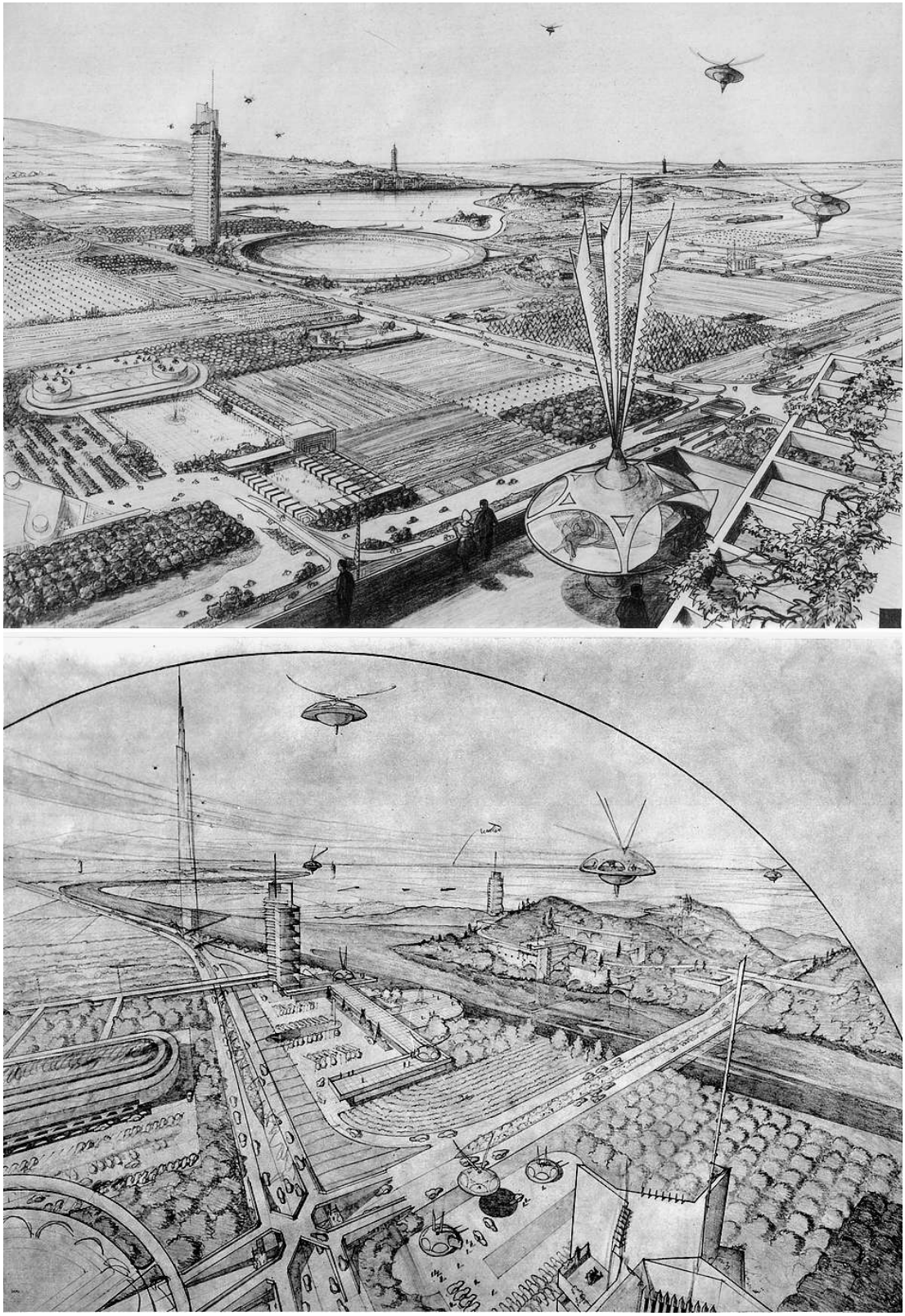


Figure 69: Frank Lloyd Wright, *Broadacre City*, Aerial Perspective, Pencil on Tracing Paper, 1934-1958.Confirmed through DACS and The Frank Lloyd Wright Foundation.

Wright attempted the removal of ‘fixtures’ and façades’, to allow the flowing of light. Wright wanted modern material surfaces that helped this light flow into the interior as in the drawings, with an adoption of new industrial processes creating “surfaces in which the machines would have to make them” (Farr 1962, p.232). Wrights *Broadacre City,* **Figure 69** (In the *Disappearing City* 1932) post-Olmsted & Howard presented a suburbia sprawl, not too dissimilar to Church’s agriarian vision, though ensuring that there was no centrality in power. As Lefebvre states of urbanism, it “contemplates itself in the countryside that it has shaped, that is to say, in its work. The town and its surroundings thus constitute a texture” (Lefebvre 1991, p.235). Wright called it ‘ruralism as distinguished from ‘*urbanisme*’ of urban block ‘scapes (Levine 1997, p.212), a pattern vision of the provision of a machine age, one acre per citizen to live and farm, adaptable across conditions. Though represented for Wright as Fishman argues, as a resistance of centralisation and a technological use for planned dispersion (Fishman 1982, p.95) this was a deviation from the ideas of CIAM. Rather than the design of what Pallasmaa calls architecture which is “stage sets for the eyes” (Pallasmaa 2005, p.30), Wright’s graphic output can be seen as illustrative of a space that was not definitive, he knew of the importance of wider phenomena, thus the conventions of this form of representation are pushed towards an end.

1.3.C - Third Moment: towards new social relations & spaces

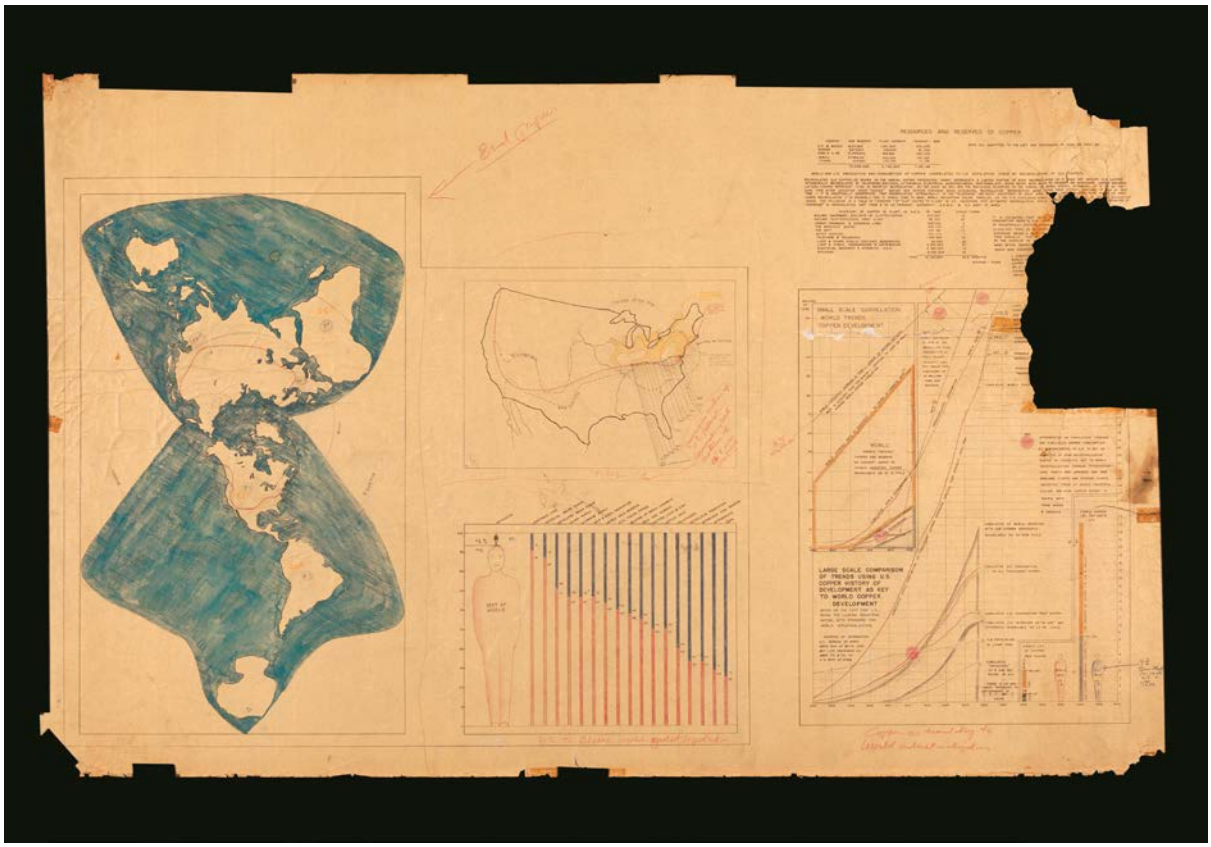


Figure 70: Dymaxion Projection method: topological transfer of data from the globe onto the two-dimensional surface. Sketches undated, Pencil, c.1943. Buckminster-Fuller Archives.

Fuller's drawing is experimental and biographical, in the sense that it records the various inventions and acts as a diary of his thoughts and ideas. In the *Dymaxion Chronofile* it contains annotations and sketches, mixed media that 'work out' and constitute his wider project of individual potential to address the world scale.

> When a map is being drawn, each point on it is fixed according to some given law which expresses the co-ordinates of that point on the map in terms of those of the corresponding point on the earth. Such a law is called the Projection on which the map is drawn: and the equations of the projection are those which give the relation between the terrestrial co-ordinates and those of the point on the map (Harvey 1969, p.2).

What is also attached to that map projection, that translation? What is the signified? Just as James Lovelock's ecological theory connotes and provides the mental equipment to project Earth as a single organism, Fuller's *Dymaxion Map* radically alters the everyday cartographic and cultural bias of poles, through a corrective map projection, towards a scaled map of 'fidelity', thus transferring spherical data to the plane surface. He is representative of a more

ephemeral change of scale considerations towards what develops towards the concluding chapters of *The Production of Space*, Lefebvre's spatial history of the worldly – 'Think Global act Local' (Lefebvre in Krausse and Lichtenstein 2001, p.496). Fuller is indicative of a more positive operation and hope for visual, which considers concrete and lived space, essentially a democratic involvement in the construction and political creation of space. As David Harvey states in *Explanation in Geography*,

> Geographic concepts of space are founded in experience. In part that experience is common to the whole society in which the geographer works. It is thus dependent upon actual physical experience and upon the accumulated cultural experience of a particular society (Harvey 1969, p.227).

Buckminster-Fuller understood this by discussing the idea of the sailor who navigates the sea via the stars, thus a cosmological method of looking outside their experience to navigate their location. Physical experience is thus the 'blind flying' of cultural cosmological knowledge.

Figure 71: Richard Buckminster Fuller, Sketches for Dymaxion Map, 1953. Courtesy of Buckminster Fuller Archives.

This flexible zone of spatial-cultural projection for Fuller, realised through drawing, helped formulate a corrective map projection towards his wider *Spaceship Earth project* - that is world-wide collective pooling of resources out of a recognition of environmental and social injustice. This map has undergone several revisions in which various data could be composed, for example extending the 'one continent' idea, demonstrating World energy markets, developing the first comprehensive map showing air traffic patterns and another to show world population statistics (Fuller and Snyder 2009, pp.171–173), *The Dymaxion Map*:

> describes the Earth's surface with the minimum total score of distortions from the many well known geometrical processes inherent in translation of the angle and scale information from a spherical to a flat surface (Fuller and Snyder 2009, p.160).

Figure 72: Nicole Santucci + Woodcut Maps, Dymaxion Woodocean World, 2013. Data shows global forest densities.

Figure 73: Amanda R. Johnson, In Deep Water, 2013.
Data shows water types and availability applied to population.

Figure 74: Anne-Gaelle Amiot, Clouds Dymaxion Map, 2013.
Data shows cloud patterns circling Earth.

The Dymaxion projection has undergone several revisions - most recently published by The Buckminster-Fuller Institute, showing water usage, whale migration patterns, patterns of world violence, forest densities and types, as well as the movements of clouds, **Figure 72 - 74**. Whilst these info-graphics are important visualisations, the contribution of the Dymaxion Map is evidenced in the development of the *World Game,* **Figure 75**. The World Game is a giant simulation in which participants solve a number of scenarios for the goal of 'World Peace'. To Fuller this rested on the development of design science, and this could yield a process for "economic, technological and social insights pertinent to humanity's future envolvement aboard our planet Earth" (Fuller 1971, p.2). Eventually commercialised and adapted, the simulation recorded some 24,000 participants over two decades[14].

Figure 75: World Game Institute, Buckminster Fuller (Centre), Medard Gabel (Right) 1983.

Thus, this planar reduction presented a representation for public appropriation that would transcend national boundaries and re-evaluate spatial production. Fuller's drawing is reductive and not without fault as Gene Keyes has discussed (2009) yet transcending of scale boundaries promoting an environmental collective. The Dymaxion Map is based on a mathematical concept designed for the purpose "of emancipation from the formal cartographic tyranny traditionally imposed by the poles" (Fuller and Snyder 2009, p.169).

[14] Craig Lambert reported in 'Bucky Fuller's Big Game Goes On" (World Monitor, 1989-06, p. 18-20). In two decades as of then, 24,000 players had "made the world work without war".

Fuller's map is difficult to assess on its social relation, though it pre-figures further GIS systems and increasing world representations. The map which transferred to *The World Game* functions in Fuller's main Unitarian philosophy to,

> Mak[e] the worlds' totally available resources serve one hundred percent of an exploding population may only be accomplished by a boldly accelerated design evolution which adequately increases the present over-all performance per units of invested resources (Fuller and Snyder 2009, p.169).

The Dymaxion Map can be located within this broad philosophy, and is related to other inventions such as Geodesic structures, structures which have had a huge impact in the design of temporary shelters and large scale architecture, from the Eden Project Cornwall, Nicholas Grimshaw & Partners, to the British Museum's Great Roof by Norman Foster. As a representation it lives and works towards a 'comprehensive anticipatory design science' best summed up by Fuller's design maxim which emphasises connectivity,

> …Because the meaning of design is that all the parts are interconsidertately arranged in respect to one another and because all the generalized principles are omni-interaccommodative which is to say that none ever contradict any others… (Fuller 2008, p.128).

Thus, the symbolism that the map provides, acts as an overlay in which experiences can be simulated or data from reality can be projected. The map thus influences and reports on world situations in a connective manner. It is also testimony to this project that it is still active and has been appropriated; a similar project has been recently taken up by Rem Koolhaas, The Office for Metropolitan Architecture (OMA) in *Roadmap 2050: A Practical Guide to a Prosperous, Low-Carbon Europe,* **Figure 76** a graphic narrative study combining trans national energy elements. Fuller's trans disciplinary design philosophy runs tangent to Lefebvre as the geographer Edward Soja reads him, "Lefebvre is arguing for action orientated and politicised ontology and epistemology for space" (Soja 1996, p.46). Fuller's work could mark at least a Lefebvre moment of social relations that replace old ones, of classicist perspective and abstract production, of the alienation of modernism moving towards "the creation (or production) of a planet-wide space as the social foundation of a transformed everyday life open to a myriad of possibilities" (Lefebvre 1995, p.422). This like Fuller is not the establishment of a system or configuration but like the Dymaxion Map, an orientation towards collectivism.

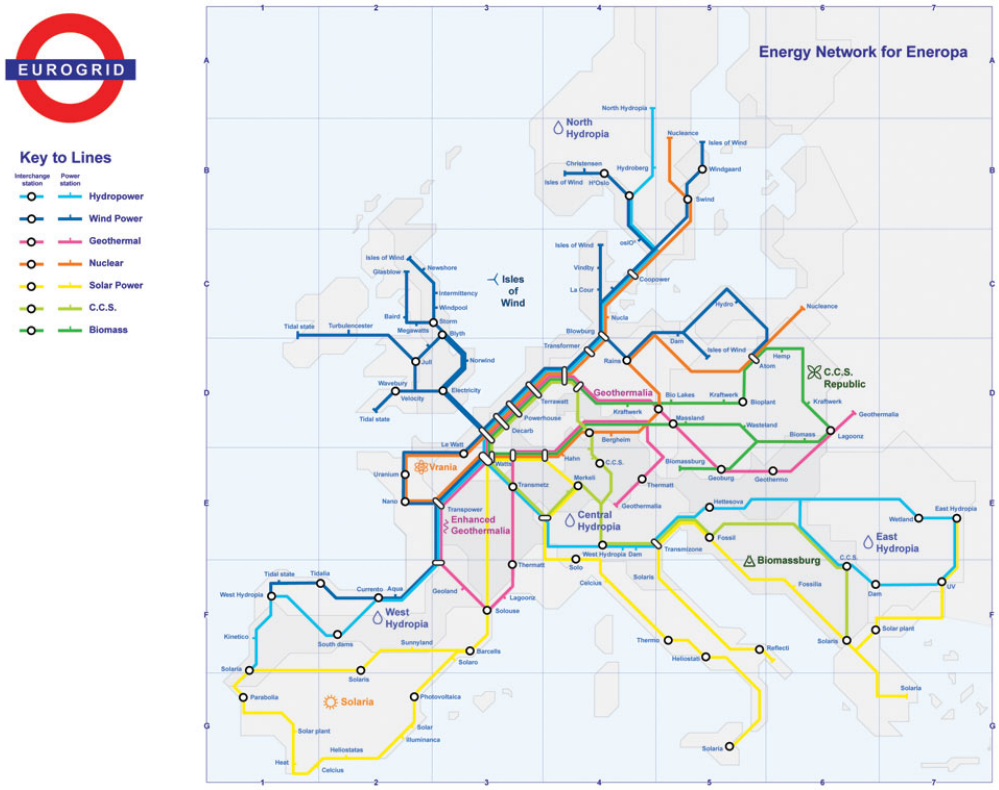


Figure 76: OMA, Eneropa (Top) EuroGrid, Extract from Roadmap 2050: A practical guide to a prosperous, low-carbon Europe, 2010.

1.3.D - New Relations & Drawing Translations

Henri Lefebvre's theory of spatial production has been related to a number of sources. In the American Sublime we see the extension of an image which becomes confused with the reality of the landscape. The image is taken and consumed as a sign of nature, that it possesses a great fidelity, when in fact it works as an artificial creation. Frank Lloyd Wright begins to deconstruct these perspectives and 'façades' of architecture in the opening and development of his 'organic architecture', connecting building and landscape. Buckminster-Fuller demonstrates the ability to generate concepts that are both abstract, but work with perception and lived space.

Lefebvre states that there have been examples of the fulfilment of a pure visual logic, in which a literal drawn line has dictated an urban plan; modern architecture has been subject to operation within its own coding. The visual logic therefore creates abstract space, where,

> the person who sees and knows only how to see, the person who draws and knows only how to put marks on paper [...] contribute in their way to the mutilation of a space which is everywhere sliced up (Lefebvre 1991, p.313).

Perhaps then drawings work by their very blindness and abstraction. However, not all drawings are subject to this literal translation and modernist visual dominance. Such modernist urban strategies have been subject to critique and belong to the particular period of anxiety in post-war France in which Lefebvre makes these observations. What is useful in Lefebvre's theory is that images have an agency in the production of space, even if that agency is negative. In the three moments of spatial history that Lefebvre discusses, and the examples supplied in the chapter, Church's paintings are consumed as a 'sign of nature', an apparent fidelity which masked the actual and philosophical position of agrarian ideals – a misunderstanding of the very landscape they wish to represent. This example fits within Lefebvre's criticism of the degradation the visual causes to experience of natural space as well as the urban landscape. Wright's drawing acts as an organic concept that at once enabled structures, these structures propel phenomenology and make the original image redundant.

Buckminster - Fuller's drawing acts as a world scale connector in which drawing is seen as a unifying process. While drawings to Lefebvre would constitute violence on spaces propelling a misunderstanding or blindness, it is perhaps by this very misunderstanding, through spatial interplay or a 'leap' that allowed such popular reception. Whilst an abstract space of thinking,

Fuller's conceptions challenge the productions of space itself echoing Lefebvre in a call for interconnectedness - another way of thinking about space.

Arguably, Fuller represents a different operation in the image. Unlike the visual reductive criticism of urban modernism, Fuller becomes pragmatic, operating out of the boundaries of Marxist and capital struggles in which Lefebvre theorises. Though Fuller addresses inequalities and alienation, in the various revisions of the Dymaxion Map, his work is not purely based on what is translatable from the drawn surface. Fuller's work is a pragmatic philosophy which proceeds from the drawn mark and travels further in a journey of *becoming, an operative agent,* what we have discussed through Calvino & Corner, that leaves the medium behind - people play the 'World Game' for the goal of World Peace.

If understood in these terms, as a transitive, operative or agent, drawing as a representative practice is part of a cycle of representation; things are perceived, conceived and then lived. The theory of space which Lefebvre unifies, thus involves the orientation of drawing within this unification. We can trace drawing within this cycle, it may be small in the process of the construction of the built environment but essentially drawing is *transitive*. As David Harvey claims,

> "at the representational level the emergence of spatial concepts is inextricably bound up with the structure of the culture in which spatial concepts are being developed" (Harvey 1969, p.194).

Lefebvre in his closing remarks maintains faith in architecture for the goal of creating more democratic spatial production and lays the challenge:

> Why should spaces created by virtue of human understanding be any less varied, as works or products, than those produced by nature, than landscapes or living beings? (Lefebvre 1991, p.397).

This variability requires architects to diversify the process in which they work and requires involvement in the political system as well as spatial production. This requirement by extension applies to Landscape Architects, Urbanists and Planners, to re-think spatial production. For Lefebvre,

> It is for a new conception of life to make possible the work of the architect, who will continue to act as a 'social condenser', not of capitalist social relations and the commanding order that reflects them, but of relations in motion and new relations in the process of development (Lefebvre in Elden 2004, p.148)[15].

[15] Social Condenser refers to the belief in the ability of architecture to affects social behaviour (see Rusakov club by Melnikov) (Watten 2003).

However, the make-up of those relations is only theorised by Lefebvre, his work is a philosophical project, *The Right to the City* is open as an avenue for thought and ideas, how and what is designed and the impact is not clearly explained. The chapter has discussed the unifying of space posed by Henri Lefebvre, every society creates its own space, and Lefebvre has given examples which have been expanded on for his three spatial histories. What can be concluded is the sense of deception that can be constructed in images, we can mistake the image for the experience of place, and this reductive lens removes the social, lived and time of the city. Images taken in an abstract sense, applied directly to reality can sometimes contribute towards the fragmentation of space. The architect or artist has the technical means to draw space; this body of knowledge can maintain such division of space which to Lefebvre enables technocratic and capitalist dominion over urban life, but that very process has the ability to change that dominion[16]. Lefebvre wrote his thesis on the French rural condition and writes substantially of environmental issues and even places hope in architecture to form new moments of production, though this is not sufficiently elaborated upon. What is most fruitful from the text is the idea of the transition between spaces, conceived, perceived and lived. His spatial theory is useful to discuss the agency or translation of drawing - in how it contributes towards urban textures. In terms of landscape design, it is clear that from the examples, each sought a production based on cultural understandings of landscape and space. By extension what are the cultural conditions of contemporary landscape architecture production? What are the aims and associations with landscape representation, and it's embodied meaning?

The everyday which is intended as a liberating research area, in which possibilities exist for a renewed right to the city, is interesting in relation to landscape architecture and architecture. However, everyday life as an area is not as substantially refined. This involves seeing design as embodied within politics. What are the intentions of such ideas, how does this affect people on sites? What are the humanistic aspects and perceptions of landscape architectural design? The map, one form of representation, will prove useful in attempting to cover these questions of what is known in its use, its translation from concept to perception, to orientating physical lived space. Further explanation could offer ways in which landscape design contributes towards 'everyday life', and a greater liberation of the city and engagement with how these areas are programmed. Thus everyday life can be an aspect of the positive valence of landscape architectural drawing and production. This could be explored through community led design over a discrete professional technocratic activity.

[16] Concrete proposals are subject to counter proposals by 'interested parties', Lefebvre suggests a complete societal change, which makes any pragmatic approach to his theory difficult.

Case Studies

Case Studies – This thematic area discusses the agency of mapping based on the theories of Michel De Certeau for landscape architecture and analyses London Southbank and the contested space discussing both original design studies and possible alternatives. The design of Milton Keynes is then discussed in order to extend the agency of drawing and the creation of landscapes. Both sites are selected on the basis of material which evidences the translation from drawing to landscape (**Chapter 2.1 -2.3**).

Chapter 2.1 - Re-Scale, Drawing & Radical Cartography: Notes after Michel de Certeau

Introduction

Figure 77: Harold Fisk, The Alluvial Valley of the lower Mississippi river, 1944.

Henri Lefebvre's theories of conceptions of space and the various discontinuities within these conceptions have an impact on how urban space in particular is produced. The theory's implication is that societies create their own space, and contemporary production of this space is creating alienation. The thesis has created a framework for understanding the operation of drawing in landscape architecture. Utilising this hermeneutic reading of Calvino, a number of drawing methods require identification, creating a positive valence for produced landscape. Thus landscape design can arguably be enriched by exploring the notion of the 'everyday' and the representation of it. The approach yields drawing methods which offer more holistic readings of the quality of landscape, and by their agency inform design processes. The everyday could be a useful research area for landscape architecture, a human focused analysis of routines, rhythms and movements of people in urban quarters. This focus on everyday life to Lefebvre is a new political idea which disrupts consumption and commodification. The everyday is body focused; it reads repetitions, routines, unsubstantial practices, travel and work, the experience of landscape over time. Such explorations in architecture have been undertaken discussing non-monumental, domesticated architecture (Harris 1997, pp.1–6). In a landscape context, monumental

landscape could be understood in the static preserved gardens of Stourhead, Wiltshire (established 1740s) (**See Chapter 3.1**).[1]

To begin charting and critiquing such possibility, the map, as one representational form is a useful point of discussion where we can explore, critique and extend Lefebvre's work, in particular through the ideas of the French Jesuit philosopher Michel De Certeau who developed his own readings of 'everyday life'. For De Certeau, maps play a role in performance,

> The founding gesture is to make a map. It creates a space. It cuts out of the complexity of things a scene on which to draw the operations necessary to remake the world... Born of a withdrawal and designed for a purpose, the map isolates a theatre and offers it up to be transformed. But that working ground also represents the reality from which the map distinguishes itself in order to change it (Certeau and Harrison 1985, p.17).

From maps we can construe some of the intricacies of scale and its relationships in what is practiced - in relation to oneself and towards a design response. This chapter discusses a variety of mapping practices, developing further into a case study in **Chapter 2.2** of London Southbank. Exploring notions of maps and practices, Landscape Architecture has much to learn from mapping practices and visualising information for the representation of a variety of ecologies. From a basis of progressive or alternative, radical map making, new social relations may occur, new scales of operating within space, or new modes of design thinking through analysis of the function of maps can be articulated. This development offers solutions towards a greater understanding and participation within space and specifically landscape architectural production. From a map, then to a plan, landscape design follows. One of the core representational tools, the map, given information from which a site plan is located, the intention drawn on, layered, composited - the intention drawn on the map lays the ground for landscape architecture to operate, it orientates. Such claims are evidenced in the sources collated in Nadia Amoroso's *The Exposed City*, (Amoroso 2010). A collection of powerful examples, however not conveniently or well sustained in academic analysis, there is much research potential to build upon this.

[1] Everyday research however, has implications for our relationship with landscape, placing a hierarchical human emphasis (Vaneigem 1983; Scott et al. 2009). The everyday, in landscape architecture must be understood as an extension to research enquiries such as ecology and geology. In the essay *Tom's Garden*, the Landscape Architect Margie Ruddick states that the formalist training, of drawing a plan, perspective and section with ghostly figures is at odds with the commonplace, complex 'everyday'. The everyday undoes the integrity of the representation (Ruddick in Harris 1997, pp.107–112).

Lefebvre was one of the most influential thinkers to explore what could be termed 'everyday life' (Lefebvre 1992; Lefebvre 2008a; Lefebvre 2008b) See **Chapter 1.2**. He terms everyday life as "illusion and truth, power and helplessness; the intersection of the sector man controls and the sector he does not control"(Lefebvre 1992, p.40). Through an examination and reflection of the way we live our lives, profound change can come about, especially and particularly in the way spaces are created. The notion of everyday life was taken and revised by Michel De Certeau and expanded in his key text *The Practice of Everyday Life* (1984, 2002). The text contains thoughts of mapping practices, to build upon in our analysis and describes "ways of operating" within space (Certeau 2002, p.XiV) *Metis* (Certeau 2002, p.XiX) what is termed - "the innumerable practices by means of which users re-appropriate the space organised by techniques of sociological production" (Certeau 2002, p.XiV). For example the sign or map may instruct us to walk only on the path; the walker may decide to venture on the grass. The text is of particular importance for uncovering the function of maps and their translation.

Developed from Michel Foucault's 'panopticism' (Certeau 2002, pp.36, 2001–2002), amongst others, the text develops the boundaries established in these practices and the re-appropriation of these boundaries: what one *does* or *makes* from urban space, what De Certeau terms 'Tactics' and 'Strategies'. Of these, tactics is a 'calculus which cannot count on a 'proper' (a spatial or institutional localisation), nor thus on a borderline distinguishing the other as a 'visible totality'; a more individualised way in which users make choices in how they use space. In relation, strategies in short, are the function of the dominant economic power, of a political and scientific rationality circumscribing a proper, "the calculus of force-relationships which becomes possible when a subject of will and power (a proprietor, an enterprise, a city, a scientific institution) can be isolated from an 'environment'"; these are economic powers which try to control the space and tactics of users (Certeau 2002, p.XiX). These dominant networks and strategies according to De Certeau are becoming more "tightly woven, flexible, and totalitarian"(Certeau 2002, p.31) thus reducing the ability to form tactics and responses with which to make marks on this colonising geography. This notion of disenfranchisement appears in De Certeau but also in many other urban treatises forming tangential arguments, with such ideas of the Genus Loci, and the celebration and protection

of the particular (Norberg-Schulz 1980; Casey 2002).[2] As the Landscape Institute statement reveals, this idea of place is embedded within its thinking;

> Landscape architecture is rooted in an understanding of how the environment works and what makes each place unique. It is a blend of science and art, vision and thought. It is a creative profession skilled in strategic planning, delivery and management. Landscape architects bring knowledge of natural sciences, environmental law and planning policy. They lead teams, engage stakeholders and manage conflicting demands. And they create delight with beautiful designs, protecting and enhancing our most cherished landscapes and townscapes (LI, 2012).

In the urban context, *Spaces* (*espace*) are defined by De Certeau as 'spatial practices' (Certeau 2002, p.115) – "of intersections of mobile elements" (Certeau 2002, p.117). "Space occurs as the effect produced by the operations that orient it, situate it, temporalize it, and make it function in a polyvalent unity of conflictual programs or contractual proximities." De Certeau then continues, "thus the street geometrically defined by urban planning is transformed into a space by walkers" (Certeau 2002, p.117). The law of the 'proper' rules in the place: the elements taken into consideration are beside one another, each situated in its own 'proper' and distinct location, a location it defines. A place is thus an instantaneous configuration of positions- "It implies an indication of stability" (Certeau 2002, p.117). Thus, a resident defined by the economic zoning of housing is constrained (place), but establishes a "degree of plurality and creativity" (Certeau 2002, p.30) within that place through such choices as interior design (and the community which they form) – space. To De Certeau *Place* is stable, *Space* is made.

The map then forms part of a paradox between the authoritarian production of place and the ruses of consumers or their 'everyday resistance' and spatial creation – the map sits in a position that merges between the place and space, the strategy and the tactic which De Certeau postulates. The map and the plan (the plan being more focused and projective) is thus a working ground in which action and practices occur. It represents as De Certeau states the working ground that represents the reality from which the map distinguishes itself in order to change it – it is the position from which two forms of mapping emerge.

The first map form, a resistive element, which is elusive in analysis, arguably can be formed through the 'radical', that is *metaphoric* (De Certeau terms *Metaphorai* - spatial trajectories

[2] The Genus Loci, stems from roman origins in the idea of a spirit of place. Developed in Garden Design by Alexander Pope, and further discussed in the *Genius Loci: Towards a Phenomenology of Architecture* by Schulz.

(Certeau 2002, p.115)) treatment of maps, which is both challenging to information design and posits alternative possibilities - what could be related to James Corner's call for the *Positive Agency* of map production. This is the ability of maps' "inauguration of new worlds out of old" (Corner in Cosgrove 1999, p.252) and what De Certeau calls "metaphorising the dominant order; they made it function in another register" (Certeau 2002, p.34). The map then represents places, but it is also a product of practice and thus represents spaces – this is similar to recent developments in radical cartography. Radical cartography is therefore defined as positioning map making, not in the drawing of definitions of place, but as a more complex drawing connoting spatial practices, weaves, meshes, appropriations and tactics but particularly re-imaginings'.

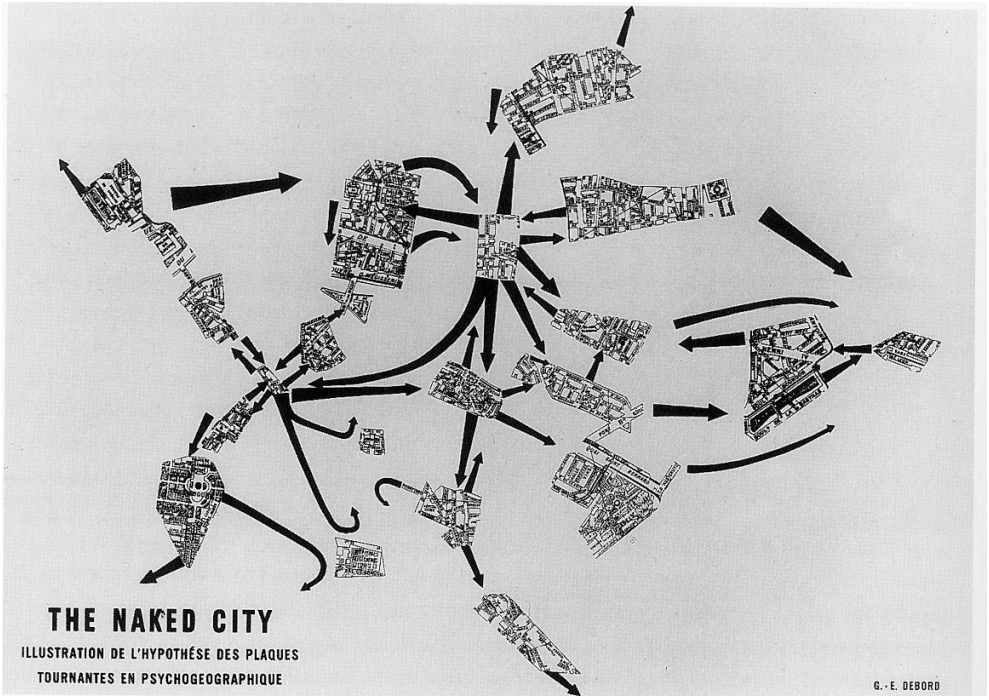


Figure 78: Guy Debord & Asger Jorn, Naked City, 1957.

Drawing maps is inscription, the drawn plan is focused projection and can be thought of as spatial writing, situated in an expanded field of possibility, of notation & mark making as an *agent*. Similar to the performance of the situationalist 'dérive'[3] (Ross and Lefebvre 1997, p.73) - the urban drift itself, a *renovated cartography* in search of an experience of similarity (Knabb 2007, p.7) as seen in *The Naked City*, **Figure 78** (Mcdonough 2002, p.53), against the usual directives. This is the second form of maps which are created within and include

[3] The dérive is a Situationist technique of rapid passage through varied ambiences. Dérives or urban drifts, are not strolls or set journeys, but involve playful-constructive behaviour and awareness of psychogeographical effects (Knabb 2007).

the journeys that enabled them– the performative aspect of a person creating the map which is spatial writing in our own reality. This leads us to a phenomenological mapping practice (Merleau-Ponty 2002, p.203)[4]. An example of this practice can be seen in the work of the performer Alex Villar (**Figure 83**), who moves analogously to a drawn line, through a space, defining negative spaces, edges, boundaries and peculiarities of urban form with his body movement.

This is related to De Certeau's idea of the *walker*, an area which people reshape and practice. It is 'everyday' research in a human scale and form, what Derek Schilling states as De Certeau's conception of "the everyday as the locus of a voluntaristic neo-humanism" (Schilling 2003, p.26). What practice an individual undertakes, what type of resistance and re-appropriation of an authoritarian place and what an individual does, what an individual re-scales, and thus produces space, can be read as a scattered *Poesis* (Certeau 2002, p.Xii). In **Figure 79**, John Fulford draws a map of things unchanged and changed in New Canaan, Connecticut for his nieces. They both went to the same school, and his nieces add in pink the additional things they experience. The map is an artefact of a poetic discussion of everyday spatial practice.

The form of this 'authoritarian place' is analogous with a formation by the phenomenologist Merleau-Ponty who distinguishes 'geometrical space', (visual, panoptic, theoretical construction) 'A homogenous and isotropic spatiality,' (analogous to our place) from another 'spatiality', which he called an 'anthropological space', (Anthropological: poetic, mythic experience of space) (Certeau 2002, pp.93, 117). Maps then form part of a generative site of new possibilities containing the operations and inventions regarding the urban dilemma - to instigate human continuities in the city. As Bill Rankin suggests, to make mapping "[work that is]...less about how to chop up a city into fragments and more about finding continuities and seeing individual identity as complex and layered" (Rankin 2012). These mapping practices are the challenges 'deflecting' colonisation - they 'escape without leaving it' (Certeau 2002, p.xiii). In **Figure 80**, the Cuban collective Los Carpinteros create non-functional sandals for a city navigated by foot, the object supposedly tells us of the walker's trajectory, but that journey cannot be decoded.

By rethinking map use in Landscape architecture, or the *Agency* of drawing, this opens up new avenues of representational activity in which the relationship between conception and production becomes more connected. That is the treatment of maps as transitional objects,

[4] Merleau Ponty and many others emphasise the body as a way of knowing the world (Merleau-Ponty 2002; Cerbone 2006; Moustakas 1994; Schutz 1972; Tilley 2008; Tilley 1997; Seamon 1993).

not neutral drawings depicting 'truths', but cultural artefacts in which ideas '*become*. This operation is essential as it also feeds back in its transition, the map helps use evaluate built form after production and continues a cyclic journey in which drawing helps in understating how we use space and landscape. Essentially these theories call for a rethinking of the agency of mapping and a reorientation of our understanding

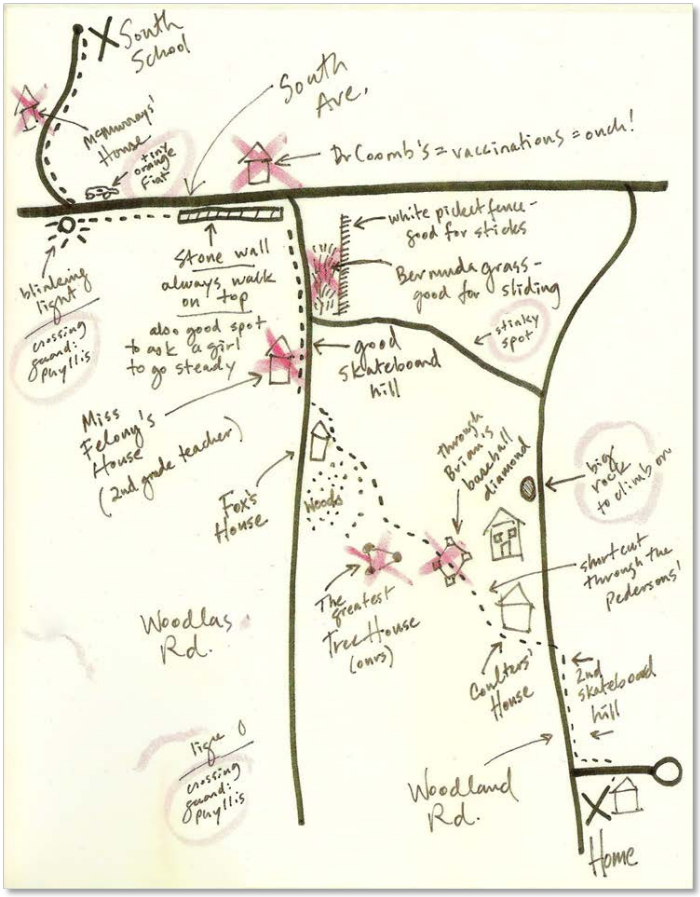


Figure 79: John Fulford, *The Walk to South School*, 1964-71, 2003.

Figure 80: Los Carpinteros, Sandalia, 2003-2004, Gray pigmented urethane rubber, clear ureathane plastic mixed with ureathane rubber, Each 12.75*5.75*2.5in.

2.1.A - The Radical, Metaphoric and Operative Map

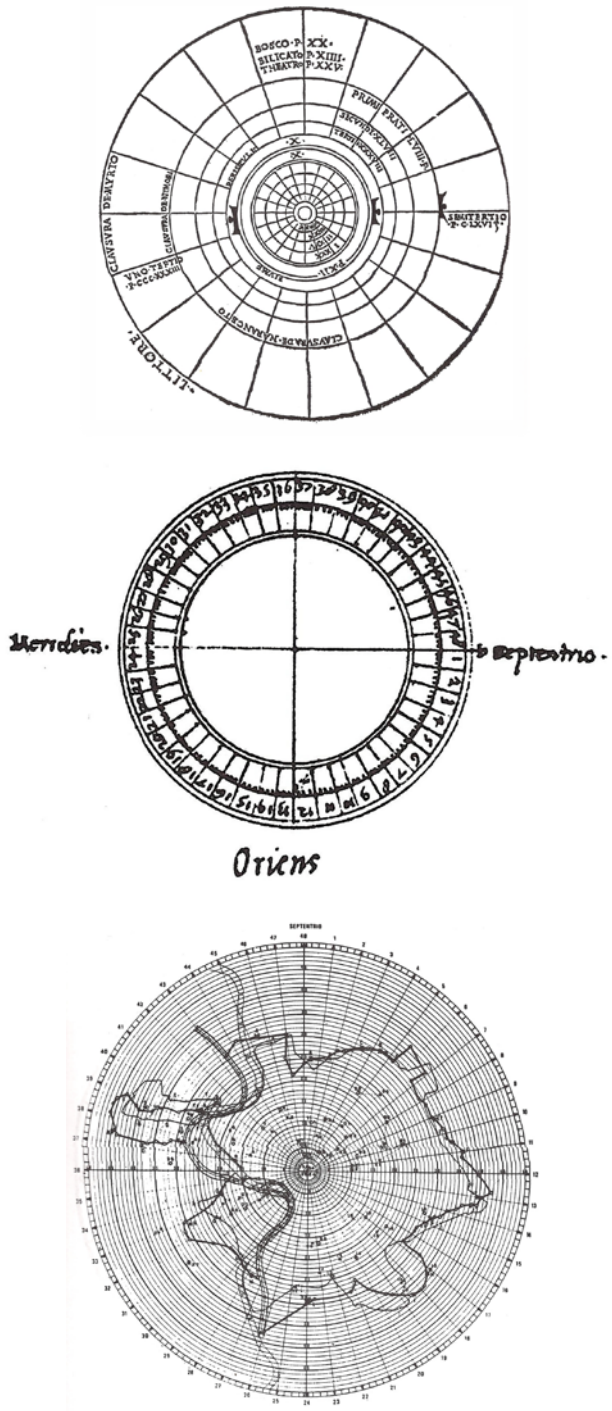


Figure 81: Hypnerotomachia Poliphili, *Diagram of The Isle of Cytherea*, pp290-325.
Diagram From The Manuscript of Alberti's Descriptio Ubris Romae. From Citta Del Vaticano, Biblioteca Apostolica Vaticana (cat 22).
Reconstruction of Alberti's Map of Rome (1450). From D. Vagnetti, "La 'Descripto Ubris

Romae'" DI L.B. Alberti, 'Quaderni Dell'Istituto Di Elementi DI Architettura E Rilievo De Monumenti Di Genova 1 (1968), p72.

De Certeau is critical of scientific cartography for the goal of 'enhancing the experience of everyday urban life'. The geographical map form, from which De Certeau calls the birth of modern scientific discourse (15 c. & 17 c.) has "slowly disengaged itself from the itineraries that were the condition of its possibility" (Certeau 2002, p.120). For example nautical charts exist though we forget the journeys that sailors made to create them; this mapping state has not changed. Even with developments in augmented reality, we assume the validity of data and rarely question the forces that created the virtual space.[5] He states,

> The desire to see the city preceded the means of satisfying it. Medieval or Renaissance painters represented the city as seen in a perspective that no eye had yet enjoyed. This fiction already made the medieval spectator into a celestial eye. It created gods (Certeau 2002, p.92).

For example the Renaissance development by Alberti in *Descriptio urbis Romae* (1431-1434) **Figure 5** shows a system of surveying using the *Astrolabe* (nautical instrument) (Evans 1998) which according to Lefaivre is also be found in the ancient building revivalist treatise, *Hypnerotomachia Poliphili*, (1499) (Lefaivre 2005, p.16). The *Hypnerotomachia Poliphili*, is a love story, however two thirds of the text is devoted to architectural theory.

This example is but part of a wider post-Vitruvian invention of equating the body with building (Wittkower 1998, p.101) and the building with harmonic proportioned sounds. These were all derived from validity in cosmic proportional ratios and Platonic readings of corporeality like the *Myth of Er* (616c). This coupled with workshops' re-inventions, imitations, and particularly harmonic ratios (Lippman 1963) would propel various manifestations of the body-architecture-cosmos metaphor mediated through drawing (Evans 2000, pp.XXXi, XXVi) way beyond its time. This arguably located and created the fascination in the *topos* and the grounding of the city within this cosmic frame. To De Certeau "the same scopic drive haunts users of architectural productions by materialising today the utopia that yesterday was only painted" (Certeau 2002, p.92). This observation was based upon a Manhattan excess in De Certeau's text as he writes of a viewer who enjoys the panorama of the twin towers. This encourages a 'totality prospective reading', it is a grid of spectacle and if conventionally mapping the route, drawing a reversible line, would: "allow us to grasp only a relic set in the nowhen of a surface projection. Itself visible, it has the effect of making invisible the operation that made it possible" (Certeau 2002, p.97). This to De Certeau, forms an

[5] Buckminster-Fuller also asserts a similar observation in the example of sailors who travel the seas creating nautical maps, navigating by stars, yet at the same time the narrative of that journey is not evident in the map itself.

operation of the representation and cartographer, that maintains the strategy of the dominant order. He asks,

> Is the immense texturology spread out before one's eyes anything more than a representation, an optical artefact? It is the analogue of the facsimile produced, through a projection that is a way of keeping aloof, by the space planner urbanist, city planner or cartographer. The panorama-city is a 'theoretical' (that is, visual) simulacrum, in short a picture, whose condition of possibility is an oblivion and a misunderstanding of practices (Certeau 2002, pp.92–93).

This 'concept city' of perspective & prospective vision then maintains itself through a denial – is an *urbanistic* discourse of rationality and panoptic power (Certeau 2002, p.94). This is contrary to a 'tour' which is a different cartographic practice and graphic reduction which is also phenomenological; De Certeau examples the Japanese address book, a 'hasty sketch already on paper, in the forms of citations of places, a sort of dance through the city: " 20 paces straight ahead, then turn to the left, then another 40 paces...' the drawing articulates spatial practices... this drawing outlines not the 'route' (there wasn't one) but the 'log' of their journey on foot...not a 'geographical map' but 'history book'." (Certeau 2002, p.120).

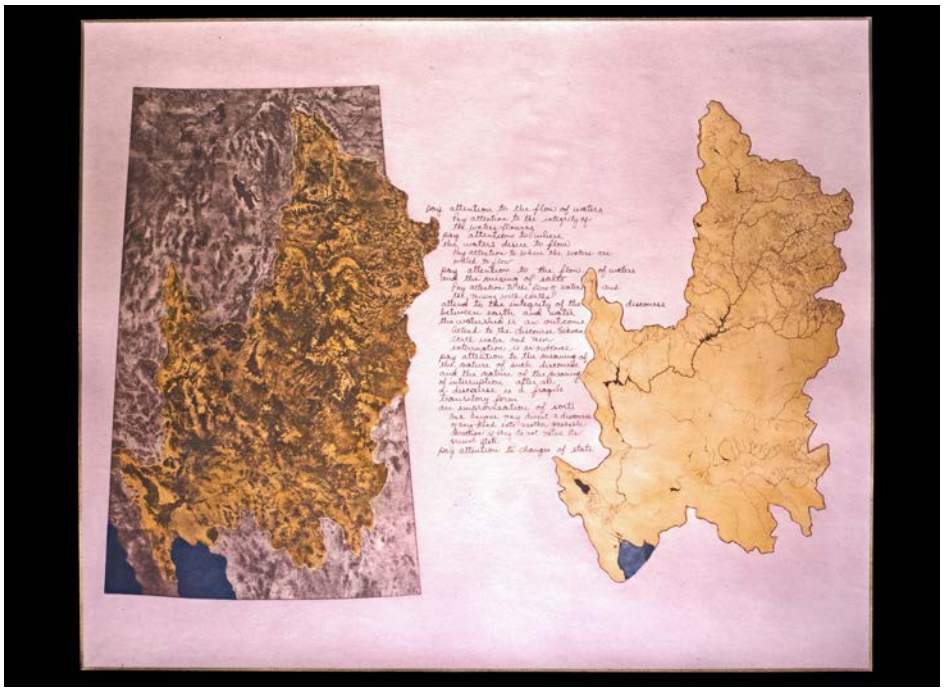


Figure 82: Newton Harrison & Helen Meyer Harrison,
Sixth Lagoon Cycle: On Metaphor & Discourse, The Lagoon Cycle: 1974-1984.

Contrary to the totalising map that denies the touring practice that enabled it, the work of Helen Meyer Harrison & Newton Harrison **Figure 82,** further builds on De Certeau's concept of the map as theatre; "The map re-presents. It describes an inventable world. It shows in

the present the movement that will carry it into the future" (Certeau and Harrison 1985, p.18). The Harrisons reinvent and displace boundaries, emphasising ecosystems through mixed media charts, drawing, texts and maps, a story of practices and dialogues – "embedded in an act of healing"(Harrison and Harrison 1984, p.69). It is a work which involves 'moving into something different'(Certeau 2002, p.109). The *Lagoon Cycle*, a 360ft Mural completed between 1973-1985,

> unfolds as a discourse between two characters who discuss the ways in which the metaphors we live by affect what we do to each other and to the environment (Harrison and Harrison 1993, p.371).

Set in seven parts, each with its own discrete story all interlinked, the Harrisons *Lagoon Cycle* analyses a number of threatened estuarial lagoons which are a metaphor for culture and life itself, and 'mega-technology's' impact on environment. They search for new metaphors against modernity and its belief and blind faith in technological invention, where they dismantle modernity's visions of perfectibility (Hughes 2008, p.35). In the *Sixth Lagoon Cycle: On Metaphor and Discourse*, the characters discuss the entire Colorado river basin, observing aquatic systems. An extract from the dialogue,

> Pay attention to the state of belief
> Pay attention to the belief stated
> Pay attention to the flow of belief and the willing of desire
> Pay attention to the flow of belief and the enacting of desire
> Pay attention to the system upon which desire is enacted and the system that generates desire
> Attend to the discourse between belief systems and environmental systems.
> (Harrison and Harrison 1984, p.6)

In this dialogue the emphasis is process, of flows, cycles of production, of activities that construct, like that of the mapmaker, over the map itself. As De Certeau states,

> The Lagoon Cycle is at once the theatre for and the result of a series of acts... those elements call out to each other. Together they form a cycle. They intertwine (Certeau and Harrison 1985, p.18).

Thus, the Harrison's "have made a map on which to recount the project of 'making earth' (Certeau and Harrison 1985, p.18). It is a 'history book' of new systems and thinking, in which 'they effect movement in and of cartographic space. They cause "space itself to travel" (1985:18), in other words creating material that emphasises time, not just static spaces and product, but one that states a history. This example points towards radical mapping; as it is - a belief: 'what is the belief if not an opening up to another space, not yet visible, in the

visible space? The belief is the presumption that there is something else in what one sees - It is the hypothesis itself and the jurisdiction of metaphor' (1985:21).

2.1.B - Bodily Mapping

Figure 83: Alex Villar, Underground, photograph, Other Spaces series, 1997.

Maps are created and used - this operation, the way people use and create maps contains a transportation; how they are first drawn, and then practiced. There is potential for maps to address the difficulty of representing time. It is in a reactive shift against the apparent neutrality of map making that the late Dennis Cosgrove (See also DeLue and Elkins 2008, p.188) states, "all mapping involves a set of choices, omissions, uncertainties and intentions – authorship – at once critical to, yet obscured within, its final product, the map itself." (Cosgrove 1999, p.6). Presently there is a re-instigation of this authorship, in *Geography and Vision* he points out the historic,

> Mid-twentieth-century cartography experienced its own drive to confine mapping practice and the map itself within the narrow strictures of instrumental science. A subsequent reaction has stretched the definition of a map and the practices of mapping well beyond the conventional sense of a scaled representation of measurable geographical facts located in absolute... all sorts of purely mental and imaginative constructs are now treated as maps, while supposedly objective and scrupulously accurate scale renderings of real-world distributions are regarded as inescapably dyed with ideological, physiological and other subjective hues (Cosgrove 2012, p.2).

In essence the challenge to mappings' hegemony is the radical. The totalising visual simulacrum of prospective vision removes the essence of time that shows itself in the pedestrian speech acts, an alternative mapping practice which De Certeau identifies,

> The ordinary practioners of the city live 'down below', below the thresholds at which visibility begins. They walk – an elementary form of this experience of the city; they are walkers, wandersmanner, whose bodies follow the thicks and thins of an urban 'text' they write without being able to read it (Certeau 2002, p.93).

Whilst this opaque movement cannot be reduced to a graphic trail (Certeau 2002, p.99) as the Harrisons have shown it is possible to counteract this issue in the use of mixed media, this movement manipulates spatial organisations. Places' names are manipulated through stories and walkers' trajectories, giving new meaning to places, "articulating a second geography on top of the geography of the literal, forbidden or permitted meaning." (2002:104-105) De Certeau instigates mysticism on the terrain, a habitable city of stories and legends. The haunted place, the one loaded with story, provides a city that is 'mobile and metaphorical' (2002:110) and opens the city to legends, all of which provide a habitable city.

Figure 84: Team Traceur, Canary Wharf Training, 2009.

Freerunning & Parkour is the performance and extension of De Certeau's transversal power travel (like walking) is a substitute for the legends that used to open up space to something different (Edwardes and Generations 2009; Edwardes 2009; Foucan 2008). Parkour is the discipline of overcoming objects and moving through space in the most efficient route - a *Traceur*, analogous to drawing, tracing movement, a path, through architecture and subverting urban spaces. Parkour was developed by Raymond Belle, David Belle and Sébastien Foucan. Freerunning later developed as a variant to Parkour, involving more creativity in the movement, in which a greater variety of gymnastic and martial arts moves are conducted in the urban terrain. The digital world and network of Parkour has also changed the execution of moves and interpretations of spaces (Kidder 2012). These practices are similar to those of skateboarders and the terrain is generally appropriated, training the body to re-use space, a sociological practice. Ian Borden has written on

skateboarding and architecture and bases his analysis on the theories of Lefebvre (Borden 2001).

What does travel ultimately produce if it is not, by a sort of reversal, 'an exploration of the deserted places of my memory' (2002:106-107) – of the manipulations of spatial organisations, no matter how 'panoptic they may be' (2002:101), of a self-expression. What would De Certeau make of *Parkour*? An efficient *Traceur* of direct movement across space, as an evolution of De Certeau's idea of the *Walker*?

Freerunning & Parkour could be seen as a spatial practice of directness, leaving nothing but *Traces* – a ghostly line describing boundaries on top of the permitted and defined boundary of the structures themselves. If we are to search for tactics of the everyday, of re-appropriation in light of increasing networked strategies of 'dominant powers', then Freerunning, of which the philosophy is to overcome the obstacle in a creative way, or Parkour as the direct route across, evidences a re-scaling of architectural production.

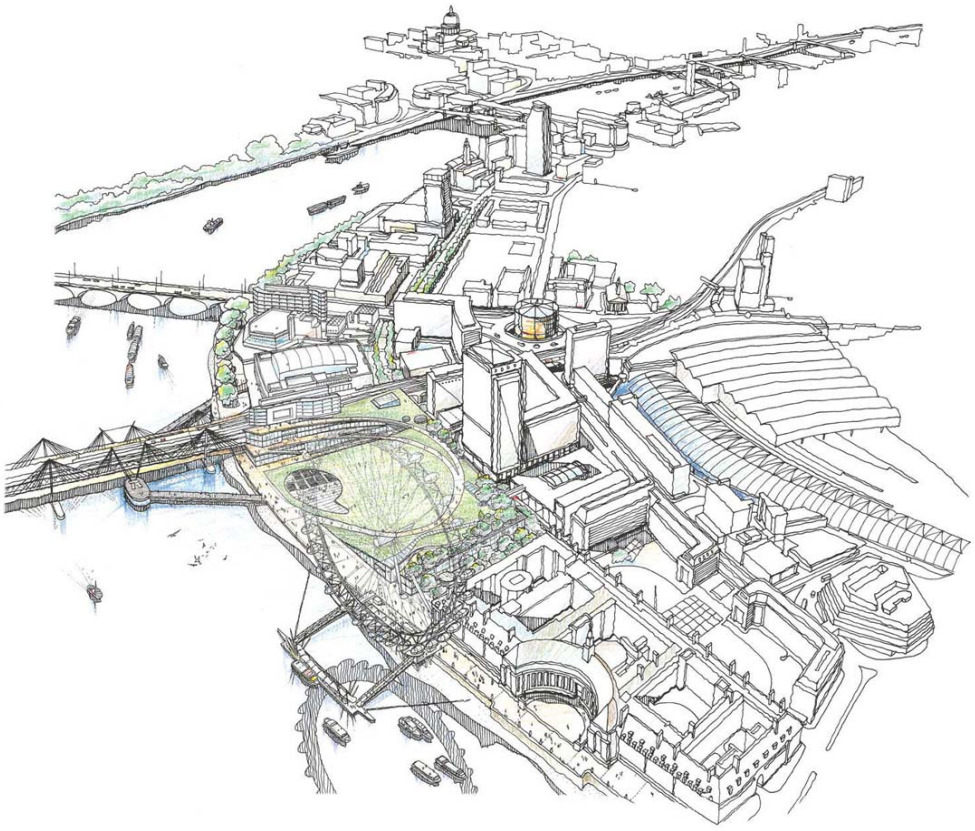


Figure 85: Rick Mather Architects, *Southbank Masterplan*, 1999-2010.

As Tim Ingold states there are some forms of lines that 'have a real phenomenal presence in the environment, or in the bodies of those organisms that inhabit it' (Ingold 2007, p.47). By

extension, within the expanded field of *lines,* is not free running a practice of drawing, of a trace? Of a vocabulary of bodily mapping in a scale of our own reality, re-telling and writing new histories into place – a sense maker? Though how would you record such movement as found in Parkour and Freerunning? How could this enrich design decisions of pathways? **Figure 84** contains two types of cartography-one of practice and inscribing lines in space and the other of record (photographic), the record becoming the relic: "It is thus a mark in place of acts, a relic in place of performances: it is only their remainder, the sign of their erasure."(Certeau 2002, p.35). The Southbank transformation **Figure 85**, master planned by Richard Mather Architects, is an excellent place for such discussions, as it is frequented by many skateboarders and freerunners see **Chapter 2.2**. For in the architectural transformation and development, what is lost and what new possibilities are available in this community's re-appropriation, a delinquent story, the memories or stories that at once formed the space, a space which is now transformed, and awaits new stories and legends? These ideas are further developed and applied in a case study **Chapter 2.2.**

Figure 86: Simon Elvins, *Silent London*, 2005, Blind-embossed etching on paper, 29*19.5in.

Another mapping practice, which shows us a representational form to develop our cartography is reminiscent of Jean-Francois Augoyard (Augoyard and Torgue 2005) in the capturing of the everyday sonic is Simon Elvins – *London Soundscape,* **Figure 86**,

> To adhere to European Union environmental noise regulations, British government maps noise levels throughout urban and industrial areas in England and studies their effect on the public (Harmon 2010, p.156).

Utilising this data set, Elvin's map created on embossed paper gives a braille surface, the rendering paradoxically visible, is a map understood primarily through touch, a touch to understand a recounting of the liveable aural everyday of the city and the points in which sound intensities and mixes are located. The representation of sound diversifies our ideas of cartography. This diversification would enhance landscape architectural mapping. For James Corner "mapping is key here for it entails processes of gathering, working, reworking, assembling, relating, revealing, sifting, and speculating" (Corner in Cosgrove 1999, p.233).

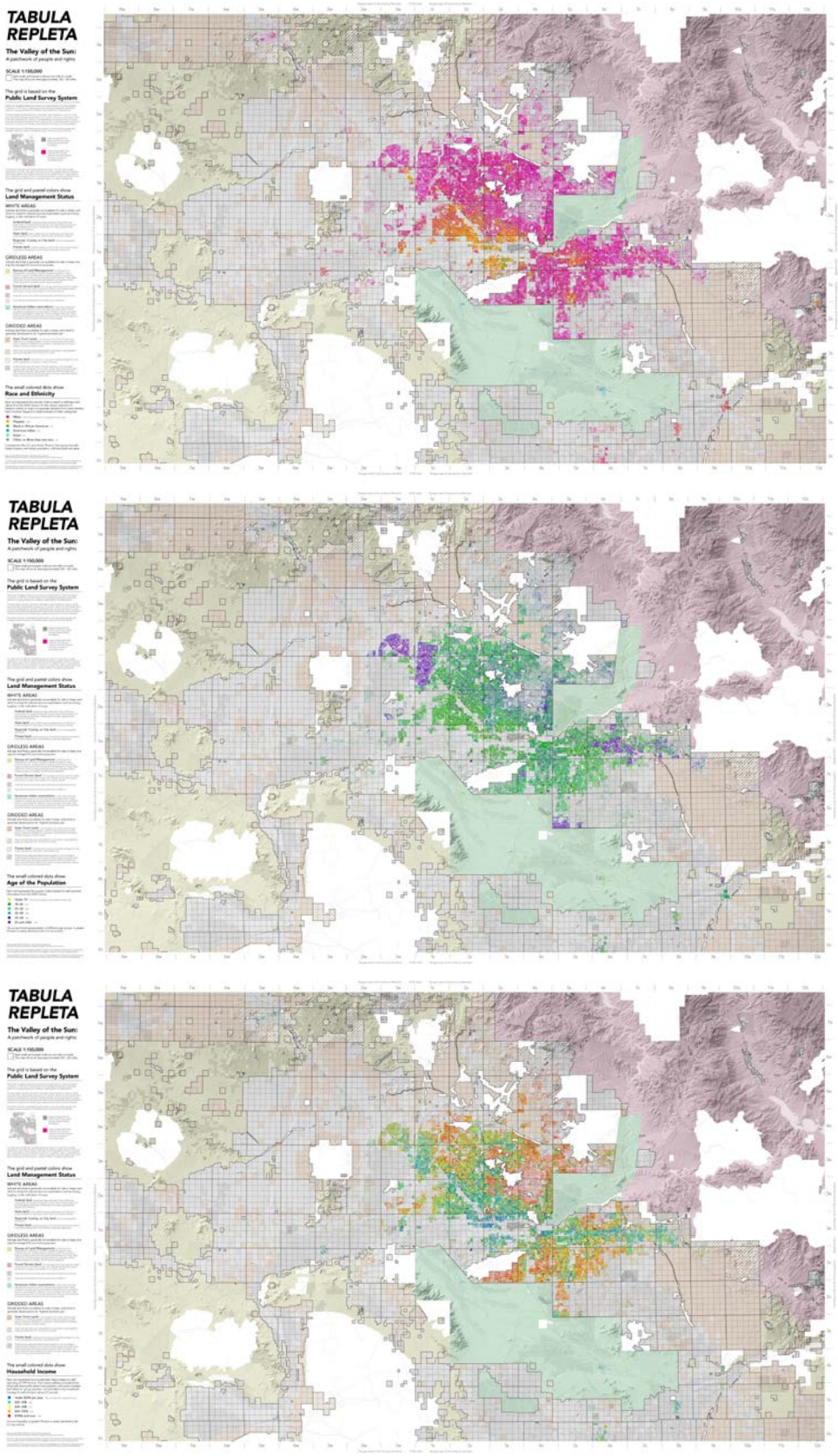


Figure 87: Bill Rankin, Tabula Repleta, Phoenix: *Race, Income, Age*, 2009.

Bill Rankin's work **Figure 87,** looks at segregation in American cities and this representation demonstrates infographic possibilities in more humanistic description and practices of mapping - mostly concerning race, but also income and age as well. His overarching aim has been to

> work against the idea of easily bounded, homogeneous neighbourhoods and to find strategies for showing transitions, overlaps, and interactions between human and non-human geographies. Or more pointedly, to highlight that the way statistics and neighbourhood maps are usually drawn, carries a lot of baggage -- about identity, urban space, and diversity (Rankin 2010).

Rankin asks and proposes a change in the creation of maps by suggesting a hybrid agency between representation on the side of the 'imaginary and the real' (Rankin in Roman and Schori 2010, p.42).

In *Phoenix* **Figure 87** Rankin uses graphic map conventions which allow other possibilities to appear in visualising the internal boundaries of the city showing race & age and another showing income and the boundaries towards the desert. These zoned maps have traditionally been displayed as static in the past. However, his work is constructed using more field data and is more challenging to previous graphic presentations questioning the notion of the boundary and provoke "slippages, overlaps, and multiple kinds of diversity" (Rankin in Roman and Schori 2010, p.44). Rankin's maps undercut the statistical objectivity and highlight the suspect data, as the map itself, to recount De Certeau, must deny the practice that created it, in order to retain the power to influence as authoritative document. In essence Rankin's radical cartography is a move of a Tufte'esque philosophy of graphical integrity (Tufte 1997); Recording the **"**movements making use of the elements of the terrain" (Certeau and Harrison 1985, p.34) countering as Rankin states "singular, reductivist interpretations [...] and give complex systems their due" (Rankin in Roman and Schori 2010, p.44). The representation of complexity and competing human practices can be represented in map form, we must take heed of such work in the design of landscape architecture maps.

2.1.C - Radical Cartography for Landscape Architecture

Figure 88: Team Traceur, Lisses, France, 2010 & TR & BR: Team Traceur, Tunis, Tunisia, 2010.

To summarise, the discussion contains a number of nodes that juxtapose De Certeau's texts and advancements in map representations and their contributions towards new scaling & re-scaling informatics – and a way of being in space. The Harrions, Freerunners, Elvins & Rankin, highlight map making practices in a different vein. Could the re-instigation of the implicit assumptions of map making practice reposition and instigate a social element for landscape architecture? – "The stories that predicted the creation of the map, then also gave some indication of what could be done in or with the places being mapped" (Reynolds and Fitzpatrick 1999, p.69). What is needed are a number of mapping methods that see metaphorically, "To see things in that way, in the movement that opens up another space for them, is to see metaphorically" (Certeau and Harrison 1985, p.18) this provoking possibility is all the more important for Cosgrove states,

> the map may be the only medium through which contemporary urbanism can achieve any sort of visual coherence [...] the opportunity for creativity in shaping and recording urban experience is greater than ever, as too is the need for critical attention to the making and meaning of both public and private urban spaces (Cosgrove 2012, p.182).

To De Certeau there are ghosts of histories and memories in the architecture and landscape of Paris (Certeau et al. 1998, p.133) (1984:91), wild resistive objects constituting 'spirits of

place' that maintain the multiplicity of it **Figure 88**. This multiplicity falls under threat in processes of renovation and urban planning, a technocratic 'hospital system' (1998:139) of curing buildings like bodily organs, in which certain maps provide the theatre for this operation. De Certeau argues this (Parisian - but similar to other cities) planning system needs to be democratised to speak and turn "the city into an immense memory where many poetics proliferate" (1984:141). Renovation can thus sometimes take the 'life' away, deserts of narratives of living, e.g. small narratives or 'local authorities' and memories of visits to the café or bakery. SITE architectural practice counters this in its 'narrative buildings' injecting the mythological, cultural, political possibilities (Wines 1988, p.152) **Figure 89** – "imagining the city, dreaming it, and thus living it" (De Certeau 1998:134).

Figure 89: James Wines & SITE Architects, Ghost Parking Lot, Hamden, CT, 1978.

Perhaps it is through the re-appropriation of maps that a neo-humanism can be located – of mapping histories of practices, what we could call; 'living is narratising' (De Certeau 1998:142). The emphasis of the practice of mapping would be resistive of the dangers of cartography found in Jorge Luis Borge's fable, a map so real as to be the same scale as the world (Baudrillard 1994). This requires an emphasis on the creation of maps of stories, like Italo Calvino's *Invisible Cities* (Calvino 1997) in which the city form is a *Poetic* dialogue. This treatment of maps and recognition of the human element of creation and practice from maps in landscape design would actively transform place – 'they render the city 'believable', affect

it with unknown depth to be inventoried, and open it up to journeys. These radical maps are the keys to the city to show all its facets, networks and complexity; “they give access to what it is: mythical” (De Certeau 1998:142). All in all the debasement of the objectivity of mapmaking challenges and provides possibilities for a radical cartography to be liveable and familiar. These are new challenges for urban design processes in the study of the tactics or stories of users and their particular drawings and mappings, lines and crossing of stories, re-appropriations, narratives, movements, metaphors and second geographies for the city and for the urban designer themselves – “what the map cuts up, the story cuts across” (1984:129).

With a repositioning and re-orientating of our understanding of map making as a process of poetics and narrative, then by implication when producing and drawing maps there is a time to represent. The representation of time has proved immensely challenging in landscape architecture, work by Nigel Thrift et al in *Time Geography* (May and Thrift 2001; Amin and Thrift 2002; Amin 2012) can help address this challenge, as Thrift asserts,

> The physical environment we inhabit does not only consist of the readily observable spatial backcloth. Associated with it, indeed inseparable from it, is a temporal component which is just as important. It may not display itself in the same graphic manner but it is an essential ingredient of life (Thrift 1977, p.4).

Further work discussing the London Southbank site will extend the theories of radical mapping practices in the next **Chapter 2.2**. The site has been chosen as it continues to be a contested space, and has undergone transformation at key periods in British architectural design and continues to provoke controversy in further developments. Discussion of the map and London Southbank further develops our understanding of the *Blood, Trade*, *Authority and Agency* of drawing in landscape architecture. The proceeding chapter brings to light the process and operation of drawing. The Southbank site allows an analysis of the relationship between representation and production. In that relationship we can identify the spatial impact of representation, based on theories of Lefebvre and De Certeau. The site also has been home to alternative sports and is in stark contrast to the gentrifying development taking place. Southbank is an excellent case in which to further develop De Certeau’s theorisations of uses of space, appropriation, tactics and strategies and analyse what is liveable and familiar, and to evaluate drawing within such a context. This work will develop the idea of ‘the everyday’ as a research area, and discuss the use of drawing as a fieldwork tool.

Chapter 2.2 - After Gordon Cullen – Visual Vocabularies for Urban Design – Navigation & Incarceration

Introduction

The previous chapter has explored mapping practices and some of the cultural layers which they embody have been unpacked. Looking at the operative actions of walkers and looking at De Certeau's ideas of urban tactics and strategies as well as the wider idea of the everyday can be further explored as research and as a method for landscape architecture. Further to this, the author develops his own embodied drawing; can the 'everyday' become a suitable fieldwork method and positive valence? Can the everyday be explored as a subject through drawing and thus create more community-based spaces?

This chapter develops a site analysis of Southbank (**Figure 90**) and Jubilee Gardens, Southwark, London, testing radical mapping methods, what was termed De Certeau's 'second geographies' and Lefebvre's 'everyday', developing appropriate drawing methods from **Chapter 2.1**. The site has undergone major development since 1951 and has recently been subject to a ten year urban design strategy for Southwark, and a ten year Master Plan by Rick Mather associates with landscape design by West 8 and Gross Max. The perceived notoriety of the area according to Niall Neeson dissuaded tourists and cultural visitors to the arts venues until CCTV introduction and 1990s improvements (Neeson 2013). The site is marked as a congregation point for alternative urban sports such as Skateboarding, Bmx, and Parkour and has been the case since the 1970s. Skateboarding history and Southbank has been extensively researched in the film by director Winstan Whitter, *Rollin through the Decades* (2005). Essentially, the space functioned and appealed to skaters as it marked a congregation point with major skating features, 'deep dishes', 'concrete sculptures' that were permanently sheltered from the rain. Skateboarding to the architectural historian Iain Borden helps analyse architecture's manifold possibilities, and as a marginalised practice, critiques architecture. Skateboarding to Borden is legislated against, subject to many orders and controls, but counters this legislation through creativity and social being (Borden 2001, pp.1–4). By extension, Parkour and free running offer similar possibilities for research. Iain Borden's work is of particular note in his use of Henri Lefebvre's *The Production of Space* (1992) in that architecture is so closely related to the urban revolution[1] that Lefebvre charts, and to everyday life in which participants (in this case skateboarders) can actively absorb

[1] See Urban Revolution (Lefebvre et al. 2003).

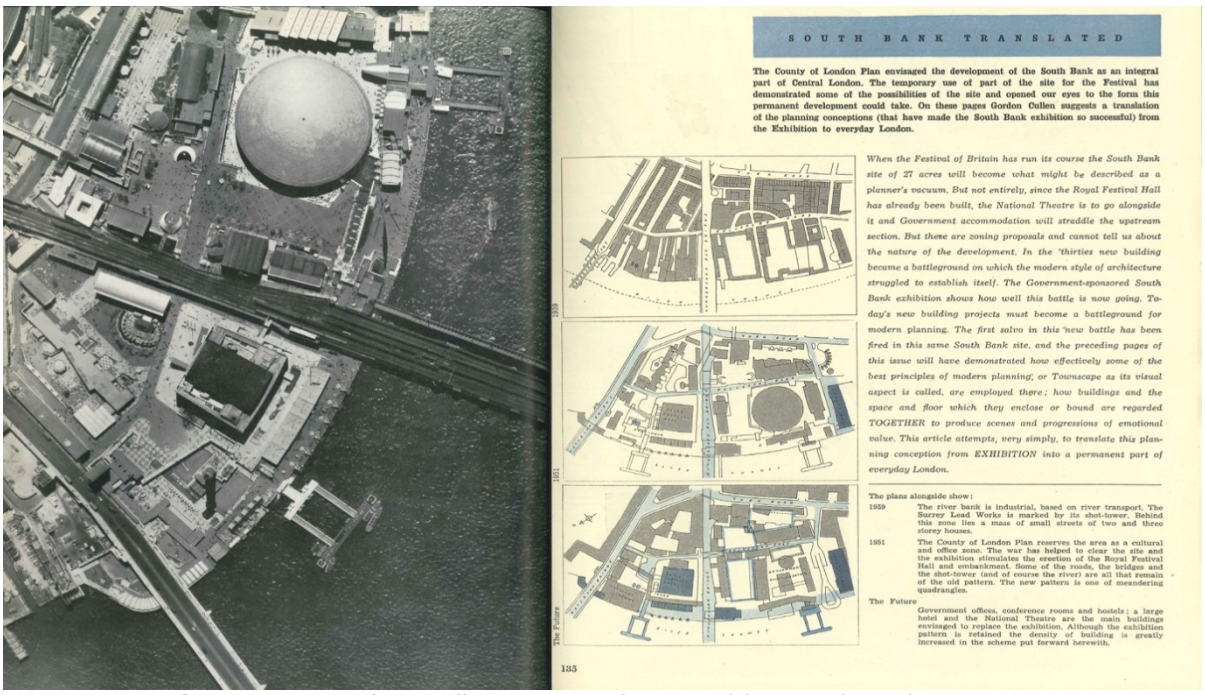
and create their own textures in the city - contradictions, patterns and relations, over a purely logical and legible urbanist discourse.

Basing the site analysis on De Certeau's theories of the everyday which was developed from Lefebvre of 'second geographies on top of another', and the 'appropriation of space', the author employs 'radical' mapping practices recording movements of alternative sports in the area pre- and post-completion of Jubilee Gardens at Southbank by the urban design practice West 8. This chapter develops field work, "field suggests more fluid qualities, and unfixed conditions suggestive of contemporary networked relationships. In current parlance, as well as delimiting a disciplinary or subject area, 'field' describes a place to learn from, to research, to draw from" (Ewing et al. 2010, p.4). Cultural anthropological approaches to fieldwork have proved successful in broadening spatial understanding; work is undertaken in this vein, which develops objectivities of an outsider with subjectivities of an insider, a participant-observation method of the study of people in their culture and habitat. Learning is derived from the appropriation of cultural activities. Cultural anthropology, and methods for fieldwork is a wide scope of enquiry outside the range of the thesis (Robben and Sluka 2012). But as such, the work conducted involved the recording understanding and movements of freerunners and Parkour[2] using a defined notational system which was part of the observation system[3]. Participation involved discussion of the moves executed, discussion of photographic and video material produced by the Parkour/freerunners and involvement of the physical and digital understanding of the rationale behind the activity to save the Undercroft from Southbank development.

[2] Parkour is the discipline of overcoming objects and moving through space in the most efficient route a 'traceur', analogous to drawing, tracing movement, a path, through architecture and subverting urban spaces. Freerunning later developed as a variant to Parkour, involving more creativity in the movement, in which a greater variety of gymnastic and martial arts moves are conducted in the urban terrain. Tricking is the practice of Parkour and freerunning moves. Rather than directional, the focus is upon the execution of the gymnastic move, for example the practice of a somersault

[3] Such a method can be subject to critique, in that those being observed may alter their activity. Such observation is not indicative of cultural patterns over time.

2.2.A - South Bank Centre Site Description & Gordon Cullen



SOUTH BANK TRANSLATED

The County of London Plan envisaged the development of the South Bank as an integral part of Central London. The temporary use of part of the site for the Festival has demonstrated some of the possibilities of the site and opened our eyes to the form this permanent development could take. On these pages Gordon Cullen suggests a translation of the planning conceptions (that have made the South Bank exhibition so successful) from the Exhibition to everyday London.

When the Festival of Britain has run its course the South Bank site of 27 acres will become what might be described as a planner's vacuum. But not entirely, since the Royal Festival Hall has already been built, the National Theatre is to go alongside it and Government accommodation will straddle the upstream section. But these are zoning proposals and cannot tell us about the nature of the development. In the 'thirties new building became a battleground on which the modern style of architecture struggled to establish itself. The Government-sponsored South Bank exhibition shows how well this battle is now going. To-day's new building projects must become a battleground for modern planning. The first salvo in this 'new battle has been fired in this same South Bank site, and the preceding pages of this issue will have demonstrated how effectively some of the best principles of modern planning, or Townscape as its visual aspect is called, are employed there; how buildings and the space and floor which they enclose or bound are regarded TOGETHER to produce scenes and progressions of emotional value. This article attempts, very simply, to translate this planning conception from EXHIBITION into a permanent part of everyday London.

The plans alongside show:

1939 The river bank is industrial, based on river transport. The Surrey Lead Works is marked by its shot-tower. Behind this zone lies a mass of small streets of two and three storey houses.

1951 The County of London Plan reserves the area as a cultural and office zone. The war has helped to clear the site and the exhibition stimulates the erection of the Royal Festival Hall and embankment. Some of the roads, the bridges and the shot-tower (and of course the river) are all that remain of the old pattern. The new pattern is one of meandering quadrangles.

The Future

Government offices, conference rooms and hostels; a large hotel and the National Theatre are the main buildings envisaged to replace the exhibition. Although the exhibition pattern is retained the density of building is greatly increased in the scheme put forward herewith.

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Figure 90: Gordon Cullen, Extract from Architectural Review, 1951.

Figure 91: Jane Brown, The South Bank during the Festival of Britain 1951.

The site marks a particular interest for the thesis in the exploration of representations, originally designed in 1951 for the Festival of Britain, which was subject to visual analysis by urban designer Gordon Cullen **Figure 90**, whose writings, feature in many UK landscape architecture curricula today[4]. The Festival's purpose was to celebrate technology and the arts as part of WW2 recovery, the festival was dismantled the following year, with the

[4] At the time of writing, 'The Concise Townscape' featured in The University of Sheffield, Manchester Metropolitan University, University of Gloucestershire and Leeds Metropolitan University, Postgraduate and Undergraduate Landscape Architecture Reading lists.

exception of the Royal Festival Hall. The park was constructed in 1951 when it was the location of the Festival of Britain's prime building, the *Dome of Discovery*, as well as the temporary landmark, the *Skylon* (removed by Churchill because of socialist connotations with Atlee's government) **Figure 91**. When these temporary buildings were dismantled the site became a car park. It remained so until 1977 when a park was laid out for the Queen's Silver Jubilee (See **Figure 92**).

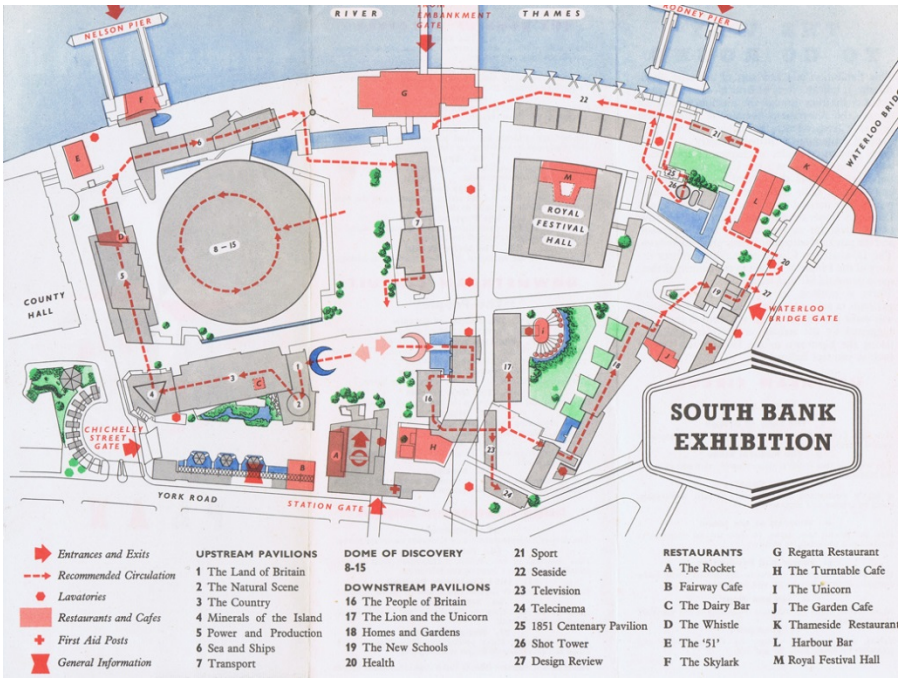
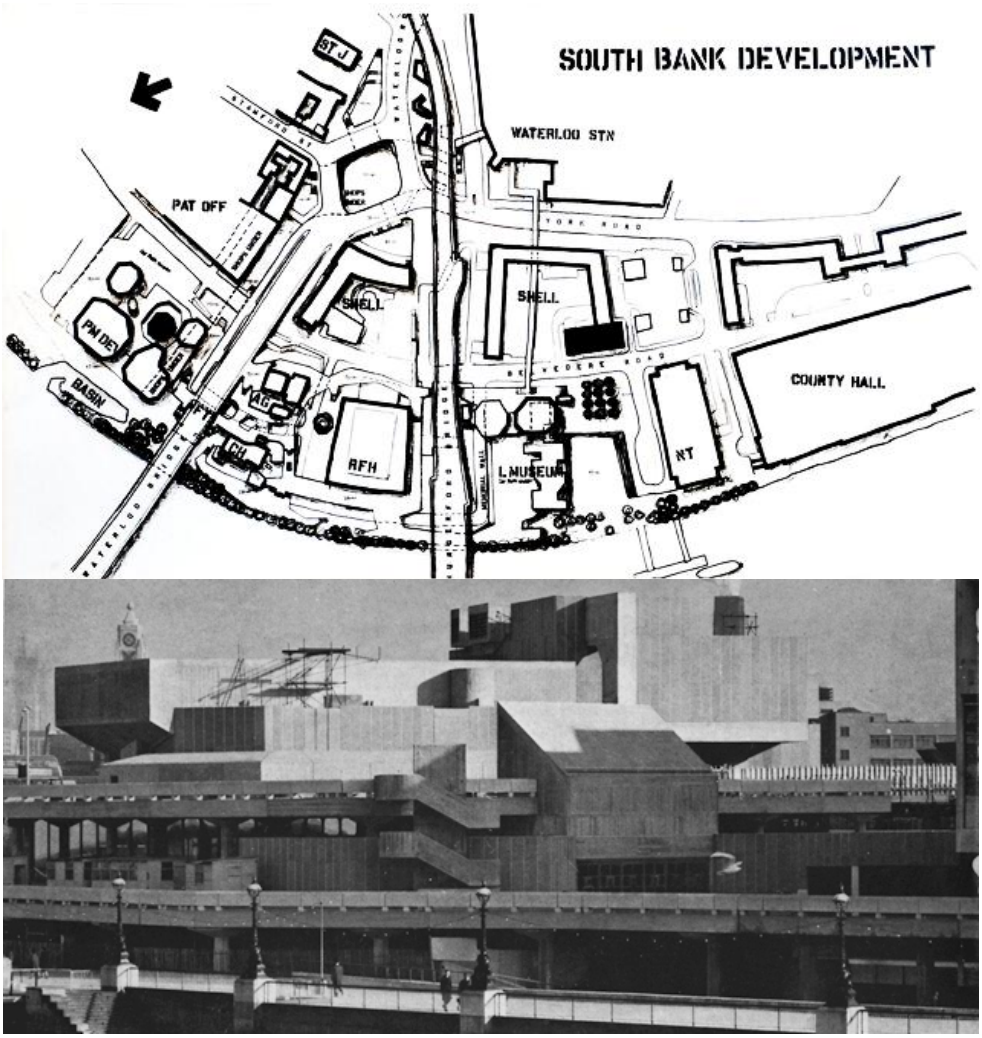


Figure 92: Festival of Britain, Extract from Visitor Pamphlet, 1951.



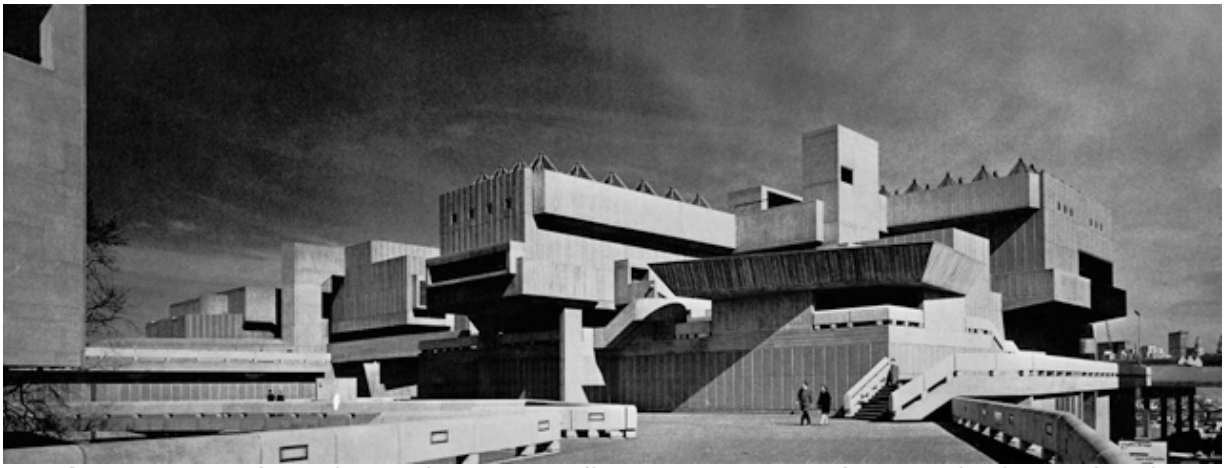


Figure 93: South Bank Development, Collage Ron Herron, Photograph of Completed Building & Queen Elizabeth Hall, LCC Photographic Unit, 1960-1962.

The Royal Festival Hall (RFH) was linked to a new structure, the Shell Centre with elevated walkways separating pedestrians and traffic[5]. The Hayward Gallery was constructed in 1968, again terraces and walkways feature to allow the public to full access. Development in the 1990s removed the walkway to the east of RFH to the Shell centre.

Localised groupings, cantilevered and small overhangs punctuate the site, and civic space is marked out with open vistas, tree lines, leading to access points to the National Theatre, Hayward Gallery, and RFH. In situ concrete and precast panels in many shades of grey adorn the structures, what Concrete Quartley called “a dignity about [the Hayward] which would have been destroyed by the superficial application of finishes” (Perkin 1968, p.5). Pedestrian levels, terraces and balconies are structured on the site, with up to three level points to walkways and lower level retail. The site has fast paced avenues, punctuated by café and nodal points of leisure. In recent development by Rick Mather Architects, Gross Max completed the site defined by the Royal Festival Hall (RFH), the Hayward Gallery, the Queen Elizabeth Hall and the Purcell Room, creating - 'Southbank Centre Square' to the Belvedere Road side of the RFH, 'Festival Riverside' to the Thames side of the RFH and 'River Link Square' that connects the two.

Contemporary urban design strategies recognised the difficulty of these walkways and ‘under used’ high level routes, and dead under-space which was believed to isolate the cultural institutes. The centre attracted the homeless searching for shelter and the walkways rather than enablers of movement were seen by some critics of the London County Council to impede and dissuade visitors. Thus, the strategy sought to reduce the access levels and brought the majority to ground level. This created building frontage populated with cafes and foyers and generally connecting transport and highway and remove the less programmed areas. The rationale was to bring a greater mix of people to the area and over longer periods of the day. The area has become a contested space for various architectural ideologies, subject to many architectural proposals, Ron Herron proposed to turf the structure entirely (Sadler 2005, p.32).

[5] Between 1958 and 1962, Warren Chalk and Ron Herron, later joined by Dennis Crompton, were responsible as Job Architects for a series of schemes investigating the development of the whole of the South Bank area of the River Thames, between Westminster and Blackfriars Bridges for the London County Council. These schemes included the National Theatre, a new Opera House, the National Film Theatre, Childrens’ Theatre, Hotel and Conference Centre. This was completed by the Group’s successors in 1967/8, at the Greater London Council, who executed the design as detailed and specified by the original Group (LCC 1989.).

Figure 94: Diana Jowsey, Ron Herron, Tuning London, Archigram 8, Archigram Archives, Ink & Collage, 1972.

In *Tuning London* **Figure 94,** Ron Herron continued a Cullen like representation by collaging changes to a north to south section of London, for the Hayward Gallery he proposed to create spaces for events and gatherings,

> We present such a view by way of a single cartoon. Geographically it represents a cut through London from north to south. Evocatively it represents a progress from the established suburbs into the old, but still vital centre and out again. It is a sequence of scenarios. They each have their origin in different moments of history but they are alive now (Cook 1999; Crompton 2012, p.368).

Another proposal based on sequential movement came from Richard Rodgers, to design a glass roof covering three structures. For Rodgers this correction was important as to him, as he believes that "the Modern Movement can be held principally responsible for the despoliation of our cities" (Rodgers 1991, p.18). Rodgers was interested in this site even before the glass roof cover proposal **Figure 6**. In a Royal Academy exhibition Rodgers developed sketches and models for a proposal for a linear park connecting pocket green spaces from Westminster along the embankment to Blackfriars **Figure 7**. Part of this proposal included a pedestrian bridge and monorail underside and a number of floating islands from Trafalgar square to Waterloo Station extending this park idea.

Rodgers presented a different ideology to Cullen as we shall further discuss, for Rodgers the effort of architecture should be directed towards responsive building[6], revealed in his concluding notes of a *Modern View of Architecture*,

> Buildings, the city and its citizens will be one inseparable organism sheltered by a perfectly fitting, ever changing framework. Posts, beams, panels and other structural elements will be replaced by a seamless continuity. These mobile, changing robots will posses many of the characteristics of living systems, interacting and self-regulating, constantly adjusting through electronic and bio-technological self-programming. Man's shelter, food, work and leisure will be connected and mutually dependent so that an ecological symbiosis will be achieved (Rodgers 1991, p.60).

This vision is indicative to the various architectural ideologies which have been projected or constructed on the site since the nineteen fifties which have concentrated on the fundamental relationship between public and private space and the use and function of the area. For Rodgers the development with 'Responsive design' (Hawkes et al. 2001; Lucy 2006; McGlynn et al. 1985) is interesting, and at first glance different to the views of Gordon Cullen, (Responsive design is explored further in **Chapter 4.1**). However, the development of Gordon Cullen's urban design method titled '*serial vision'* has proven influential in the design of areas which provide 'emotional impact'. This impact is created by designing transitory routes which provide existing and emerging views (**Figure 95**). For Rodgers, in 'London as it could be' the concept for him is that that cities are for the meeting of friends and strangers in civilised public spaces surrounded by beautiful buildings. The aesthetic may be at odds with Cullen, but the motivation of architecture of Cullen and Rodgers is similar in a humanistic connection, though Cullen is more independent and individualised and is worth further elaboration.

[6] Architecture or design which responds in line with changing conditions of environment, originally conceived by Nicholas Negroponte in developing connections between cybernetics and architecture (Beesley et al. 2006).

Figure 6: Richard Rodgers Partnership, South Bank Arts Centre, 1994.

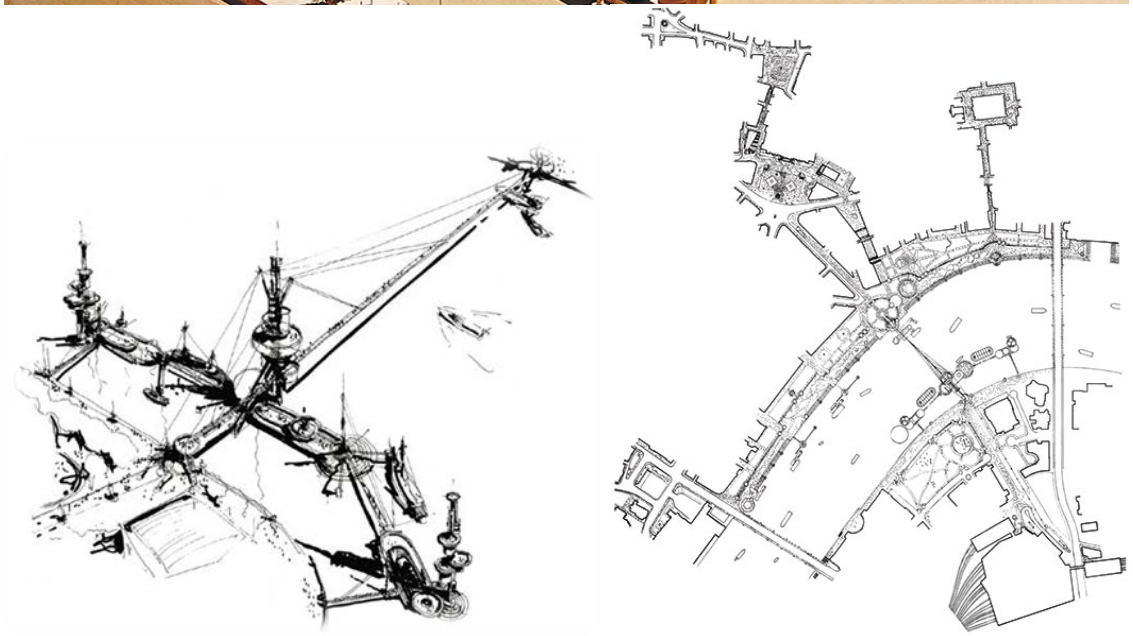


Figure 95: Richard Rodgers Partnership, 'London as it could be', Model, Sketch of proposed Bridge and Plan, Royal Academy exhibition, 1986.

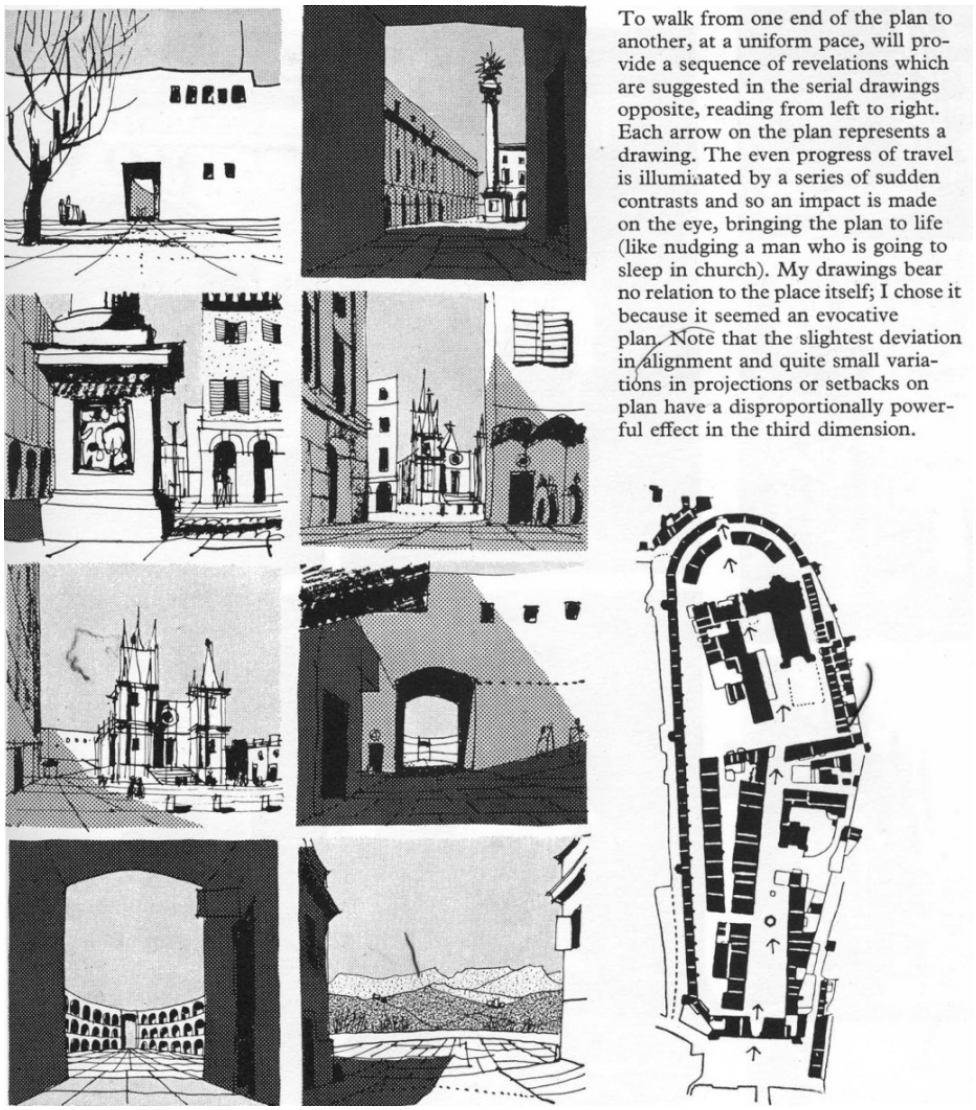


Figure 96: Gordon Cullen, *The Concise Townscape*, Extract, p.19, 1961.

The Concise Townscape contains many static images in the text and mixes studied perspectives relating to a plan (Cullen 1961). The text has picturesque tendencies for urban planning as Colin Rowe argues,

> In other words, townscape could readily be interpreted as a derivative of the late eighteenth century Pictureseque. And, as it is implicated all that love of disorder , cultivation of the individual, distaste for the rational, passion for the various, pleasure in the idiosyncratic and suspicion of the generalized which may, sometimes be supposed to distinguish the architectural tradition of the United kingdom (Rowe and Koetter 1978, p.34).

Such a picturesque label stems from the idea that the design of spaces should, as a result of the serial reading of its form, be framed by experiential visual tendencies to objectively survey, focus and spectate panorama as well as the framing of vista; a framing as a picture. The eye as a dominative force thus creates an urban ensemble of things which improves the

quality of the space. The issue with visual preference can be related to Lefebvre's readings in **Chapter 1.3**. Moreover here the idea of a visual ensemble has implications with eighteenth century aesthetics of improvement and cultivation. By extension Townscape theory was a conservatism of preservation which Colin Rowe eludes too in his critique. Essentially Cullen's method is an intuitive experience led activity of a designer with a visually reductive output. Such work is important for the development of visual site analysis and the understanding of many complex forms. Perspective drawings run alongside a map primer of each area giving immersion in the plan drawing, which bring to life travel and urban contrast (Cullen 1961, p.17). Post-Pevsner (Pevsner 2010), Cullen's analysis of the Southbank site develops planning principles meant for a wider London. As Cullen states in his article on Southbank,

> the preceding pages of this issue will have demonstrated how effectively some of the best principles of modern planning, or Townscape as its visual aspect is called, are employed there; how buildings and the space and floor which they enclose or bound are regarded together to produce scenes and progressions of emotional value (Cullen 1951 p.1).

Townscape principles were attacked by Brutalists and many others, however, whilst the system and preference of the visual seems naïve, its success lies in its ability of enabling and communicating designers responses to areas and to be descriptive of site, and more importantly retain a humanistic aspect. Form in this case is separated from content, but Cullen's approach to solve more holistic urban issues is to be commended though the fundamental approach fails to deal with issues discussed here, in the re-orientation of representational practices for landscape architecture inclusive of social relations.

This serial narration of space is akin to the landscape *Prospect / Refuge* theories of Jay Appleton (Appleton 1975). Appleton postulates that within a landscape there are preferred locations that are prospect dominant or areas which are refuge dominant. Thus, a visual prospect of a wooded landscape is more 'attractive' as it provides areas of 'escape' and 'protection'; the visual therefore provides various psychological states; prospect allows the viewing of prey, hiding is the refuge, essentially a human biological theory; the visual thus becomes a psychological driver for feelings of safety.

Appleton's suggestion is in line with Kantian readings of disinterested viewing (Kant 2008); removed from the experience, viewing magnificence through a safe lens. In *The Experience of Landscape,* the Kaplan's suggest there are modern environmental preferences based on a similar view of biological preference found in Appleton, that environments are preferred containing complexity, mystery, coherence, texture, identity, ability, and spaciousness

(Kaplan and Kaplan 1989). In Appleton, Kaplan and Cullen, a correlate is found in the preference of certain environmental experiences and designs. Further work on experiential landscape appears in the work of Kevin Thwaites, Ian Simkins and Ombretta Romice (Thwaites 2007; Thwaites and Simkins 2007; Thwaites et al. 2013) landscape thus becomes a product of mind and eludes to certain preferences, certain urban features come to *mean*.

Similarity to Appleton, it is interesting when Cullen describes Southbank transition which "preserves the feeling of enclosure and at the same time emphasizes the point of exit." Much has been written on Townscape, however the source of 'emotional response' is in urban design is interesting, **Figure 97**.

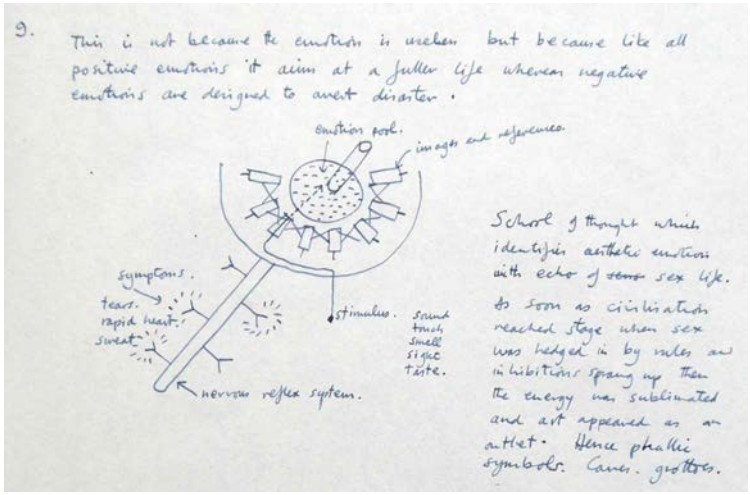


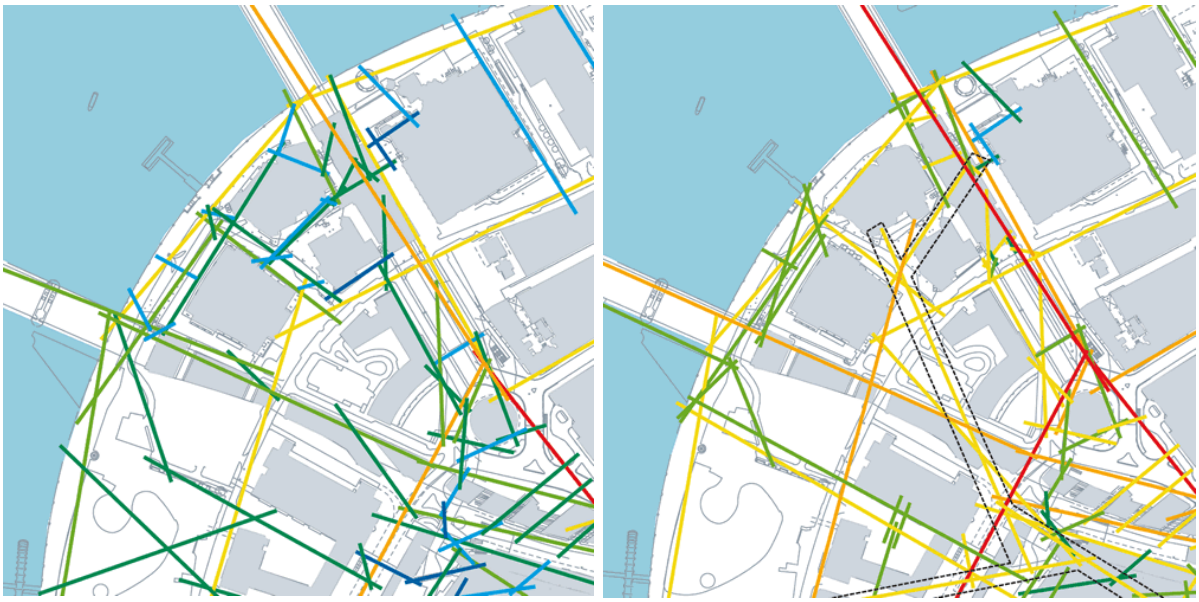
Figure 97: Manuscript of 'History of British Architecture' (1946): the stimulus and the activation of the 'emotion pool' through images and references

As Clement Orillard has written, Cullen based his emotional response on a Freudian understanding. In the sketch by Cullen,

> It shows how a stimulus is activated through images and references, the 'emotion pool', which then activates emotional symptoms ('tears', 'rapid heart' [beat], 'sweat') through the nervous system. This drawing is associated with a text in which he wrote about the 'school of thought which identifies aesthetic emotion with [an] echo of sex life', about 'inhibitions' and about 'the energy [that] was sublimated'
> (Orillard 2012, p.722)

The critique of Townscape theory that it is rested on emerging environmental psychology, rather than pure visual reductions is worth further exploration though is outside the scope of this thesis. Cullen like Appleton and the Kaplans utilised psychology to justify personal subjectivities through drawing, (diagramming in Appleton's case) presenting and reforming these subjectivities into visual objectivity.

2.2.B - Contemporary Southbank Urban Design



Space Syntax, *Spatial accessibility pattern, Before & After*, 2000.

Colours are used here to represent numerical values of pedestrian movement. Lighter warmer colours represent greater spatial accessibility, colder infrequent. By improving pedestrian access to the bridges, a concentration on the planning of horizontal surfaces, Space Syntax recommended increased pedestrian access. In the pedestrian study to the left, again fields of activity are recorded. Poorly used areas are in Blue, new routes in Orange and High levels of Surveillance in Yellow.

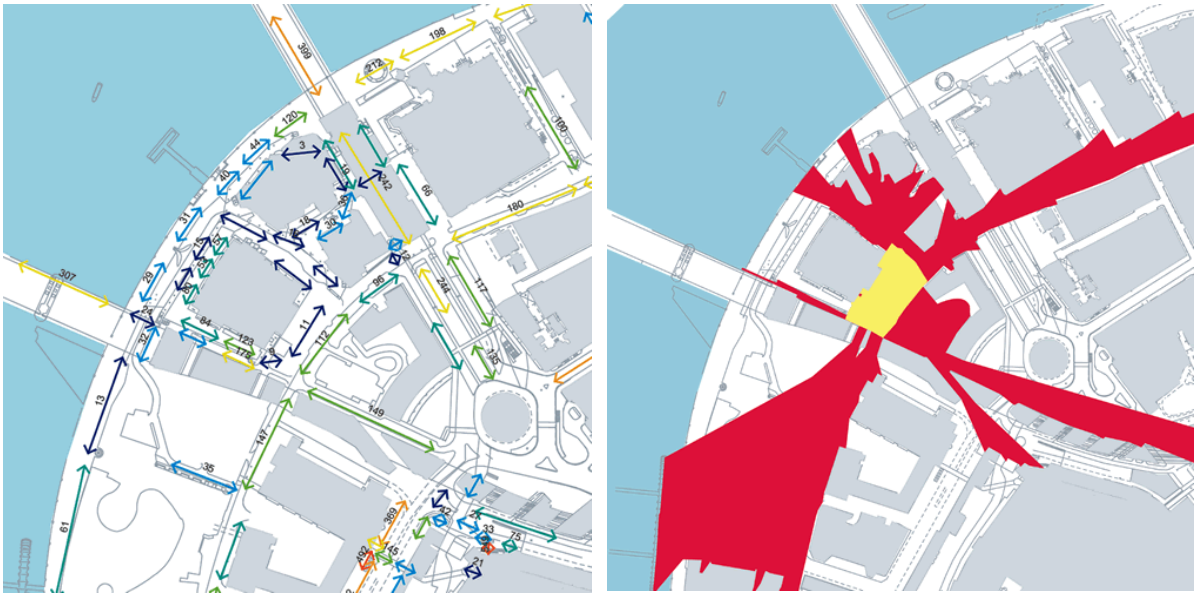


Figure 98: Space Syntax, *Pedestrian Access, and Visual Field Analysis*, 2000.

The study bottom left looks at the visual panorama that a visitor has from the rear of the Royal Festival Hall in yellow. These studies were conducted at London Southbank and the sites multiple access levels. The movement data recorded adults' movements per hour. See Alan Penn for detailed modelling description (Penn 2003).

The urban research consultancy Space Syntax conducted visibility and pedestrian use studies of the Southbank site creating before and after studies using coloured simple straight lines. These studies in 1999, contributed to the master plan developed by Rick Mather Architects[7]. The company is directed by the originator of 'Space Syntax' Ben Hillier and Julienne Hanson, *The Social Logic of Space* (1984), *Space is the Machine: A Configurational Theory of Architecture* (1996) aimed for the goal of establishing neutral analysis of discursive space for architects. This neutral analysis utilised quantifiable statistics and these were computer modelled and geographical located in a digital map. For example, modelling pedestrian movements in order to analyse the accessibility of the paths and structures in which movement takes place. That is to say that spatial movement does not predict choices; but human choices are 'predictable'. Such accessibility in the theory, argues that navigation ability affects social and economic factors in such a space.

A movement database was established. Pedestrian studies were taken using simple counting techniques developing a coloured arrow typology of use. A visual Field analysis also demonstrated potential of creating a more connected public space, showing landside 'in-between space' in red. Space Syntax's field methodology was based on three values:

a) spatial layout hierarchy, from more accessible to less accessible places

b) the distribution of object attractors and land uses

[7] The first phase, concentrated on the site defined by the Royal Festival Hall (RFH), the Hayward Gallery, the Queen Elizabeth Hall and the Purcell Room, creates three new major public spaces - 'Southbank Centre Square' to the Belvedere Road side of the RFH, 'Festival Riverside' to the Thames side of the RFH and 'River Link Square' that connects the two, developed in detail by Gross:Max Landscape Architects. A new 'liner' building alongside the Hungerford Railway Bridge to the south of the RFH defines a grand new route up to the Golden Jubilee Hungerford Pedestrian Bridges and shields the public and the RFH from the high-level railway. The building conceals existing service routes and decants existing office space from the RFH, allowing it to turn more space over to public use. Additional arts-related commercial space is interspersed at peripheral positions at all levels to increase the mix of use and activity. New cafes are incorporated on street and river frontages of the RFH. Service routes are removed from the public realm and are discreetly relocated behind major building blocks, releasing significant areas of public space while linking and reinforcing key destinations. Phase One was completed in September 2007.

The second phase includes new and upgraded accommodation for the Queen Elizabeth Hall, Hayward Gallery and the British Film Institute, and develops the Hungerford car park in parallel with Jubilee Gardens to maximise public open space while extending the current Southbank facilities in line with the client's arts brief. Foyers and cafes for existing arts venues are relocated to ground level, animating public space and allowing for expansion of arts facilities in underused areas above. A new connection from River Link Square to the deck level of Waterloo Bridge provides further activity, clarity of movement and activated frontages. West 8 landscape architects have developed detailed designs for Jubilee Gardens in accordance with the principles of the Urban Design Strategy. The park is elevated to organise movement of people along more defined existing streets and allows views of the Thames and beyond, while reinforcing its own identity. There is potential for a wide range of activities and spaces within the gardens, including outdoor performance of differing scales, quiet relaxation and children's play areas. Rick Mather Architects, *Site description* (2010).

c) the location of transport nodes.

A method which considers pedestrian movement as a basis for more connected streets and spaces, land uses, sizes and attractions to structures is an important urban design consideration based on Lynchian 'transport nodes' 'to' spaces, and 'from' spaces (Lynch 1960). The inclusiveness of the method to capture 'all' of public use and movement on site is worth enquiry, I would argue that the fieldwork failed to include the alternative sport users. The method is not inclusive of particular cultural everyday activities such as the urban sports which populate the area and give the space its 'identity'. The Space Syntax method was integral for Rick Mather Architect's master plan. Thus, this fieldwork is essential in the production of space, again demonstrating the agency of drawing for production, but more importantly showing some of the ideologies in play in production; what is drawn and notated carries through to whole planning and design decisions.

The field of study 'Space Syntax' is an interesting area for Landscape Architecture, in its investigation of the very use and spatial cognition of landscape. Mobility studies are reliant on the plan to configure information, or reliant on the map, the graphic output of the Southbank site clearly reduces information, a graphic reduction of movement to a straight line, coloured and rationalised for decision making. Again movement is conveyed as an arrow, the symbol of an actual arrow, sometimes signifying danger, direction, targeted to point. To what extent is movement described in these terms, with purpose? **Chapter 2.1**, showed mapping practices demonstrating drift, poetics, and stories of spaces. The Space Syntax diagramming reduces and introduces a graphic rationality which removes the extensive and complex vocabulary of spatial movement. Cullen's visual subjectivities are evident however in Space Syntax theory, assumptions occur prior to scientific analysis, almost absolving the designer of involvement in social relations. Certain fieldwork is collated to enable the computational modelling, an ethnographic observation, over a participative-observation, action-research. This involves the recording of life histories or the creation of many other approaches which engage on a greater level.[8] The operation of Space Syntax is contentious as it presents info-graphics as the neutral, therefore summary of spatial order in which the architect then acts, more than a partial view of movement patterns in quantities which could contribute to a wider analysis of spatial practices. The theory, in-itself is well explained, but its implications is a removal of mystery, peculiarity, difference and texture through an urbanist determinism which could be viewed as overly programmatic in human geography and behaviour. This is more telling as Hillier, rephrases Le Corbusier, that 'Space

[8] Such enhancement of movement analysis could be found in the approaches discussed by Sarah Pink, Doi*ng Visual Ethnography* (Pink 2012; Pink 2009; Pink 2006) see also (Knowles 2004).

is a Machine' (Hillier 1996, chap.8). Such abstract mechanistic analysis of social forces has been critiqued by Lefebvre (**Chapter 1.2**). The idea of a mathematical model of common pedestrian routes ignores the anomaly, creative, individual and metaphoric walking practices discussed in de Certeau in which various patterns emerge which defy graphic narration.

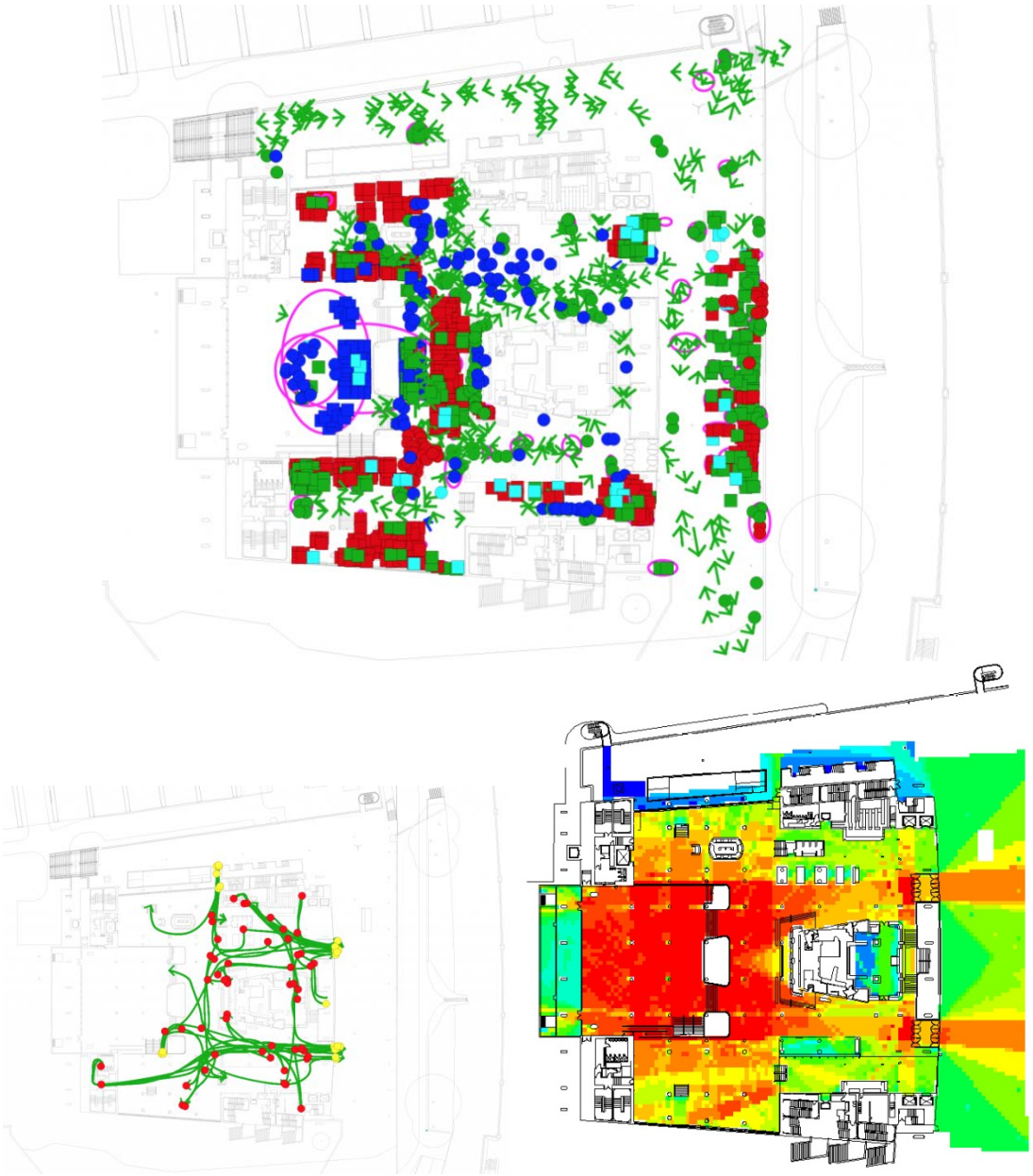


Figure 99: Space Syntax, *Stationery Activity, Traces*, *Spatial Accessibility*: Royal Festival Hall, 2000.

The justified graphs of line and dot, are symbolised to show and summarise the main important property of the space and channels of movement, here Wayfinding is used to analyse movement from entrances to the performance space. The same colouration is here applied, warm colours representing higher intensities, cooler less so.

Space Syntax also created a model of stationary activity, traces of movement and spatial accessibility of The Royal Festival Hall. The way-finding notation is interesting in this fieldwork; again its apparent objectivity removes the complexity of human movement to mere static maths. The Southbank development has developed in the wake of societal change. Southbank faced a large amount of crime in the late eighties and early nineties. The various enclaves and spatial turns proved useful for criminals to conceal themselves within. Space Syntax's study showed different groups using different routes, thus creating quieter or underused areas. These areas are then *assumed* to be colonised by anti-social individuals or groups. The evidence to support such a claim could not be found and was maybe a purely 'physiological' assumption. However, the study's purpose was to identify mobility with reference to the viability of commercial retail space or catering outlets and was focused as such, which it then justified and was incorporated in the master plan. The work is an essay on the transformation of a public space into a commercial space.

In such an 'urban design' it is worth considering appropriate drawing techniques that analyse the site. It is worth developing a series of drawings that test cartographic assertions and develop experimental devices recording ethnographic practice (Hammersley & Atkinson 1994), testing the notion of the aforementioned 'relic' of action (**Chapter 2.1**). Initial research results conducted by the author indicate in this chapter Florida'esque (Florida 2003; Florida 2012) gentrification of the area and the constraint of alternative sports in place of large scale retail. Richard Florida proposed in *The Creative Class* (2002) a typology of professions, in which the creative class, mixes of highly educated professions, act as catalysts to post-industrial city recovery. For example artisans moving to Soho in Manhattan then raised the real estate values of property and improved social statistics. The idea has been influential on American and UK urban policy.[9]

Landscape design by West 8 indicates wholesale re-appropriation of the Parkour playground towards a gentrified levelled civic space in line with the strategy of Rick Mather Architects. I would argue, that the fieldworks which position an urban strategy for the creation of a commercialised 'cultural area', is successful but it has omitted a user group and created displacement. Is this displacement for the sake of the majority, or is it based on a different rationale? The after studies evidencing a benefit to the Southbank Area is based on

[9] In the UK context, cultural regeneration, arts and creative industry investment as a catalyst for city recovery, can be seen and applied in Cardiff, Liverpool, Birmingham, Newcastle and many other cities over the last two decades. This idea also manifests itself in the idea of gentrification, which through such activity social issues can be solved by the introduction of such professions to the area. Highly contentious and subject to much critique, what some studies have shown is that such urban policy has been responsible for widespread displacement and the furthering of social issues (Mcguigan 1996).

experience of gentrifiers. To note, the extent that the alternative sports groups matter to the proportion of tourists and visitors is hard to quantify, though the *Save the Southbank Undercroft* petition has reached 40,000 supporters at the time of writing and is at least some initial evidence that such redevelopment is contested (Fox & Hazelton, 2013; Martin, 2013)[10].

The intended criminal reduction and increase in overall participation to the centre may mitigate any sense of displacement of the urban sports grouping. Arguments would state the benefit of such architectural production. As Rick Mather comments on the South Bank Centre,

> South Bank is unused for much of the time and, when it is busy, its use is 'mono-functional'. Underused spaces are then colonised by antisocial uses which further deter through movement by local residents and workers as well as by tourists and commuters. The result is a spiral of decline in which there are relatively few locations in which commercial, retail or catering uses are viable. This means that the critical 'multiplier' functions that take advantage of passing trade in traditional urban areas have never succeeded in becoming established in the South Bank area
> (Hillier 2001, sec.04).

However, there are two points to be made; First, Fieldwork was created for commercial development and for the justification of an earlier strategy for it. Secondly, such development and the creation of space for retail risk creating monotonous space, removing marginal but highly cultural practices that established authenticity in the area and localised identity, something which neither Rick Mather architects and partners, Gordon Cullen, Appleton or Richard Rodgers would want in their work, ideology or design. Corner suggests that,

> Cities that want to be more competitive and attract tourists and new businesses are discovering that their calling card is the distinction of their public spaces. If they are just the same as everywhere else, they are not distinguishing themselves. That's why landscape architects have boomed in the past decade; we are trained to do something one-off with the local ecology, as opposed to architects who tend to have one style that they transport from place to place (Corner 7/12).

Whilst this shows a blatant discipline-based bias of this landscape architect and prejudice against architectural practice, the desire for space shared by all is demonstrated; ideology and actuality are sometimes at odds. Given the previous chapters it is important to develop appropriate methods to study the site, a place which Cullen instigated, Herron and Rodgers visualised, and Space Syntax analysed with apparent objectivity realising the aim of their commissioning client. The question is then how to create a planning system in which users

[10] Change Petition: http://www.change.org/en-GB/petitions/lambeth-council-southbank-centre-boris-johnson-arts-council-england-stop-the-relocation-of-the-southbank-skate-park

have a stake, towards a more focused community based design approach, based on the ideology that greater participation in this process creates more inclusive and diverse spaces, which De Certeau and Lefebvre write, relies on us to translate these philosophies into a working method from **Chapter 2.1**.

The notion of the everyday as making people more aware of their activity within the city is important, and from this focus, Lefebvre believes this is the important factor for revolution and the right to the city (see (Harvey 2008)). The everyday as a research area is well covered in social science, and the best development of the everyday comes from Michel de Certeau (Certeau 2002; Certeau 1986; Certeau et al. 1998; Certeau 1997). For landscape architecture the everyday as an essential design philosophy can be extended, but I believe there is much possibility within this area and this features throughout my thesis (Harris 1997; Goonewardena et al. 2008; Sheringham 2009). The everyday therefore connotes a community led engagement in the built environment and how it's shaped and considers the range and method of stakeholders[11]. As Lawrence Halprin states,

> Participation and activity are essential factors in a city. One can be a passive spectator in the enjoyment of other arts, but the essential characteristic of the city as an art form it demands participation (Halprin 1963, p.193).

[11] CLD is defined in Scope of Work stages 1-9, (due to be revised under new RIBA Plan of work). **Scope of Services 7**: Obtain from the Client information on ownership, legal interests, project information and any other matters which may influence the stakeholder engagement process. Assist the Client to define the initial project requirements including the purpose of the stakeholder engagement, the preliminary list of stakeholders, the stakeholder consultation/ communication process and the programme. Agree the final scope of services to be provided by the Landscape Consultant and other consultants and the fee basis for the services. Confirm the programme, including meeting and presentation dates and outputs/deliverables required. Obtain agreement to proceed. **Preparation**: Confirm the Client steering group and roles (Client, stakeholders and decision makers) confirm roles (Client, stakeholders, designers and decision makers). Prepare the draft list of stakeholders and confirm with the Client steering group. Prepare the draft stakeholder engagement strategy including the engagement methodology: communication and consultation strategy, disclosure of information, participation and negotiation. Consider stakeholder needs and requirements. Establish the method for delivering outputs and any requirement to feed into current design processes and policy documents. Define the objectives and key messages for each stakeholder group. Establish a grievance mechanism, process, or procedure to receive and facilitate resolution of stakeholders' concerns and grievances about the project. **Communication and Consultation Process**: Communicate by the agreed method, such as workshops, open days, exhibitions, study tours and walkabouts. Attend and participate in focus groups and community/stakeholder meetings. Prepare and distribute questionnaires/newsletters. Develop and update websites. Prepare press articles and liaise as necessary with media. Work with schools, local community groups and clubs. Undertake grievance management and resolution by the agreed method. Prepare a statement of the monitoring and plan review process and record monitoring results. **Completion:** Analyse feedback results of stakeholder consultation and communications and prepare data.Test the results against stakeholder needs and requirements and Client objectives. Prepare the report. Present to the client all written and visual data. Finalise information to feed into the design process or policy document. Attend design team meetings as required. CLD, can feature in Landscape Institute Work stages A-D. See LI's *Landscape Architecture a Guide for Clients,* 2011. See also CABE's *Space Shaper* managed by BEAM.

What Lefebvre wants in his final work *Rhythmanalyis* (1992) is awareness of presence, and by implication time. Lefebvre wants an overall unified connection with our space and urban environment, as he is concerned with environmental degradation, to create an awareness of the way things are structured and the presence/ time of our surroundings. Is there and can there be a direct translation of Rhythmanalyis to design? The context of the Southbank is useful to explore these questions. Intended as a cultural area, it has many mixed uses by the public. How is the civic space used, re-configured overlaid and appropriated? Ian Borden has explored the theories of Lefebvre in architecture, in particular the spatial practice of skaters. Architecture is not subject to objectification, and determinism, codification or reduction to a visual realm as we have seen, but as Borden argues,

> architecture is no object. At an interdisciplinary nexus, as an intrinsic element of everyday life, architecture is not composed of isolated and monumental objects. Architecture is ambient and atmospheric, and architecture allows us to tell stories – it is both backdrop to, and inspiration for, theoretical and poetic musings of all kinds, from love to philosophy, theology to Marxism (Borden in Hutchison 1999 p.136)

The skater directly moves and appropriates the urban space and does not let the intended function dictate action. Body movement is geography on top of another. This rhythm is different to that of people in Parkour and freerunning; the appropriation varies and purpose is different. However, this body centred work tells us how the Southbank architecture is interpreted, not by car, or as a pedestrian, but cut through, materially explored and journeyed. The furthering of specific determined spatial uses in the design strategy affects the ability of these incoherent urban patterns and urban sports which use the area.

2.2.C - Fieldwork Method for Analysis of Urban Sports

Figure 100: Paul Cureton, Southbank, Satellite Image, CAD Overlay & Infrared, 2012.

The landscape architect Lawrence Halprin was interested in human environments and participation, seeing movement patterns as integral; "the essence of our urban experience is the process of movement through a sequential and variegated series of spaces." (Halprin 1963, p.193) As a main thoroughfare to Waterloo station and Charing Cross, as well as

holding a ferry terminal for the Thames, makes this area a high level transitory location. **Figure 100** shows the importance of green space and treeline in puncturing the location, giving leisure and social space to a highly developed area. One significant green space is Jubilee Gardens, where the Sky Dome was previously located in the Festival of Britain in 1951 (opposite The London Eye surrounded by County Hall and the Shell Centre). The area between the gardens and National Theatre has been the location for major urban sports due to the varied enclaves and levels as well as the street furniture within it. Underneath the overhang of the theatre there is a legal wall[12] which many graffiti artists tagged.[13] The size of the under-croft has been reduced in recent years and was to be returned to original size, however the undercroft will be transformed into a restaurant following new plans released in 2013 and the overall urban strategy to commercialise the public spaces.

A discussion of the design work by West 8 in the gardens develops an argument of how the urban sports grouping were displaced and indicative to the current contemporary issues. West 8 conceived Jubilee Gardens as a holistically-designed, organic, lush and green park in 2008. “Trees and flowers, blooming throughout the year, providing a botanic ambience” (West 8 2012). The metaphor of Green Trafalgar has been adopted, exploring the park as the main green gathering space of the South Bank – a central Green. West 8 sought a design where,

> surfaces, trees, flowers, benches, edges and activities work in unison. Paths become fluid and inviting, capturing and intensifying desire lines. The undulating plane of the topography provides prime lookout points, capturing dramatic views of the London skyline and the South Bank (West 8 2005, p.8).

First stage visualisations and designs framed panoramic views which opened onto undulating hills. The topography by West 8 intended to cultivate intimate spaces, micro-climates and refuge areas within the park. A more developed lighting system supported a clearer navigational area at night-time which addressed the psychological issues of safety at the Southbank complex previously stated.

[12] Painting on any public walls is prosecutable through the Anti-social Behaviour Act 2003 and Clean Neighbourhoods and Environment Act 2005, however certain walls which are painted by users that are not prosecuted generally, the outcome being public walls in which the collection of artwork is contemporary, refreshed regularly and competitive, resulting in more developed pieces and less ‘throw ups’ (quick marks claiming the space).
[13] Tags are quick graffiti signatures of the artist.

Figure 101: Jubilee Gardens Aerial Photograph, West 8 Jubilee Gardens Site Construction, Jubilee Gardens Plan and Perspective Aerial.

However, as the design progresses through work stages, the undulating hills originally conceived become realised at a much lower height and grade. The sense of undulation was lost. Funding and land ownership complications reduced the original ambition of the gardens. Sixty nine English new park trees featured, a playground area, dressed granite edging and set paving gave welcoming edges to turf areas. Seasonal flowerbeds feature, though seem out of scale in the sense of the lower levelled turf to planting ratio. The gardens in terms of planting were well worn before the re-landscaping, featuring tree boarders and one main path leading towards the London Eye from the Shell centre **Figure 101**. Turf areas worn to sand layers or applied sand layers mitigating lawn damage proved attractive to free runners as a surface to train and support landings[14]. A more open prospect was important in the design for attracting more general visitors to the gardens in that there was not a sense of 'preserving' more a worn communal area. A car parking lot to the east of the site also proved attractive, as the supporting car park wall provided a suitable launch for tricking.

[14] Drainage is a particular issue here as the gardens were constructed on the foundations of the former Sky Dome.

Figure 102, Edging Detail & Planting (Authour) West 8, Panoramic Rendering, Jubilee Gardens, Digital 2010.

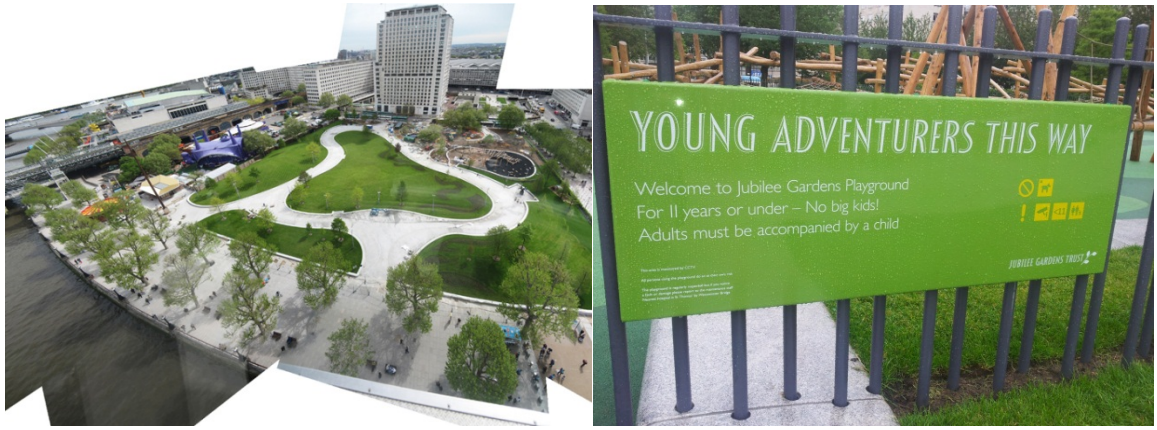


Figure 103: West 8, Jubilee Gardens Panoramic rendering and Playground Signage (Authour), 2012.

Before such work the space was a mixed-use green area, planting was minimal, however, it functioned well for 'tricking' that is a form of free running concerned with somersaults and acrobatics. The sense of change to the site is evident in the flattened green space, regulated pathways and signage to playground equipment prohibiting adults and in particular Parkour and freerunners using fixtures to train. It was important that such claims that the gardens

had displace Parkour and Freerunners could be substantiated. A suitable method would need to be designed for capturing the space usage and the very movement of this user group. Extensive film footage and still photography existed of the Freerunners and is the standard practice in which to capture their activities. Large digital forums feature and host these results.[15] As a practice that "overcomes everyday life", 'jams'[16] feature, in which people congregate, the digital space co-ordinates and furthers the community. Such work is well documented, however a notation system for executed moves and patterns overlaid on a plan would enable an info graphic of urban uses which could extend the parameters of the Space Syntax method. Film works capture movement in a more fluid way compared to notation, however such work documents specific groups, involves an editorial process in which moments of rest, communal chats, practice on surfaces, poorly executed moves and the dispersion by security personnel are removed to present selected moments. These fragmented representations are more strongly individual than a mark on plan; however they do not articulate the wider community spatial practice in an urban quarter. Given this inability of representation of community practice, the representation of these groupings revolves around a certain assimilation of urban design methods to record this temporality. The recording of movement has context in the work of the landscape architect, Lawrence Halprin and his wife the choreographer Anna Halprin, as well as dance notation, all of which will be explored and discussed further in **Chapter 6.1**.

Figure 104: Backflip executed at Jubilee Gardens, Cartwheel Arabian into Front flip executed at Hayward Gallery Fountain, 2009.

[15] JUMP magazine, Freerunner, Parkour Generations, Urban Freeflow and many others represent digital channels.
[16] Spur of the moment gatherings of groups, organised via digital media.

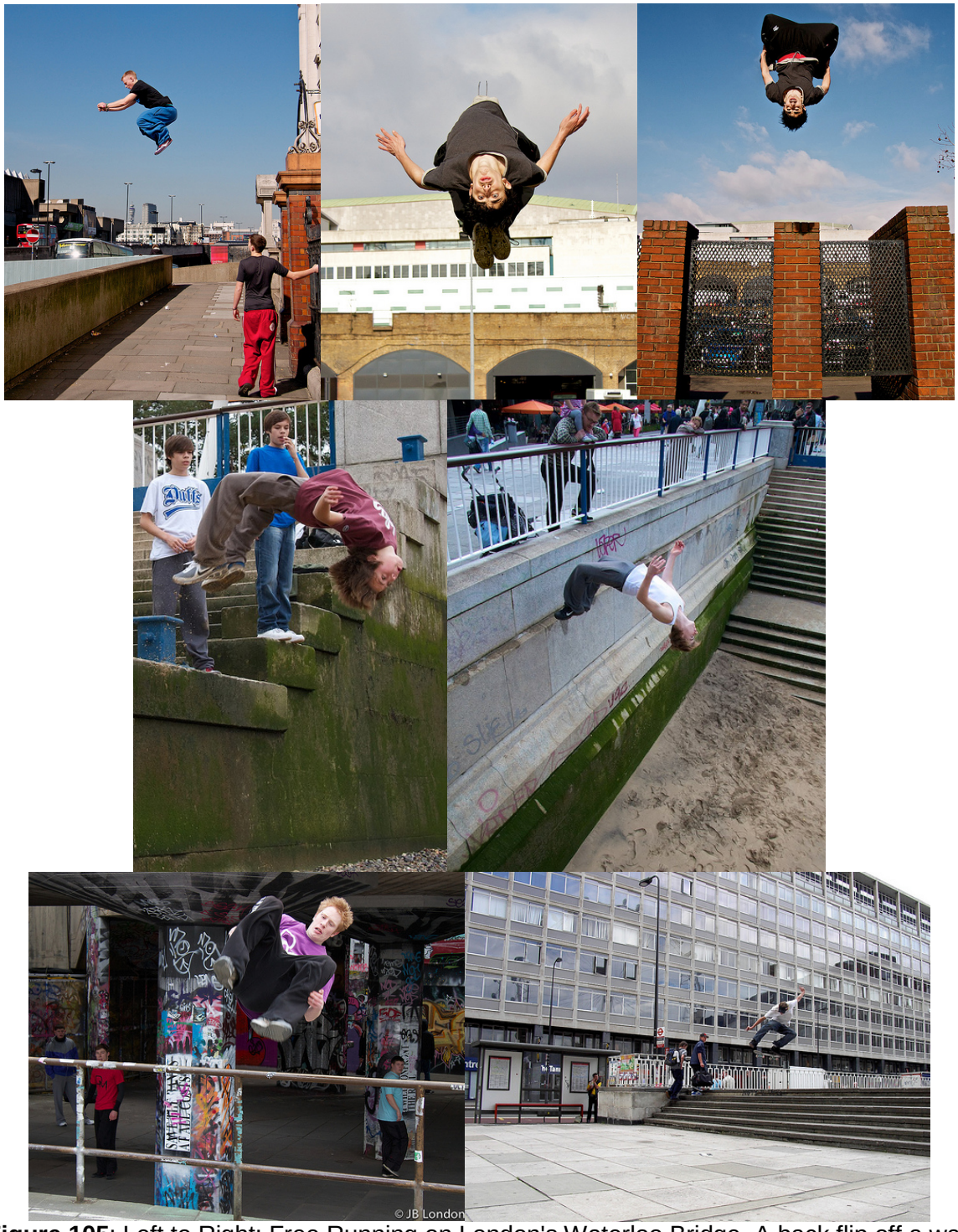


Figure 105: Left to Right: Free Running on London's Waterloo Bridge, A back flip off a wall near London's Jubilee Gardens. 2011. Tricking on the banks of the River Thames - Festival Pier, 2010. A backflip onto the banks of the River Thames from Festival Walk 2010. Free Running at London's Southbank Undercroft, Festival Hall. A member of the Dynamic Movement Team 2011. JB London. Skateboard Kick Flip, Shell Centre.

The architectural features around London Southbank allow various surfaces in which to execute Parkour and Freerunning moves, some of these spaces are also used by Skateboarders and Bmx riders. For example the festival pier, in low tide reveals a sand bank, the free runner's hop over the railings and use the area to practice.

Figure 106: Left to Right: Parkour to the rear of London's Waterloo Bridge, A back flip off a wall near London's Jubilee Gardens. 2011. Routine between NT and Festival Pier. Tricking aerial on the banks of the River Thames - Festival Pier, 2010. Routine at Jubilee Gardens, 2011.

The photograph captures the peak movement of the executed moves, though does not locate the wider movement and intention of the discipline, to trace the direct movement through space. The photographs autobiographical, self-portraiture does not convey the time aspect of the spatial strategy in addition. Though the photographs show the level of spectacle on the one hand and the level of appropriation and practice needed. For example, the first image is largely inaccessible to the public, other than for freerunners. Many inaccessible spaces around the site are utilised. Thus, claims of a practice of spectacle cannot be substantiated.

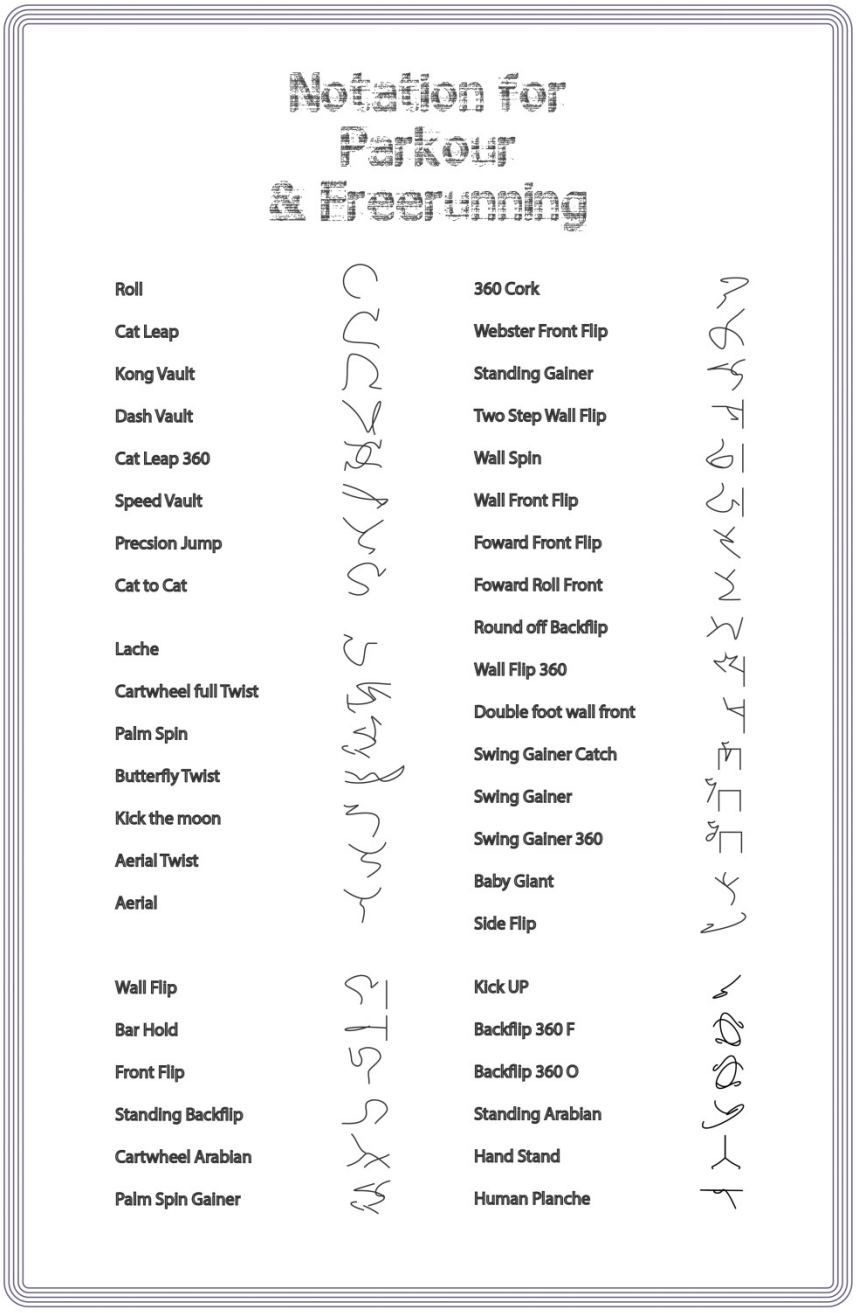


Figure 107: Paul Cureton, Notation System for Parkour, 2008-2012.

To record freerunner patterns and Parkour, a notation system was developed showing the major moves that are executed moving through space. These symbols required simple execution to record quick successive movement patterns in a sketchbook whilst on site. Movement could be recorded using simple lines to which the symbols could be incorporated. These patterns could then be overlaid on plan.

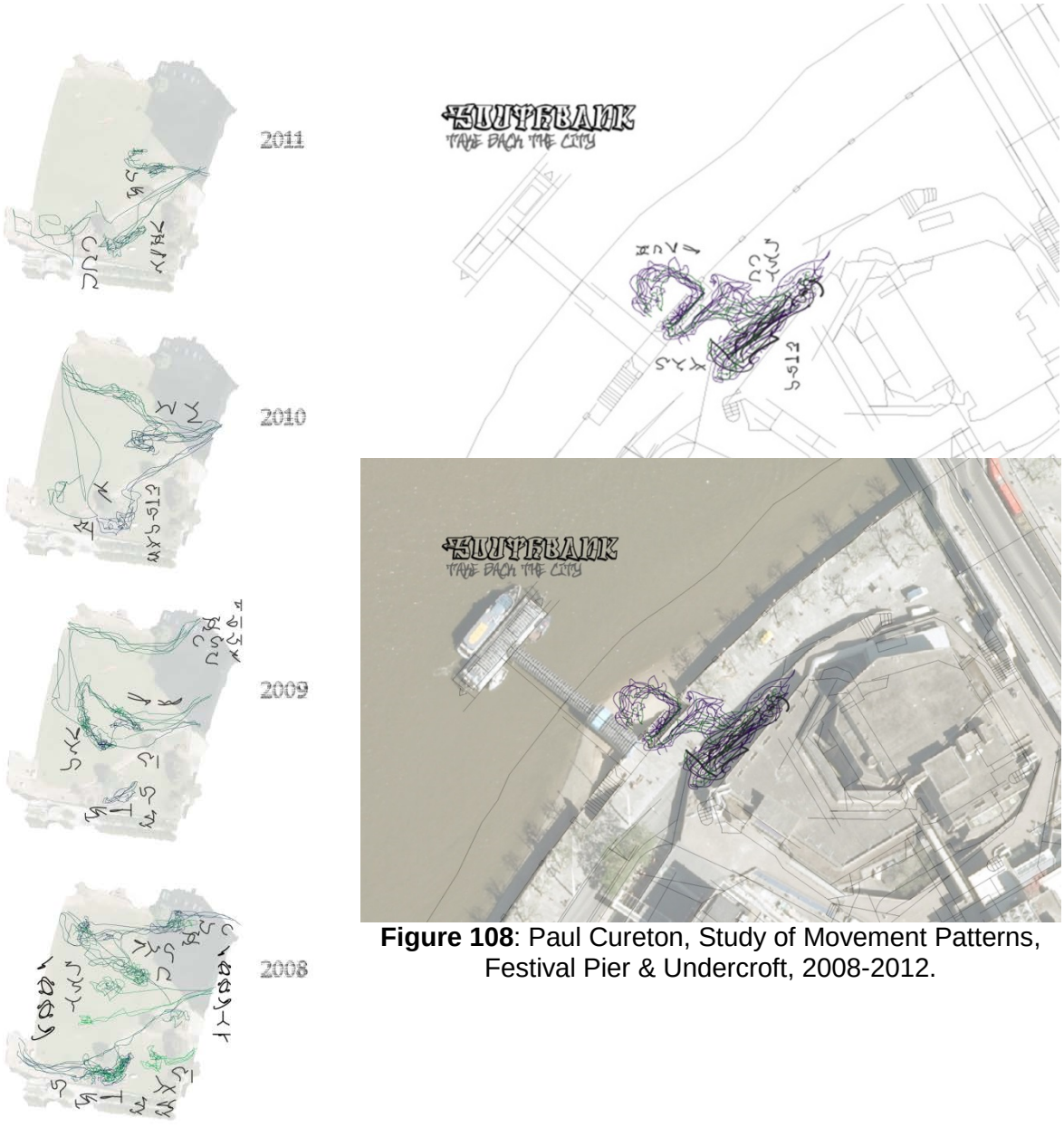


Figure 108: Paul Cureton, Study of Movement Patterns, Festival Pier & Undercroft, 2008-2012.

The French novelist, filmmaker, George Perec in *Species of Spaces* (2008) analyses the everyday, of small glimpsing activities in time and the ordering of space. He notes that to understand these glimpses,

> Observe the street, from time to time, with some concern for system perhaps. Apply yourself. Take your time…
>
> Note down what you can see. Anything worthy of note going on. Do you know how to see what's worthy of note? Is there anything that strikes you?
>
> Nothing strikes you. You don't know how to see (Perec 2008, p.50).

Such instruction for the observation of temporal practices was useful. To analyse the movement patterns of the free runners a simple line was used to connote movement. Georges Perec provides a practical example in how to observe the street, searching for the things of note, a patience of observation. Observation requires a time, and the line must be drawn in time and with application. Jubilee Gardens, Festival Pier and the Southbank Undercroft were notated using simple lines of various colours on paper. These lines of various thicknesses were then collated in Adobe Illustrator and overlaid onto a CAD plan, purple lines the most frequent and black lines greater intensity, green as practice **Figure 108**. Supplementary photographs and perspective drawings were created to support the fieldwork, **Figure 109**. This analysis was repeated every summer for four years. Recording parkour and free runners present at the time of visiting. A mixture of many individuals each with their own reasons to use the site as well as seasonality can also affect such activity. The drawings are mere traces, limited in two dimensionality, the line cannot describe the elevation, height or pattern of move through the space.

Figure 109: Paul Cureton, Perspective Drawing, NT Rear & Composite Cat Leap Photograph, 2008-2012.

Figure 110: Paul Cureton, *Parkour & Freerunning Pattern*, 2008-2012.

By drawing on plan, the invitation is to imaginatively inhabit the 2d surface, and to imaginatively move within in it to understand the symbolisation developed over the plan. It is what Paul Emmons would call for architects, 'drawing the invisible' when conceptualising structures (Ewing et al. 2010, p.126). The information is a graphic reduction, an artefact of an action. It is not mapping by drawing, but mapping post-action with drawing.

However, what information can be derived is that the spaces have been used, while it may be 'under-used' in terms of Space Syntax's original mathematical modelling and simulation, it however contains an important grouping and user group. More importantly, the movement study shows a different way of navigating space, overcoming obstacles, a directness of route. This is an appropriation based on De Certeau's theorisations of 'second geographies on top of another', the freerunners make their movement 'everyday', they have become part of the symbol of the terrain. The skateboarder repeats this appropriation in a different vein; as Borden states, skating offers the chance to invert social relations and meanings and so create a kind of heterotopic space (Borden 2001, p.5). This is against what we have seen as an organised functionality of Southbank, of commercial transaction of the rationalisation and controlling of walking, through that control to De Certeau, the pedestrian speech act becomes monolingual (Certeau 2002, p.102). It is the inhabitants which shape the built environment of the Southbank Centre not the reverse. As the architecture critique Kieron Long wrote of Southbank Centre's artistic director, Jude Kelly's vision for Southbank[17], development "must leave some space for unplanned occupation, some un-programmed, un-let space that might just nurture something unexpectedly valuable" (Long 2013).

But through this simple initial testing, results indicate that by the improvements delivered through Rick Mather Architects, and in particular West 8 at Jubilee Gardens there has been a decline in parkour and freerunning in the area. This correlates with the development of the walkways and introduction of retail and restaurant chains. The scope in which fieldwork is conducted through drawing is important for a broader understanding of the space to be understood. Such claims hit at the very issue of representational techniques for landscape architecture, when designing for mobility, as Lawrence Halprin states,

> In order to design for movement, a whole new system of conceptualising must be undertaken. Our present systems of design and planning are inevitably limited by our techniques of conceptualising and our methods of symbolizing ideas
> (Halprin 1963, p.208).

[17] Jude Kelly the artistic director of Southbank justifies management plans and argues that Skateboarders must 'budge up' and accept Southbank plans to create a wider relationship between people and Art (Kelly 2013).

Whilst Halprin quotes in a 1970 American planning context, such reasoning is interesting in this case. The purpose of the designed space was created with a view to provide green space. We must ask what the purpose of the gardens was, was it to become a backdrop for the Queen's celebrations, over a design for a wider user group? The methods of consultation had taken place apriori, the fieldwork and the method of experiencing the landscape must be analysed and included within such studies, from this fieldwork we must ask how that informs any future work. Consultation must be inclusive in all communities and motivations not defined before the enquiry, but the results collated, judgements made after. Spatial design cannot be a priori as Borden and Lefebvre critique (Borden 2001; Lefebvre et al. 2003). Whilst it is difficult to engage users of the space that do not necessarily have a spokesperson, the first rule for landscape architecture, architects and urban designers involves listening to what the place has to say.[18]

Christian Norberg Schulz in *Intentions in Architecture*, suggested the idea of 'the spirit of place', whilst subject to critique to a scenographic mysticism to instil meaning in landscape[19], which was based on readings of Heidegger (Heidegger 1975) suggests that,

> a complex architectural organism can only be experienced through a movement where the succession of perceptions becomes organized mentally into a total experience… We do not experience a building or a square as an isolated phenomenon, but as a part of a comprehensive urban organism. This organism 'colours' the perception of the parts (Norberg-Schulz 1968, p.198)

Schulz discusses the importance of phenomenology and movement as a basis to understand the place as a totality. Such body centred analysis is important as we have seen for mapping practices (**Chapter 2.1**), moreover practices of Freerunners and Skateboarders at the Southbank everyday, demonstrate a knowing, appropriation and use of the built environment more than other external applications. It is worth further discussion of the plans for London Southbank and the exploration of the rationale behind such work.

[18] The landscape architect Alister Scott et al, suggests why such consultation is formed; "research and policy on landscape has predominantly focused on the visual aesthetic through the use of quantitative-led tools for landscape evaluation and assessment… these methods have been increasingly challenged with calls for more holistic and multi-functional approaches that draw on people's experiences and interactions with local landscapes" (Scott et al. 2009, p.397).

[19] Lefebvre criticises Schulz on the basis that his theories create indistinguishable reading or creates rifts in understanding the mediations between conceived, perceived and lived space (Lefebvre 1991, p.298). The emphasis as in the thesis, is an understanding of *Agency*.

2.2.D - Future Development of Southbank Centre

Figure 111: FCBS, Festival Wing design study, Digital Aerial, 2013.

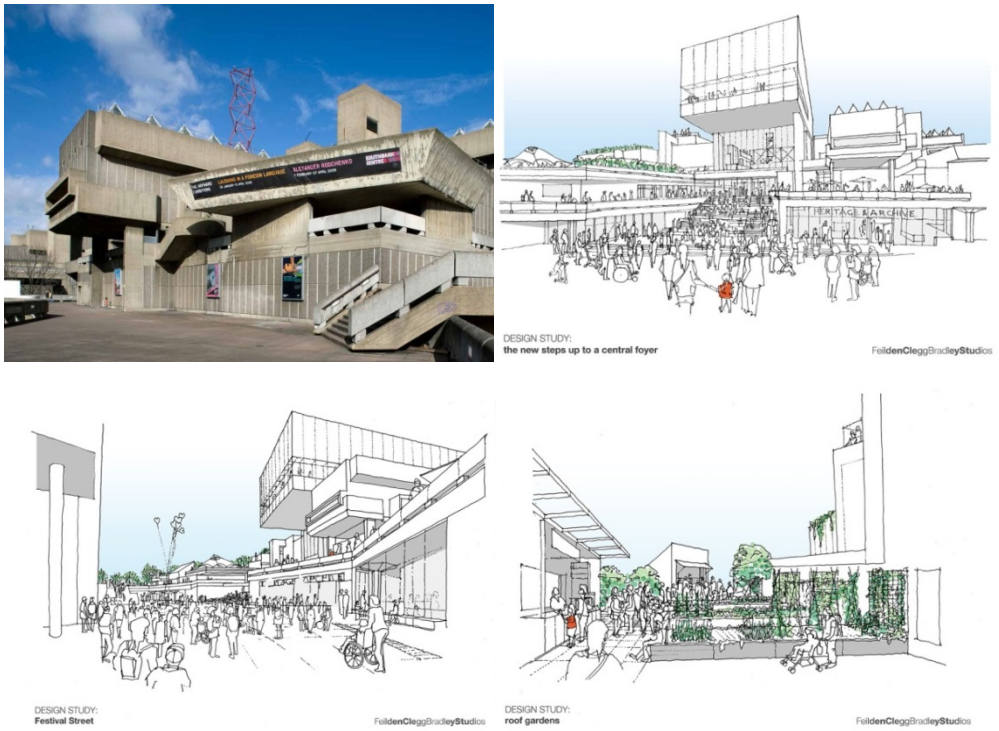


Figure 112: FCBS, Design Study Perspectives, Site Photograph, 2013.

Feilden Clegg Bradley Studios (FCBS) visualises its winning development entry which was 70% complete. Here a glazed sky pavilion sits on top of the existing structure; public terraces will be commercialised and in-filled.

Figure 113: FCBS, Winstan Whitter, Consultation Proposals, Undercroft, May 2013.

As part of the consultation process, FCBS worked with Winstan Whitter the skater and documentary film maker over the re-location of the undercroft space. Drawing over plan, a number of suggestions are made. FCBS are consulting with Winstan Whitter, Toby Shuall, Iain Borden, Jenna Selby, Lee Bofkin and Darryl Munroe amongst others.

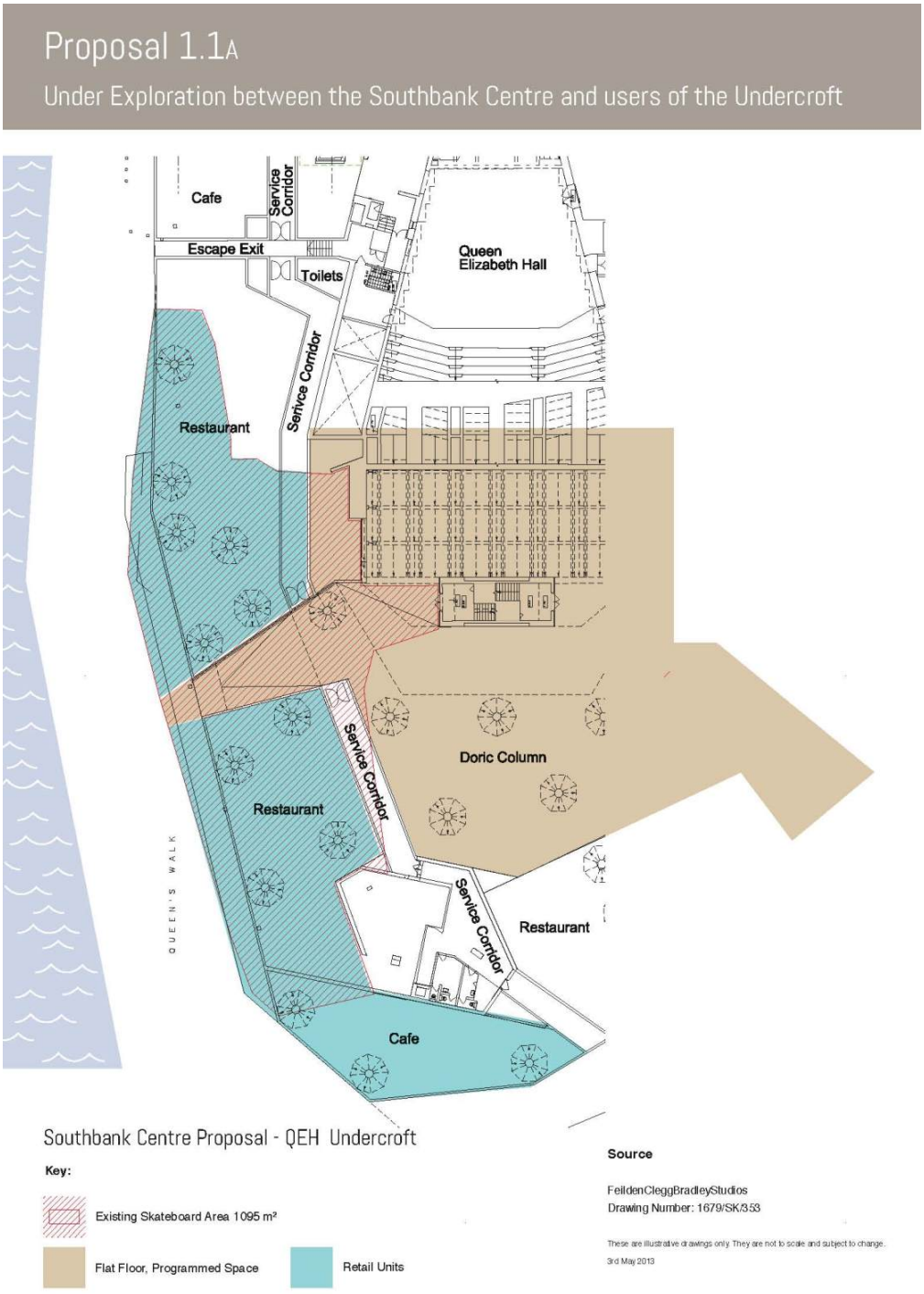


Figure 114: FCBS, Winstan Whitter, Consultation Work Group Proposals, Undercroft, May 2013.

In this drawing, the extent of retail development is shown. FCBS considered locating retail at the site of the proposed new skate park arguing that the construction and location will not economically work.

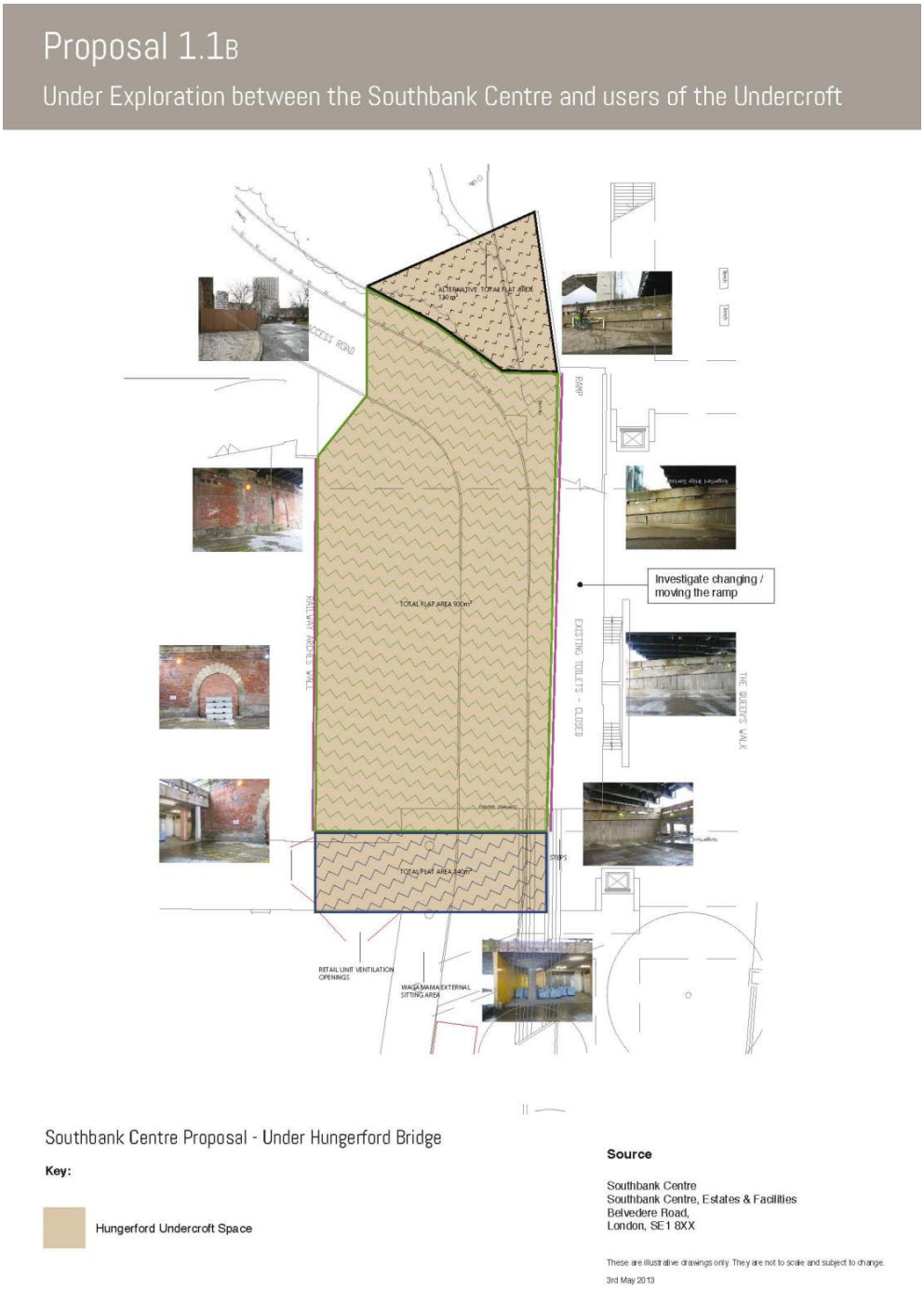


Figure 115: FCBS, Winstan Whitter, Consultation Work Group Proposals, Undercroft, May 2013.

In this drawing, the suggested new skate park under the Hungerford Bridge is visualised with supporting photography. The proposal involves the realignment of an entry ramp.

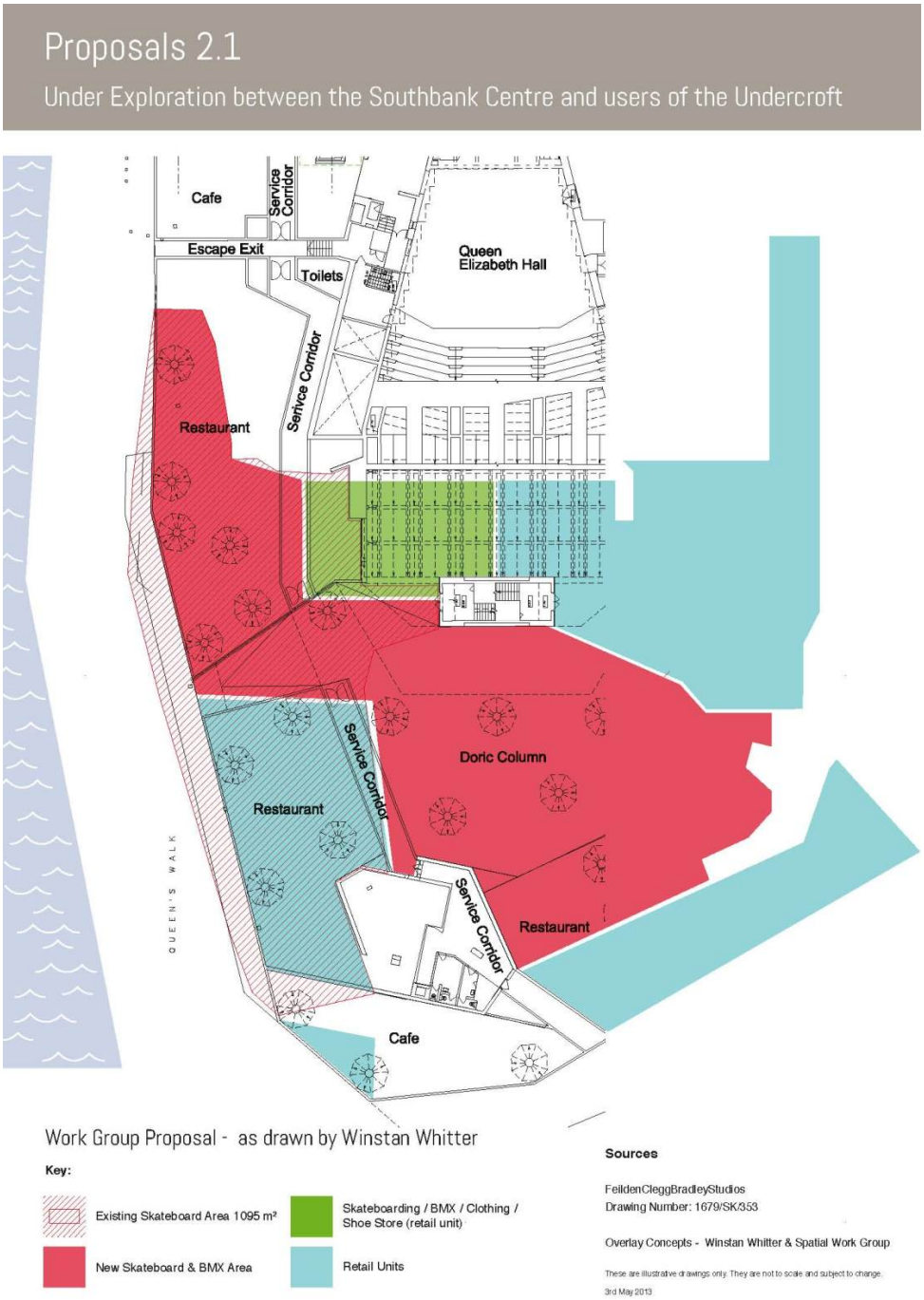


Figure 116: FCBS, Winstan Whitter, Consultation Work Group Proposals, Undercroft, May 2013.

These work groups and consultations have been formalised into further consolidated drawings to which ideas of an addition of skate retail unit has been proposed. The extent of the previous space and the proposed new bmx/skate space can be viewed here in red.

Plans for this part of the site are currently being drawn up by Feilden Clegg Bradley Studios (FCBS), who were appointed as lead architect in October 2012. Their proposal which was 70% complete, results in a large glass box which will be situated above a concrete walkway

between the entrance to the Hayward Gallery and the back of the Purcell Rooms concert hall **Figure 113 – 116.**

> These concrete structures have been much criticised but even though they have been minimally cared-for over several decades they still have nobility and – something increasingly precious because it is getting rarer – the provision of space and surface that is open, free, unprogrammed, unconsumed by branding and marketing (Moore 2012).

The undercroft will be converted into a restaurant, with the skate park being re-located to the back of the Hungerford bridge, FCBS are consulting with Whinstan Whitter, a skateboard documentary filmmaker, where Winstan draws out the new space for the skater community **Figure 116** (Whitter 2005). Central Saint Martins have been commissioned as a neutral team to consult on the proposed move. Consultation times have been criticised as short. Campaigners have applied to create the Undercroft as a village green, and thus be preserved under the Commons Act 2006. The decision was delegated, though at this stage of the thesis, was awarded Asset of Community Value (ACV)[20]. The Southbank Centre is reliant on the development of the retail space to fund the new set of cultural centres it has planned (Jones 2013)[21]. Thus a major icon of alternative sports is to be displaced from the public site and will be closed regardless of decisions and configurations. Building work will take place in autumn 2014. Ian Borden states that for skateboarding (by extension this rings true of BMX and Parkour), "produces space, but also time and the self…" (Borden 2001, p.2). Such activities mark out a social space and range of social practices not far from the intentions of the LCC development by Herron & Crompton. Borden constructs the relationship between architecture and skaters on a Lefebvre understanding of the representations of space, and representational space. That architecture is not a static thing, but is produced with meaning, use and changes representation. We are concerned in this chapter with the social relations, and devising a drawing fieldwork method is describing these conditions which create a fieldwork and consultation process that is not environmentally determined.

FCBS are sympathetic to the icon that the undercroft represents in the consultation process that they devised, however the aim of the development is the increase in the capacity of the buildings, and particular the services of the buildings, not the surrounding ancillaries. The only ancillary concern is the provision of associative eateries supportive of this new capacity. As the firm states in its brief;

[20] Localism Act (2012)
[21] The Commission for Architecture and The Built Environment (CABE) requested further design and planning time to resolve the spatial issues.

> ‘We come alive not once but many times’
>
> The project includes the creation of major new arts spaces including a new glass pavilion, a new central foyer and a new liner building. The proposals will enable Southbank Centre to realise its vision to deliver a larger and more ambitious arts, educational and cultural programme across the site for all its visitors to enjoy.
>
> The project will bring the performance spaces and galleries in this part of Southbank Centre up to the standard of the recently transformed Royal Festival Hall, addressing current urgent problems including poor access to, and upgrading of, the stages and galleries, substandard back-stage areas, and worn out services. The project reclaims unused and underused space to transform the whole of the complex and deliver more flexible cultural and social use in line with the successful and popular festival programme across art forms (Studios 2013).

The focus of blame towards the architects is susceptible to the majority opinion in criticism of this design brief[22]. However, again the terms of the development are worth investigating. The contentious subject is not the architecture itself, but the new social relations presumed out of production. This in particular is perceived in high level homogenous restaurant chains and given high retail rents also discourages ‘independent’ shops capable of operating on such pricing. Thus, perceptions of mono-cultural site programming cause particular friction to the public as Sharon Zukin states, “cultural strategies of redevelopment … pit the self-interest of real estate developers, politicians, and expansion minded cultural institutions against grassroots pressures from local communities” (Zukin 1995, p.2; Anheier and Isar 2012; Wang 2013). Zukin’s statement is evident of such division in the objections to Lambeth Council by the Southbank Centre for their planning proposals[23] (Clauson 2005).

It is by exclusion that such criticism is levelled at the development. The Southbank Management centre team should be mindful that, if the area is a symbol of culture, what culture is it representing? Again as Zukin, states,

[22] This is a complex and extensive issue, though the purpose of design, were delivered by the Southbank management. It maybe a wider issue as Douglas Murphy argues, a symptom of architectural failure (2012).

[23] 13/02014/FUL | Alterations and extensions to the Queen Elizabeth Hall, Purcell Room and Hayward Gallery including a 'pavilion' above the Hayward Gallery and Purcell Room (a triple height building at level 7 to 9) and the creation of a 5 storey high 'foyer' beneath (level 2 to 6), a 'liner building' parallel to Waterloo Bridge (three storeys at level 4 to 6) and infilling of ground floor undercrofts. Providing an increase of circa 9,200sqm arts/cultural/leisure use (Class D2), circa 1,000sqm arts/cultural/leisure use (Class D2) and/or business use (Class B1), circa 500sqm arts/cultural/leisure use (Class D2) and/or shops (Class A1) and/or restaurants and cafés (Class A3) and/or drinking establishments (Class A4) and/or hot food takeaways (Class A5), and circa 4,200sqm shops (Class A1) and/or restaurants and cafés (Class A3) and/or drinking establishments (Class A4) and/or hot food takeaways (Class A5). Together with refurbishment of the existing venues, relocation of servicing, creation of public realm between Belvedere Road and Queens Walk, provision of roof gardens, external hard and soft landscaping, plant and associated works. Listed building consent is sought for provision of new links to Waterloo Bridge and associated works (reference: 13/02016/LB). | The South Bank Centre Belvedere Road London SE1.

> Culture is a powerful means of controlling cities. As a source of images and memories, it symbolises 'who belongs' in specific places. As a set of architectural themes it plays a leading role in urban redevelopment strategies (Zukin 1995, p.1).

The site is part of a wider urban design strategy running over twelve years in which many of the ideologies for the site have already been played out linking and creating mixed use 'nodes' that connect the Southbank along the river to the Tate Modern (Montgomery 2008, p.319). With such a large urban field to contend, it is right that such a process would take a certain time, though the current consultation activities taking place lose their validity given that such plans have been in place for such duration. This leads to the criticism of an environmental urban determinism taking place. For example two important publications have set out the agenda for this contested space, *The Southbank Employers Group Urban Design Strategy* (2010) and *Streetscape Design Guide* (South Bank Employers' Group 2004), which ran tangential to Rick Mather Architect's masterplan. The public consultation process was to enable consensus and develop the strategy through Ipsos Mori. A number of exhibitions on the exhibition also took place (South Bank Employers' Group 2009.). Within the reports there is an aesthetic opinion of 'intimidating' spaces, which we have seen repeated in Mather, and Space Syntax. In the report there is the emphasis of retail and amenity development for the Shell centre, and NT, Hayward and this shows the extent to which original conceptions and strategy has been consistent; "The site has dark and threatening undercrofts and windswept terraces" (South Bank Partnership 2010, p.118).

There are difficulties in working out a field method for recoding the movements of freerunners, however the study has shown a number of issues in design strategy and scope of enquiry for the Southbank Site. The 'everyday' is arguably an important area for enquiry in the understanding of the use of our built environment. The involvement of wider groups at strategy level is interesting; however the Southbank is still a site undergoing rapid transformation. Analysis of a site in which a wider typology of drawings, ideas and users has taken place will assist this context. Study of a site and identifying within it the *Trade* and *Agency* of drawing in broadening conceptual base will further support such claims on the nature of drawing and landscape production.

Chapter 2.3 - 'Cathedral of Trees': the design discards of architectural and landscape architectural production

Introduction

The question of how the outcomes of a design process relate to the vision represented by a map, remain open at this stage. Explaining the differences between what was proposed and what was produced on the site would be one approach to answering this issue. These complex questions started to be practically explored in **Chapter 2.1**. The discussion highlighted the contested space of the Southbank as a complex texture in which many operations occur. The space was subject to an environmental determinism creating public space into commercial space using a contentious form of analysis, Space Syntax. This analysis was at odds to my own initial work, the work of Iain Borden, and theories of De Certeau and Lefebvre, but more importantly a wide public demonstrating against such changes and the removal of sub-cultures which were argued to provide the very identity of the site. The use of drawing in planning and landscape design needs further context, and Milton Keynes (MK) provides a useful case study in which design intent and actual production can be explored through the extensive recent archive that has been created. Milton Keynes was one of the largest and earliest public sector projects involving landscape architecture on an unprecedented scale in the United Kingdom. It was constructed on the basis of incorporation of several villages, its planning ideology can be observed without much deviation from original intention, thus providing a site to explore the *Blood, Trade, Authority* and *Agency* of drawing on the city with a clear lens. A number of discarded design proposals for MK are also useful in which to explore this agency of drawing, in which designers attempted to inscribe meaning in the 'new' landscape some of these works could be seen as quite radical.

Milton Keynes is part of a long chain of town planning experiments starting with the *Garden City* (*To-morrow: a Peaceful Path to Real Reform*) released in 1898 and revised in 1902 (*Garden Cities of Tomorrow*, Howard 2009) a rationalised ideal city method for urban planning in which work is divided and supported by large scale parks, greenbelt and surrounding agriculture. However, the scale at which the city was envisaged and the role of landscape architecture and drawing is of particular importance. The Garden City Utopian vision, and the diagrammatic power with which Ebenezer Howard depicted it has influenced successive generations of built environment professionals, showing first the power of

drawing but also its influence to form landscape, construct and reshape land form and human relations. The planning historian Stephen Ward suggests that,

> Very quickly, the Garden City came to be understood in a more limited sense, as an urban planning model to reform the spatial arrangement of social and economic life. It is through this understanding that Howard's legacy has largely been experienced (Ward 2002, p.87).

Milton Keynes Development Corporation (MKDC) and their consultant planners began planning the new city in December 1967. Lord Campbell was the chief executive, Richard Llewelyn-Davies, Walter Bor and John de Monchaux formed the plan. Derek Walker served as Chief Architect and Planner in the early stages. These architects formed the main writers for the reflection of the planning process. Planned as a 34 square mile area, the 'new city' would incorporate existing towns, Bletchley, Wolverton and Stony Stratford along with another fifteen villages and farmland in between. The hope for the city is expressed by The British Medical Journal in a report,

> Many people living in Milton Keynes in 20 to 30 years' time may well be enjoying a quality of life quite different from that of today. Education and leisure will be far more a part of everyone's life; industry may be much more concerned with the production of knowledge rather than goods; real incomes for most may well have doubled or trebled; and with this there is likely to be greater mobility and more demand for choice in goods and services, including health services (Monchaux 1969, p.629).

The layout of the city was based on the instigation of Garden City ideals, and form would be borrowed from the urban theories of Melvin Webber for the transport grid system, which was predominantly car based his essay *Urban Place and the Non-Place Urban Form* (Rittel and Webber 1973; Webber 1964) heavily influenced the MKDC creating a plan based on extended social contact on the basis of the electronic age and the said influence of the automobile generation the emphasis changed from master-planning; a description of various zones and activities to be incorporated and developed to 'enabling' and 'strategising city form'; a more fluid vision of how the city is to be developed and directed based on initial principles including social and economic values. The view of the city was of heterogeneous groups of people communicating through space in which many forms could emerge. This change in concept of the drawing and the urban design was in the hope that the strategy could morph, be manipulated and change time, becoming adaptable and allowing feedback; i.e. a fluid drawing rather than definitive[1].

[1] "In the first decade of the Milton Keynes Development Corporation, one issue emerged which clearly illustrates the advantage of strategic planning over master planning. The plan contained an assumption of the employment area required to sustain the target population, based on precedents of the late 1960s. By the end of the 1970s, it became evident that many of the employers attracted to

These drawings were integral to the formation of Milton Keynes, they are the agent that realised the city. Buckinghamshire County planner Fred Pooley originally proposed a design with four monorail loops connecting living areas as beads on strings with a central work and service zone: a plan prioritising public transport and subordinating cars (Edwards 2001).[2] This planning configuration was based on the idea of new social relations and economic networks, or future cities. Webber was not without criticism,

> For the most part, they are functionalists in their thinking, and remain partial to ecological and economic determinism of metropolitan structure.(Farley 1966, p.463)

Such criticism can be justified in the transport choices of MK, with the motorcar as the preferred transport method and the marking of industrial zones, which materialised in a different way through emerging technology companies which hampered city function. MKDC developed a grid pattern of squares each 0.62mi. All of the internal roads were designed to run between catchments and communities and not dissect them, Andrew Mahaddie, MKDC urban designer, creates a storyboard of how each square is to be experienced. The grids would be punctuated with large open park spaces (though this green space was not entirely by choice). Twenty eight kilometres of linear park within Milton Keynes lie in flood plains and were therefore 'un-developable'. Each grid square totalling one hundred squares was to have its own identity and neighbourhoods, each with their own local centre hosting services. The city grid would use a vertical and horizontal road numbering system. Some of the grid squares would contain industrial units others would possess city-rural aesthetics. This aesthetic was the dispersion of settlements - low density schemes curtained by trees, termed 'a city in a forest'. This guiding principle can be seen in the drawn image **Figure 117**.

Milton Keynes were computer-based warehousing and distribution firms, i.e. huge sites with a handful of jobs. The target population at the densities in the Plan could therefore only be employed if further land was acquired outside the city's designated area, or alternatively, the target population would have to be reduced. Neither option was acceptable, but tweaking the Strategic Plan allowed a new balance" (Thomas and Loew 2007, p.18).

[2] This was notably illustrated by Gordon Cullen.

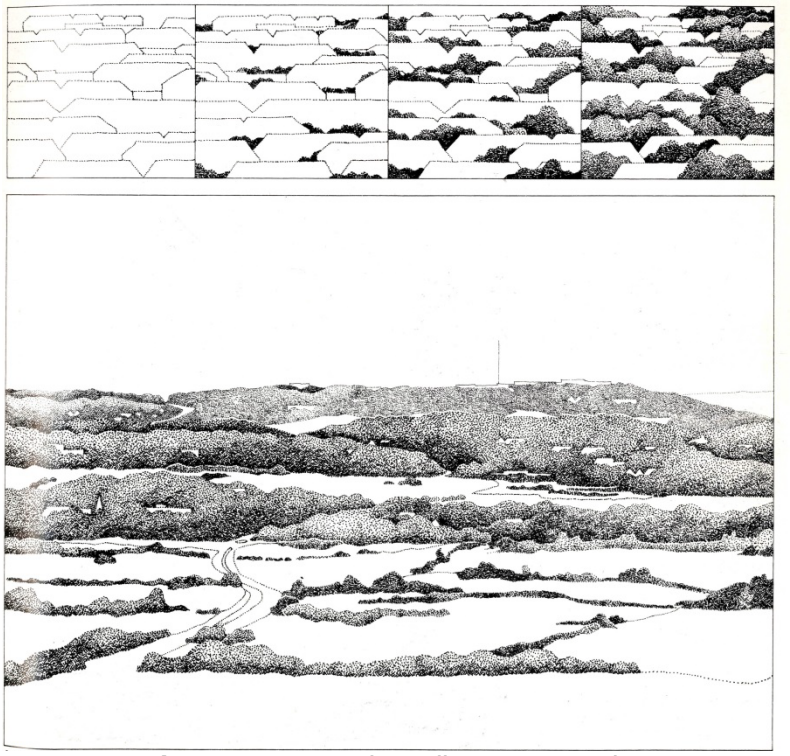


Figure 117: Derek Walker, Forest City,
Extract from Architecture & Planning of Milton Keynes, 1981.

Tony Southard and Andrew Mahaddie strategized the landscape design and this strategy was delivered by Neil Higson, Brian Salter and Tony Southard's team. Some of their design proposals were discarded though it is worth analysis for our understanding of their attempts to inscribe meaning in the landscape. Each grid would contain a proportionate amount of landscape; planting would be selected to vary the identity of each square. Roadside planting would absorb noise and mitigate car pollutants. Mounding strategies would have cut outs or windows so the driver would have a glance and interest at each catchment as they undertook their drive **Figure 118.** These landscape works was also needed as through the period of development the area was heavily hit by drought and Dutch-elm disease.

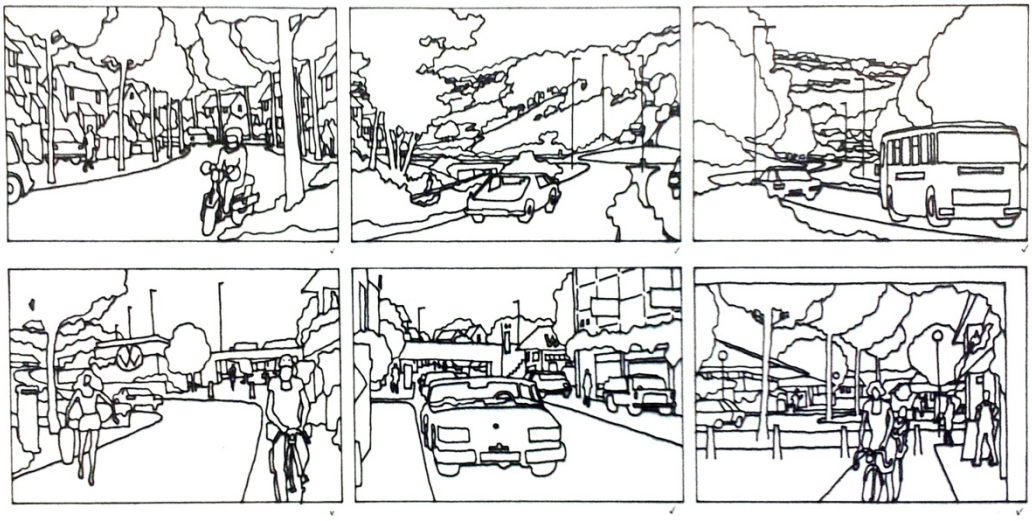


Figure 118: Andrew Mahaddie, Grid Roads and Routes, Extract from Final Illustration Storyboard, MKDC, Pen on Layout Paper, 1971.

As Michael Edwards, who was involved in the MKDC planning team reflects, density would be concentrated toward the edge of each grid square, with large parks and gardens developed in the centres. Though as the MKDC landscape designer Higson notes,

> Initially however, feeble tree growth and bare earth mounds produced a sense of desolation, and early attempts at grid road planting were myopic, one kilometre at a time, and became merely decorative large scale herbaceous borders devoid of any continuity across the city, exposing housing areas, and with no ecological foundation (Higson in Thomas and Loew 2007, p.22).

With planting issues, engineering issues also compounded the problem, as the land form of the county resulted in large amounts of cut and fill to adapt roads to purpose issues of disposal would add to costing, though a solution was used in the design of the National Bowl by John Czaky. Peter Youngman began the first landscape planning and was succeeded by Neil Higgson. Neil Higson was Head of the Central Landscape Unit of the Development Corporation and was responsible for the development of the landscape of Milton Keynes from 1975 to 1988. A landscape typology (**Figure 117 - 118**) was developed for the amalgamated historic towns and general scheme of *Strings, Beads* and *Setting*, **Figure 119**,

- *Strings* - for the planned linear parks running either side of the River Ouse and its tributaries and ‘beads’; areas that would form communal gathering spaces in the city. ‘Strings’ would form a network of green corridors containing footpaths, established first to develop continuity of the park system.

- *Beads* - would be consist of sculptures, gardens, car parks, pubs and leisure facilities focal points to the *Strings*.
- *Setting* - would consist of woodland, grassland and water areas, as well as mitigating historic towns, essentially bulk open space (Bendixson and Platt 1992; Walker 1982).

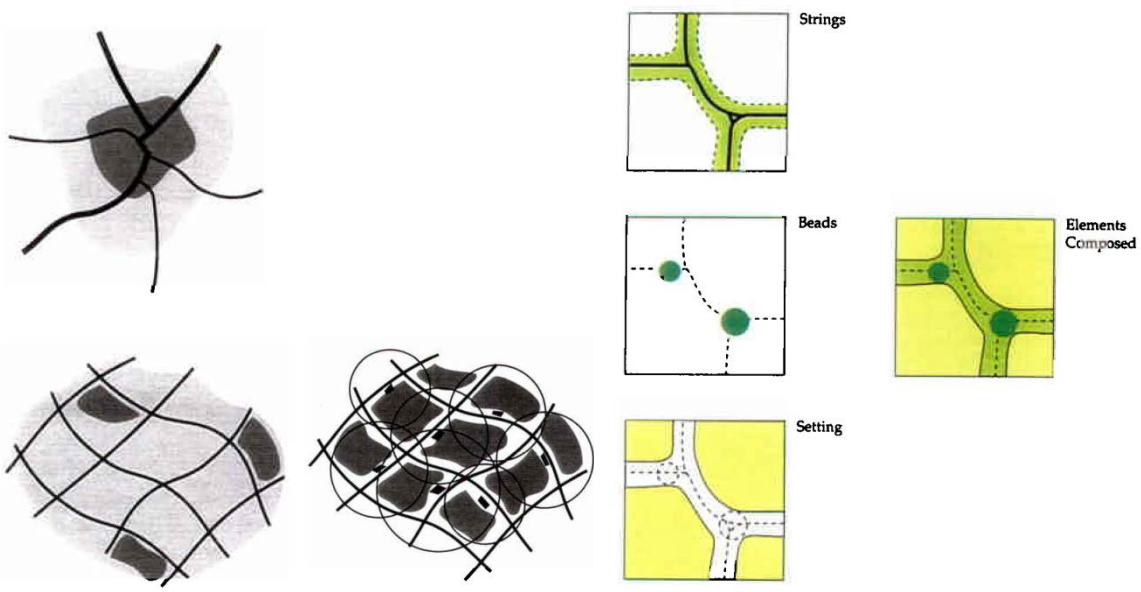


Figure 119: Radial compared to Grid form Cities, Catchment Diagram.
Strings, Beads, Setting, Park Policy Typology, MKDC Planning Document, 1970.

Thus, the aim of Milton Keynes was to avoid a specific centre, but to create carefully laid out grid roads surrounded by linear parks, green walls of berms and trees. Landscape design was an important factor to shape the city and to give a sense of individuality. It marked a previously unseen scale of planting of indigenous species. The forestry techniques employed in MK depleted UK nursery stocks as well as in the Netherlands. As Derek Walker states,

> More than any other new town, Milton Keynes has relied on its landscape to give it structure and identity. The original master plan by Llewelyn-Davies Weeks, Forestier-Walker and Bor was sensitive, setting among its main goals: opportunity and freedom of choice, balance and variety, an attractive city, and public awareness and participation. It drew attention to the role of landscape components in an attractive city at both the large and small scales (Walker in Thomas and Loew 2007, p.14).

The landscape strategy would buffer the grid system to create the idea of a forest city, and it was not only form that led to this strategy, there was an economic benefit[3] of maintenance

[3] "A cost comparison between Milton Keynes and Peterborough showed that the Peterborough roads were twenty six times more expensive to build, and the cash flow analysis of a system that can be

and production of grid form as Mike Macrae an architect who worked on the initial MK plan comments;

> We worked up our plan with activities located along on the main roads, and made plasticene models showing development intensity as a kind of volcanic cityscape. We also read Jane Jacobs, and learned that the focus of local areas was at their entries and not in the middle (Macrae in Thomas and Loew 2007, p.12).

This pattern was draped on the landscape. In the early statement of design intentions, the full weight of design aspirations was realised in a single drawing: showing road, pedestrian and landscape channels in the masterplan of 1970, **Figure 120**. However, the drawing failed to communicate its specific purpose and action, and resulted in additional roundabouts instead of traffic light grid systems; the roundabouts were deemed necessary as the original speed limit of 30mph imposed for cars in the first plan was rejected. Kinks at junctions had to be developed to absorb speed, the roundabout was presumed to be a better feature to assist this speed increase. Rapid development of the central Milton Keynes retail zone created a fixed centre distinct from the original intention of more dispersed activity per grid. Land reservations had to be enlarged, creating longer public transport times. As Edwards states,

> A further failing was in the drawing. The key drawing in the master plan is almost ambiguous—certainly not very explicit—about the interdependent design principles listed… This aggravated the weakness of the prose (Edwards 2001, p.76).

This marks an important case of the use of drawing and marks in comparison to other work developed in the master/strategic plan **Figure 120**. The ambiguity inherent in the drawing, and the general flexibility of the overall design concept allowed deviation over time from the original vision. Thus the strategic plan could be seen as the establishment of a performance space adaptable to human conditions, a score for the everyday and social relations to make and change the spaces over time.[4]

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built incrementally is much better than for a system that has to be complete before it can be effective" (Mahaddie in Thomas and Loew 2007, p.17)

[4] This graphic is certainly different of the urban apriori actions seen in the previous chapter in Space Syntax.

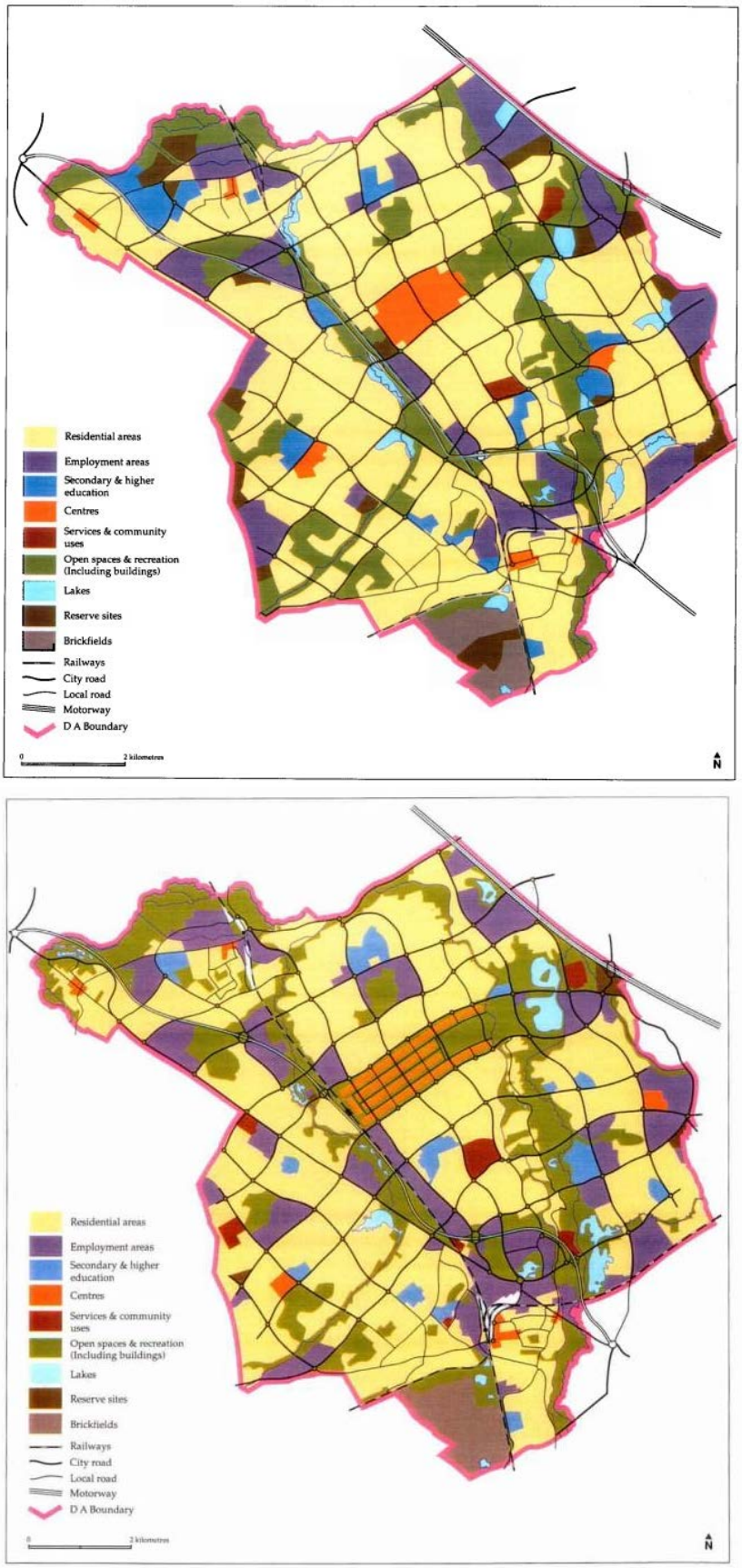


Figure 120: Milton Keynes Masterplan 1970 & 1989 Mk Development Masterplan**.**

Though the flexibility was a deliberate idea of Llewelyn-Davies Weeks, as previously said, the drawing was to be treated in a new way, not as an objective truth, an embodied drawing, but also as a looser agent of ideas and strategies based on planning principles developed by Webber (Bendixson and Platt 1992). The idea of planning in a less mechanistic approach, laying city form with complete stipulation, is still a much favoured design method (Tewdwr-Jones 2012). Many sources cite the age of the planners and architects who undertook the work, of which many had only had a few years' experience or had recently left architectural school (Walker 1982). The way in which departments interacted, advised and collaborated is an interesting extension of this enquiry. The design activity was not conducted in a vacuum, Buckminster Fuller and Steen Eiler Rasmussen and many others would contribute theories to new town planning in Monday evening lectures and presentations to MKDC, who was interested in social reactions and enriched Derek Walker's team with contemporary urban discussion (Walker 1982; Walker in Thomas and Loew 2007 p.16).

Figure 121: Town Park, near the boating pool, Helmut Jacoby, Arch. Derek Walker & Andrew Mahaddie, Graphite, 1976.

Such work is interesting when we consider such architectural rendering of the now built Milton Keynes. Rendering by Helmut Jacoby, Andrew Mahaddie, Walker and Higgson is certainly telling of the space inhabited today **Figure 122 - 123**. Arguably the whole environment of Milton Keynes to an extent could be traced back to the original visualisations – what was connived translates directly to what has been produced. Different techniques of communication were needed to earn the confidence of the client, public, design teams and publicity for the project. This chapter looks at three case studies and successes and failures as well as the un-built architectural discarded design proposals of Milton Keynes (Walker 1982).

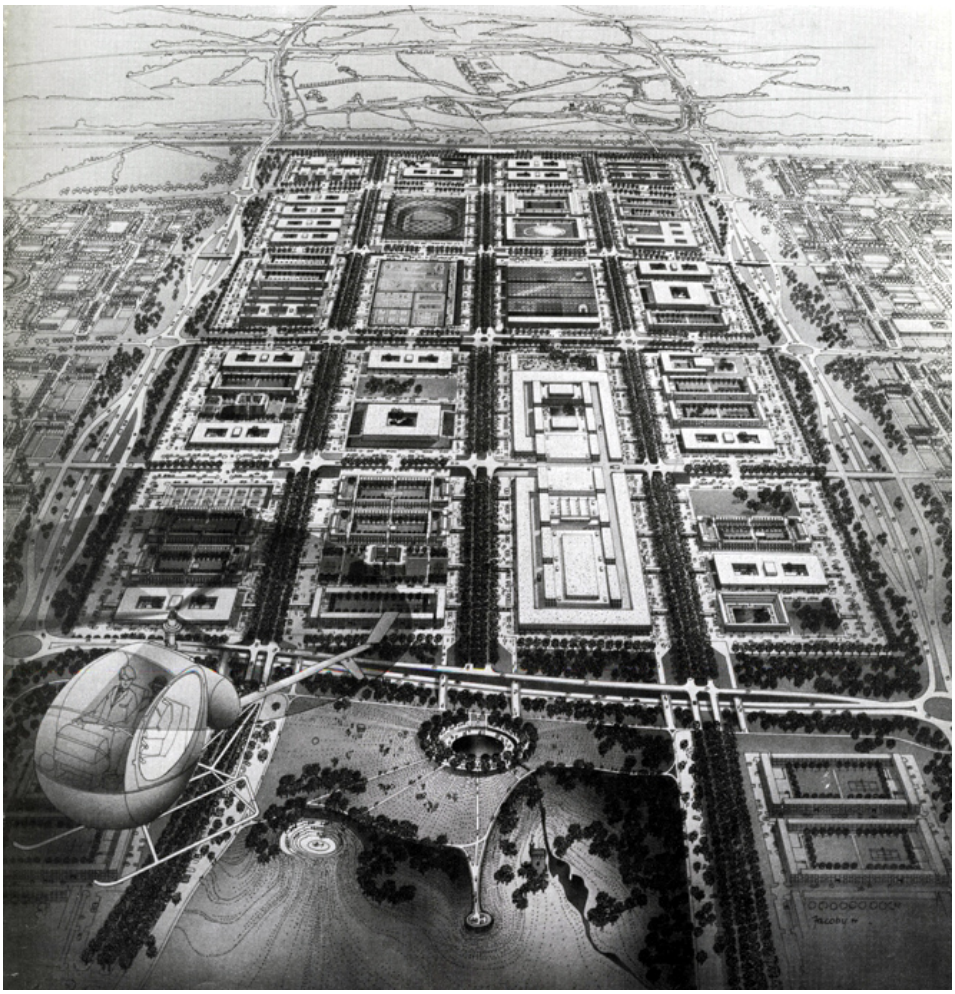


Figure 122: Helmut Jacoby, MK in 1990, Aerial Perspective, Graphite, Milton Keynes Main Centre, 1974-1990, 1974.

Figure 123: Nicolas Tye Architects, Milton Keynes Main Centre, Aerial Photograph, 2012.

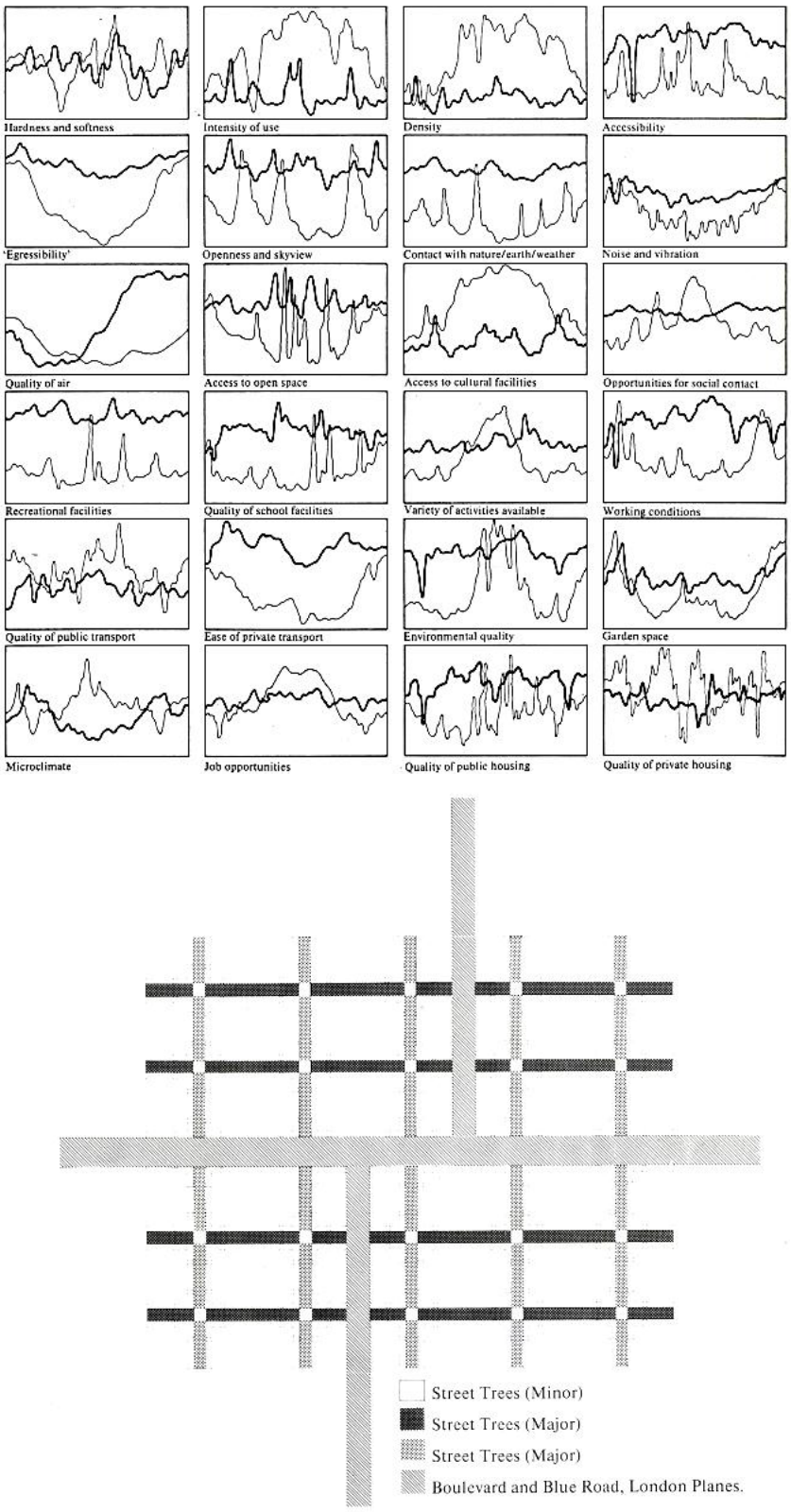


Figure 124: Derek Walker, Socio Analysis & Central Area Gird Road Tree Planting, MKDC, 1973.

Extensive modelling took place for the development of Milton Keynes **Figure 124** and the diagram is the information graphic which was chosen due to its capability of conveying such layered information, here MK is compared to London. Modelling of recreation, job opportunities, working conditions, education, green space, pollutants and many others were all compared to highlight the benefit of such activity in line with Webber based principles of socio-based planning over traditional forms (Webber 1968). The diagrammatic quality can be found in the way in which the data is stratified and layered, the viewer connects the data, which somehow transforms the line into a meaning of the production of space. The diagrammatic development almost embodies the Webber approach to urban planning, a philosophy as demonstrated in this passage;

> The next stage of urbanization planning will be guided by the concept of selective development - by the formulation of tactical programs that conform to strategic plans aimed at bringing the left-behind groups into contemporary urban society
> (Webber 1968, p.1108)

The sense of a tactical arrangement of social conditions is evident in grid form structure, even more so in the allocation of 'green space' reduced to a modernised code and percentage (around 20/25% per square, major spaces are depicted in **Figure 125**). The depiction of the protection and provision of green space is a tactic of the utopian vision of Milton Keynes planners. That is to say that the diagrams like maps carry the philosophies and intentions of planners, they transport the conceptual to production.

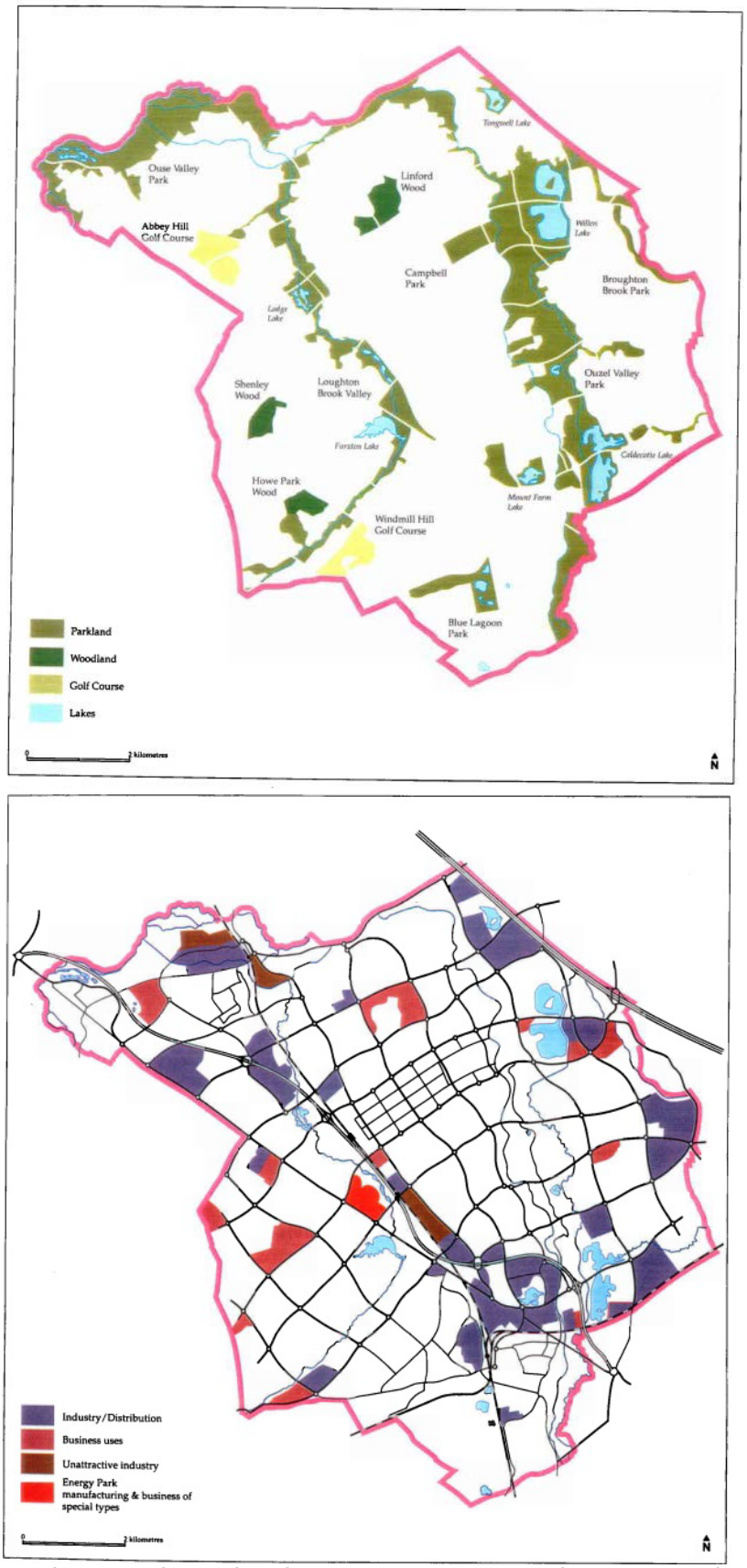


Figure 125: Linear Parks and Major Open Space & Employment Land Typology, Milton Keynes, MKDC 1970.

Such diagrammatic quality was supported by perspective drawings and aerials intended as design guidance for developers, some of which were private developers due to Governmental change and a European Ruling. The vision was for a 'Forest City', buildings would disappear as trees reach maturity, acting as curtains to the structures. A housing yardstick of fourteen houses per acre was the initial idea to enable this vision, to deliver a density lower than many of the problematic major cities (Walker 1982). Settlers to the new town would be welcomed with social development programmes; housing was to be designed ecologically. Milton Keynes being home to the first solar powered housing in the United Kingdom, methane gas was intend to power public transport, an extensive art programme was central to the cities development and was land reserved for communities' future use; Milton Keynes was planned in *hope*. Some of the grid square guidance drawings are shown in **Figure 126, 127, 128, 129, 130**.

Mahaddie, in these sketches, organises each square, as each drawing represents a perspective of each of the major points taking a journey through grid roads and local routes. Studies from life are made - the worker commuting, dog, car and cycle rider - all are delimited to catch a sense for more worked and finalised images which became presentational storyboards of the percentage of green infrastructure per square **Figure 2**. Mahaddie would compare in each drawing the grid roads, with local routes drawing a perspective square of views, openings to industry, roadside planting, and openings to parks and landmarks. The experience of the city was to be the same regardless of transport choice. It was intended the public make connections and view interest between each square. This would give a sense of the localised identities of each square. The square would also be drawn as an aerial perspective, to give a sense of urban form and related to the perspectives.

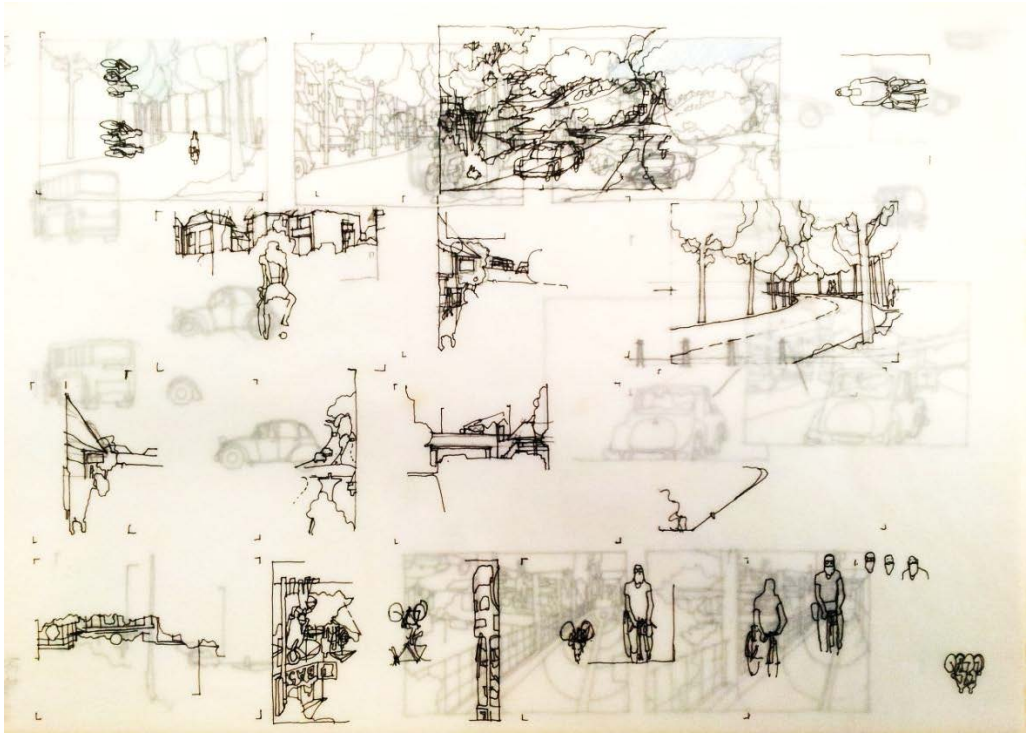


Figure 126: Andrew Mahaddie, Continuous Local Routes, Pen on Layout Paper, A4, MKDC, 1970.

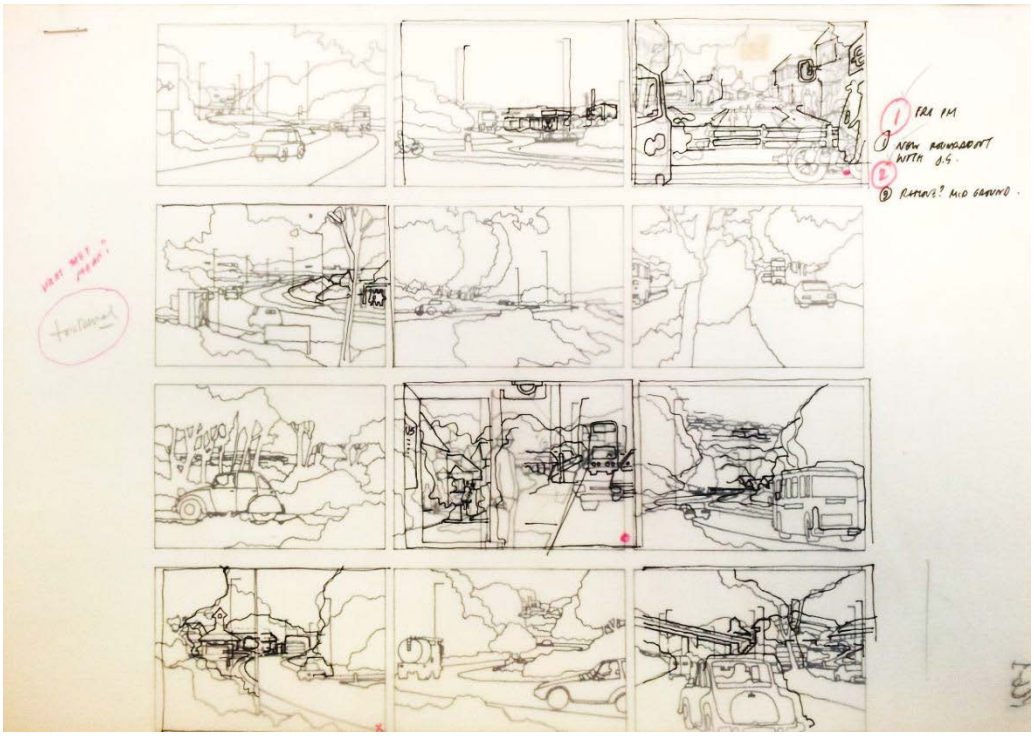


Figure 127: Andrew Mahaddie, Continuous Local Routes, Pen on Layout Paper, A4, MKDC, 1971.

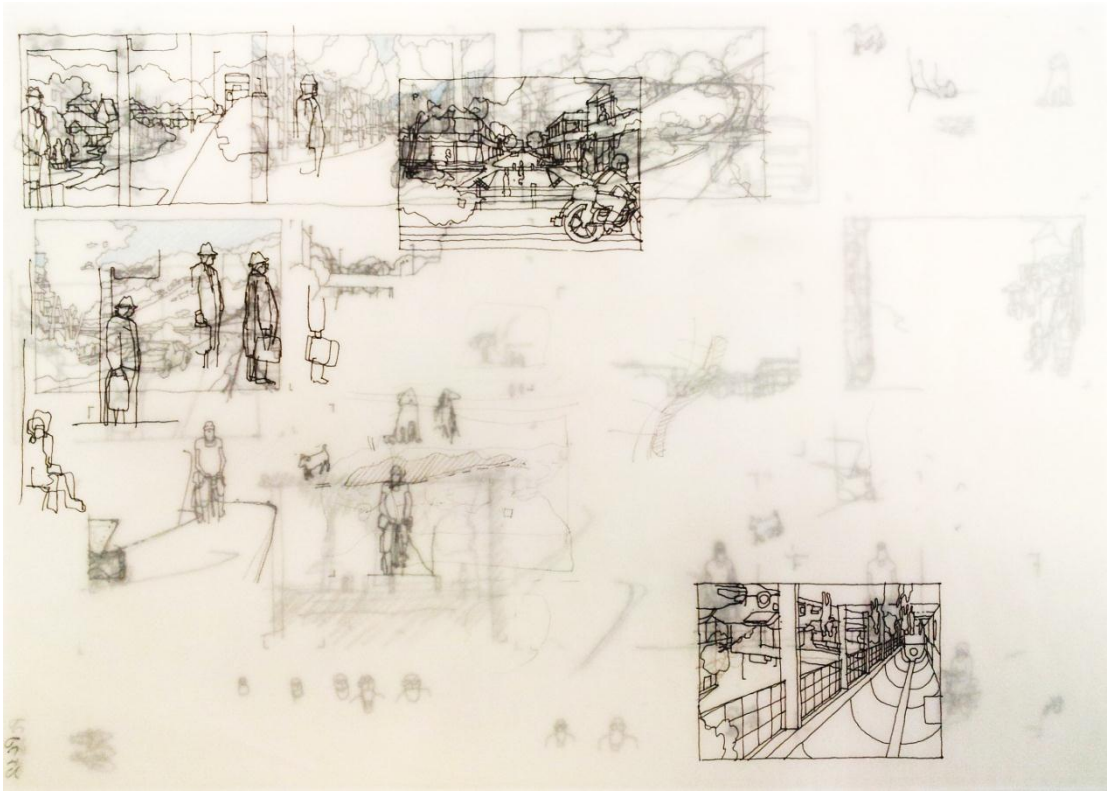


Figure 128: Andrew Mahaddie, Continuous Local Routes, Pen on Layout Paper, A4, MKDC, 1970.

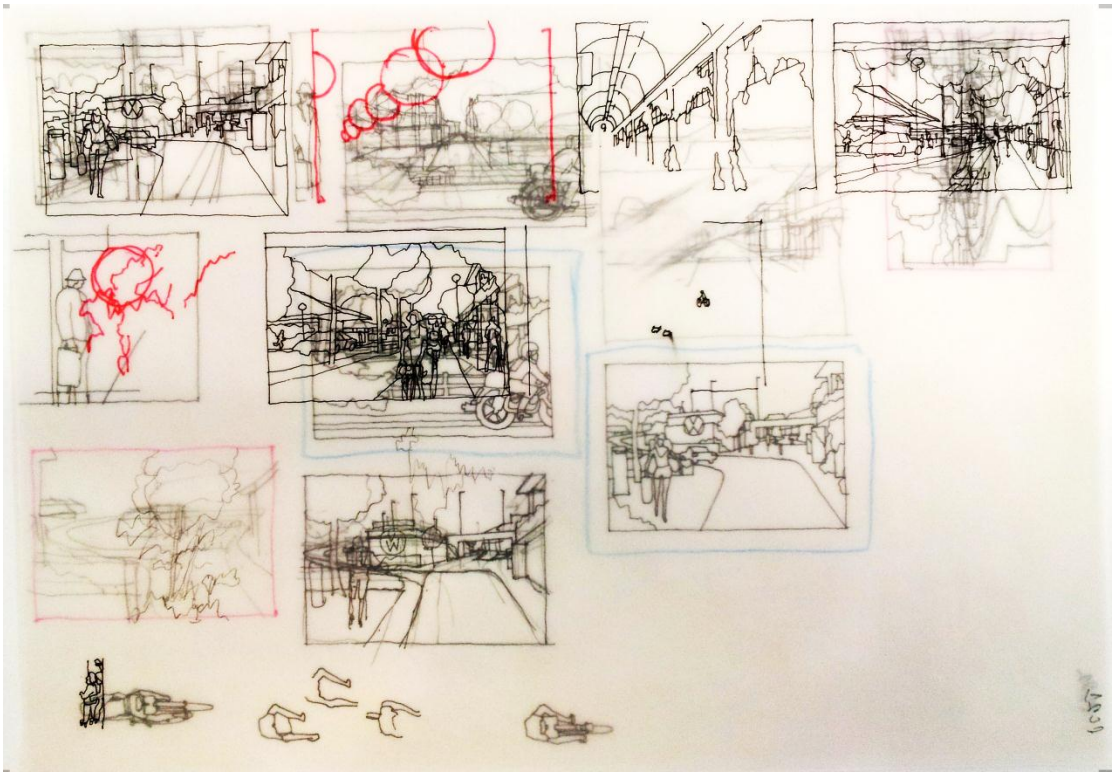


Figure 129: Andrew Mahaddie, Continuous Local Routes, Pen on Layout Paper, MKDC, A4, 1971

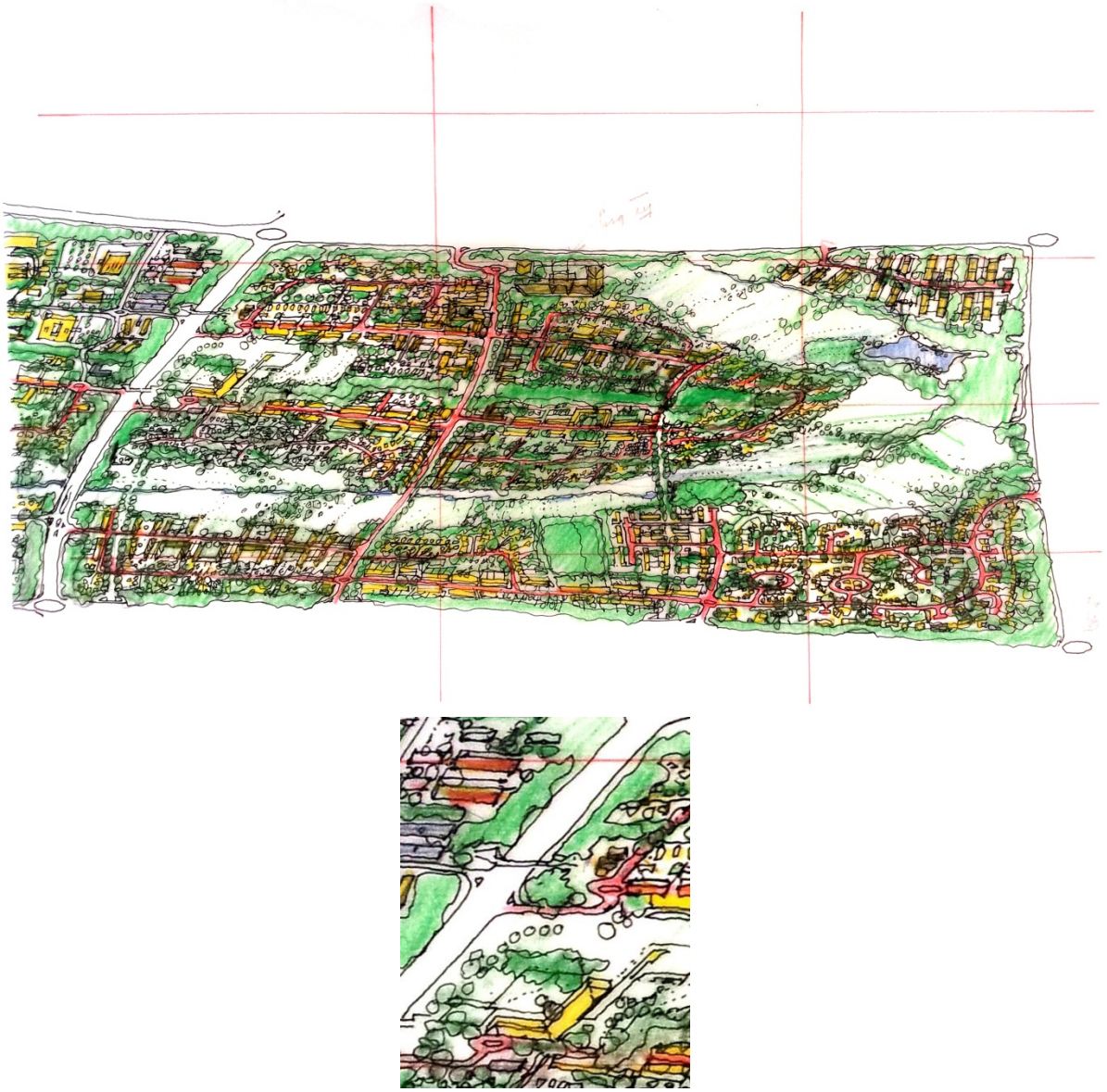


Figure 130: Andrew Mahaddie, Grid Square & detail, 0.62mi pr Sq est. Langley, Pen & Coloured Pencil on Layout Paper, A4, MKDC, 1971.

The planning of Milton Keynes gave a stake to all of its citizens, they could help shape and form the city to their desires, and this was formed in terms of the local community groups and forum community house established per segment.[5] Thus policy was developed which could be expanded on certain grounds, or contracted. This meant local event, ecologies and

[5] The council also engaged in grass roots cultures, for example meeting with skateboarders to create their preferred skate park design hosted by Architecture MK and working with the Council's architects and planners (see Urban Design 94, p20-22 on SK8MK). This won the 2006 Local Government 'Award for Community Involvement & Engagement of Partners & Stakeholders' (Lamacraft in Thomas and Loew 2007, p.33). Such ambition also materialised to an extent in the establishment of the Open University, with initial principles of free higher education.

practices shaped the place and the centres. This approach by Mahaddie, and the plan drawings in synergy, created a diversity of design, the drawings and team as the MKDC team leader and planner Jon De Monchaux states,

> Put forward certain principles and illustrations for exploiting the opportunities inherent in the larger pattern of a continuous mesh of pedestrian routes, local roads, and main roads; and it advocated and careful and systematic evaluation of what was achieved as each new centre and place was developed (Monchaux 1984, p.25).

The drawings give certain belief structures of the sociological urban grid form for heterogeneous spaces these drawings can be viewed as fluid agents, in the effected the conception of the city, for example the 20% green space maxim being carried through in development and visualised the experience of these new grid centres from the road. Each study considers at a human level the implication of the development on conservation sites and historic villages, to newer social housing. This agency is revealed in the MKDC planning documents as MKDC planner and architect Walter Bor writes,

> The plan shall lay the foundations on which an organic process of development will grow and become a living reality as the people who come after us plan and build for the future… (Bor 2013, p.xi).

Bor's statement could be re-orientated, in that MK was formed on the idea of a fluid performance space in which a variety of practices and urban forms could emerge within the framework of a forest city grid. This organic process has of course generated difference, but is closer to a social space of multiplicity than the privatisation and economic driver evident in **Chapter 1.2**.

2.3.A - Cathedral of Trees, CMK Park & Willen Maze

Figure 131: Paul Cureton, Milton Keynes: Campbell Park (Green) Willen Lake (Blue) CAD & DMG Assemblage, 2013.

The chapter has started to look at the concept work for the area to analyse the radicality of the visualisation and the possible landform. One such land form was the '*Cathedral of Trees'*, designed in 1986 by landscape architect Neil Higson. There was a rush to inscribe 'meaning' in the landscape throughout the planning process and create 'beads', which could also be called nodes in modern urban design (Punter 1996). The development of a forest city and park form was important and the Cathedral of Trees could be seen as an icon of this philosophy. The Park space was to be developed using private capital and surplus investment (Bendixson and Platt 1992, p.22; Walker 1982).

In **Figure 131** each grid square was to have an allocated aesthetic and an appropriate illustration was produced per area. Campbell Park, (Green) and Willen lake, (Blue), were two of the largest 'green spaces' in the Milton Keynes plan, CMK park (later called Campbell Park) puncturing the centre of the hyper retail **Figure 122 - 123** (Mies Van der Rohe influenced). The park and Willen Lake have undergone a number of revisions. Formal gardens and water features populated by sculptural works dot the site. The original vision of the park was far more radical than what was realised as was the general strategy of Milton Keynes plan (Bendixson and Platt 1992).

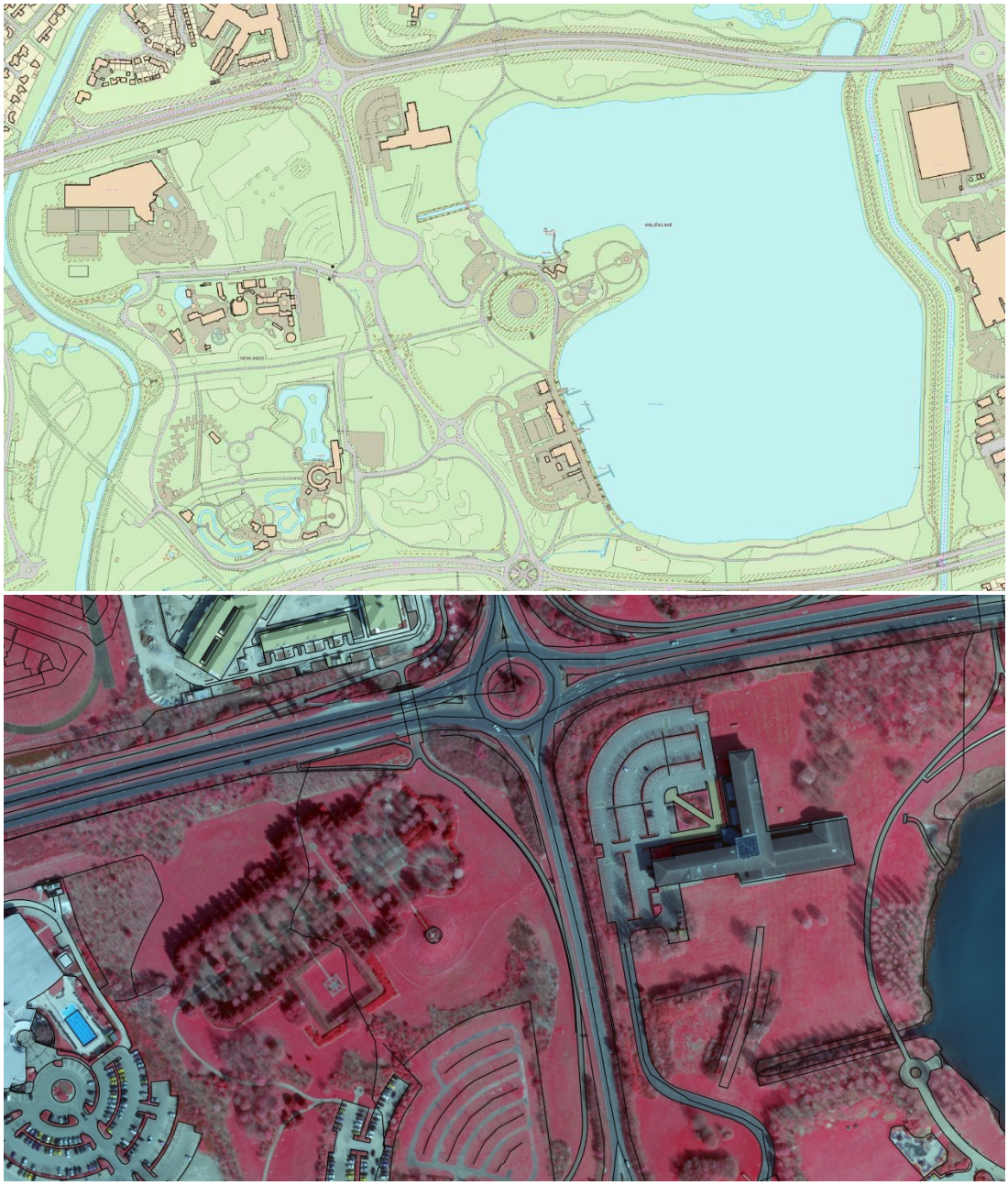


Figure 132: Paul Cureton, Milton Keynes, Cathedral of Trees, Willen Lake, OS Master map Assemblage & Cad & Infrared Assemblage, 2013

The Cathedral of Trees was a tree land form for Willen Park, **Figure 132**, based on the outline of Norwich Cathedral. Here Higson employed trees like structures, Lime and hornbeam for the Nave, evergreens for the towers and spires and cherry and apple for the chapels. Willow, horse chestnut and oak also feature. The brightly coloured springtime bulbs were planted to give a sense of the reflection of stained glass windows. A large sunken square lined with Hornbeam helped form the cloisters. A conical mound was shaped to act as the chapter house in which the layout can be viewed. Envisaged as a place for contemplation the tree form was planted on the basis of a poem by Steve Clark,

Cathedral of trees

Among the arches of oak and yew,
Grown great on rain and dew,
I sense a lesson to be learned.

The northern wind in branch and bow,
Gives ministry to fawn and sow,
A quantum peace that I've not heard.

No font to wash away my sins,
But a rambling brook, who's tumbling din,
Tells tales in tones of clarity and purity.

No stained glass here, depicts a life,
Of servitude and mortal strife,
First taken then risen to infinity.

Each branch it seems, a crafted beam,
Where prayers, the carriers of dreams,
Pass between, with no account of whispered secrets, not for all.

The leaves that gently kiss my feet,
Demand no thought for their upkeep,
But lie again anew each autumn fall.

The catacombs, silent below,
Are tended to by shrew and vole,
Who's work I'll never know, dutiful and patient.

Something else I never knew,
The tree that fell and is my pew,
Gave up itself, so I could sit in quiet contemplation.

Would man make such sacrifice,
That I find peace, give up a life,
When suddenly I laugh, I see it all.

My being here is meant to be,
This great design, is mine to see,
It brings me gently to my knees.

For here is God,
In his Cathedral of trees.

The sense of creating a 'poetic' landscape is well exemplified on the site. Further landscape and sculptural commissions were undertaken such as Willen Maze by Neil Higgson and Tim Minett in 1985 **Figure 133.** Based on the Saffron Walden Rosicrucian maze, an oak forms the centre. At each of the maze corner points there is a bronze sculpture by Minett. The

intention of the maze is to mark out 'four races' of mankind[6], in which the central symbol of life, the oak unifies and gives peace. The Maze and the tree cathedral are all orientated on an axis of midsummer sunrise that follows and moves to Milton Keynes centre where street names incorporate pagan references such as *Saxon Gate*.

Figure 133: Paul Cureton, Milton Keynes, Willen Maze by Neil Higgson and Tim Minett, OS Master map Assemblage & Infrared, Aerial Photograph, 2013.

[6] This is problematic reading of the four lobes of the maze and symbolism evident.

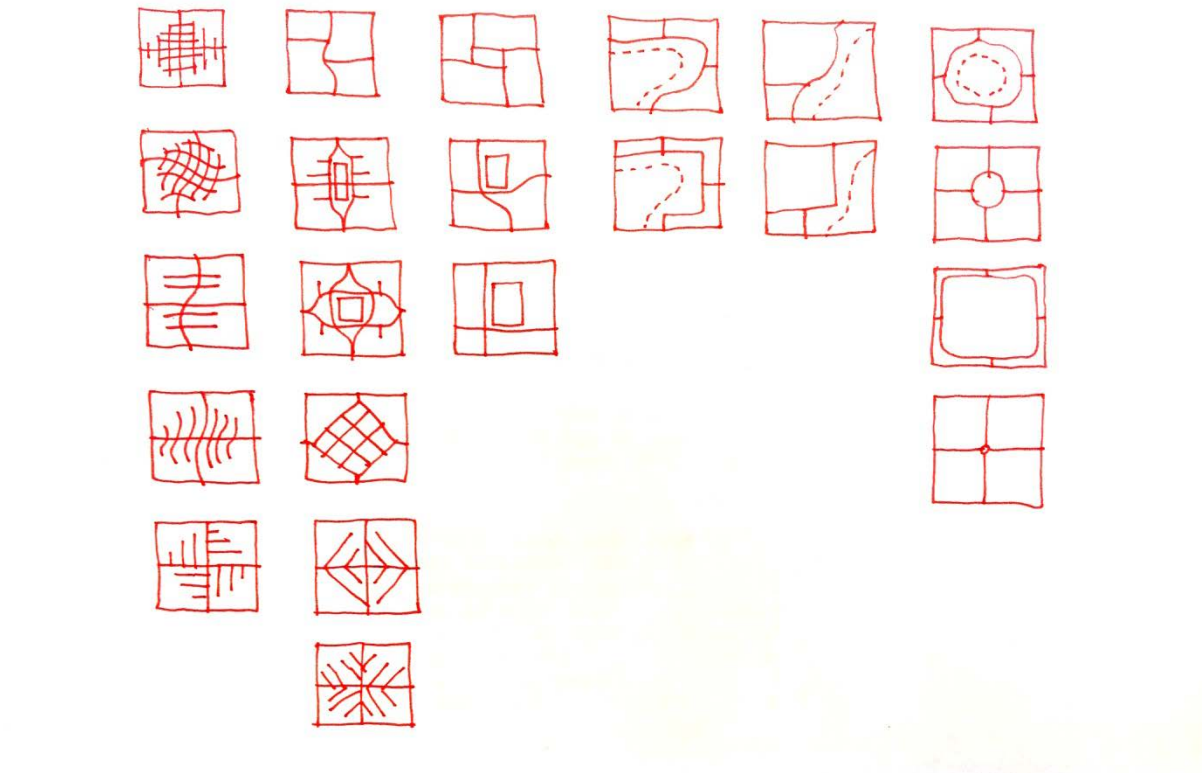


Figure 134: Andrew Mahaddie, Grid Sketches, Pen on Layout Paper, A4, 1970.

The poetic landscape was further embellished with the design of the Peace Pagoda, North Willen Lake and working Buddhist temple by Professor Minoru Ohka and Tom Hancock, 1980. Nipponzan Myohoji monks and nuns built a Pagoda frieze to tell the story of the Buddha. In South Willen Lake a sculptural form, *The Circle of Hearts* was developed in 2000. Formed for millennial celebration, two concentric stone circles house a grass space for occasional fires surrounded by with wild flowers. Such attempts to make landscape with spiritual connotations are devalued by the theme park, *Gulliver's Land* to the west. The original park called CMK Park (**Figure 135**) was designed by Walker and Mahaddie and rendered by Helmut Jacoby. CMK Park was to possess a water carpet; i.e. water features throughout the site siting on a central axis aligning to Stonehenge. A belvedere featured that led to a large conical mound at the centre, best represented in the axonometric drawing. The mound was to contain the subterranean cafes and artist studios **Figure 136**. The proposal only reached model stage and was discarded on economic grounds. The sense of axial landscape design perpetuates across the whole masterplan. Overall the landscape works by

Mahaddie and the team were influenced in the writings and sacred geometries of John Mitchell[7], a writer influenced by Plato who discusses earth mysteries, and landscape form,

> In the symbolism of all religions, a geometric construction representing the heavenly city or map of paradise has a central place. It occurs in sacred art as a mandala, a concentric arrangement of circles, squares, and polygons depicting in essence the entire universe. Related images include the labyrinth, the paradisal garden, the walled enclosure or temple precinct, the world tree, the enchanted castle on a rock, the sacred mountain, stone, well, or spring, and all other symbols of the universal axis…(Mitchell 2008, p.7).

Reviewing the passage in the light of Mitchell's description of our psychological imaging of celestial cities, it is almost as if the landscape design was literally translated from Mitchell's passage, as the site contains the labyrinth, paradise garden, temple and world tree and many other symbols of the celestial city. Such Geometry is drawn in Mahaddie's own sketches **Figure 9**. What Mitchell would describe as Landscape design is a story of creation (Mitchell and Brown 2012), at least the popular text of Mitchell in new age circles, would posits that sacred geometries were the one true form of organising space for peaceful existence. The vocabulary of drawing straight lines apropos Euclid, cosmology of Plato (Timaeus), renaissance infatuation with propositions and ratios of space, the divine system of organisation, all play out in the landscape design philosophy re-written in contemporary terms, which is bizarre to comprehend for new town planning and Milton Keynes, Street names such a Midsummer Boulevard, the orientation of the retail centre and reflective evaluation of the planning team support such claims.

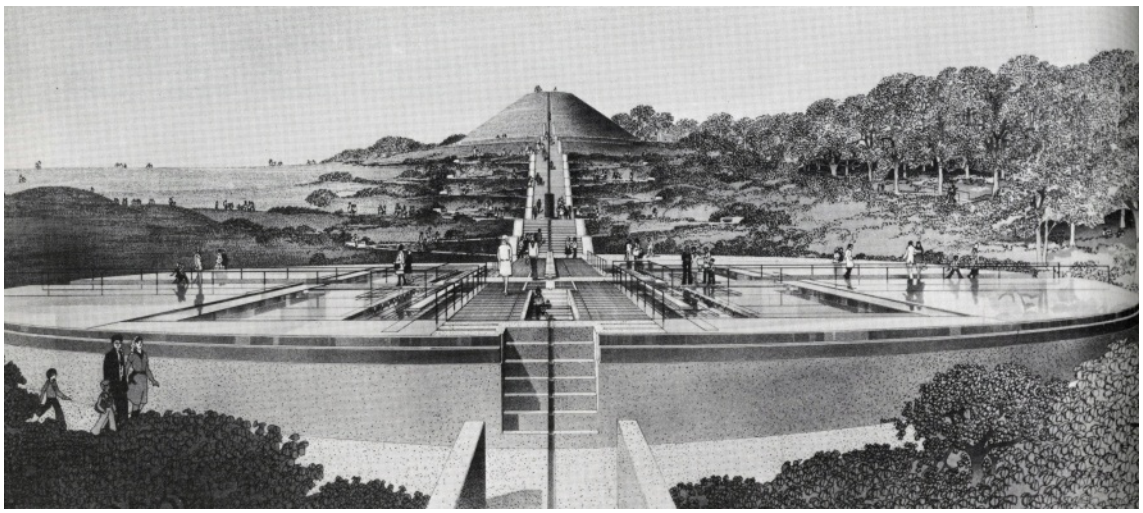


Figure 135: Town Park, Water Carpet & Cone Area, Helmut Jacoby, Graphite Arch. Derek Walker & Andrew Mahaddie, 1976.

[7] Mahaddie confirmed by authors interview, it was not a direct influence but was generally read, as his thesis gained popularity in the 1970s.

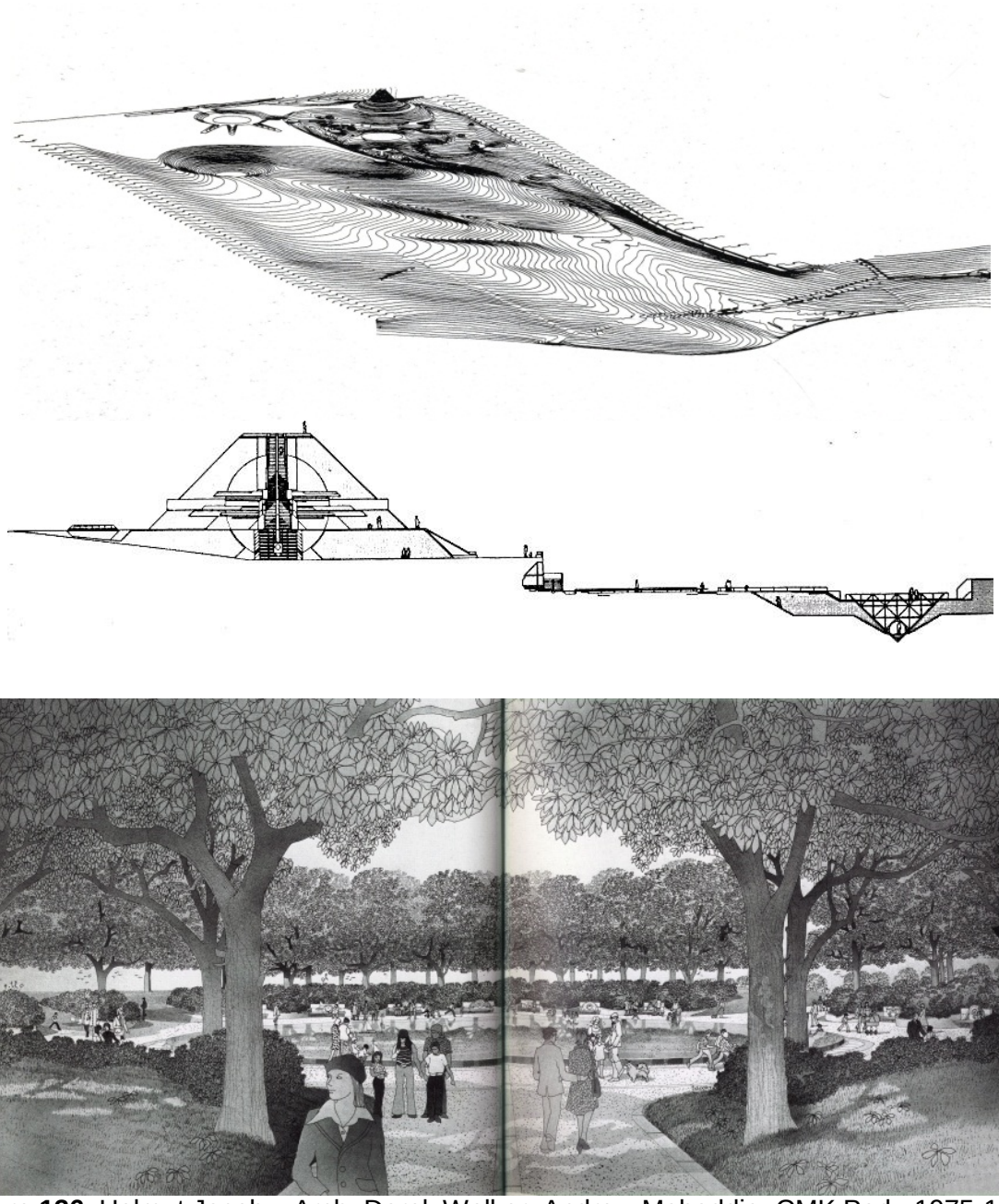


Figure 136: Helmut Jacoby, Arch. Derek Walker, Andrew Mahaddie, CMK Park, 1975-1976, Axonometric Ground Form, Section & Round Pond.

In the ‘City as an Image of Man’, T.C. Stewart analyses the psychology and mythology of city form through a weighted prose and diagrammatic exploration. In Milton Keynes we find similarity in symbolic form, “although the aphorisims in the text were expressed by individuals at different times and in different languages, the geometry or forms that they are talking about remain the same”(Stewart 1971). The underlying philosophy of the landscape design can be expressed by Hollein,

> The first furrow with the plough. A field. A space comes into being. The trees fall. The woods are opened up. Space comes into being.
> Manmade space.
> You dig a hole.
> Pile up some rocks.
> Put up a pole.
> Architecture comes into being.
> A single point, line and plane (two dimensional theoretical) can determine space. A phenomenon of the third dimension (Hollein 1960, pt.1).

In this mathematical landscape shaped from various geometries it could only perhaps be drawing that could carry the abstract to the concrete. The landscape and parks of Milton Keynes needed to develop localised identities, and all of this experimentation went hand in hand with the creation of 'place'. It was done so in a playful way, literally, as seen in the work of Archigram for a children's playground (Now Demolished) **Figure 137, 138, 139.** The optimism in which landscape was formed, the instigation of place making was central to the development corporation. This sense of play developed out of feedback from residents of Milton Keynes, and later by Bristol University's Centre for Advanced Urban Studies commissioned by MKDC in 1979, in which interviews combined with drawings by residents of their map of Milton Keynes, a drawing giving instruction on how to arrive at their house, coupled with descriptions and recognition of icons of MK (Bishop 1984). Drawing was the agent that carried the image of the city (though respondents did not feel that they lived in one), and the pattern of MK gave it that very identity. The maps did not draw the grid square but rather clusters of activities, shops, schools and parks.

These designs and discarded proposals begin to evidence the wider desire of the building of the 'forest city' to inscribe meaning in the landscape, using drawing; creating a fictional space in which actual objects come to exist, with reference to ancient landforms and geometries. Such investment rested on the creation of places, features or *Beads.* These works hoped to give MK an image, to create a city of symbols and culture with reference to the fragmented archaeology of surrounding cities and parts of the villages that the city subsumed; an urban agenda for a new English city. These works give qualification to the *Blood* method of Calvino; expressive activity in response to the landscape phenomenon, essentially creative expression of landscape which rests on cultural layered responses.

Figure 137: Naomi Borstein, Dennis Crompton, Ron Herron, Andrew Holmes, Diana Jowsey, (Archigram), Children's adventure playground at Calverton End, Milton Keynes, Buckinghamshire, 1972. Ink & Collage on paper.

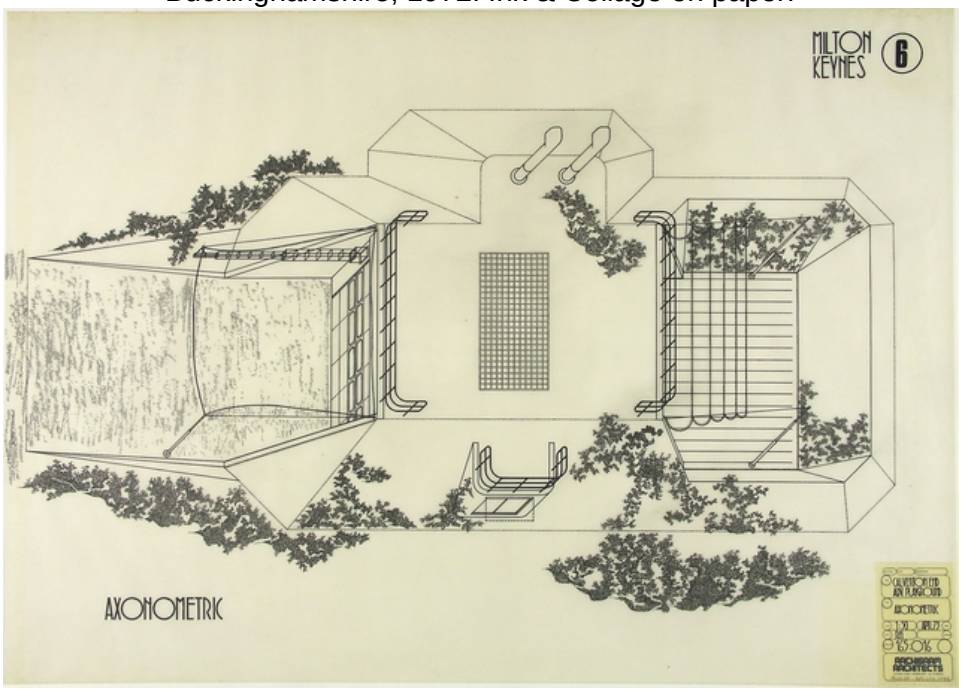


Figure 138: Naomi Borstein, Dennis Crompton, Ron Herron, Andrew Holmes, Diana Jowsey, (Archigram), Children's adventure playground at Calverton End, Milton Keynes, Buckinghamshire, Axonometric, Ink on paper, 1972.

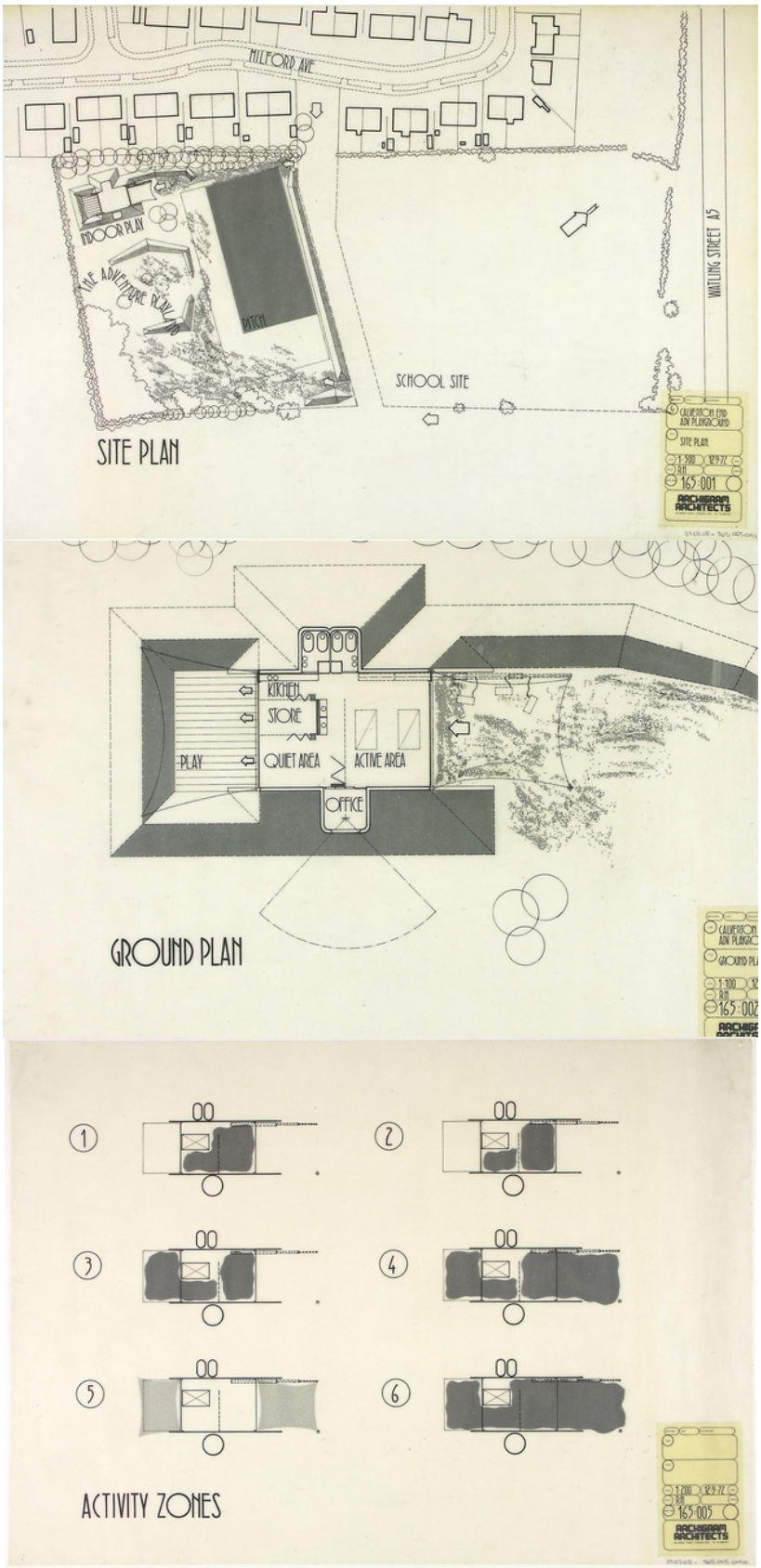


Figure 139: Naomi Borstein, Dennis Crompton, Ron Herron, Andrew Holmes, Diana Jowsey, (Archigram), Children's adventure playground at Calverton End, Milton Keynes, Buckinghamshire, Site Plan, Ground Plan & Activity Zones, Ink on paper, 1972.

2.3.B - Bletchley Brick Pits Theme Park

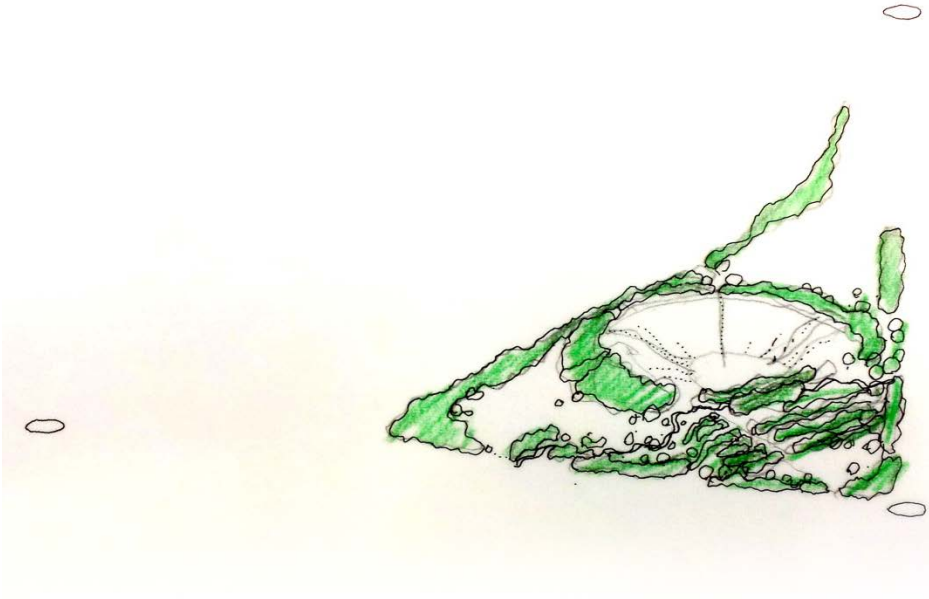


Figure 140: Andrew Mahaddie, Loughton Bowl Sketch,
Pen and Coloured Pencil on Layout Paper, 1971.

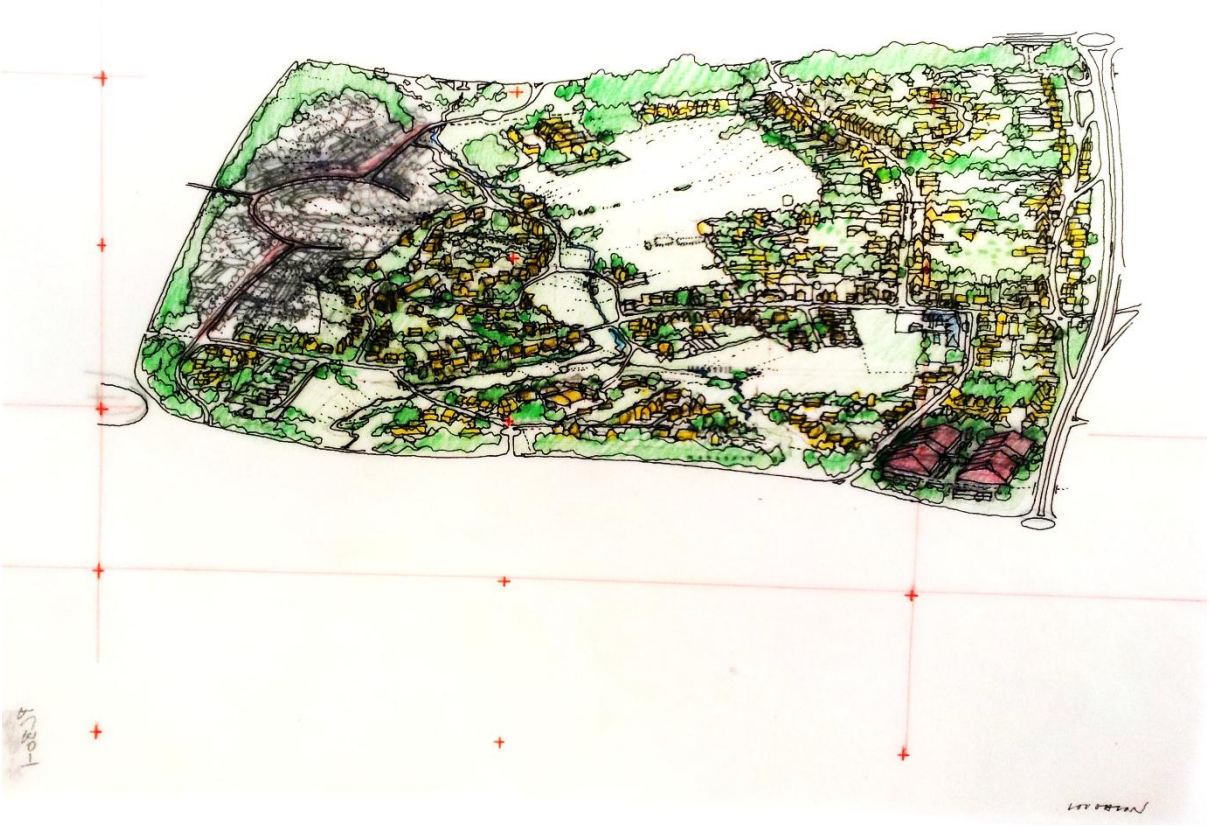


Figure 141: Andrew Mahaddie, Loughton Bowl Aerial,
Pen and Coloured Pencil on Layout Paper, A4, 1971.

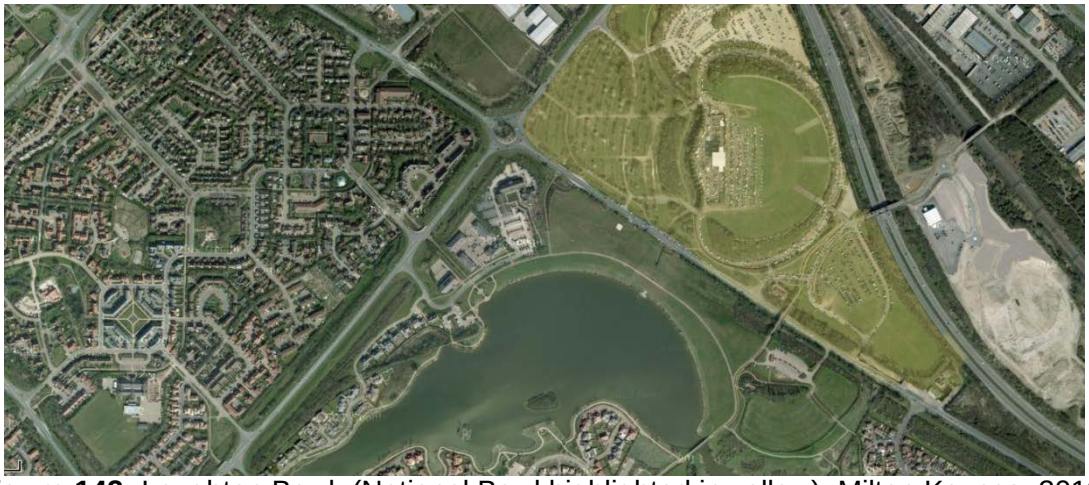


Figure 142: Loughton Bowl, (National Bowl highlighted in yellow), Milton Keynes, 2013.

The architects and planners faced several issues in producing the master plan, particularly at periphery areas and former industrial sites. The National Bowl, north of Bletchley (Yellow), was formerly a brick pit and required infill **Figure 142**. In 1973, a large earth mound was envisaged to create a performance and event space using sub-soil excavate designed by John Czaky who was an events designer for MKDC. The road building for the grid structure and the soil surplus from construction was used as infill for the pit due to the extensive cut and fill of realising the grid network on Buckinghamshire topology, creating a vast saving in transportation costs and disposal. In **Figure 140 - 141**, Andrew Mahaddie sketches the bowl and locates the idea in relation to the rest of the grid square. What is interesting here is the relationship between the drawn mark and the physical scale of the earthwork, how a simple idea is drawn, then translated quite directly into a landscape feature. Again as part of a wider urban design, MKDC attempted to invest meaning and performance in a space, to create symbols of a city within a short time frame.

Figure 143: 'Blue Lagoon' Nature Reserve & Brick Pits, Milton Keynes, 2013**.**

South of Bletchley, further brick pits, needed strategy and design **Figure 143**. In addition the northern pit was flooded since 1940, giving a mineralised blue colour, hence the name 'blue Lagoon', which formed a nature reserve.

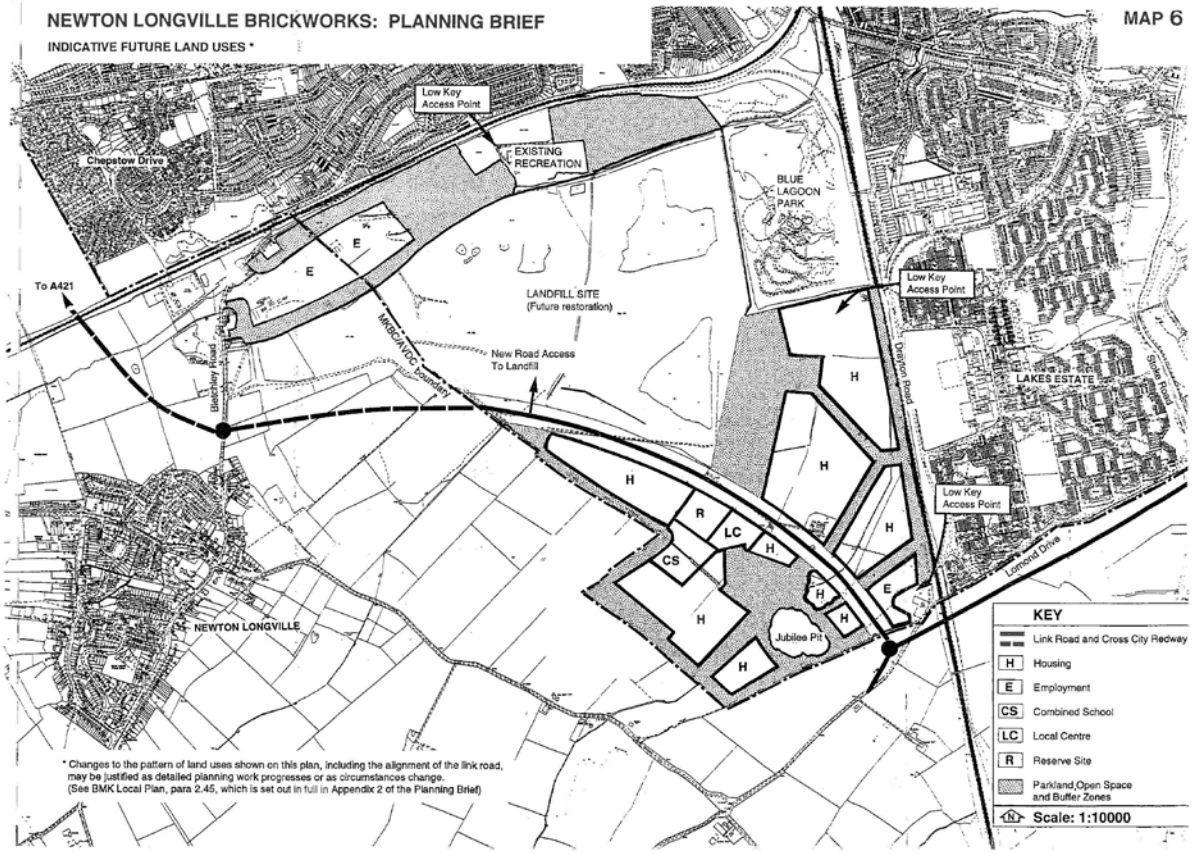


Figure 144: Newton Longville Brickworks Planning Brief Approved, 1995.

The brickwork factory was demolished in 1970, and land use was changed to landfill in 1980. Though the sense of protection of the periphery was envisaged in the master plan, Milton Keynes has been the victim of high density strategy, as such, the pressure for in-fill of its green space is great. This is demonstrated in **Figure 145**. Future land use concentrates on housing development with neglect of the landfill site and additional road networks, showing expansion and amalgamation of Newton Longville village to the west. This development is well described as a broader issue for Milton Keynes (Thomas and Loew 2007, p.41).

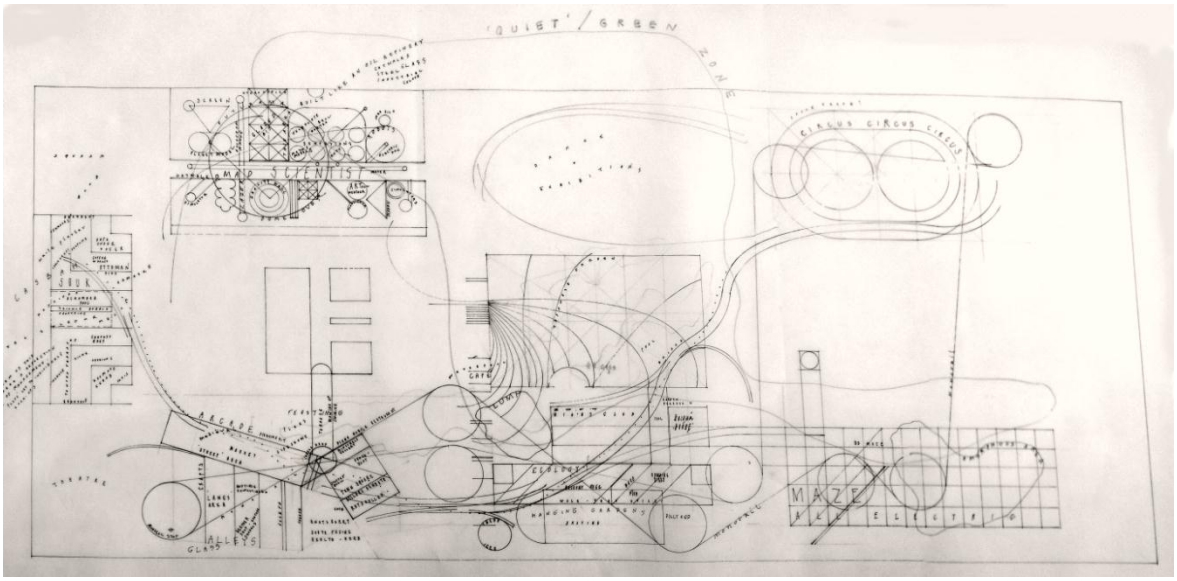


Figure 146: Andrew Mahaddie, Green Park, Three Sections, Pencil on Layout Paper, 1973.

In **Figure 146**, Mahaddie draws his ideas for the pits and develops these for features of *Cowcommon Canyon*, or creates an ideational sketch of the make-up of the park. Three main sections feature; 'Mad Scientist' garden, a Kasbah and Electric maze all serviced by a central monorail and leisure arcade. All of these features are incorporated within the further developed sketch.

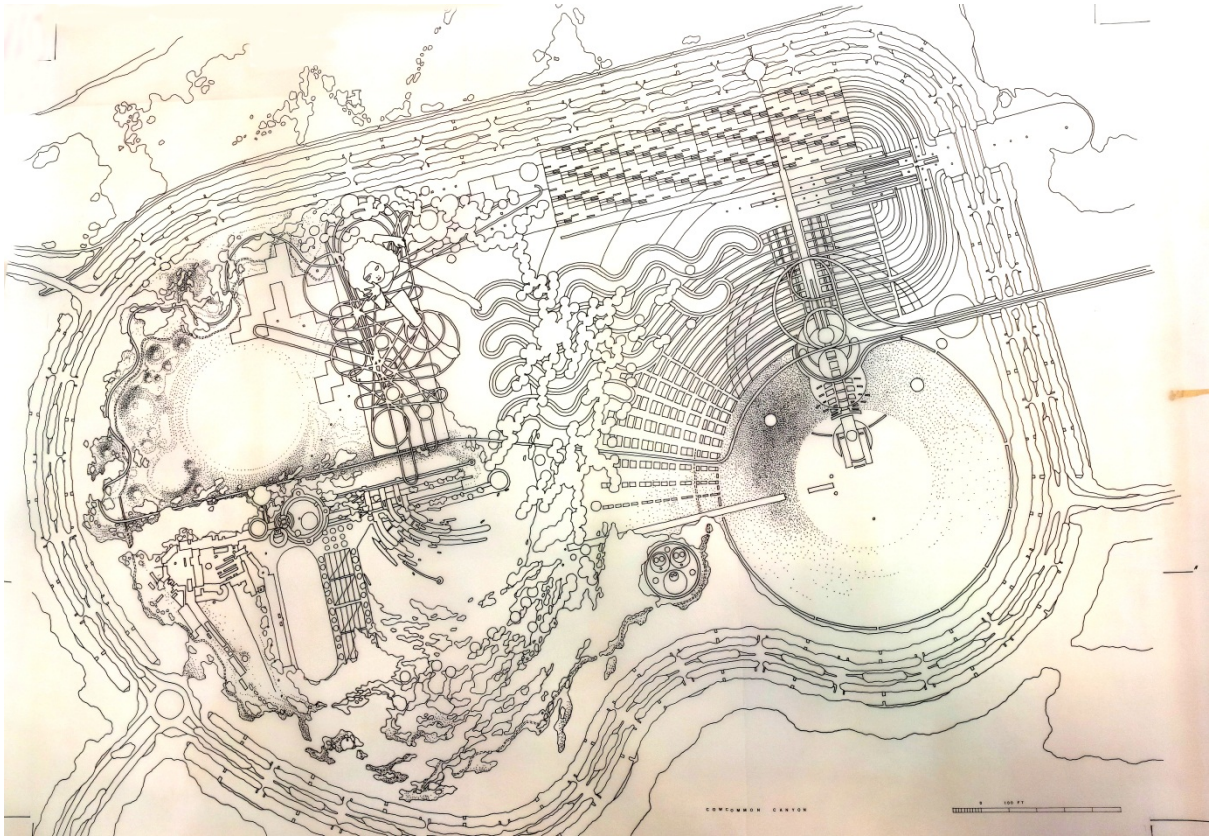


Figure 147: Andrew Mahaddie, Cowcommon Canyon, Bletchley Brick Pits, Pen on Layout Paper, 66cm x 103cm, 1973.

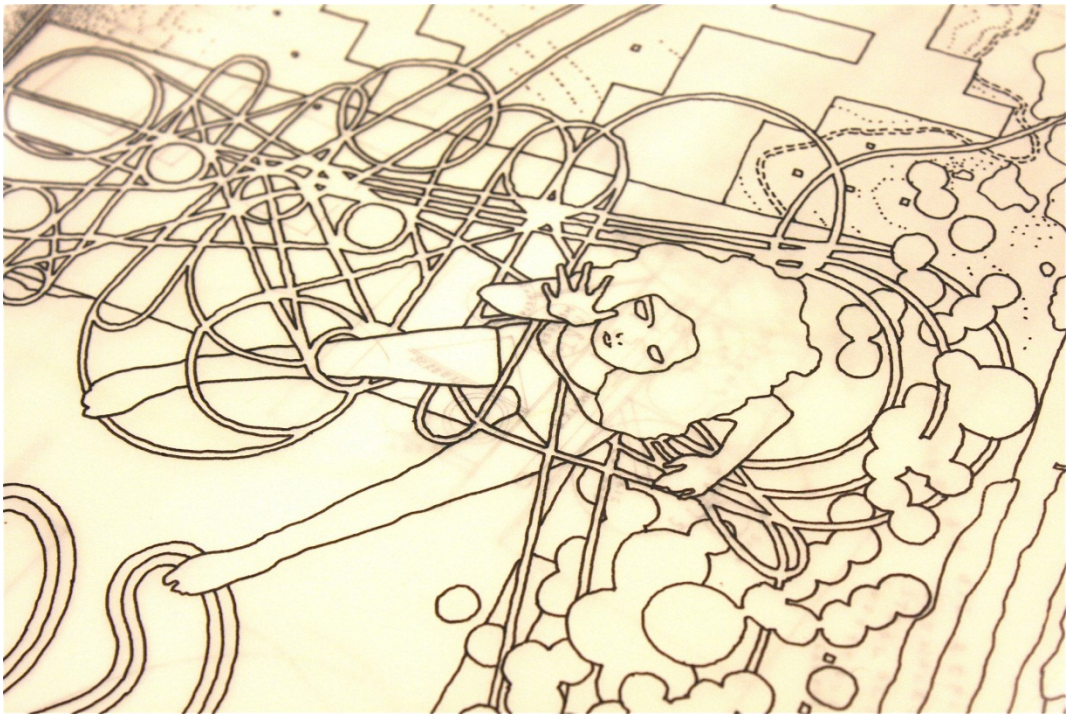


Figure 148: Andrew Mahaddie, Cowcommon Canyon, Theme Park Bletchley Brick Pits Area, Detail of Colossus, Scheduled 1990+. Courtesy of MKCDC. Permissions Given.

Such aspiration and vision differing from that which was built would also be found in another 'un-built' Milton Keynes a theme park in Bletchley brick pits area (1974) **Figure 147 - 148**. This is important to discuss as this work, like CMK Park, was the 'hope' for Milton Keynes in creating large scale projects (Walker 1982, p.96). In this work on layout paper, an exploration of the future of the brick pits south of Bletchley, surrounded by the London rail line is drawn out. A national recreation centre combines participation in the arts, sport and education with the entertainment area shown in this plan. Overlaying the drawing is the description of the site. The pit at the time of drawing was 30m deep and Mahaddie titled it a 'Canyon' and it would be converted into an asset. The canyon would be enhanced by making use of tipping to create a 77m truncated cone 152m in diameter (discus). The main Euston line on the perimeter would make public transport the main mode for access. Mahaddie ideally hoped for a monorail to connect MK station to the theme park. The monorail would connect to a parking boulevard, which offshoots pedestrian routes, bus, and escalators to the parks feature. The site is organised on the premise of some climate control, allowing 24 hours operation. The most intensive areas are to the north of the canyon, and the quieter areas are on the south edge. It is important to understand the agency of drawing here and Mahaddie's conceptual formation or *Blood* & *Trade*.

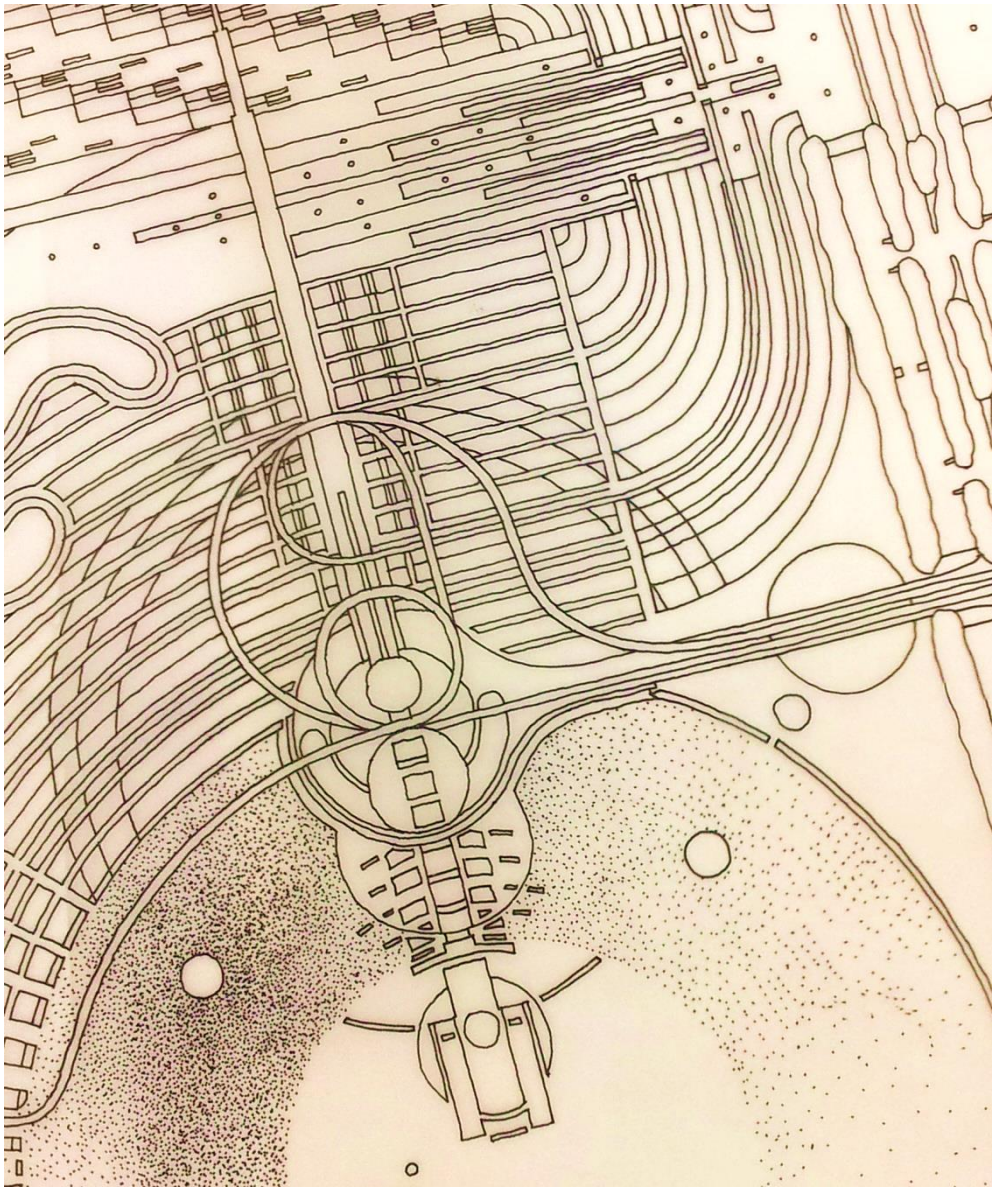


Figure 149: Andrew Mahaddie, Cowcommon Canyon, Theme Park Bletchley Brick Pits Area, Detail of Pont du Gard, Scheduled 1990+. Courtesy of MKCDC. Permissions Given.

A gradual web pier spans the hill and the north edge of the canyon, with water terraces below, a spidery steel pont du gard open roof deck with viewing platforms, restaurants and travelator features **Figure 149**. A mirror curtain could be suspended below to project an illusory space. The north edge would feature a grass cliff with many recreational and educational facilities. Climate adjustments would feature Mediterranean style, surfing beaches, swimming pools, winter gardens, tropical palm house, sports areas, theatres, casino, bars, museums, apartments and studios. This would be enabled through an adjustable glass roof with an automatic blind system. All of these parts are articulated by a hand drawn line and could be understood as a heuristic process, as part of *Trade*, the framework developed for the understating of the process of landscape architecture drawing.

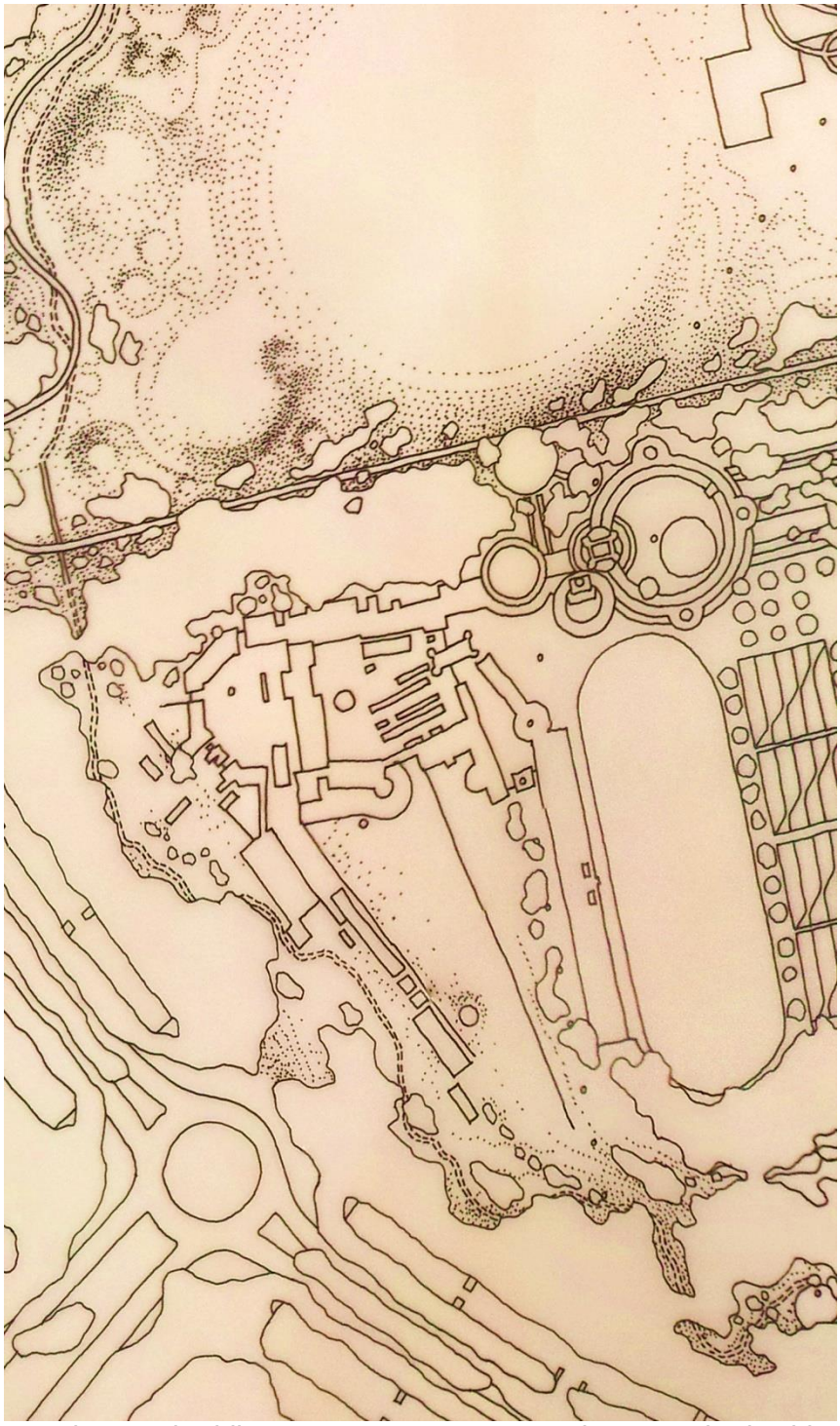


Figure 150: Andrew Mahaddie, Cowcommon Canyon, Theme Park Bletchley Brick Pits Area, Detail of Pont du Gard, Scheduled 1990+. Courtesy of MKCDC. Permissions Given.

Further west along the south facing slope is a sheltered playground, fairground and garden area, divided into a structural service grid. South west is an electric maze, which contains a number of amusement systems and rides; one such ride involves a car and a 3 dimensional maze, with computer support. Further west is a large ‘mole’ mound, **Figure 150**. The first

higher area is a 'medieval village', and holds a castle, globe theatre, craft demonstrations and market, herb gardens, jousting tournaments, maypole, feasting and pageants. The village would have a residential population of craftsmen and teachers, furthering medieval cultural history. On a terrace below this village to the east, a waterfront village spreads around the lake, a combination of Port Merion, Port Grimaud, Mousehole and St Tropez. Buried in the wood of the highest west slope is a quiet area of lotus pools and healing areas. Cable cars and railways provide transport up the main truncated hill. The landscape would feature large scale environmental sculptures, including a colossus, coloured ground forms of lights and inflatables, bubbles and cat walks, glittering surfaces and transparent planes melting into the water terraces **Figure 148**. The colossus provides a key marker for visitors, an iconic signature of the theme park.

The terraces enclose the whole eastern end of the canyon and run flush to the grass cliff and would feature hanging gardens and grottos. The surrounding areas would be kept low key for the local community. Further to the west could be a 'Western extension', including rodeo and ranch skills. The sketch suggests use of brick waste and excavation rather than the usual filling of pits, which same strategy materialised in the National Bowl.

The works is interesting in the wider strategy of instigating new social relationships and the establishment of local identities within a new town, rather than reliance on a landscape symbolism in which to create place. Mahaddie's drawings function as a heuristic in the creation and testing of ideas for places, it is an assemblage which is not prescriptive. It describes its features in detail though it is not to say that those descriptions are definitive. The theme park drawing is a re-orientation, like the masterplan, an open urban strategy. The interventions at Loughton Bowl, by Czaky and Mahaddie, which could be viewed as 'sustainable practice', are formed on the basis of creating public space for everyday life. These landscape works contain a tolerance for many different organic design forms to emerge. Such free form drawings emerge with many landscape forms and ideas however the sense of experimentation was more limited in architectural work.[8]

[8] External housing work took place by Foster & Partners, James Stirling, Stirling and Wilford, Henning Larsen, Edward Cullinan, MacCormac Jamieson Prichard, Martin Richardson, Evans & Shalev, Ralph Erskine, David Rock, Colquhoun & Miller, Peter Womersley, Ivor Smith & Cailey Hatton, and Brian Frost. According to Edwards however, this relationship between internal and external partners led to some of the failures of MK as a whole (Edwards 2001).

2.3.C - Helmut Jacoby

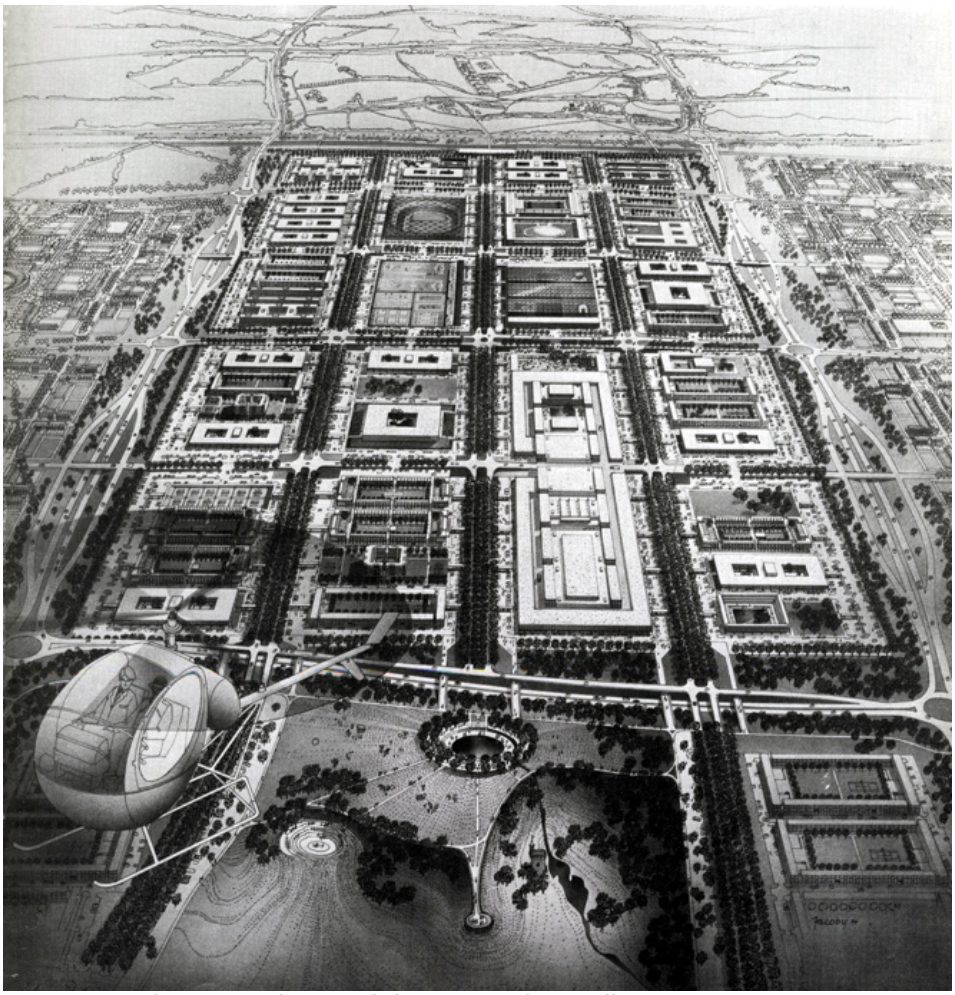


Figure 151: Helmut Jacoby, Aerial Perspective -Milton Keynes 1974-1990, 1974.

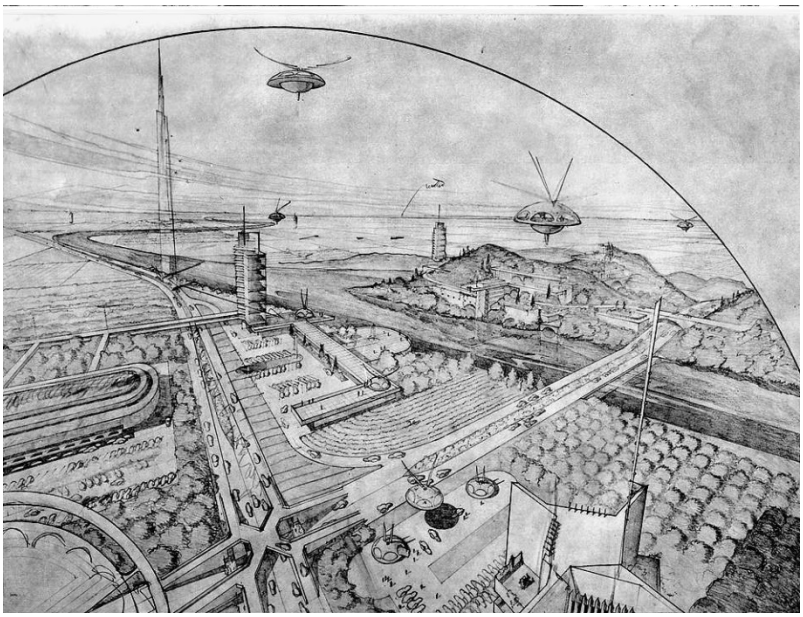


Figure 152: Frank Lloyd Wright, *Broadacre City*, Aerial Perspective, Pencil on Tracing Paper, 1934-1958.

Unlike Mahaddie, The German architectural draftsman Helmut Jacoby was brought on board to work with Walker and his team for the development of visualisation for the plans with a certain exactness (Walker 1977; Jacoby 1981). Rendering visions of up to twenty years ahead, Jacoby would render perspectives from plan and section. Whilst Mahaddie's drawings were intended as designs or design guidance, operatives, in the case of his grid square works. Jacoby would draw for the purpose of showing 'actualised' public facing visions of the architecture (Bofinger and Voigt 2001). In **Figure 151**, the base of Campbell Park is revealed as is the super-size shopping centre, what Derek Walker would call Mies Van Der Rohe influenced (Walker 1982). Comparisons have been made with Wright's 'Broad acre city' in which there is a propensity in the aerial, to survey whole urbanised cartesianain systems **Figure 153**, like De Certeau, whose theories we explored in **Chapter 2.1**.

Figure 153; Helmut Jacoby, Shopping Building, Covered Arcade, Arch. Derek Walker, Stuart Mosscrop, Chris Woodward, Syd Green, Sketch 18”x12”, Rendered 45x30cm. Photograph, Midsummer Arcade in 1990, with a sculpture, Circle of Light, by Liliane Lijn.

Paul Laseau in his graphic instruction book for architects talks of Jacoby with almost mystical praise when he states that Jacoby in “quick preliminary studies he uses to plan the final renderings provides remarkable clarity of spatial definition with an economy of means”(Laseau 2001, p.50). This deliberate canonisation needs to be ignored, but the idea of economy in his drawing is worth investigation. An economy of description here evidenced in **Figure 35** is certainly demonstrable, just as the diagram functions to carry synthesized information. Here in the perspective white space is used to define surfaces. More striking is the relationship between photograph and rendering in ink lines and spray, architectural production was defined by the very pencil sketch without any differentiation, two different spaces are confused; the visualisation’s agency transfers and mediates between these spaces and Jacoby is a case which illustrates this agency in clear terms. Jacoby was much sought after as an architectural illustrator, and as Deyan Sudjic talks about, when Jacoby was drawing for Norman Foster; his drawings acted as endorsements of the quality of architectural subjects (Sudjic 2012, p.76). Jacoby’s drawings were also measured as the accuracy of construction to original design intent. As Jacoby states, “As an architectural renderer one comes into extremely close contact with the author, as does the translator of a poem or a literary text. Drawing like translation, is a very intimate process” (Jacoby in Bofinger et al. 2001, p.202).

The question of how the outcomes of a design process relate to the vision represented by a plan, have been explored in MK. This investigation has explained the differences between what was proposed and what actually manifested. It was through the application of design diagrams that a strategy for the town could be envisaged, these were supplemented by perspectives and aerials to each grid square of proper character and density. Whole spaces were adjusted to new axes, only achieved through the translation of drawing, carrying mathematical precepts to built-form. This was evidenced more so in the way Jacoby’s perspectives were viewed as authoritative documents, both demonstrating quality of design, due to Jacoby’s own acclaim and the ability of his drawing technique to carry information ‘as if it was real’. The conceptual base in which Milton Keynes was formed was conceived in a much wider context than recent Southbank developments. The Utopian vision became narrowed with the reality of city formation, but it still retained a space to breathe due to its percentage of green space and identified expansion zones. It is the breadth of design ideas formed by drawing that allows flexibility in living in the actual space because of the way that the designs hardly deviate from the original vision on paper. The landscape allocation mitigates and allows adaptability for the intentions of a ‘quality life’ so assumed in Garden City philosophy. The insistence on flexible urban textures in which new social relations

worked out, still proves a suitable response to the whole endeavour of creating cities. The strategic push for house building, and the use of reserved space and infilling the city grid can only damage the original vision of the 'forest city'. However, the chapter's main concern demonstrates the peculiar way in which drawing is so close to the final landscape subject, with sometimes a literal translation between representation and production. Such translation shows the process of the construction of the spaces. In that translation we can understand the *Agency* of drawing through looking at the entirety of the subject. This framework allows the development of additional drawing methods that have a positive valance to built landscape. Higgson and Mahaddie could answer the initial problem posed by James Corner of a cultural agent, creating home and attempting to create belonging. In CMK Park, Willen Lake, & Cowcommon Canyon, literally there is a process of inscribing meaning in the landscape, through appropriation of historic English landforms and geometries. In these works we can see the operatives of *Blood, Trade, Authority* and *Agency*.

The strategic treatment of the grid form 'forest city' of MK is interesting in relation to theories of De Certeau with which the map is re-orientated as a space and operative, a thing of stories and narrative in which many things populate. Such a theory can be argued to exist in the diagrams and planning material, turning; 'the city into an immense memory where many poetics proliferate" (1984:141). Milton Keynes has been criticised for its open ended urban design (Tibbalds 1984), however I would contend that such criticism is not levelled at the plan & design, but at the economic environment that developed which led to many discards and unrealised projects, or projects scaled back that they lose intent, one can only wonder what Milton Keynes would be like if projects such as the original CMK Park and *Cowcommon Canyon* were realised today. Without doubt this would have been 'place making'.[9] For landscape architecture, MK evidences an agency of Garden City ideology, but for the purpose of the thesis, evidences the translation of drawing, acting as a cultural agent communicating ideas into cultural landscapes. In relation to the Southbank (of course at different scales) its urban development in contrast has yet to receive such prescriptive urban programming over time; it has the space for stories.

[9] 'Place Making' in a Milton Keynes context is different to the contemporary ideas of 'Place Making'. The School for Advanced Urban Studies was commissioned by MKDC to gather public's perceptions of MK in the 1970s. 210 people were interviewed, using verbal descriptions and maps with blank areas in which the interviewee hand drew their understanding of the space. These interviews showed attitude and perception and behaviour within MK. Results indicated a clustered practice with no overall landmark identity, which the residents enjoyed feeling that it function as a village space over a whole city form (Bishop 1984; Monchaux 1984). For further Place debates see (Ben-Joseph 2005; Casey 1998; Marcus and Francis 1997; Sepe 2013).

This marked difference expressed through the various graphic vehicles shown in **Chapter 2.1 & Chapter 2.2** and the competing ideologies in action need further exploration**.** Whilst we have evidenced a certain agency in production, the creation of graphics and Calvino *Authority* require exploration. Through the analysis of authority we can start to decode the way with which emerging professionals are forming ideas, strategies and tactics through their graphic vehicles and who eventually play a role in shaping and forming of urban patterns.

Pedagogy

Pedagogy – This area discusses student landscape architectural drawings and charts the modes in which the student is immersed in landscape to make their studies and the educational implications of such processes. Further discussion of digital design drawing is also discussed in which a number of possible methods are charted in order to extend the creative and experimental possibility of the medium (**Chapter 3.1 – 3.2**).

Introduction

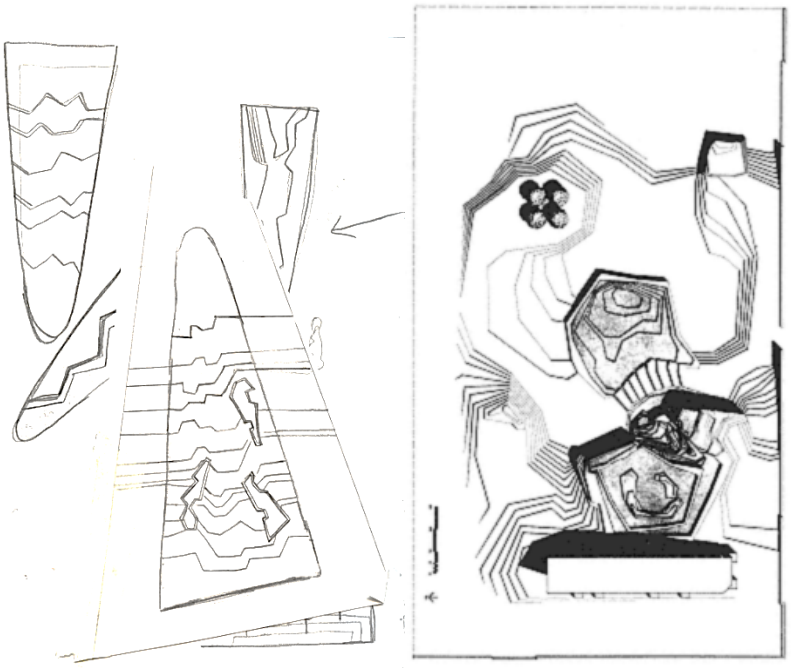


Figure 154: Alice Murphy, BA (Hons.) in Landscape Architecture Year 2, Pencil & Tape, Design Development**,** Manchester Metropolitan University & Lawrence Halprin, Love Joy Fountain Site Plan 1966.

The work conducted thus far has explored the relationship between representation and production of landscape. A framework based on the hermeneutics of Italo Calvino has been established in order to understand how a drawing in its many manifestations operates in landscape architecture. We have looked at two case studies analysing some fieldwork towards evaluating a site and the social implications of fieldwork design and strategy, and in the case of the Southbank **Chapter 2.2**, a displacement of an important group and cultural collective to an area. In the case of Milton Keynes, **Chapter 2.3**, the flexibility of open drawing and interpretations led to some planning issues in the delivery of the grid squares, though drawings were fundamentally involved in place making. The use of drawing as a speculative and ideational device proved exciting, and the notion of *Agency* of representation was expanded upon and given a context for its operation. The use of drawing as an embodied vehicle of concepts needs further expansion, given that the Milton Keynes planning team were recent graduates from architectural education (Walker in Thomas and Loew 2007, p.8). It is worth enquiring into the meanings, and process of drawings formed at this educational stage; that is

to say, the Calvino *Authority* - how we make images about landscape using varied tools. Tactile qualities, sound, touch, sense, immersion are reduced to a graphic procedure attempting to represent the human experience of landscape. To visit Berger's definition of drawing in the sense of "…burrowing in the dark, a burrowing under the apparent" (Berger 2005, p.77) the student moves through the four stages of Calvino categories, **Chapter 1.1**; in

- 'Blood', articulating abstract thoughts. **Figure 154** describing with an apparent fidelity, landscape features, a form of expression.
- 'Trade' the student attempts to convey and communicate their understanding of the site as seen in **Figure 156**.
- 'Authority' the tutor attempts to refine and suggests ways in which both the translation and communication of these processes could be edited, selected and rephrased.
- 'Agency' of drawing is the recognition of design conception to production and the social relations that occur from that agent.

Drawing in this sense could be termed an artefact of action after De Certeau (Certeau 2002), though what other medium brings to purpose such experience of landscape? Such formal associations can be viewed in **Figure 154**. It is the author's comparison and not contextualised by the student. We can view ideas of what can be changed/ programmed. Alice layers and arranges paper cut-outs of the various drawn forms to show the process of programming for an urban space. Lawrence Halprin in comparison uses rock stratification as a design form for his plaza; both layer and collage. Drawing can act as a reflective agent on designs and ideas, for the tutors themselves within this activity; we need to understand the purpose of instruction and context of learning.

Paul Ramsden in *Learning to Teach in Higher Education*, which forms a recommended text for H.E. academics undergoing teacher training[1], suggests that evidence gathered from research will help student learning, he states that "to teach is to make an assumption about what and how the students learn; therefore, to teach well implies learning about students' learning" (Ramsden 1992, p.6). Whilst Ramsden talks of a wider reflexivity in education, in design drawing the tutor is faced with a (commonly) paper surface acting as a surface for ideas, we must therefore enquire into how drawings are formed, as design education has a profound effect on professional practice. Daviron Gazvoda in the article on landscape architectural education claims that the "creation of new landscapes requires an intuitive creative ability landscape architects need to combine with analytical systematical approach" (Gazvoda 2002,

[1] PgHE or PgCTHE; The Postgraduate Certificate in Higher Education (*PGCHE*), Accredited by the Higher Education Academy (HEA).

p.118). What Gazvoda is suggesting is mediation between artistic, creative and intuitive acts, and scientific analytical approaches to describing landscape form and intent which has similarity to the aims of Corner's call (Corner 1992).

Given that students do not join professional practice until placement, the formation of personal designs and concepts for landscape architecture rests initially in graphical form. This places the graphic in a peculiar situation, as it must become a surface for a wide body of information across the board, geology, geography, ecology and many other understandings of other disciplines must be synthesised within the design drawings. This is crucial and useful in the demonstration of the agency of drawing.

What other medium is capable of doing so, and can demonstrate its ability to convey information, given the precedence of landscape design drawing? We have seen this process in the **Introduction**, through a brief history of representational practice we have seen various innovations in drawing methods and techniques which convey ideas. These works contained cultural understandings, referring back to particular ideologies of landscape. The best example being seen in the work and architectural geometric perfection of Andre La Notre, and the various accretions that followed at Versailles, as drawn by the Paris geographer Abbot Delagrive, **Figure 155** in which the landscape was seen as a neutral fabric to work upon.[2] This notion of an 'un-spoilt' surface and space for landscape design paradoxically became the popular aesthetic that foregrounded rapid landscape changing through Boundary laws in the United Kingdom in the Eighteenth Century, and the wide displacement of villages and the rural population (Brewer 1997). It is better to discuss the nature of the cultural layer of the landscape, what values have been projected onto it.

[2] See (Thompson 2006; Brix et al. 2004) for extensive analysis of Le Notre.

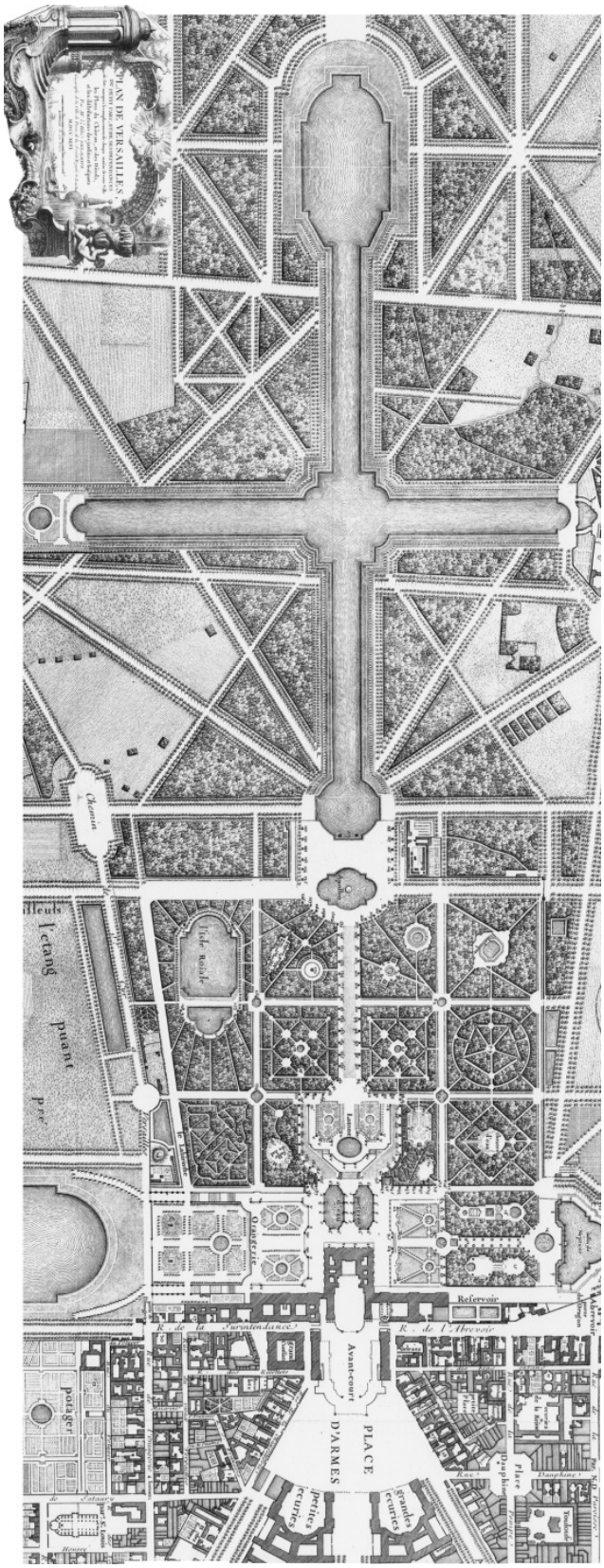


Figure 155: Abbot Delagrive, *Gardens and palace of Versailles*, 1746. Extrait du 'Plan de Versailles, du petit parc, et de ses dependances où sont marqués les emplacemens de chaque maison de cette ville, les plans du Château, et des hôtels, et les distributions des jardins et bosquets' (1689-1757) - M D CC XLVI 1746.

3.1.A - Student Process Drawings

As previously discussed the drawing reduces the experience of landscape into mostly visual terms, it edits and removes landscape elements to a visual lens. Phenomenology involves a wider immersion and connectivity in the landscape (Moustakas 1994, chap.2; Tilley 1997, pp.10–14; Tilley 2008, chap.1); the fact that a drawing is an abstraction of the landscape experience into graphic elements. This abstraction is important to analyse as the drawing researcher Howard Riley suggests that,

> Drawing not only expresses the social context but is part of a more complex dialectic in which drawings actively symbolize the social system, thus producing, as well as being produced by, the ideological framework of society (Riley 2002, p.261).

If we accept Riley's hypothesis, then what this suggests - and applying it to a landscape context - is that the way students draw reflect the ideas that we have about landscape and society's idea of what landscape means. Working alongside Becky Sobell, Landscape Architecture Department, the author selected a number of drawings, to build a typology of drawings that are used in landscape architecture process at Manchester School of Architecture.

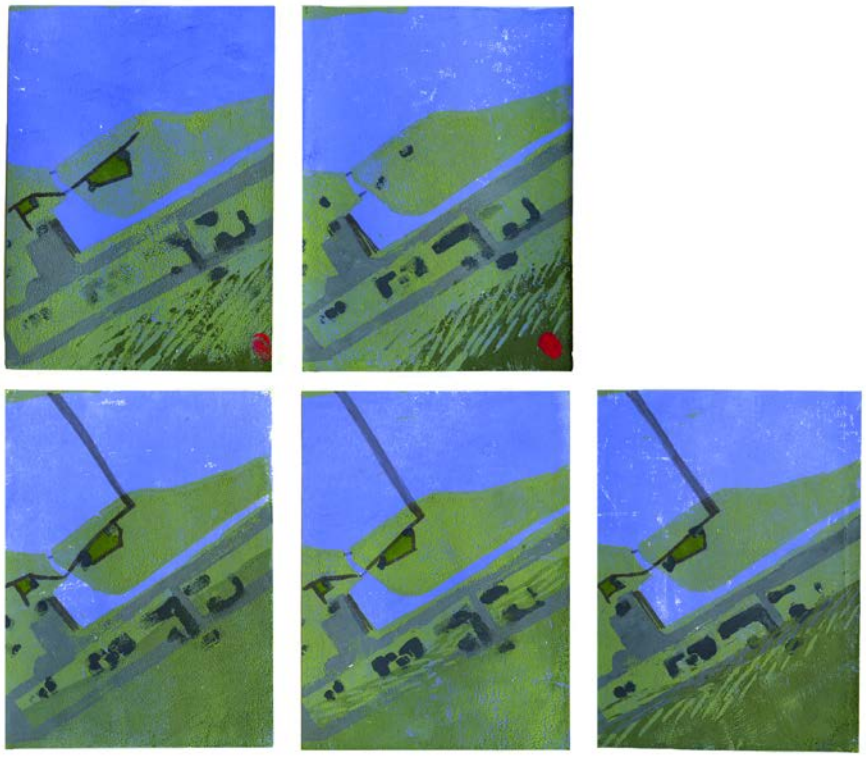


Figure 156: Amber Roberts, Bachelor of Landscape Architecture, Manchester Metropolitan University Print, Concept Visualisation. In this mixed media work Amber draws her design in response to changing sea levels.

The architect Glenn Murcutt (Murcutt 2008) and graphic designer Milton Glaser see drawing as not a creative act but one of discovery, a surface on which to make observations. To Glaser; “to perceive something is to recognise it. But to recognise something is not necessarily to perceive it” (Thurman in Glaser 2009, p.6). As such, many authors state the criticality of drawing as a thinking tool, a mediation on conditions, which through viewing the drawing, makes us attentive. The problem of such texts are that the claims made by artists and designers who produce such drawings therefore make claim to the importance of the medium which they use. The emphasis on a ‘truthful’ structure of internalised thoughts is brought to light (or what I have termed Calvinoesque ‘Blood’) and is interesting in relation to **Figure 155**. Amber describes her ideas in response to changing sea levels, thinking of many multifaceted possibilities for a design solution. However, we must be careful of emphasis of concentration on the ‘magic’ of the medium, and concentrate on the quality of the landscape intervention and its analytical quality. This issue can be mitigated by more sequential images over the creation of iconic ones. Through sequencing we can describe in more detail the change of landscape over time.

Figure 157: Karl Glenn, BA (Hons.) in Landscape Architecture Year 1, Manchester Metropolitan University, Pencil & Coloured Pen, Contour Drawing.

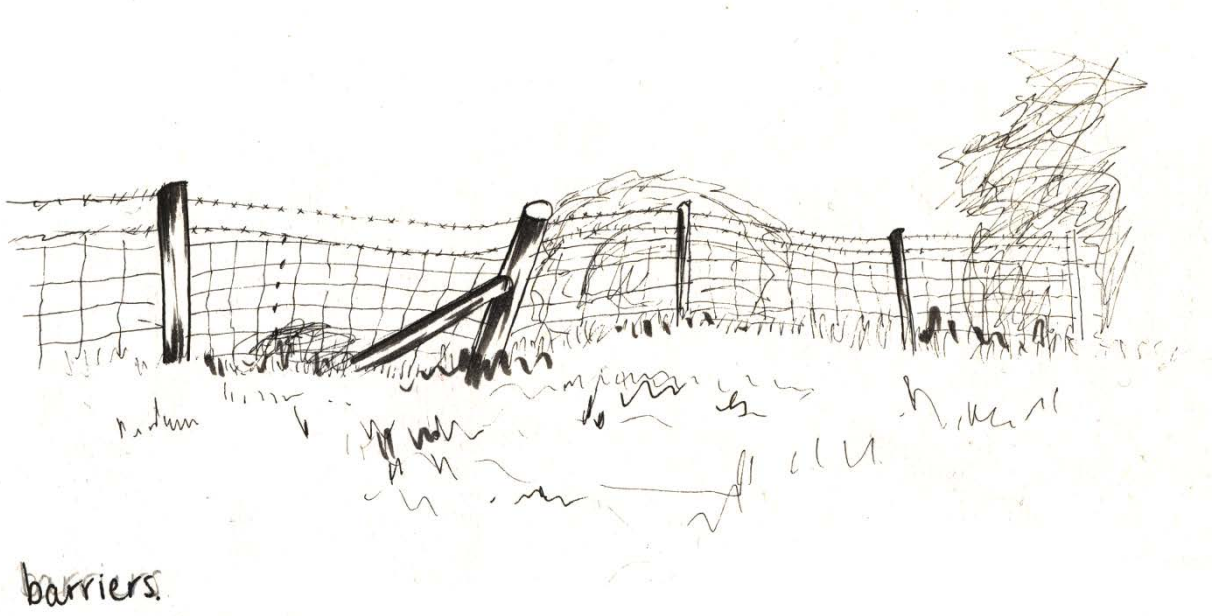


Figure 158: Hazel Cunliffe, BA (Hons.) in Landscape Architecture Year 2, Manchester Metropolitan University, Pen & Pencil, Typological Analysis**.**

The emphasis of the selection was based on finding a number of processes, or journeys in which drawing is used to understand a site, evaluate and develop ideas for the site. In **Figure 157**, Karl looks at the site and subject, not the drawing itself. Contour drawing is essentially a process of creating outlines of a subject (Kaupelis 1992). After the process, coloured lines are added to emphasise the experience of the place. The extremity of the action emphasises the editorial function of reducing elements perceived to a limited palette reducing 'noise'. Karl's drawing is akin to the work of Claude Heath, in which Heath makes blindfolded life & still life drawings using a series of lines, in which the form of the sitter/object emerges (Heath et al. 2003). Heath has moved to the subject of landscape, and this methodology can prove fruitful, making explicit the act the student undertakes, visualising his interpretation of a place. The arts educationalist Arthur Efland states that,

> The fundamental reason for teaching the arts is to enable students to understand the social and cultural worlds they inhabit. These worlds are representations created with aesthetic qualities of art media (Stuhr 1996, p.73).

From what is suggested, from the process of **Figure 157**, the student's selected process has allowed the description of the social and formal features of the chosen site; we arguably draw landscape to understand it. This can be demonstrated in **Figure 158** where Hazel draws a wire fence in order to describe landscape boundaries. Here she tries to express her understanding of fields and edging, with emphasis on barbed spikes and the angle in which the fence posts create the barrier. She uses white space and simple marks to connote vegetation and skyline.

Such claims on the function of the drawing can be made in comparison to her second work, **Figure 159**. Her inclusion of her own hand within the drawing, demonstrates an understanding of the space in which she situates herself. The drawing uses a line, where she demonstrates a different understanding of her vision; the sketchpad and the inclusion of the hand make the transition of drawing from concept, by hand to paper surface of a park. This in relation to Efland's statement gives the tutor an explicit work in which to look at the students understanding of the world in which they inhabit. This shows certain tactility where the student is faced with the subject. This tactility is not new as Frank Holme writes in the *Journal of Brush and Pencil,* (1901) in that a line cannot reproduce nature, it is suggestive of, a working basis of 'boiling down' to elaborate a story and in that line, can be read a character of that artist. What Holme hints at here is based on John Ruskin's ideas that drawing is the conveyance of ideas with the slightest possible means (Holme 1901, p.232).

This mode of expression is similar to the philosophical idea of the medieval philosopher William of Ockham, here rephrased by the friar and priest Thomas Aquinas; "If a thing can be done adequately by means of one, it is superfluous to do it by means of several; for we observe that nature does not employ two instruments if one suffices" (Aquinas 1945, p.129). This philosophical principle is analogous to the artistic process that Holme cites. Whilst this comparison may be subject to critique within this context, the principle is cited and remains the ethic of the statistician and data visualiser Edward Tufte (1997, p.73). Thus, the depiction of the qualities of the site, through contour drawing (descriptions by outlines), is a process of making the simplest and most economic means to depict the qualities of the site. At the same time, implicit in the process is a reliance on the economy of line which is reliant on Calvino 'Blood' a connection to the hand and its motoring process. By showing the hand, there is a sense of self-consciousness and concentration on that hand and its ability. This would match with Holme's statement that "the art of condensation, being a matter of selection, requires not only time, but thought as well" (Holme 1901, p.238) .

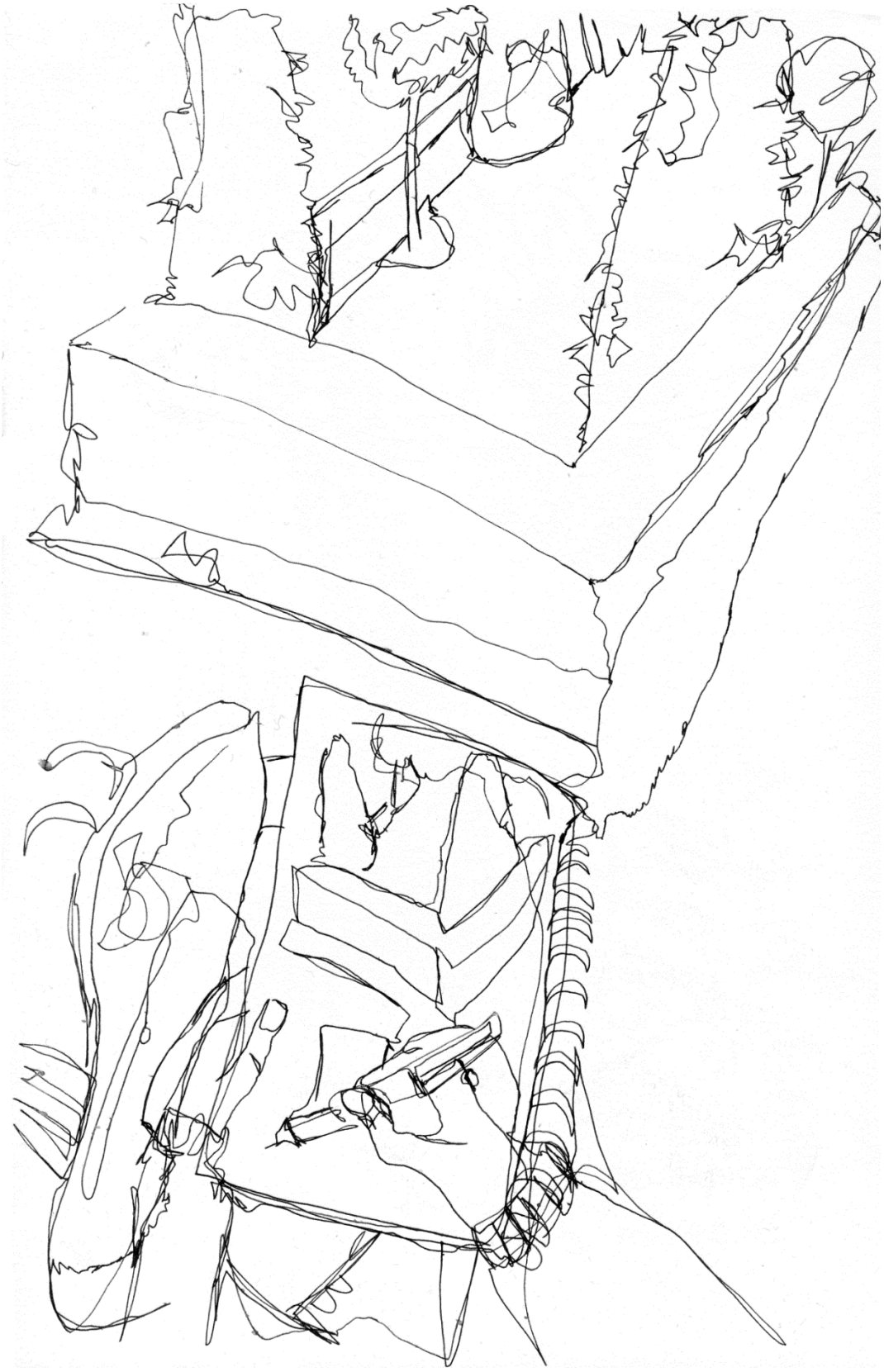


Figure 159: Hazel Cunliffe, BA (Hons.) in Landscape Architecture Year 2, Manchester Metropolitan University, Pen, Contour Drawing.

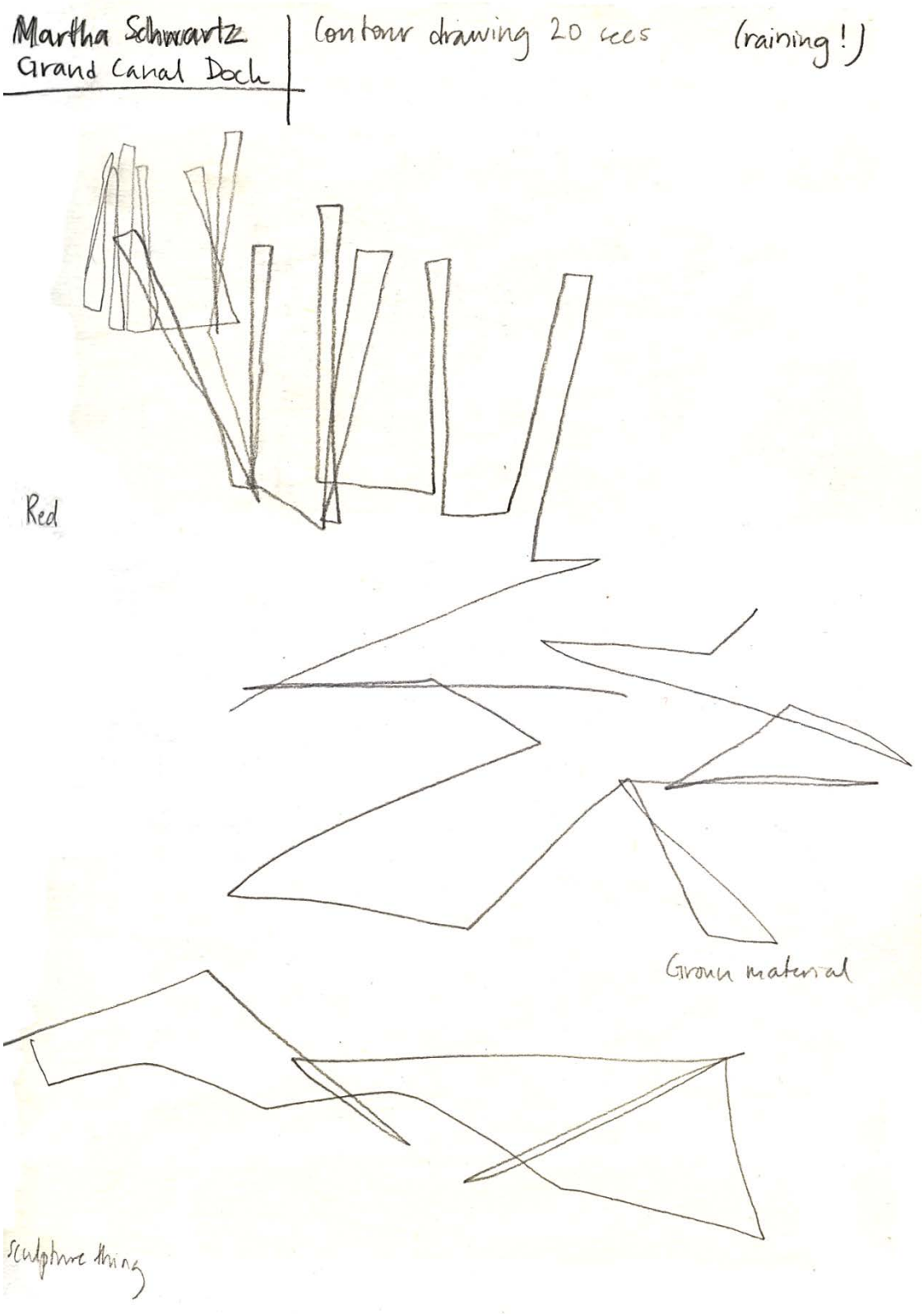


Figure 160: Maria Wejbro, Erasmus Exchange Programme Level 6, Manchester Metropolitan University, Pencil, Contour Drawing.

Figure 161: Martha Schwartz Partners, Grand Canal Square, Dublin, Ireland, 2008. Courtesy of MSP.

The emphasis in Efland's statement is on understanding, an example which Sobell would employ in instructing the students to create contour drawings (descriptions by outlines) attempting to formalise the act of looking and perceiving. Through this teaching activity the resulting drawing becomes secondary to being engaged in the act of making, and the students through evaluation can become familiar with the way they select and edit. This is interesting in relation to Corner's position in which landscape architecture drawing must mediate between creative and instrumental acts (Corner 1992; Corner 1990; Corner 1991). In **Figure 160**, the drawing of a line to the student, can represent the complex rhythms of landscape, it can speak of their experience in another voice. Just like writing, it can help reflect on the nature of the site, and if as Tim Ingold states "[it is to be] understood in its original sense as a practice of inscription, there cannot be any hard and fast distinction between drawing and writing..." (Ingold 2007, p.3).

In comparison with a photograph of Martha Schwartz's work, Grand Canal Square, Dublin, Ireland project **Figure 161**, with an economic use of line, as Ockham, Holme, and Tufte assert, we can see this idea borrowed in the context of landscape architecture, what the landscape architect Catherine Dee calls an 'aesthetics of thrift'; that is a drawing which involves precision and care. This thrift is defined as something that embodies thinking about the landscape, the drawings speak for themselves but also highlight content (Dee 2012, pp.3–5). Dee suggests

that ‘aesthetics of thrift’ involves two principles, first the employment of artistic practices as the doorway to judgements of utility and goodness. Secondly, it defines qualities embodied in the designed landscape (Dee 2012, p.10). These two qualities to Dee constitute a design philosophy in which she discusses strategies and principles.

Maria in this case utilises an economy of line or aesthetic of thrift and skilfully encapsulates the sharp angular composition of the urban carpet and light sticks **Figure 161**. This drawing was completed very quickly, yet is immediately recognisable to anyone who knows the project. The use of text is interesting here and becomes part of the drawing, adding a multi-sensory human dimension over touched, to representations that glamourise site conditions as in the photograph.

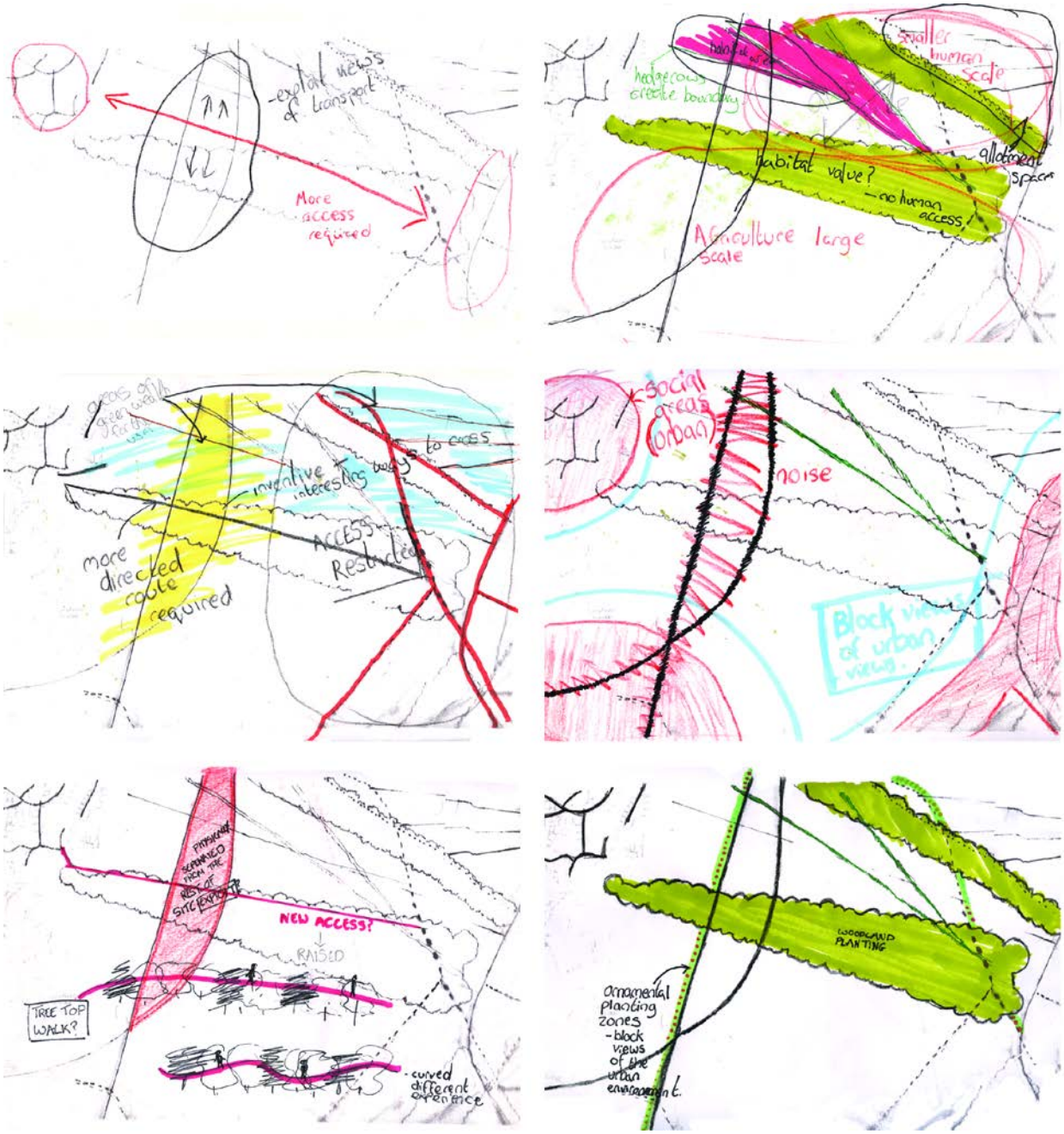


Figure 162: Sophie Lewis, BA (Hons.) in Landscape Architecture Year 3, Manchester Metropolitan University, Pencil, Spatial Analysis.

This personal drawing vocabulary, defined in terms of developing a suite of mark making practices embodied with meaning, is important for developing the ability to create a sequence for a Calvino 'Trade', the communication of information, in this case a field site between developments which needs to demonstrate economy in terms of the reduction of the landscape to a series of replete facts, the decisions to be taken with these facts, and the design choices based on site information chosen. In **Figure 162**, a journey through a rural area in Cheshire is depicted by a range of sketches. The drawings are overlays on a plan from the result of walking

and visiting the site. The lines are not particularly succinct, delicate, more for the purpose of describing the rhythms of the space that she feels when walking, text and drawing are here combined to create a fuller notational system. Drawing for the landscape student involves the development of a range of inscriptive marks which creates a drawing 'vocabulary'. This is to be developed, delineated and communicated. Though as we have previously noted, the agency of drawing is different to the act of writing. Thus, drawing pedagogy must extend the idea of drawing as a "synaesthetic and communicative medium [which] might better afford a richer realisation of ideas within the built environment" (Corner 1992, p.275). Corner's statement as we have noted, requires evidence. For this evidence, the articulation of the way the student landscape architect could operate is very similar to the way the field of visual culture has developed, and could be extended and acts as a suitable method, for example;

> In the area of visual culture the scrap of an image connects with a sequence of a film and with the corner of a billboard or the window display of a shop we have passed by, to produce a new narrative formed out of both our experienced journey and our unconsciousness (Mirzoeff 2012, p.26).

While the idea of unconscious creativity is certainly questionable, the process of selection of editorial possibilities choosing from a wider visual and sensory media is helpful. As the landscape architect Anne Whiston Spirn states, "for designers, new techniques of notation and representation are required. Conventional techniques are inadequate to the portrayal of time and change, and they encourage the continued focus on visible and static form" (Spirn 1988, p.124). Such a process demonstrates and communicates a more holistic understanding of landscape as a fluid complex environment which is subject to interpretation, what is sought here is an agency for drawing which is artificial but truer to the sensory time-based landscape.

Figure 163: Karl Barrett, BA (Hons.) in Landscape Architecture Year 1, Manchester Metropolitan University, Mixed Media, Abstract Representation of Place.

Students can make abstract drawings that articulate the total effects and personal experiences of a place, breaking figure / ground planes, the sense of a visual culture method of creating connections of landscape phenomena. In **Figure 163**, an abstraction of sky and Mancunian redbrick urban colour feature. Scrapes and textures appear on the surface, to articulate the synergy and reduction of experience. As in visual culture, a connection of many spatial textures is attempted and connected. This notion of connection is important as the drawing researcher Tom Hardy states, because, for teaching in a wider sense, “The mere regurgitation of our prejudices and methodology can only act as a constraint to insightful learning” (Hardy 2003, p.349). The statement is difficult if applied to a landscape context, where certain conventions are required, learning to draw to scale, the adoption of certain sizes and symbols as well as weights of line. Again certain workflows are required in professional practice which require differing sets of drawings and conventions. The sense of constraint is interesting here; though the question is the attempt to find new personal ways in which to represent ideas at a conceptual and fieldwork level, interpreting the phenomena of landscape, and making

connections between it. For Howard Riley in a wider sense this understanding appears as a notion of regurgitation, it is important for drawing as he argues that,

> The greater degree to which the drawer understands reality as the product of perceptual experience filtered through language, the greater the possibility of producing innovative drawings (Riley 2002, p.259).

The definition of 'innovative' is open to critique. However, the criteria by which the student drawing can be viewed as innovative lies in the sense of the immediacy of drawing, creating intangible ideas into tangible representations that can actually be constructed. Therefore, making drawings that translate the unreal, the concept, to the real involves making ideas of landscape readable.

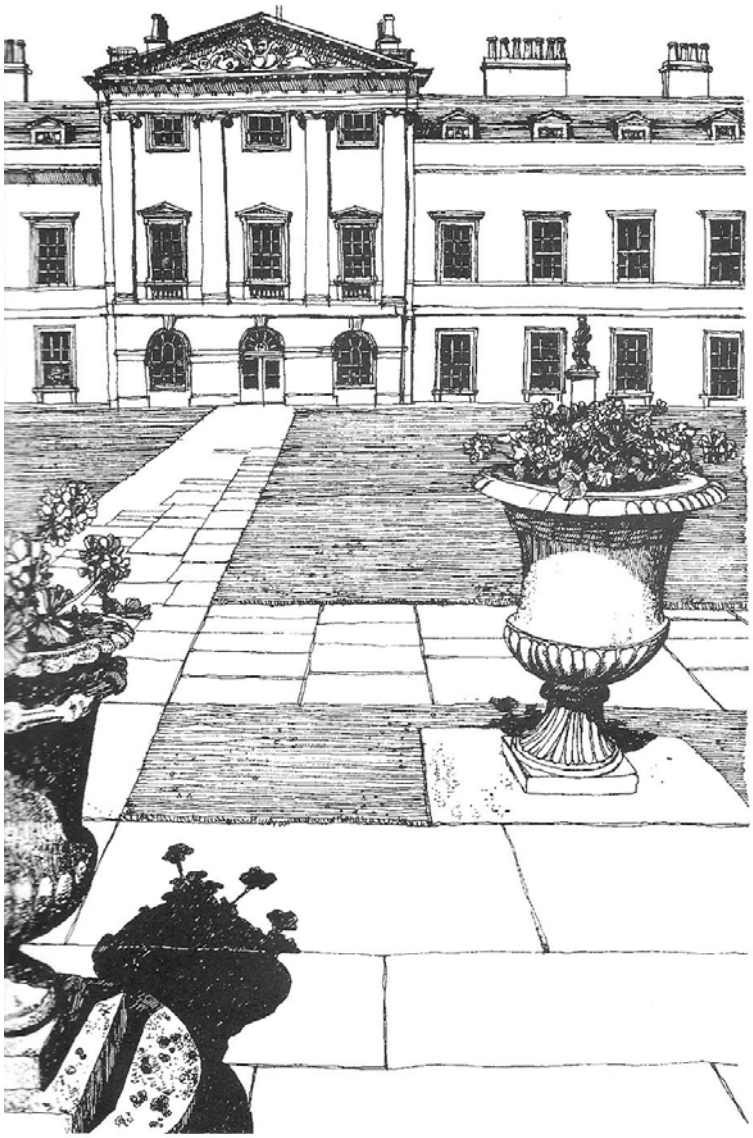


Figure 164: Laurie Olin, Front façade, Stourhead, Pen & Ink, 2002.

This can be exampled in the work of the landscape architect Laurie Olin, in *Across the Open Field* (2012), which was also discussed at length by Jane Gillette (Gillette in Treib 2011, pp.156–163) on the issue of representation; what is being said and how is it being said. Olin's text is led by the drawings which he produces, he analyses Stourhead in Wiltshire **Figure 164**[3] and makes various studies around the grounds. His studies are supported by literary analysis and biography. To Gillette, Olin never actually responded to the cognitive element of Stourhead. Gillette does not recognise that Olin's drawings are personal translations of the concepts of the gardens translated into a readable visual, and this is questionable. She confuses the agency of drawing and does not understand its qualities. What Olin is doing, like the students in the chapter, is taking site information and through non-verbal means using that information as a basis to create personal interpretations of the meaning of the landscape, whether incorrect or correct (in this case to Olin to Henry Hoare's original garden design). Olin immerses himself in precedent and the landscape to understand, and the drawings that he produces are part of a cognitive process. According to the educationalist John Biggs in a wider context,

> Good teaching is getting most students to use the higher cognitive level processes that more academic students use spontaneously (Biggs and Tang 2011, p.7),

If drawing is assistive to cognitive process, of understanding, problem solving and decision making, then by drawing it is an important issue for landscape architectural education in that such innovative possibilities of representation are possible through immersion and phenomenology.

[3] English Landscape Garden developed by Henry Hoare in the Eighteenth Century.

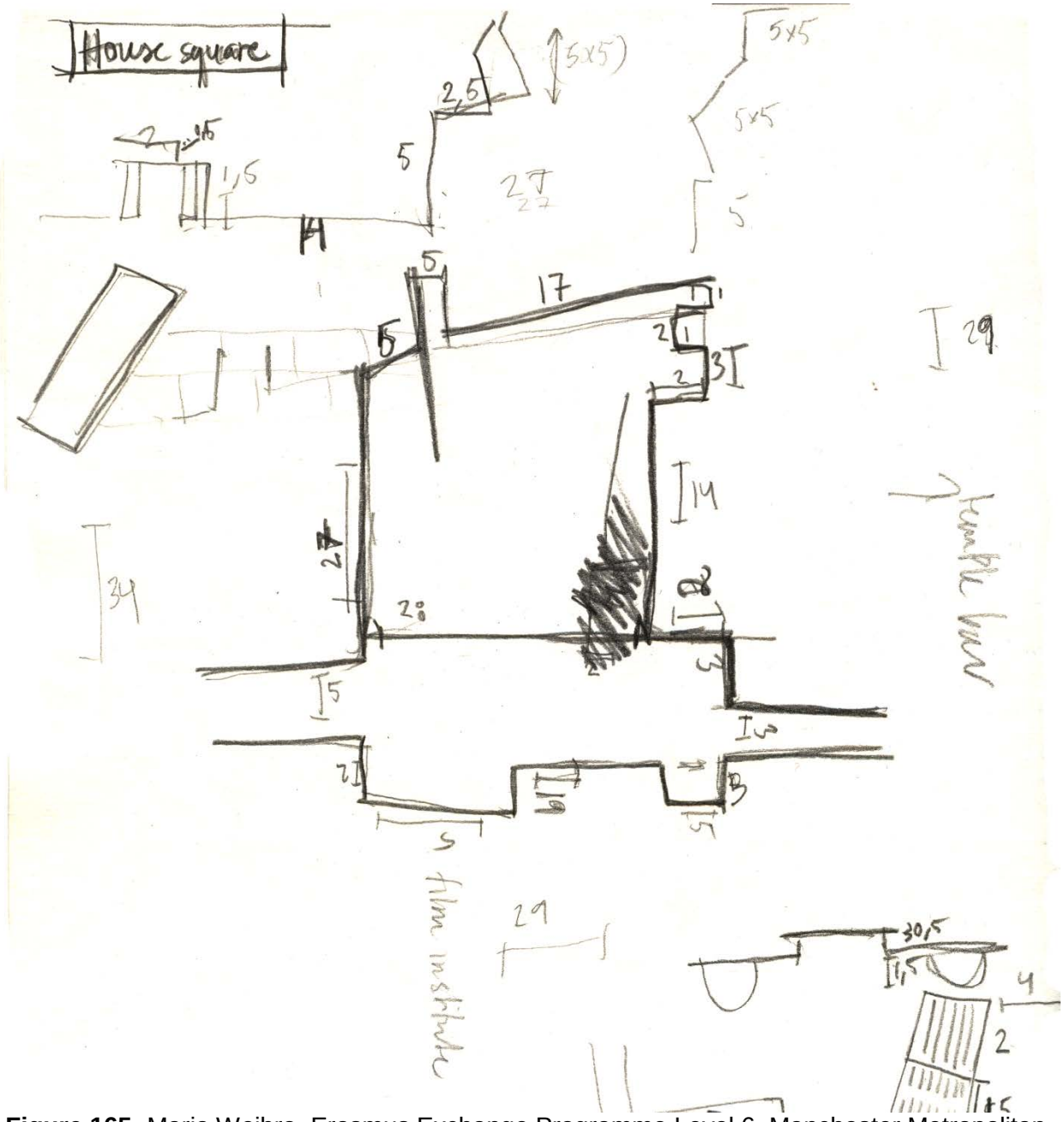


Figure 165: Maria Wejbro, Erasmus Exchange Programme Level 6, Manchester Metropolitan University, Pencil, Spatial Measurement.

When in the field, if the student is to use their own body to measure the space, they are employing immersion and mathematical concepts. The similarity to the way freerunners manoeuvre and understand space through their practice is interesting in relation to this process (Edwardes and Generations 2009). In **Figure 165**, Maria measures the space with her own paces measuring the scale of the space in relation to the body. This body-spatial measurement is interesting, not just for its associations with renaissance architects and workshops ratios and harmonic proportions, but also in the sense of the Calvino 'Blood', of expression, the expression

of the sense of space of the individual, mediated by the hand in line in which the drawing form emerges. This practice is important; the visual is informed by other perceptions. In the short study *The Eyes of The Skin*, the architect Juhani Pallasmaa states that,

> I confront the city with my body; my legs measure the length of the arcade and the width of the square; my gaze unconsciously projects my body onto the façade of the cathedral, where it roams over the mouldings and contours, sensing the size of recesses and projections… I experience myself in the city, and the city exists through my embodied experience. The city and my body supplement and define each other. I dwell in the city and the city dwells in me (Pallasmaa 2005, p.40).

This is the process by which Maria conducted her work. Through that understanding, connection and experience, the constraint and freedom that body measurement provides enriches the drawn mark; "vision reveals what the touch already knows" (Pallasmaa 2005, p.42). Through an understanding of the process, the drawing can be reviewed in the light of this information, the line tells a story, it tells of an activity; it becomes metaphoric. By making these marks, in John Berger's reading, "our vision is continually active, continually moving, continually holding things in a circle around itself, constituting what is present to us as we are" (Berger 2008, p.9). Again the emphasis of drawing innovation could be based on the ability of the student to reflect in order to use what John Biggs calls 'higher level processes'. This wider pedagogical claim in a drawing context is evidenced in this case not only in the level of notation to understand the space and demonstrate self-awareness, but also to translate that awareness into a readable visual. To understand further, 'higher level processes', Noel Entwistle provides some approaches to learning which hint at this higher level process - which is also mentioned by Biggs, Riley and Efland (Ramsden 2003) in which he presents three modes,

Deep approach	Intention to understand Vigorous interaction with content Relating new ideas to previous knowledge Relating concepts to everyday experience Relating evidence to conclusions Examining the logic of the argument
Surface approach	Intention to complete task requirements Treating task as an external imposition Un-reflectiveness about purpose or strategies Focus on discrete elements without integration Failure to distinguish principles from examples Memorizing information needed for assessments
Strategic approach	Intention to obtain highest possible grades Gear work to perceived preferences of teacher Awareness of marking schemes and criteria Organising time and effort to greatest effect ensuring right conditions and materials for study (Entwistle 2009, pp.52–160).

The aim of the instructor, to continue this line of argument, is to push learners towards deep level learning as against strategic or surface level approaches. In this case, this means a level of understanding about precedent in the landscape, tactility in landscape immersion, and the economic reduction of information towards readable ends. In a drawing context, deep level learning could be characterised by marks that represent a "modality of vision supported by other senses and conditioned perceptions" (Clarke 2005, p.52). This modality is reflective of place, space, students' own movement, their inscription, and understanding of the landscape type they inhabit (von Haaren 2002). Davorin Gazvoda terms this a double character operation for landscape architecture education, for a representational practice based on artistry and science in combination (Gazvoda 2002, p.128).

The wider educational literature on reflectivity is key to developing higher level learners in landscape architecture, particularly in representational practice, and rests on formulations developed by Donald Schon,

> When someone reflects in action, he becomes a researcher in the practice context. He is not dependent on the categories of established theory and technique, but constructs a new theory of the unique case. His enquiry is not limited to a deliberation about means, which depends on a prior agreement about ends. He does not keep means and ends separate but defines them interactively as he frames a problematic situation (Schon 1991, p.68).

Such ability to reflect, in this case on landscape, is difficult to qualify, however the emphasis falls upon the practioner to interpret and respond. To achieve such 'reflectivity', however, has been open to criticism, there has been a call for greater definition (Hatton and Smith 1995). Likewise the ability of instructors to enable such reflectivity has remained slightly mystic and has received few working methodologies.

Paul Ramsden states the definition of teaching in its broadest sense;

> to include the aims of the curriculum, the methods of transmitting the knowledge those aims embody, the assessment of students, and the evaluation of the effectiveness of the instruction with which they are provided (Ramsden 2003, p.9).

If we accept Ramsden's definition, then in a drawing context there is a great challenge in developing activities which can achieve curriculum continuity, be assessable and also be evaluative of the way in which students have learnt. The danger of such activities is that drawing instruction should not necessarily change student's approaches. It must be noted again

as Ramsden defines, regarding the characteristics of students and different approaches to learning,

> Its implications run right through how we should teach. In trying to change approaches, we are not trying to change students, but to change the student's experiences, perceptions, or concepts of something (Ramsden 1991, p.45).

It is important to give instructions that do not create new dogmatic practices, which are meant in terms of a method which is narrow and applied repeatedly in different landscapes and at different scales without differentiation. In order to expand this methodology, for example Catherine Dee calls for a succinct movement between analogue and digital process for landscape students, rather than pure digital process which can develop more descriptive conditions (Dee 2010).

Therefore in landscape architecture representation, such instruction can have profound effect. In this case the student's choice of medium and the purpose of marks, annotation and composition that they have selected are important, as they demonstrate through drawing the level of immersion within a landscape to a certain degree, and the cognition and understanding they have employed. Through the drawing medium, the inscription relates to the way in which the ideas have matured. It provides visual evidence of editing choices and the overall success of the process by utilising a wide vocabulary of visual description.

That means through analogue and digital production, plan section, perspective, abstract and hybrid conditions. Such expression can be found in **Figure 166**, in which Tom collages and colours over modified photographs for an underused urban site. The collage allows the viewer to see existing site conditions and intentions within one image. Hybridised conditions and possibilities for digital drawing for landscape architecture and potentials with digital tools and experimentation extend the various issues discussed in the analogue student drawings.

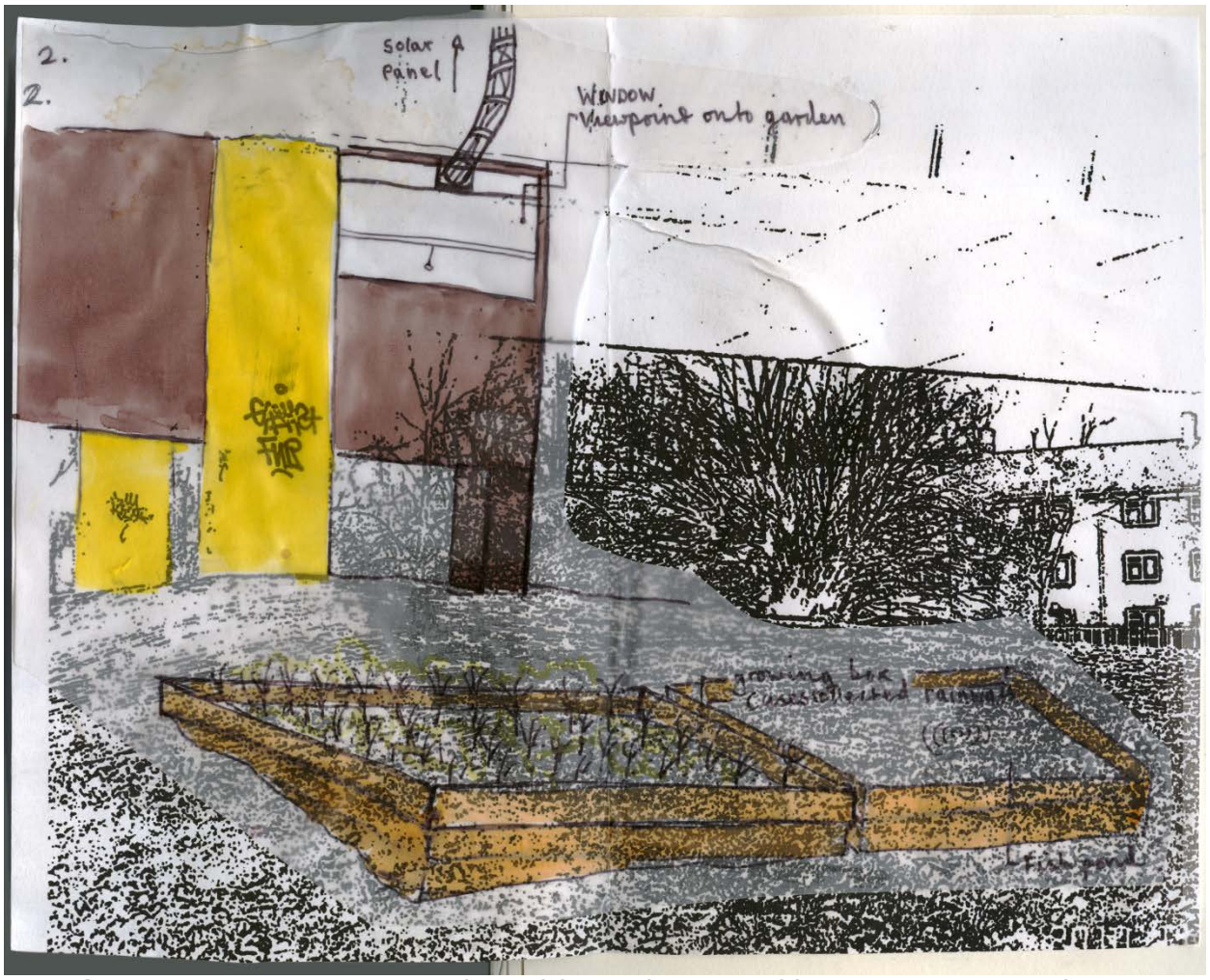


Figure 166: Tom Daggers, BA (Hons.) in Landscape Architecture Year 1, Manchester Metropolitan University, Mixed Media Collage, Design Development/Visualisation**.**

The educational theory, *Phenomenography* (Entwistle 1997; Sandbergh 1997; Svensson 1997) places learning as relational – a relation between the student, teaching content and learning environment. In a landscape architectural context this theory has several possibilities, as "*Phenomenography* seeks to explore these different conceptions, or structures of awareness which people constitute from the world of their experience" (Entwistle 1997, p.127). In comparison, and furthering the issues of space theorised by Henri Lefebvre and the joining of different attributes of spaces, this theory could be useful in understanding and learning about drawing, and how students draw – the agency (**Chapter 1.2**). Riley identifies a whole productive cycle, in which drawings are formed,

> Both producers and viewer of drawing take up positions; adopt attitudes and points of view which are influenced by their positions within their sets of social relations. Such an ideological positioning involves a specific way of using signs (a semiotic), and a

structural sensibility (an aesthetic) both grounded in a particular system of social relations (Riley 2002, p.261).

Figure 167: Sophie Lewis, BA (Hons.) in Landscape Architecture Year 3, Manchester Metropolitan University, Pencil, Spatial Analysis

These points of view, can translate in **Figure 167**, in which a journey through an urban quarter is depicted by a suite of sketches following Gordon Cullen's *Serial Vision* method (Cullen 1961). Focussed on the way the urban fabric is revealed, Sophie uncovers the changing rhythm of views experienced when walking the site. Simple symbols convey meaning, fence, roof, window and many other features are simply delineated and the sculpture is highlighted throughout as a feature. Here the similarity to Gordon Cullen's process can be shown, where an urban ensemble of things is depicted, as an experience and intuitive led activity of a designer

(**Chapter 2.0**). The student's education, perhaps here reveals itself, in the ability to edit and highlight the strongest features which are important to the place.

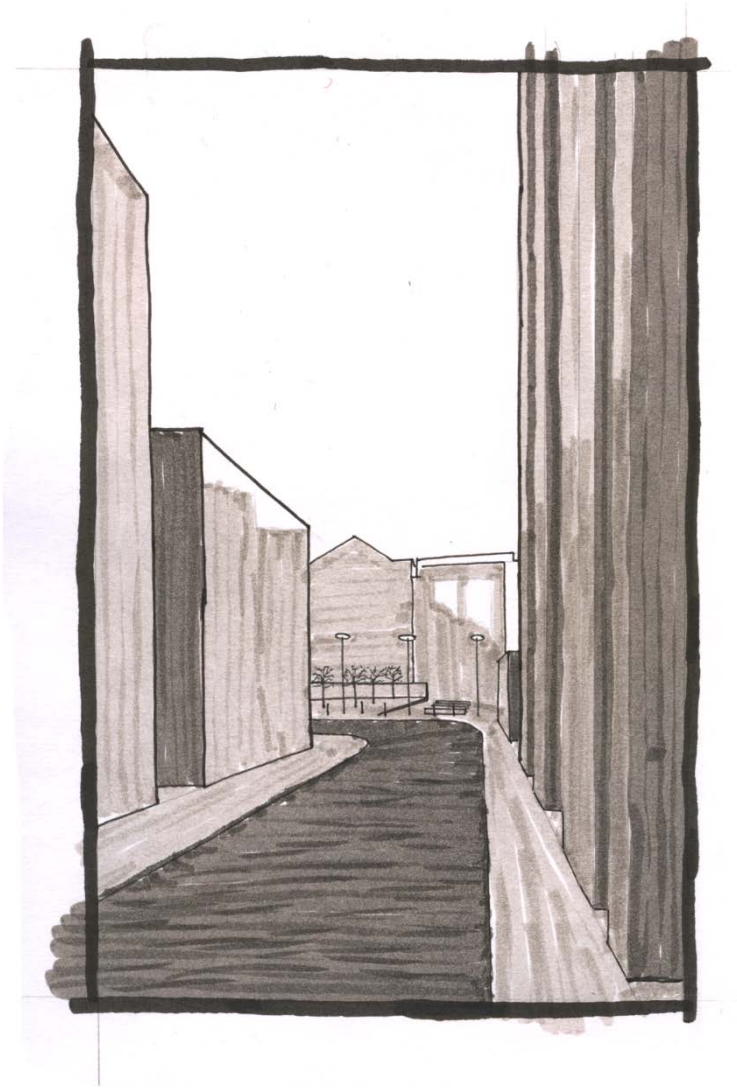


Figure 168: Jacob Helm, Graduate Diploma in Landscape Architecture, Manchester Metropolitan University, Felt & Pen, Spatial Analysis.

In **Figure 168**, Using tone, Jacob articulates the linear movement inherent in this urban streetscape. The highlighting of predominately horizontal or vertical axes emphasise this movement perceived, bar the highlighting of paving, and the image reduces elements and details to a series of axes. The image shows perceptions of someone versed with a landscape architecture design education, able to perceive, or attempt to edit such vision to a coordinated response to 'place' - in this case fixed elements which are also imbued with social relations after Lefebvre. Of the various typologies employed, there were a number of drawings that worked from the basis of site information as a method for developing landscape design ideas. This

analysis of typologies has discussed analogue processes, however further discussion of digital work by landscape architecture students would further enhance our understanding of drawing and concept formation. These would assist in demonstrating the influence of instructors on the formation of representative schemes by students.

3.1.B – Student Digital Landscape Drawing

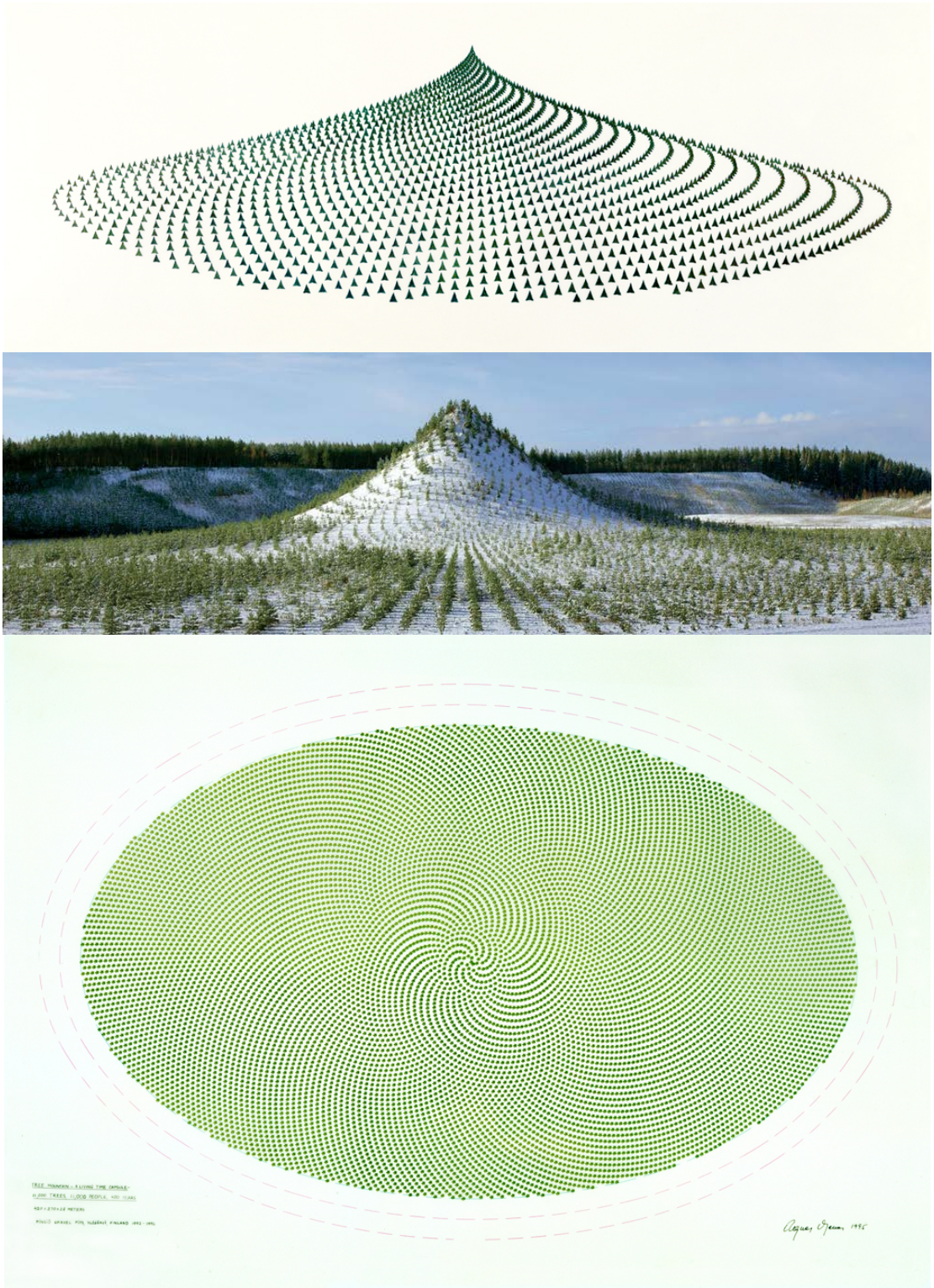


Figure 169: Agnes Denes, Tree Mountain Sketch,1982 & Tree Mountain Photograph & Aerial Drawing 1996, Ylöjärvi, Finland, Project 1992 -1996.

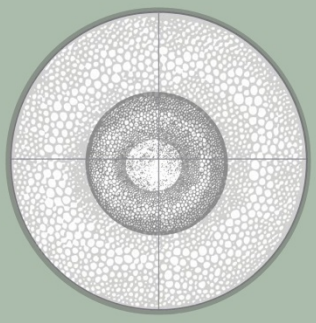
Whilst we have seen the results of student process drawings, we have not discussed works that are more fully presented, in terms of an assimilation of ideas, concepts, and strategies for a landscape. In the work of the artist Agnes Denes, a land reclamation project planting 11,000 trees is shown **Figure 169**, which is both concept and realisation. Using both her own pattern and the golden section, Denes draws a forest for the future, "Planting a forest is opening up the earth to receive the seeds or seedlings like the canvas is prepared, gessoed and the ground sketch applied" (Denes in Hartz 1993, p.67). She sees mental abstract thinking in a hybrid blend with nature to create the sculptural work. So in this work, we could see the agency of drawing that is not differentiated; the drawing projects, but the sculpture projects also. Both are instructions and operations in time.

In **Figure 170**, a digital landscape architecture module was delivered by me titled *Rapid Earth*[4], the emphasis was the design of earthworks for various landfill sites around Manchester, the instruction was given for a sort of 'free play' of ideas, in which students could create metaphors. Sophie dedicates her site to moss species and the human appreciation of them, which to her was both horizontal and vertical. The microscopic structures of British moss species found on botanical plates (around 1850) led her to think and apply her design to one particular landfill site. She dissects the site with waterways, which can be explored in coracle boats. Central islands are added to aid rain catchment and absorption creating favourable conditions for moss growing and to assist peat formation. Sophie read the work of Macfarlane and Deakin for inspiration, thus the digital drawing became a repository for both physical reading of the landscape, and translation of literary works combined with the cultural symbolism of ceramics.[5] The text informs her drawings and creates what Catherine Dee calls a dialogical synthesis (Dee 2004). In Sophie's 3D model, she shapes the material, unpacking the moss idea as a whole landscape motif, giving an interesting expression and play with the scale of natural forms. This layering is an experiment and condensation of text and cell structure.

[4] Instruction was given in the following software packages Adobe Photoshop, Indesign, Illustrator, Sketchup, Autocad, 3D Max, Maya, Civil 3D and ArcGIS which covered both 2d and 3d drawing and geographic information. The instruction catered for novice and advanced users, supported by landscape architecture digital instruction manuals (Cantrell and Michaels 2010; Tal 2009; Hutchison 2011). The module was devised to be an open brief in which each student was given their own site in Manchester to design earthworks. Detailing and strategy requirements were minimum, the module was devised for students to explore more open creative methods and ideas for landscape (Anne W. Spirn 1985).

[5] The Lancashire Mosses were drained of and farmed. And the Flows were planted with thirsty and fast-growing conifers, which smothered and drained the bog, killing its mosses and destroying the rare species of birds plants and insects that had thrived there (MacFarlane 2009). "Like the layers of spongy sphagnum moss that grew in the peat bogs, (the landscape) grew by gradual accretions into something of lasting value, ... what Keats calls the poetry of earth" (Deakin 2008). "I wandered all day, tracking back and forth, following rides, moving through its dozens of covert worlds: its dense and almost lightless thickets, its corridors and passageways, its sudden glades and clearings. I leapt streams, passed over sponge-bogs of sodden peat, soft cushions of hair cap mosses" (MacFarlane 2009).

Bolton Red **Moss**



Concept
A site dedicated to moss species and the human appreciation of them, both horizontal and vertical. The microscopic structures of British moss species illustrated within botanical plates (circa 1850) inspired my concept, design and application. In line with the previous restoration efforts, water levels are to be increased internally by creating water ways. These are also to serve the human exploration of the moss species via coracle boats. Earthwork alterations are to aid rain catchment and absorption. Baulkways, strips of higher land, have been created to isolate the mossland so that the site can be fed purely from rainfall and help protect the site from pollution. Increasing water levels and favourable conditions of moss growing in return aids the formation of peat: as moss breaks down, peat is formed and restored.

1mm

Microscopic structures of British moss species from around 1850.

Like the layers of spongy sphagnum moss that grew in the peat bogs, (the landscape) grew by gradual accretions into something of lasting value, ... what Keats calls the poetry of earth.

R.Deakon "Wildwood"

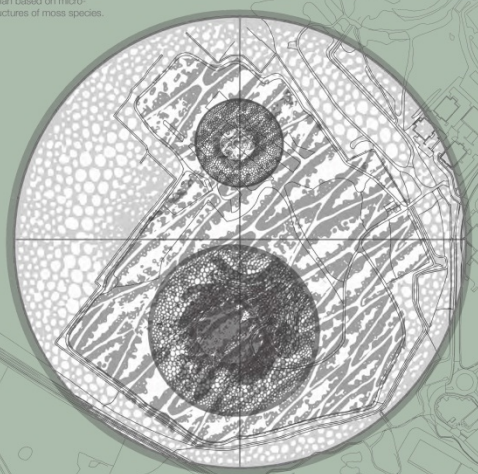
The Lancashire Mosses were drained off and farmed. And the Flows were planted with thirsty and fast-growing conifers, which smothered and drained the bog, killing its mosses and destroying the rare species of birds plants and insects that had thrived there.

R. Macfarlane "The Wild Places"

I wandered all day, tacking back and forth, following rides, moving through its dozens of covert worlds: its dense and almost lightless thickets, its corridors and passageways, its sudden glades and clearings. I leapt streams, passed over sponge-bogs of sodden peat, soft cushions of haircap mosses.

R. Macfarlane "The Wild Places"

Concept plan based on microscopic structures of moss species.



Concept Plan

Access
The site can be accessed from one entrance only, next to Futura Park. Various A and B roads, which are connected to the M61 lead to the site.

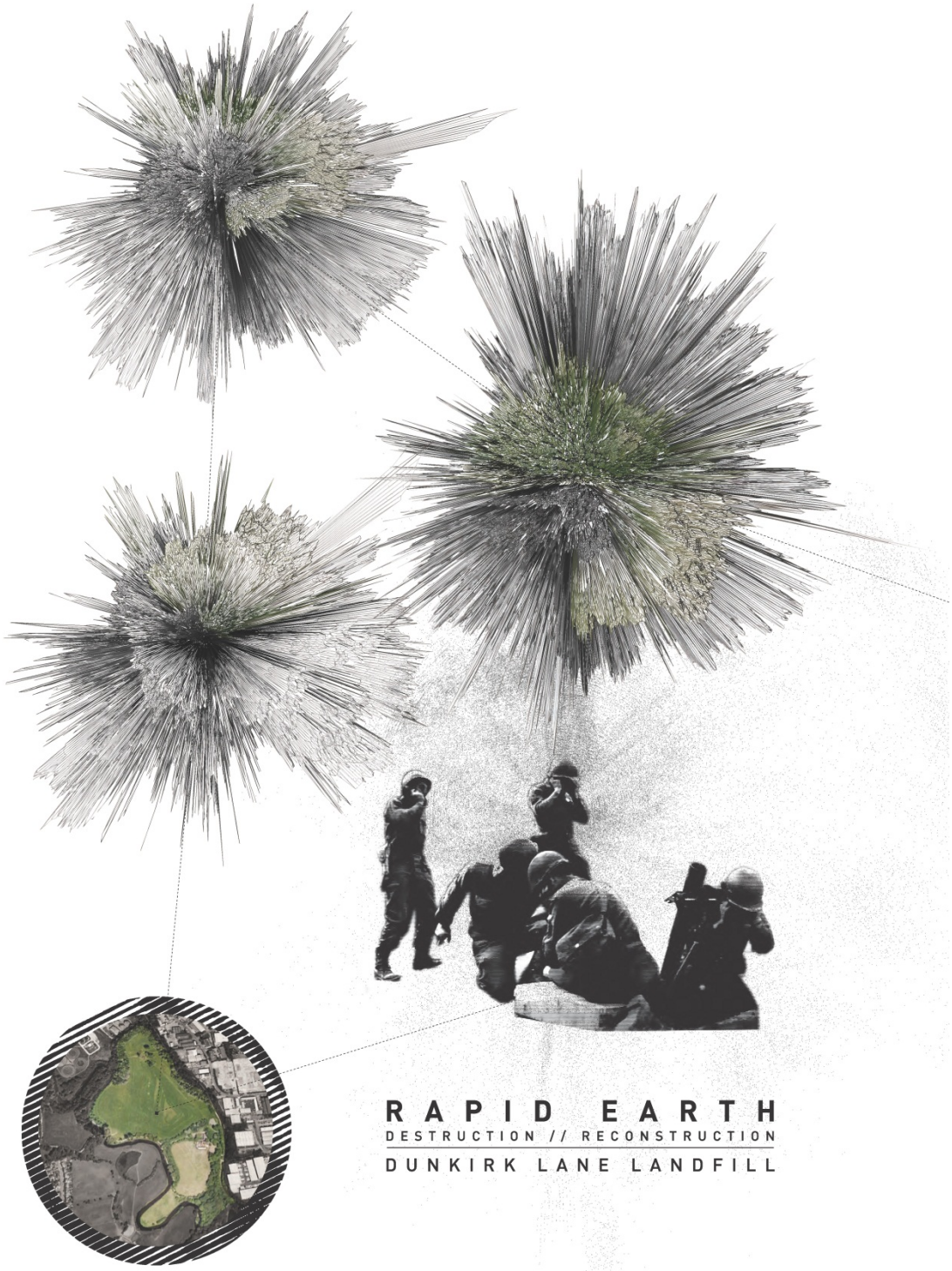
Water
Water courses currently surround the periphery of the site.
Since 1969, the Trust has been undertaking works to block drainage ditches and raise water levels within the mossland to a level suitable for the growth of mossland species.

Vegetation & soil
Land surveys indicate only pockets of healthy trees and shrubs (green areas). However, moss species and peaty soils are of significant importance. Pollen analysis has revealed the first peat deposits of the northwest's mosslands to be from 8000 years BC, making Red Moss 10,000 years old.

Now
Red Moss is a wetland mossland in Greater Manchester, located south of Horwich and east of Blackrod, in Lancashire. The site, formerly a landfill site, spans 17.9 hectares.

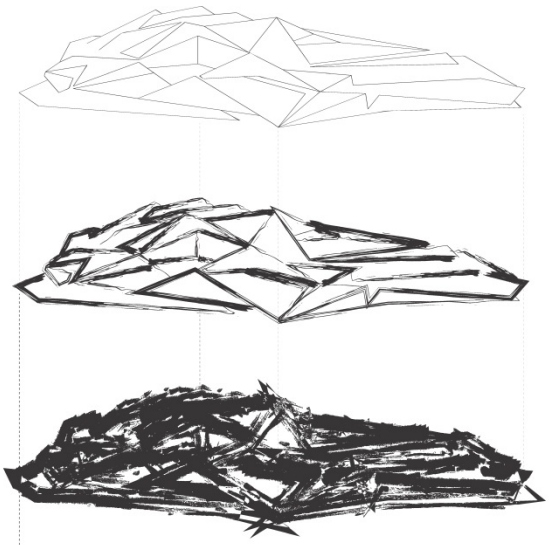
Figure 170: Sophie Parker-Loftus, Bolton Red Moss, Digital Media, 2012.

53°27'41.93"N 2° 5'42.99"W



53°27'41.93"N 2° 5'42.99"W

A series of 3 bombing visuals created with digital media. The visuals are 3D renderings of the exploded site plan and will act as the catalyst for change on site.



Dunkirk Lane will test military objectives of reconstruction and reclamation following destruction of the site. The abused landfill is totally destroyed and the beginning of a new landform is starting to take shape.

Figure 171: Scott Badham, Dunkirk Lane, Digital Media, 2012.

In **Figure 171**, Scott Badham created a series of military motifs in which his landfill site, *Dunkirk Lane* will be formed. Here he proposes complete destruction of the site in which a new landform then takes place. Here Scott proposes operational tactics through an abused landscape to rebuild the relationship between what he called 'anthropocentric and biocentric systems'. In his perspective 3D renderings of the exploded site plan he promotes this change. At an experiential level, the landform expresses its destructive past through its unusual geometry. The landscape form imitates large scale rubble, shattered through destruction, the earth is then stacked and stabilised using geocells. Badham's representation is a candid example of the violence of construction and landscape. He draws intricate pathways and by sparse use of vegetation tries to amplify the stillness from the aftermath of 'war'. Geometric shapes filled with *Papaver rhoeas*[6], are planted on the landform providing blocks of blood red colour to enhance the sense of atmosphere. The site relationship with water is improved by the 'shards' slicing into the central site, injecting water into the central core from the surrounding water bodies.

The representation implies a time, of design phases, where in this case restoration involves an attack, leaving a fabric of craters and impact. Such instruction was purposed towards generating the 'higher level' learner, in a drawing context, and in these outputs whilst the quality of the work is not for critique, the process in which the students assembled material for the generation of ideas is certainly interesting - an assemblage of experiences and cultural ideas; Badham's editorial choices of classic American war films applied as a design sequence, and Parker-Loftus' ceramics as a symbol in which to organise a landscape around. The dangers of such wider selection of course mean that the discontinuity and reception of these designs, if ever produced could become evident. As in Olin's work at Stourhead, where his drawings were seen as devoid of any cognition, the critic did not see the works as examples of the cognitive process. Such digital work was also assembled with little direct contact with the sites themselves, unlike the analogue drawings shown, repeating a historical dis-attachment (*Versailles*) and thus an important phenomenological experience which aids understanding, which according to Pallasmaa, is important for learning. Whilst in the digital works such combination of cultural artefacts can be used in free play, the danger is that such free play does not account as a heuristic (Calvino *Trade*) as seen in analogue works. To qualify, the solving of issues can be avoided in digital work, through an overt presentation that shrouds a sort of 'thinking hand', where we have seen students grappling to draw landscape phenomena. Such work can be readily assembled into conventions and this can be evidenced in the **0.1 Introduction**.

[6] Flowering plant of the poppy family.

To revisit Calvino and the landscape hermeneutics established on this basis, in light of the case studies of London Southbank and Milton Keynes, there is a lot at stake in modes of representation which as a result of their agency can have deterministic effects both positive and negative. However, through a re-orientation of the conceptions of drawing, and the understanding of the educational schemes in which understanding is constructed for each student, we can view Calvino's terms as positive hermeneutics for a landscape architecture drawing methodology in which to be educated. Producing form and design landscape works, which may after Lefebvre, create spaces more inclusive of social practices and operations. Those practices in turn can be evaluated through drawing, if understood as a metaphoric body centred process, in which drawing forms articulate these multiplicities. Thus, 'Blood', articulating abstract thoughts, describing with an apparent fidelity, landscape features understood as a personal form of expression. 'Trade' meant in terms of the student attempts to convey and communicate their understanding of the site as seen. 'Authority' as understood by the scope and refinement in which a task is set the suggestion of ways, in which both the translation and communication of these processes could be edited, selected and rephrased. Finally, 'Agency' of drawing and the recognition of the social relations that occurs from design conception to production.

Whilst the analogue student process can be located within the Calvino method, the digital practice of landscape architecture requires further discussion in light or this re-orientation in the recognition of the agency of drawing. Graphic invention does not necessarily feed into the landscape architecture profession, and in the digital drawings that are produced this is through several complicating factors which make this evident, economy, training and standards. Change emerges from within design education; it is the seed for further work, which needs cultivating with a variety of choices and skills through a series of contexts.

Chapter 3.2 - Hypergraphic – Superstudio – A Manifesto for Digital Landscape Architecture

Introduction

> *"(Studying under Gropius), I soon appreciated the basic idea of the Bauhaus that the arts were not segmented"* (Lawrence Halprin in Saffa, 1991).

The debates on landscape architecture between professional bodies, universities, and design firms with varying interests in the environment, competition and public perception have affected the position of landscape today. This effect has led the landscape architectural field into something of a peculiar position. This position arguably created a paradigm which is resulting in a strange restriction on the ability of landscape design to respond in meaningful ways to changing climate, cultural and economic conditions. To solve, or at least move beyond the dominant representational paradigm, we need to look outside of the discipline itself, or realistically pull back the basis – roots and segments to which Halprin refers - in which the discipline has constructed itself today (Swaffield & Deming, 2011). Thus my justification of a manifesto format is to talk about an intention and motive to make landscape architecture representation more focused and considered in both academic and professional practice - in this case in digital work building on the previous chapter predominately discussing analogue works. It is a manifesto, as I believe there is a sense of urgency in its task.

The process by which landscape design emerges and is constructed can be seen as the translation and communication of design drawing. We primarily design using drawing which then moves into something else, it can become a built thing, a new spatial texture and provide questions and possibilities of solutions for urban issues and the threatened environment. We need to focus research on the agency of drawing, to focus on its mediation between different surfaces - to analyse the characteristics of what Giles Deleuze calls the botanical *Rhizome.* The *Rhizome* is the multiplicities of the image of thought, that culture is a wide array of continual things without a specific root or narrative, a connector between things. This notion is perhaps how we could view drawing, focusing on its mediation between things; as "a map not a tracing"[1] (Deleuze & Guattari, 1988, p.12). This is perhaps equivalent to what Kundera calls a "poetic mediation on existence"(Kundera, 2005, p.35).

[1] Deleuze applies this as a principle of cartography.

Representation could be seen as part of the design process, an area in which to locate these rhizome roots, in the specific way that the drawing acts as an agent. So between things, between concept and ideational activity at the early design stage, built form, to the representation of that built form – a mode which Evans calls a referential art; “Referential art is, by its very nature, reduced from its referents” (Evans, 2000, p.xxi). Representational debates have focused on analogue to digital transition, building a debate about the fidelity of digital production and the artistry and directness of hand drawing (Mitchell, 1989), though this does not answer the nature of the translation between. The movement between representation and production is the real issue – how we make images about landscape using varied tools.

Thus selection and appropriation of tools to make landscape are more pressing concerns for generating ideas. Lawrence Halprin’s assertion in the opening quote, of the conjoined nature of artistic production is key to enriching digital landscape drawing. Thus the aim of this chapter is to enrich this process by looking at key computational technologies and artists movements and create a synergy of practice. There are two ideas located within this enrichment. First that such computational invention led to specific hardware and software advances, and secondly that the artistic movements have brought interesting approaches and uses of such technology. How much of this invention can inform digital design drawing for landscape architecture?

The approach of the manifesto is prone to criticism with such postmodern relativistic methods of combining and selecting parts of completely different design narratives and histories. This is questionable, but the hope at least is to begin at a representational level a method of working that combines multiple approaches to the goal of creating and communicating information (thus the choice of a manifesto format)[2]. If this is achieved then perhaps the method could be forgiven as moving towards a trans-disciplinarity. The physicists Basarab Nicolescu, Karen-Claire Vossas created a similar manifesto unifying the spiritual and the scientific in quantum physics; "the goal is the understanding of the present world, of which one of the imperatives is the unity of knowledge" (Nicolescu, 2002, p.44). This is similar to what can be called ‘courage of technology’, a ‘risk to invent’, and unify knowledge as the internet pioneer Ivan Sutherland would state (Sutherland, 1996, p.7).

[2] See (Nicolescu, 2002; Nicolescu, 2008).

Figure 172: Aberdeen City Gardens, Satellite Image, Competition Resources, Malcolm Reading Consultants and Neale Smith 2011.

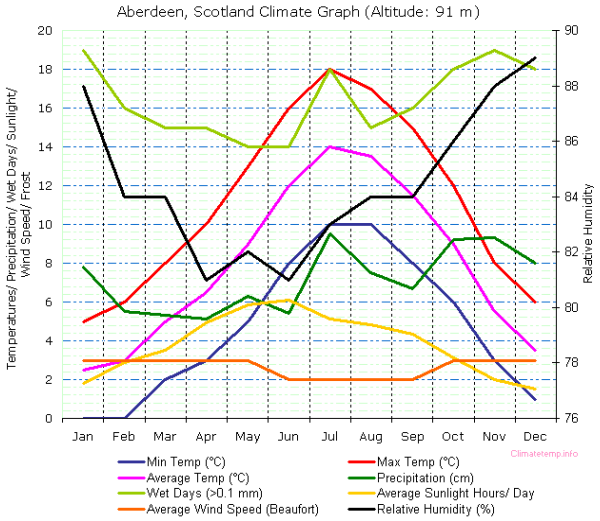


Figure 173: Aberdeen Climate, Met Office UK (Office, n.d.).

For the recent design competition in the UK for Aberdeen Gardens (2011), ideas generated by firms at a representational level constructed landscape in a peculiar virtuality. Aberdeen receives on average 856 mm (33.7 in) of precipitation annually or 71 mm (2.8 in) each month. However, the majority of visualisations created a climate akin to a Mediterranean summer. At the same time, public, client and planners reception drives such consumption for this productivity, undermining the credibility of experimental visualisations or considered representations of design intent. The practice must be able to sell their ideas, there is an economic stake, new clients are needed, and the communication of design ideas must show the scheme in its best light. These pressures must be considered, though the danger is that such visualisations become kitsch (Kingery-Page & Hahn, 2012) and the ability of digital works to simulate real world processes becomes separated (Boyer, 1996).

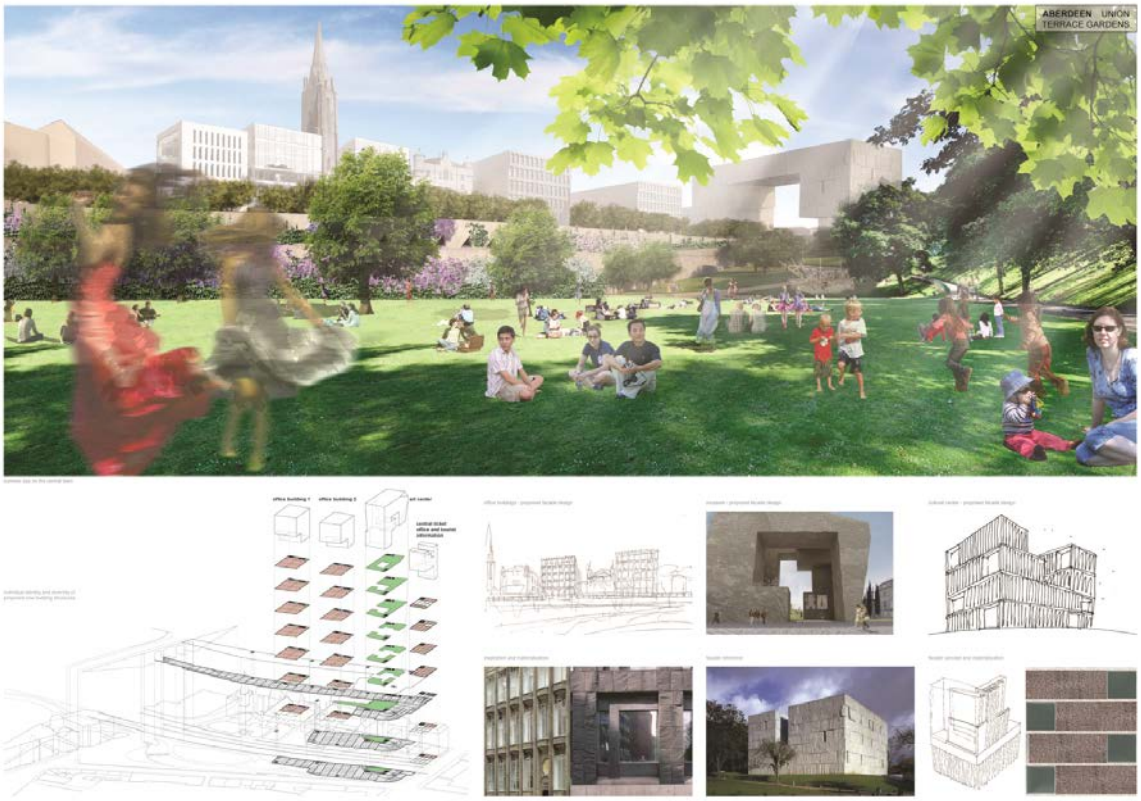


Figure 173: West8 Competition Entry Page 3, Aberdeen City Gardens. (Visited 3/5/2012 http://www.malcolmreading.co.uk/architecturalcompetitions/citygarden).

The work's effectiveness for communication of ideas becomes limited by these constraints – a construct which shows freedom, however limited, within its own prison of standardised representation. Paradoxically, the GUI computational tools to allow such construction have marked a very different and more radical history of invention. Such representation is important to challenge as it links with wider landscape issues, as the phenomenologist Christopher Tilley states,

> A centred and meaningful space involves specific sets of linkages between the physical space of the non-humanly created world, somatic states of the body, the mental space of cognition and representation and the space of movement, encounter and interaction between persons and between persons and the human and non-human environment (Tilley, 1997, p.10).

The sense of linkage and ability of simulation of digital representation is important. Given this issue it is important to consider two contexts which could address the distance and virtuality of landscape representation. First, the field of *Psycho - geography* and 'Lettrism' shows a variety of approaches to engaging in urban space, which is the variety of tools used to understand urban experience and articulate that experience in visual form. In the work of 'Superstudio', hybrid works are utilised as a vehicle in which to engage in architectural critique. Thus, whilst disparate

unconnected contexts still provide a research direction for digital landscape architecture, which encapsulates both the adoption of a wide variety of tools, and a mode of working that extends critique and discussion of the built environment.

In addition to this possibility it's worth discussing three historical moments in computer engineering and design which have had an influence on the toolsets available today; Sketchpad (1963), GPS (Global Positioning System) (Leica Geosystems 1987 - 2006) and GML (2000). Sketchpad was the first software in which a user could draw on a screen using a stylus. GML Geographic Markup Language (based on XML grammar) was the first universal coding language in which geographic data could be visualised and shared. GPS was developed for military purposes but adapted to survey landscape by Leica Geosystems, this work symbolises a new representational system with a body connection and landscape as well as remote sensing of terrains and vegetation. These historical moments mark periods of specific invention and thus created new digital developments. These developments do not match the current digital landscape architecture drawing practice in which it could be seen to be in a dominant representational paradigm (**0.1 Introduction**). The combination of radical practices with computational invention creates a synergy and manifesto which addresses these shortcomings.

3.2.A - Lettrist Movement & Psycho-Geography

Lettrism sought a new form of communication which blended various arts; poetry, cinematography, print and painting. Essentially by aiming and reacting to bring poetry to the everyday. Predominantly Lettrism's outputs focused on notational styles, they invented a graphic form called Hypergraphics which was a synergy of poetry, text, cinema, typography and hand graphics. Maurice Lemaître (Seaman, 1983) also described Hypergraphics as an "ensemble of signs capable of transmitting the reality served by the consciousness more exactly than all the former fragmentary and partial practices (phonetic alphabets, algebra, geometry, painting, music, and so forth)"(Ford, 2005, p.20). Lettrism continued its experimental activity in the form of Psycho – Geography through a breakout group. As Guy Debord terms it "the study of the precise laws and specific effects of the geographical environment, consciously organised or not, on the emotions and behaviour of individuals." (Debord, 1955). Here, Situationists opened a new graphic communication and critique of capitalist society architecture and urbanism out of a distinction of a particular undertow of psychological – geographical relief of urban centres which apparently discourage or enable certain movements and activities (Mcdonough, 2002, pp.55–87).

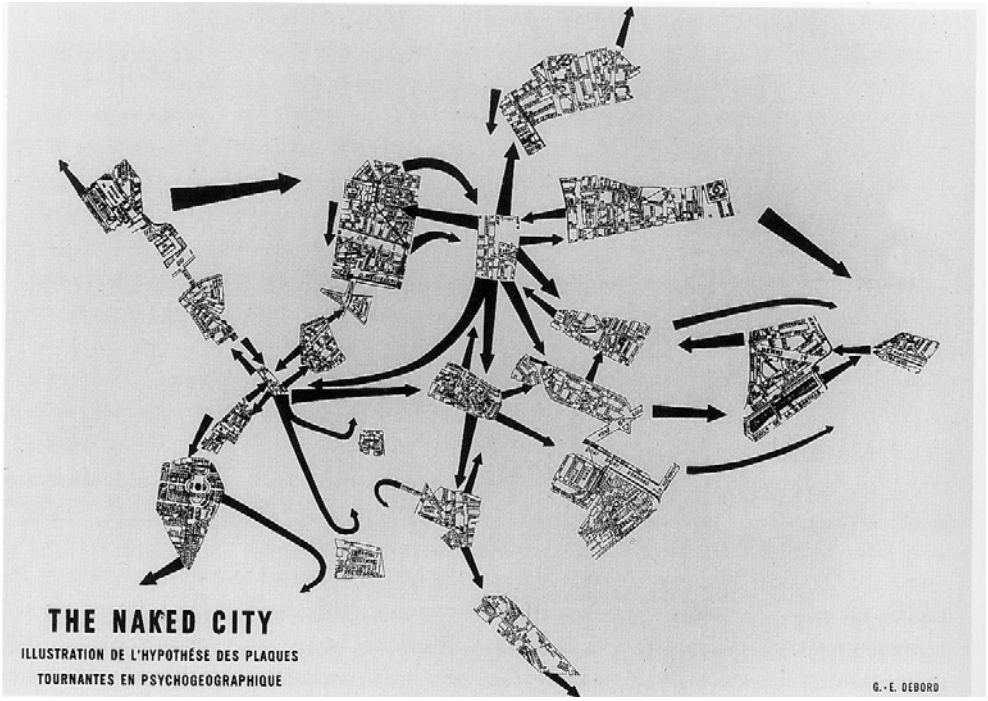


Figure 174: Guy Debord & Asger Jorn, Naked City, 1957.

Exploring maps as constructions and perceptions of space, the work (notably in the Naked City 1957) conveyed maps figured as narratives rather than as tools of "universal knowledge"(Mcdonough, 2002, p.61). As Debord states, "the production of psycho-geographical maps may help to clarify certain movements of a sort that, while surely not gratuitous, are wholly insubordinate to the usual directives." (Knabb, 2007, pp.5–8). The most constructive example from the Situationist International group was the notation of the 'derive' or drift, in which atmospheric points or locales connect with others at unrecognised scales forming a composite map of fragmentation states and drifts between and around obstacles. This work created at a representational level an abstract reduction of the Parisian space to social relations, but this in itself, was more 'truthful' than the presented fidelity of a 'whole' Parisian map seeking a totalising impossible eye or 'voyeur' (Foucault, 1991; De Certeau, 2002) in which the terrain is laid bare. The maps became the art of actions and narratives, of localised scales which are hard to interpret. Such work runs with Henri Lefebvre's description of the production of space in which capitalist conditions contributed to a condition of the segmentation of space. Lefebvre's complete lifelong project sought to unify the abstract, perceived and lived (Lefebvre, 1991). Such work in a digital landscape context is challenging, as remote sensing data constitutes the same 'totality'[3] in landscape design - post Ian McHarg - the desire to gather and simulate 'wholesale conditions of working', thus transforming the complexity of landscape into a 'neutral' simulation or theatre of operations for new production. What can be extracted from these earlier movements is the use of more localised and refined individual notions and perceptions of space, moving towards more collectivism in describing the urban realm and its features (Reynolds & Fitzpatrick, 1999). Lettrism, and Psycho-Geography challenge the objectivity of mapmaking and provide possibilities for a radical cartography to be liveable and familiar. These are new challenges for urban design processes - in the study of the tactics or stories of users and their particular drawings and mappings, lines and crossing of stories, re-appropriations, narratives, movements, metaphors and second geographies for the city and for the urban designer themselves as we have seen in **Chapter 2.1** – "what the map cuts up, the story cuts across" (De Certeau, 2002, p.129). Psycho-Geography and Lettrism offer a research avenue for landscape architectural digital production, particularly in mapmaking which allows human approaches and selections to be assimilated in the digital process, which then changes the notion of the digital map as a neutral terrain replete with culture and individuated understanding of landscape.

[3] Appearing to represent the sum of landscape, what appears to give a sense of a 'full' picture of the terrain.

3.2.B - Super Studio

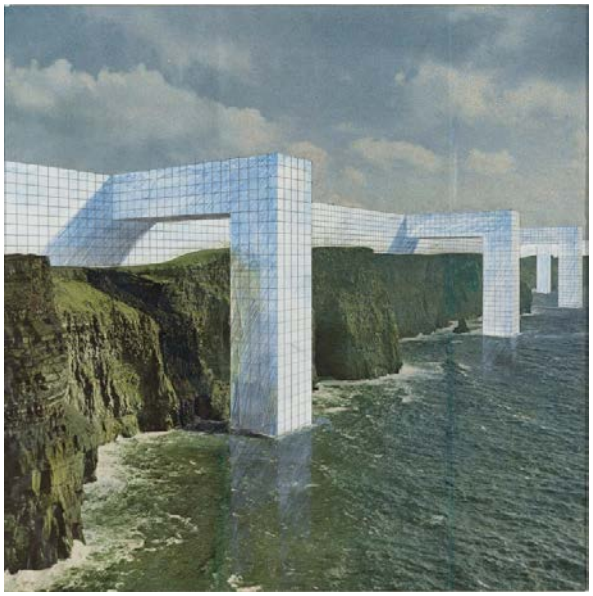


Figure 175: Superstudio, *The Continuous Monument, An Architectural Model For Total Urbanisation*, 1969.

Superstudio was founded in Florence, Italy, by Adolfo Natalini and Cristiano Toraldo di Francia—recent graduates of the Florence School of Architecture—in 1966. Emerging from a critical cultural mielu,

> [Superstudio] saw that architects need to be involved in a different kind of thinking about what their profession is… Rather than just creating luxurious objects, or introducing people into the world of consumer objects, they should be worried about such political issues as, 'What is architecture?'
> (Ringen, 2004).

Alongside similar groupings such as Archigram and Archizoom, Superstudio primarily conducted research outcomes in paper form. Utilising and layering photos they developed ideas about an all-encompassing architecture, the *Continuous Monument*, a black and white grid occupying all landscape, thus rendering the world uniform (Gargiani & Lampariello, 2010). This work marks an important case for the development of critical ideational activity. The idea of the Superstudio was that an architectural practice could be conceptual and theoretical, concerned with cultural criticism rather than just the production of buildings (Byvanck, 2005). By extension this chapter is focused on the development of a Landscape Architecture 'Superstudio' which is interested in the theory, concept and criticism of built landscape. Superstudio's 'Anti Design' was a reaction against the failure of modernism and architecture, the group blamed modernism for economic and environmental degradation (Lang & Menking, 2003).

Corner identifies the need to address the estrangement of theory and practice from poetic value, in the constitution and embodiment of culture, stating that in landscape architecture “contemporary theory and practice have all but lost their metaphysical and mythopoetic dimensions, promoting a landscape architecture of primarily prosaic and technical construction” (Corner, 1991, p.116). Superstudio and James Corner developed a method of working for digital drawing in landscape architecture, as further critical of its own outputs. Further critical interrogation of digital landscape form is based on Bernard Tschumi’s idea that “the paper representation of architecture will have the sole purpose of triggering desire for architecture” (Tschumi in Wines, 1988, p.186). Adopting such a motive as Tschumi states, places landscape architecture in new territories in which it can act. These territories include changing public ides on meaning in landscape, promoting the profession further and developing an important environmentalism. This avenue of research re-orientates the current digital landscape architecture works into visualisations which are critical and have a greater agency in environmental action.

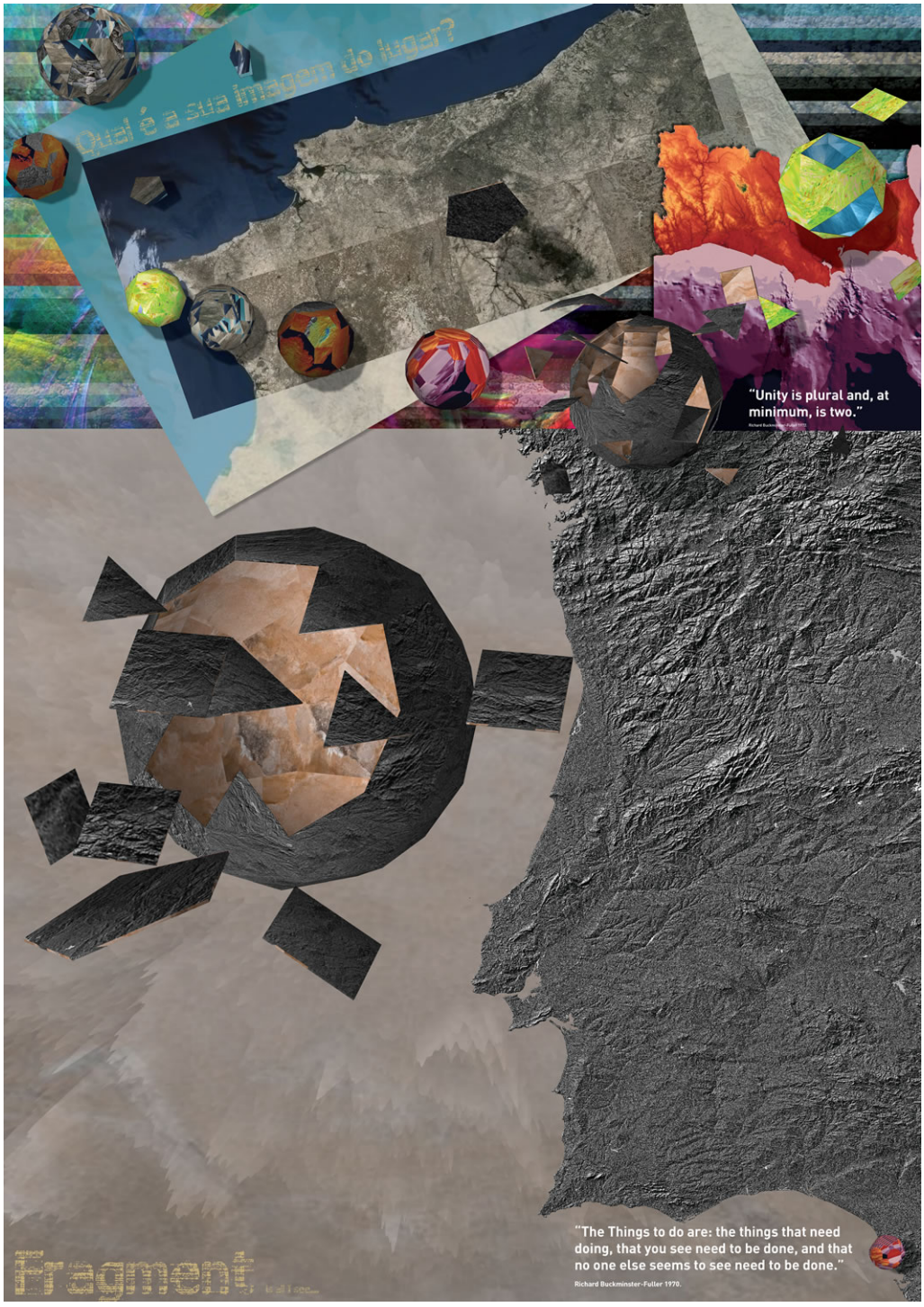

Qual é a sua imagem do lugar?
"Unity is plural and, at minimum, is two."
"The Things to do are: the things that need doing, that you see need to be done, and that no one else seems to see need to be done."
Richard Buckminster-Fuller 1970.
fragment

Figure 176: Paul Cureton, Design for Desertification, '21st Century Rural Museum', Lisbon, Porto, Coimbra, November - July 2012- 2013, Group Exhibition.

Such ambition formed part of experimental representation in this project **Figure 176**, *Design for Desertification*[4], A simple DEM model is combined with multiple data sets, and unitary design philosophies of Buckminster-Fuller (**Chapter 1.2**) – an initial twist on hyper-graphic production

[4] DFD http://creativeruralcommunities.wordpress.com/

but also bringing critical attention to landscape practices and futurological land uses of segmented operations. Here, projections envisage the major centres to be flooded, vast areas the victim of high temperatures, and limited liveable space.

Figure 177: David Haley with Paul Cureton, Luis Quintas and Cristina Rodrigues, 'Meantime... Desert Poetics', Design for Desertification, '21st Century Rural Museum', Lisbon, Porto, Coimbra, November - July 2012- 2013, Group Exhibition.

This is further explored in a distorted 17 metre by 2.5 metres World desertification map, titled 'Meantime... Desert Poetics' by ecological artist David Haley and the Portuguese poet Luis Quintais. The map was created from 283,000 tiled images, geo-referenced and reconstructed. Showing the world from within (mirrored map) the curved installation, centres visitors to the centre point of the earth. The sun's position in the form of sequenced spot lights, light the panels at the same time as the sun moves around the world. The impossibility of the view of the earth from within masks the real issue of an enveloping desert from which landscape is consumed.

By discussing three computational inventions we can compare a radical technological development in relation to digital landscape production – Sketchpad (1963), GPS (1987) and

GML (2000) have had profound impacts on future interfaces. Each computational invention marked radical changes to the digital realm and evidences a continuing requirement for invention. This history yields certain developments, like Hypergraphics and Superstudio that have can have a practical impact on digital landscape.

3.2.C - En Route to a Simple Line - Sketchpad (Ivan Sutherland 1963)

Figure 188: Sketchpad began in 1961 and was developed by Ivan Sutherland at MIT. (Ref: Sutherland, Ivan E. Sketchpad: A Man-Machine Graphical Communication System. Proceedings of the AFIPS Spring Joint Computer Conference Washington, D.C.: 1963, p. 329-346.).

Sketchpad marked a specific computer development history. Sketchpad, based on the idea of napkin sketches, refined to more and more finished engineering drawings, formed the idea of the invention of the program. Working with a light pen, predecessor of the mouse, the user could point with the pen and interact with lines displayed on the screen. Ultimately, Sketchpad developed a graphical user interface that mediated between human and computer with real application to engineering solutions (Sutherland, 2003, p.3).

One of the earliest successes was to draw a cross which tracked the movements of the light pen.(Sutherland, 2003, p.54). The cross formed the basis of the start of a line. This is what we can see still today in the use of AutoCad. The programming involved commands with buttons, for example pressing a button would fix the cross hair to a selected point to begin drawing a line. Further programming developed points, arcs, lines linked together to form objects (Cad Blocks). These could be stored in a library, scaled and rotated. Development of new displays and refresh buffers, as well as the demands of large industrial conglomerates helped develop real world applications in aero and car manufacture.

Particular developments in patching and content awareness of imagery (moving and still) will push graphical interfaces further towards increasing virtuosity, most prevalent in Adobe CS7 and 8 future phases. Developments with new interfaces and more intuitive devices such as 3D

immersion, Google glasses and Wacom's will increase the virtualisation in our lives. However, such sensory contact with landscape change and form is important to maintain. For example, in the eye tracking drawings of Michel Paysant (Cureton, 2013). Landscape form is delimitated using eye trackers, primarily developed for people with limb paralysis. In a landscape context, the representation still maintains a connection with human construct, similar to blind contour drawing found in **Chapter 3.1**.[5] We view the lines of the eye as it moves around the page, unfocused, distracted, messy, un-glossed and unpatched. A truer representation of landscape experience than the uses of contemporary technology tools built with a propensity to stylise, this is a major growth area in landscape research (Nordh et al., 2013) . Sketchpad was a pragmatic product from the outset which freed workers from the labours of technical drawing (Hartmann & Cigliano, 2002).

[5] Eye tracking has been researched in Landscape architecture see (Nordh et al., 2013).

3.2.D - Geographic Markup Language (Goldfarb, Mosher, Lorie 1969 & Lake, Cox, Portele 2000)

The Geography Markup Language (GML) is the computer coding language derived from XML grammar defined by the Open Geospatial Consortium (OGC) to express geographical features. The GML specification can encode dynamic features, spatial and temporal topology, complex geometric property types and coverage's (Brink et al., 2012). The coding language carries the ability to add descriptions of geographic features.

SGML, Standardised Markup Langauge was developed by Charles Goldfarb, Edward Mosher, and Raymond Lorie in the 1960s, the IBM process allowed the recording and sharing of large document formats, derivates include XML and HTML. Standardised GML based on XML, was developed by Ron Lake in 2000. Simon Cox, Clements Portele and members of the OCG developed the grammar and the work was sponsored by the U.S. Army Corps of Engineers. To develop this further, Lake had to find consensus and reach agreement of the form of the grammar.

GML has different goals compared to Hypergraphics or Superstudio. However, GML (Goldfarb, 1973) serves as a modelling language for various geographic systems as well as an open interchange format for geographic transactions on the Internet. Users are also able to augment geo-spatial information supplied by a data producer with data of their own, creating new feature instances or modifying existing feature instances. The ability of the code to integrate all forms of geographic information is crucial to the use of GML. The ability of the code is the democratisation of this language, which shows a successful vehicle and method in which new ideas can be shared and distributed – landscape as a subject can thus be visualised to a greater degree and described to a greater extent.

Note that the concept of feature in GML[6] is a very general one and includes not only conventional 'vector' or discrete objects, but also coverage (see also GMLJP2) and sensor data. The geometries of those objects may describe, for example, roads, rivers, and bridges. InTIME (Marcoux & Sevigny, 1997) was the experimental version of the variant GML, and the core invention,

> The principle of separating document description from application function makes it possible to describe the attributes common to all documents of the same type. ... [The] availability of such 'type descriptions' could add new function to the text processing

[6] The key GML geometry object types in GML 1.0 and GML 2.0, are the following: Point, Line, String, PolygonGML 3.0 and higher also includes structures to describe "coverage" information, the "raster" model, such as gathered via remote sensors and images, including most satellite data.

> system. Programs could supply markup for an incomplete document, or interactively prompt a user in the entry of a document by displaying the markup. A generalized markup language then, would permit full information about a document to be preserved, regardless of the way the document is used or represented (Goldfarb, 1996).

This coding and development was important as it brought a cultural significance to light. GML – has as a cultural effect - the ability to become 'the reconciliation of national differences' the portability of the file format between GIS allows trans-national working and opens up possibility in geographical knowledge sharing; essentially everyone speaks the same geographic language mitigating error and allowing greater distribution of the environment.

Such ability to share and construct has not materialised as much as was intended. At a coding level, XML open source has the philosophy of Richard Buckminster- Fuller,

> …Because the meaning of design is that all the parts are interconsidertately arranged in respect to one another and because all the generalized principles are omni-interaccommodative which is to say that none ever contradict any others… (Fuller, 2008, p.122).

Figure 199: Mapbox Base Map, 2013.

Developments in Openstreetmap which has its own XML, challenge and provide exciting connectivity, though such work remains constrained by the lack of 'purposeful' projects from the public at large. Software such as Mapbox, an open source digital map program is democratising what was a technical art form - extensive mapping tools are available to those with an internet connection. Users can add data, construct new maps from scratch for free and map any issue or environmental concern with little instruction.

Environmental issues can be presented from up-to-date visualisations of ice melts, to deforestation in the amazon on multiple devices. However landscape architectures role within this digital cartographic impulse needs to come to the fore, as in the GML case, founded on the basis of cross national dialogue and connectivity and sharing of data.

3.2.E - GPS (Leica Geosystems 1987 - 2006)

Figure 200: Leica Viva GS14 Compact GNSS Receiver, 2012.

Figure 201: Will Gowland, Here be Dragons, 2012. Will explores GPS data and its relationship with landscape marking the relationships of inaccuracies in GPS data and the ability to manipulate such datasets.

GPS was primarily attributed to the inventor Roger Easton and was developed by the U.S. for defence purposes. More recently the affordability of GPS has made devices more readily available for landscape architecture practices (Spies 2012). The use of GPS and development in handheld devices allow the survey of landscape and the reproduction of 3D digital environments which work in tangent with CAD and GML language (Petschek and Lange 2004). The advancement of these technologies means that professional practices increasingly have to make decisions based on remote sensing data. In the text *ME++: The Cyborg Self and the Networked City* (2004) William Mitchell suggest that current virtual networks and connectivity through mobile devices, act as appendages to the body and this is the case with GPS. For example in wind farm visualisations GPS units are used to create points in which camera shots are taken (called verified views). These photographs are then used for a photomontage of the intended installation (Macdonald, 2012). In addition to this Mitchell suggests that activities conducted on virtual networks have the capacity to influence real world activities and this

invention certainly matches Mitchell's claim. Sometimes this relationship is synchronous, other times catalytic. This synchronicity can be evident in the use of mobile devices for way finding and navigation (Lange & Bishop, 2005; Mach & Petschek, 2007). If we accept Mitchell's connectivity theory which is similar to a Deleuzian *Rhizome*, then the activities of virtual networks have a profound influence in the understanding and interpretation of landscape architecture. As we have seen if digital landscape architectural representation is far from simulative, or representative of experiences of situation found in landscape. GPS research has an influence and agency for the reception of these real worlds, GPS reconnects the disembodiment that the virtual world creates. This echoes with the theories of De Certeau and *Motation* developed by Lawrence Halprin, **Chapter 6.1**. Our understanding of landscape is changed by digital communication. The enabling of new digital realms is important to address, as the pressing ecological challenges that are upon us make it important to represent, to make the virtual into real, into response (Thompson, 1998).

Future motives for digital landscape architecture could be based on the following discussed principles combined into a manifesto format. Lettrism sought new approaches to constructing images and increasing representational techniques which could bring to the fore greater dialogues with the wider public. Psycho-Geography sought new mapping conditions and greater interaction between creating landscape and public participation which can yield a wider input into public space. Superstudio sought a critical dialogue through representation and thus must be key to future work, creating, challenging, and developing ideas and applications working against standardisation. As Henri Lefebvre has warned in architectural production,

> ...we produce only the reproducible, and hence we only produce only by reproducing or imitating past production...because reproducibility is what ensures the renewal (or reproduction) of existing social relations (Lefebvre, 1991, p.377).

Looking at three moments from the history of computer science we can see particular points of unique inventions in the digital world, which have had profound impact on future interfaces which can provide the material and techniques found in the practices of Psycho Geography and Superstudio. Thus the manifesto is a call for the merging of theory and practice and hardware for digital landscape. Sketchpad allowed and marked the way to draw and interface with computers. The graphic interface would democratise work to wider audiences and users. GML allowed the development and reference of geographic images to make real world visualisations at multi-scales, and most importantly in a standardised format to increase digital mapping systems availability and sharing of information systems. GPS paved the way for increasing networking and tested the first geographically accurate landscape and the resulting evidence of human behaviour on such a system. Such context can be appropriated for not only software and

hardware development, but also for the *use* of such tools for digital landscape. These differing practices and inventions combined, allow the development and synergy of a number of digital practices for landscape architecture drawing and thus a positive valence for production.

Heuristics & Scoring

Heuristics & Scoring – This thematic area discusses and extends the context, case studies and pedagogy of drawing for landscape architecture by discussing the heuristic and notational possibilities of drawing, which have potential to enrich the positive valence to which the thesis argues. This work discusses Wolf Hilbertz, a seascape architect and the architect Paolo Soleri, both of which use drawing as a problem solving device and both of whom have tested and constructed their ideas. Lawrence Halprin's notation system is also discussed in its participatory potential. These contexts establish an argument for landscape architectural drawing to involve heuristic and scoring processes (**Chapter 4.1 – 6.1**).

Chapter 4.1 - *Videre:* Drawing and Evolutionary Architectures

Introduction

Whilst student analogue and digital processes have been explored through Calvino developing a positive hermeneutic into a working method of practice, three important computational historical moments in digital landscape drawing have also been discussed. The previous chapter discussion was focused on working practices which escape the current dominant representational paradigm for landscape architecture. The case studies of Southbank and Milton Keynes stressed the importance of translation of image to production, and emphasised the need for continual invention and experimentation, what could be seen as the development of 'everyday research' in landscape architecture and the re-orientation of drawing as an agent, a metaphor, an open scored performative act. What someone draws helps to understand the experience of landscape, though the choice of representational scheme can have profound reductive effects. Given this issue it is important to develop examples which are more experimental, which have also been translated into built works.

This experimentation is important, and I would argue that drawing is a heuristic; this can be demonstrated in the discussion of two important works by Wolf Hilbertz (1938 -2007), and Paolo Soleri. The heuristic method is one of discovering and finding, projecting solutions borne, through drawing you learn to solve something, problems are mapped out (Moustakas 1990). First, the development of mineral accretion, whilst at first glance, this is not a subject for landscape architecture; it is a profound technology that can mitigate coastal erosion and assist costal management. In this case, the drawings visualised possibilities, the results tested and realised. The ideas of mineral accretion are carried by the agency of drawing, to which the process has had an environmental impact. Secondly, the development of Arcosanti in Arizona, rests on 'philosophical drawings'; embodied images[1] that state an imperative for radical new urban patterns, centralised mega-structures that house populations to minimise land use. This vision has been undertaken. This discussion of futurological drawing is on the basis that, whilst drawing must be instrumental in communicating landscape design, such instrumentality does not mean in any terms, the scaling,

[1] This follows Juhani Pallasmaa's definition that an image can be one based on embodied and lived experiences that take place in 'the flesh of the world' (Pallasmaa 2011).

removal or reduction of alternative ideas for landscape. The contribution towards pressing ecological issues such as land use, conservation, and protection, outweigh the drawings themselves. The drawings are irrelevant other than their ability to carry the message and solve issues.

Figure 202: Unknown Student of Wolf Hilbertz, *Autopia Ampere*, Hand Coloured, After Newton Fallis, 1975.

The Autopia Ampere drawing was produced by Newton Fallis at the University of Texas whilst he was a student. Other students worked on drawings in Hilbertz's Symbiotic Process Lab to which **Figure 202** was produced. The illustration was intended to be shown in the Smithsonian Magazine. Fallis discusses the process "The nautilus/golden-mean-spiral Autopia was drawn in the same manner it was expected to 'grow'. While the overall drawing was conceived and laid out very carefully (I planned the eye position for the mechanical 3-point perspective such that a person viewing a double-page spread in Smithsonian magazine from a normal distance would have their eye position coincide closely with that of the drawing), I did not know what all of the drawing portions would look like at that time. I started the final drawing of elements with the little centre portion, where the actual structure would have to be begun with a raft on a fairly unforgiving ocean. I felt it might have a crude form, as it does, more instructed by its necessities and end up finally as an icon in a city park. Later portions - such as the oceanographic institute - would have the benefit of greater wisdom and the deeper planning typical of more complex programmatic challenges, and hopefully the luxury of artistry"
(Fallis interviewed by Cureton 2010).

Figure 203: Frank Gutzeit, *Autopia Ampere,* Model, Mixed Media, 2000.

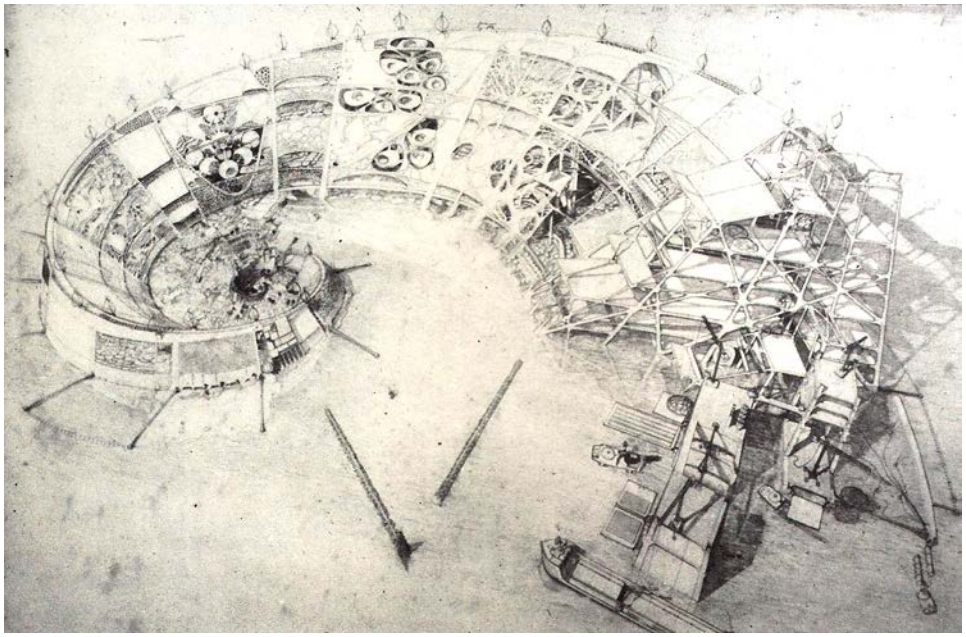


Figure 204: Newton Fallis, *Autopia Ampere*, 1978, Graphite on Paper, 92*145cm. Fallis comments on the process of being situated at the drawing board; “I tremendously enjoyed the long evenings I would work alone with the drawing, and found that as your hand is filling in some forms your mind is able to ponder the vastness of the city's implications and attempt to generate new form and technological solutions to problems” (Fallis interviewed by Cureton 2010).

Figure 205: Unknown Student of Wolf Hilbertz, Autopia Ampere, Internalised Ocean, Based on a drawing by Newton Fallis, Photocopy and coloured Pencil, 1985, 92*137cm. In this work the Brise soleil to the right side would act as a passive heat regulator to the Biorock structure. The sun shading was combined from an earlier drawing on cybernetic systems by Hilbertz. Here Biorock is configured to land based systems and the configuration of the city is adapted.

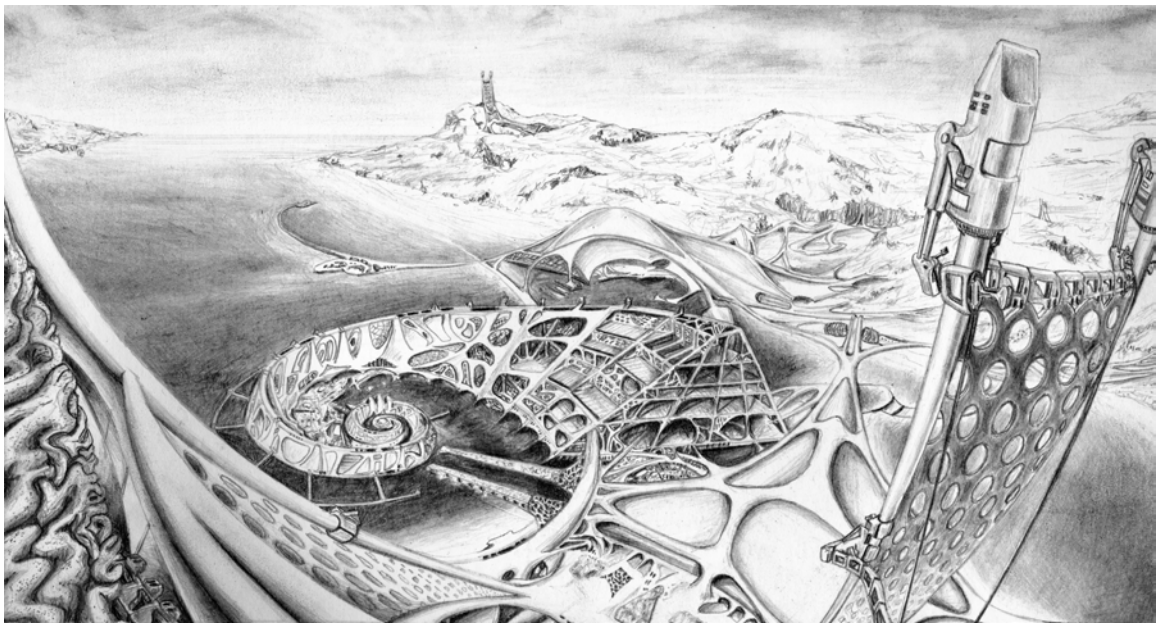


Figure 206: Paul Cureton, *Autopia Ampere*, After Newton Fallis (1970) and Wolf Hilbertz (1978), 2009, Pencil, 23.5cm * 13.8cm.

Through the works of the late seascape architect Wolf Hilbertz[2], marine coral scientist Thomas Goreau, architect Newton Fallis and collective, the chapter considers the development of 'self-organizing' natural building materials developing a mode of working called *Cybertecture* (CYBERnetics & ArchiTECTURE). This investigation focuses particularly on that of Biorock® the mineral accretion technology (See **4.1.A - Coral Arks**), and involves a process of creating artificial coral reefs which are stronger and more resilient to degrading factors found on natural reefs. The technology demonstrates an evolutionary environmental system, which continually grows over time, a coral which is more reliant, tradable, multiplies in growth three to five times faster than normal, protects coastline, and grows fish populations through its constantly evolving habitat. Importantly the technology has wide implications for restoring, designing and managing fragile and threatened coral ecosystems thus creating an emerging field of *Seascape Architecture*. Through the application of such technology, an accreted city of coral is envisioned titled *Autopia Ampere,* **Figure 202 - 206**. The early development stage of the project involved large scale hand drawings of possible outcomes and issues in construction and production and the chapter advances to explore wider notions of visualisation in architecture developing the experimentation strand of the agency of drawing. The drawings of *Autopia* can be considered as heuristic[3] and also visionary in the testing of ideas - (Videre, Latin. *to see*). The author's composite drawings present this vision as a method to understanding the project.[4]

For Hilbertz approached his work searches for a mutually beneficial relationship between building and environment. Cybertecture he saw as a mode to radicalise and achieve this relationship through automation;

> "Cybertecture is a concept to reverse a historical process radically"
> (Hilbertz 1972, p.1).

[2] Having studied architecture in Berlin, Hilbertz began teaching at Southern University in Baton Rouge, Louisiana in 1965 where he founded the 'Responsive Environment Laboratory'. He worked on the notion of Cybertecture before moving to the School of Architecture, University of Texas, Austin and then founded the 'Symbiotic Process Lab' in 1970 working on non-traditional building materials. Hilbertz passed away in 2007.
[3] To this end it seems far from coincidental that in George Polya's 1945 book, *How to Solve it*, he advocates drawing a picture as one 'heuristic' when a difficult problem is encountered.
[4] Through interviews and the gathering of archival material the drawings are constructed based on visual works still remaining and the overall ideas and vision.

> "The old falls down, times change, and new life blossoms out of ruins"
> (Taylor and Schiller 2011, sec.Act IV, sc. ii.)

Examination and integration of the mechanisms of evolutionary processes can yield a raft of experience which can then be drawn from, of the processes of things in nature. For Hilbertz *Autopia Ampere* would be an underwater structure living just like corals. His work created the desire for heuristic evolutionary architectures that are "self-organizing environmental open systems capable of forming higher orders of organization"[5] and his work are being continued and collectively being reshaped towards new technologies that address our environmental impact. A heuristic approach is to enable change, a new life as the poet Fredrich von Schiller places it. This approach was that the seascape architect Wolf Hilbertz, coral scientist Dr. Thomas Goreau and Newton Fallis, Forest Higgs & student collective, from the late 1960s researched and articulated categorical imperatives[6] for natural building materials that created a symbiosis of man, animal, plant, technology and nature[7]. These imperatives included renewable building materials with low to moderate states of energy that could be naturally grown whilst also supporting biodiversity[8]. It was through examination of the phenomena of natural organization that a cybernetic function (utilising computer technology that determines the frequency of this natural change) could enable these new structures and materials -what Hilbertz called *Cybertecture* analogous to living systems, control mechanisms that organize materials in a self-determined manner. Hilbertz attempted to outline an evolutionary environmental system "which organises the space-time continuum eco-systematically."[9]

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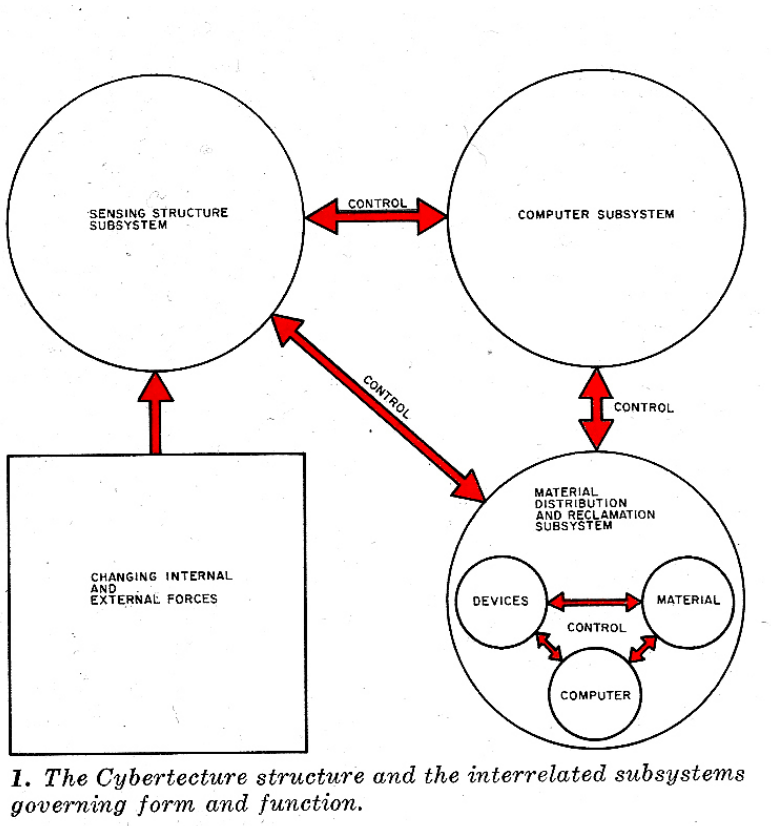
[5] Wolf Hilbertz, Strategies for Evolutionary Environments, in T*he Responsive House:* selected papers and discussions from the The Shirt-Sleeve Sessions in Responsive House Building Technologies, ed. by Stan Allen (Massachusetts: Department of Architecture, MIT, May 3-5, 1972), p247.

[6] Wolf Hilbertz, 'Solar-generated Artificial and Natural Construction Materials and World Climate, Natural Structures: Principles, Strategies, and Models', *Architecture and Nature*, SFB 230, University Stuttgart and University Tuebingen, 2, (1992), pp119-127.

[7] Dr Thomas Goreau tirelessly campaigns for the conservation of Coral Reefs, President of the Global Coral Reef Alliance (GCRA) and is the Coordinator of the United Nations Commission on Sustainable Development Partnership in New Technologies for Small Island Developing States.

[8] Wolf Hilbertz, 'Manifesto', in *Architecture and Nature*, SFB 230, University Stuttgart and University Tuebingen, 2, (1992), pp119-127.

[9] Wolf Hilbertz, 'Cybernetic Architecture, A Teleological Approach', in *Proceedings of the Kentucky Workshop on Computer Applications To Environmental Design,* ed. Michael Kennedy (Kentucky: University of Kentucky & The Graham Foundation for Advanced Studies in Fine Arts, 1970), pp95-99 (p95).



1. The Cybertecture structure and the interrelated subsystems governing form and function.

Figure 207: Wolf Hilbertz, Cybertecture Diagram,
Extract from *Progressive Architecture*, May, 1970. The diagram develops the feedback system and control of the relationship between computer, material and environment.

Hilbertz based the system on three sub sections first, a sensing structure subsystem akin to a living organism, and it requires a material to sense such environments. Secondly, a material and reclamation system which manipulates the sensing structure to the needs of the user. Thirdly, a computer system which would act as a decentralised nervous structure organises the sensing and reclamation systems to adapt to the total needs of the user, **Figure 207**. It would have reversible capabilities and could balance itself against any disruption. The system would absorb and be capable of higher level tasks of organisation and complexity and symbiotic processes.[10] Such work, it was hoped, would create an *autoplastic* system – open systems being regulated by the law of nature only – "creating, changing and terminating, in an in-deterministic manner, diversity and contexture."[11] Architecture was to be seen as a material in transition and experiment which would never be completed: "it will incessantly explain and form the world out of it's very self-anew

[10] Ibid, pp97-98.
[11] Wolf Hilbertz, 'Manifesto', in *Architecture and Nature*, SFB 230, University Stuttgart and University Tuebingen, 2, (1992), pp119-127.

and thus, at any given time, will be the best of all architectures."[12] This would be closer to the *Rhizome* of Deleuze, of architecture of time, an open score (Kwinter 2002).

Such goals to Hilbertz could only be realised through the integration of the hard and soft sciences and the arts - architecture and engineering essentially - moving beyond a 'responsive environment' towards an 'evolutionary environment' - a socio-cultural and environmental solution. This evolutionary environment works on the premises of dynamic stimulating interrelationships and rich connections, "between man, his extensions and nature; being simultaneously beginning and end, originator and result, producer and user."[13] Such visions and alternative thinking are similar to those of Soleri, Buckminster Fuller et al, belonging to both an enriching pedagogic mode for studio practice, but which also have radical challenges to accepted systems and ways of working, as the architectural theorist Vesely remarks, "what we know contributes to what we make, and what is already made contributes substantially to what it is possible to know."[14] Accepting such patterns, the identification of the possibilities of coral structuring and the pressing need to conserve the unique marine habitat so essential to life that Hilbertz develops, demonstrate such heuristic methods which in turn represent the original (visual) representations at a conceptual level – a cycle evolving pattern of thinking.

[12] Ibid, pp119-127.
[13] Wolf Hilbertz, Strategies for Evolutionary Environments, in T*he Responsive House:* selected papers and discussions from the The Shirt-Sleeve Sessions in Responsive House Building Technologies, ed. by Stan Allen (Massachusetts: Department of Architecture, MIT, May 3-5, 1972), pp 247-255 (p251).
[14] Dalibor Vesely, *Architecture in the age of divided representation: the question of creativity in the Shadow of Production* (Cambridge, Mass.; London: MIT, 2006), p6.

4.1.A - Coral Arks

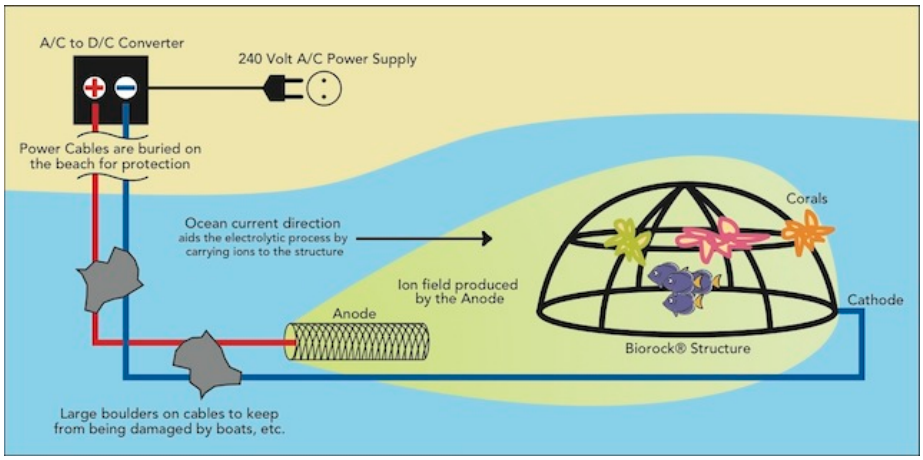


Figure 208*: Biorock Schematic*, (Mineral Accretion Process), 2010.

Figure 209: Lucy Wells, *Biorock Installation*, WCDS, Grand Turk, Caribbean, 2009.

The piloting of mineral accretion demonstrated a harmonious ocean building material called Biorock® (also called Seament, Seacrete, or Mineral Accretion). Applying an electrical charge powered by photovoltaic or wind generators to a sunken steel mesh armature (usually construction grade rebar) charges and repairs or creates new coral reefs as well as being self-repairing, **Figure 208 - 209**.[15] The electrical charge would crystallise materials and create walls of calcium carbonate. Small coral tissue then become attached to the Biorock reef structure and both accelerate growth when the

[15] Wolf Hilbertz, *Electro Accretion: Grow Shelters from Sea Materials*, Newton, MA (1987).

electrical charge is sustained. The coral is left with more metabolic energy, reproductive cability and environmental resistance in the process. Thus, it becomes stronger by age, is more resilient and multiplies in growth three to five times faster than normal and protects coastline.[16] The Biorock corals "are more intensely pigmented, have higher growth rates and better developed branching and growth morpohology"[17], than those genetically identical which grow in the same environmental conditions. Pigmentation of corals plays an important role in the regulation and absorption of solar radiation and thus their ability to grow within harsh environments. The reefs can also be grown in areas where water quality is an issue. Likewise the reefs can be specified to any shape or size including depth, all depending on the form of the rebar in the original specification.

The new structures on various damaged coral sites have attracted juvenile fish, moray eels, sea urchins, sea cucumbers, crabs, squid, shrimps, bivalves, and even dolphins were previously the reefs were significantly damaged from storms[18]. As some coral reef estimates indicate that 25% of the world coral population is dead[19] the imperative for not just palliative but active intervention in this environment is clear. The artificial reefs are termed 'coral arks'. The arks also provide economically sustainable fishing areas, converting fishermen to fish farmers, conservators of the sites, thus destroying a dangerous spiralling downturn on the marine resources of natural destruction and human decimation.[20] In comparison as Hilbertz and Goreau claim, coral reefs would be the most valuable ecosystem for over a 100 countries worldwide if their economic and environmental services were properly accounted for and properly managed.[21] The arks coastline protection limits erosion and is substantially cheaper to implement than concrete seawalls. This has been

[16] Global Coral Reef Alliance, *Biorock®/ Mineral Accretion Technology for Reef Restoration, Mariculture and Shore Protection*, online, http://www.globalcoral.org/Biorock%20%20Mineral%20Accretion%20Technology%20for%20Reef%20Restoration.html [Accessed 20/12/09].
[17] Wolf Hilbertz, Thomas Goreau, *Reef restoration as a Fisheries Management Tool*, online, http://www.globalcoral.org/Reef%20Restoration%20as%20a%20Fisheries%20Management%20Tool.htm [Accessed 6/8/2010], p20.
[18] United States Patent, *Method of enhancing the growth of aquatic organisms, and structures created thereby*, patent no 5543034, (1996), p3.
[19] Ari Spenhoff , *The biorock process, picturing reef building with electricity*, Global Coral Reef Alliance, 2010, online http://www.globalcoral.org/Biorock%20booklet%20online%20version%201.4.pdf [Accessed 9/1/2011] p3.
[20] Ibid, p15.
[21] Thomas J. Goreau, Raymond L. Hayes, 'Reef Restoration as a Fisheries Management Tool', in *Fisheries and Aquaculture*, ed. Patrick Safran, in *Encyclopedia of Life Support Systems* (EOLSS), (Oxford: Eolss Publishers, 2008), p3.

implemented in the Maldives creating a Biorock breakwater- causing the beach to grow by fifty feet in a few years by absorbing the wave energy.[22] The use of coral as building material has appeared in the ancient city of Cartagena de las Indas in Colombia[23]. This precedent shows the history of such thinking.[24] In addition coral reef restoration has been reported in the 1800s attaching corals to wooden stakes, and was known to Darwin.[25]

The arks have significant economic benefits to tourism apropos particular areas which have undergone extensive damage due to storms become snorkelling and dive spots. This creates networks of stakeholders all of which work together to monitor and sustain the arks. Other artificial reefs such as old cars, sunken ships or concrete modules coral take longer to take root and establish due to the pollutants that they excrete[26] - "thus do not produce genuine coral reef communities"[27]. Additional benefits include the construction costs- wire, electricity and labour being the only outlay. Testing has taken place in Saya De Mahla banks[28], NE Indian Ocean, a shallow marine ecosystem (and essential stepping stone for shallow water species). Hilbertz and Collective searched for suitable research sites examining the geography and bathymetry when he came upon Seamount Ampere[29], east of Gibraltar and Skerki Bank near Sicily, though Saya de Malha Banks was deemed the most suitable. Additional builds have taken place in more than a dozen countries such as Pemuteran, Karang Lestari, Bali, Gili Trawangan, Lombok, Indonesia, Ihura Island, Maldives and Arno Atoll - The Republic of the Marshall Islands.

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[22] Wolf Hilbertz, Thomas Goreau, 'Bottom up Community-Based Coral Reef and Fisheries Restoration in Indonesia, Panama and Palau', in *Handbook of Regenerative Landscape Design*, ed. Robert L. France, (London; New York: Taylor & Francis, 2008), pp143-159 (p147).

[23] Alvaro Ortega, 'Basic Technology: Mineral Accretion for Shelter. Seawater as a Source for Building', In MIMAR 32: Architecture in Development (London: Concept Media Ltd. 1989) pp60-63.

[24] Wolf Hilbertz, *Solar-generated Building Material from Seawater as a Sink for Carbon*, online http://globalcoral.org/Solar%20Generated%20Building%20Material%20from%20Seawater.pdf [Accessed 8/8/2010].

[25] Thomas J. Goreau, Global Coral Reef Alliance, Wolf Hilbertz, Sun and Sea, e.V., 'Marine Ecosystem Restoration: Costs and benefits for coral reefs', *World Resource Review,* Vol. 17 No. 3, (2005), pp375-409 (p390).

[26] United States Patent*, Method of enhancing the growth of aquatic organisms, and structures created thereby*, patent no 5543034, (1996), p2.

[27] Ibid, p2.

[28] Frank Gutzeit, Thomas Goreau & Wolf Hilbertz, *Second Expedition to Saya de Malha*, Hamburg, August 2002, online http://www.wolfhilbertz.com/downloads/2002/saya_2002_rev1.pdf [Accessed 13/2/2011].

Living coral, light and PH sensitive, evolving, but also disappearing is an icon for our current climate – "the most vulnerable ecosystems to rising temperatures, sea levels, soil erosion, and to excess nutrients from sewage and fertilizers."[30] A major issue is coral bleaching possibly caused by 'hot spots', extended periods of warm sea temperatures above one Celsius caused by global warming.[31] The rate of acidification in the sea due to an uptake in carbon dioxide in the atmosphere effects and is one trigger alongside rising sea temperatures for coral bleaching. The PH drop also affects fish species causing reproductive issues.[32]

Coral is perhaps the prime example of a living mega structure, of marine landscaping in which to locate our building methods - something that grows from itself anew. This heuristic method provides a vision of a synergistic 'constant state of becoming'[33], of architecture always in transition.[34] As 'Seascape architecture' the mission is one of conservation and restoration of the marine ecosystem and as Goreau and Hilbertz state,

> Like its counterpart landscape architecture, it also focuses on designed ensembles and ecologies of flora and fauna that are self sustaining with human help... while producing aesthetically and artistically satisfying habitats... the professional mission embodies the same philosophy and ethical code inspiring the counterpart landscaper.[35]

The influence of landscape to create a sister discipline is evident here and such a project, philosophy and emerging discipline is owed in great part to some of the early stage visualisations for the project and projections of the possibility of the material. It was a convergence of experimentation and creativity and collaboration between the architecture and engineering studios which developed the visualizations which then delivered a heuristic based method as we shall see in the next section. The discussed section helps us to understand the agency of drawing. Essentially a pedagogic mode delivering basic skill sets, interdisciplinary approaches to problem solving, design processes, environmental awareness all leading as Doehne states,

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[30] Thomas J. Goreau, Raymond L. Hayes, 'Coral bleaching and Ocean 'Hot Spots", AMBIO, *Journal of the Human Environment*, Vol 23**, (**1994), pp176-180 (p179).
[31] Ibed, p179.
[32] Marah J. Hardt, Carl Safina, 'Threatening Ocean Life', *Scientific American*, August (2010), p66-73.
[33] Wolf Hilbertz, (1972) p247.
[34] Wolf Hilbertz, *Electro Accretion: Grow Shelters from Sea Materials*, Newton, MA (1987).
[35]Thomas J. Goreau, Global Coral Reef Alliance, Wolf Hilbertz, Sun and Sea, e.V., 'Marine Ecosystem Restoration: Costs and benefits for coral reefs', *World Resource Review,* Vol. 17 No. 3, (2005), pp375-409 (p403).

for the architecture students' to "flee from the beaten path and explore his[/her] particular interests"[36]

[36] Gaynell Doehne, 'Architecture has a new mission', *Alcalde*, July, (1972), p1.

4.1.B - Visualisation of a Micro-nation

> "Not form, but forming, not form as final appearance, but form in the process of becoming, as genesis." (Klee 1973, p.39).

It is appropriate that from the illustration by Newton Fallis, **Figure 205**, who worked with Hilbertz, this particular vision can be spectated from a tower of *Autopia Ampere,* a drawing that depicts the development of the mineral accretion technological coral (Biorock®) possibilities in the form of a city and oceanographic research institute. The composite produced was a means for the author to understand the elements of its design, not for the purpose of slavish representation but for the purpose of gauging its complex ideological positioning and ecologically demonstrative activity. As Dee maintains, adopting a critical method of dialogic drawing "provides the researcher with a more concrete critical position (through lived experience) with which to examine visual conventions that these studies differ from written critiques of images and their use."[37] It is to adopt a mode of enquiry of a Paul Klee'esque (Moses) genesis, the stages of a work and its "coming into being"[38] a desire for the recreation of expression and a will to manifest itself. Or to recount Heidegger "let us go to the actual work and ask what and how it is"[39].

Through the gathering of the materials yet to enter official archives, the drawing can be remade, a sort of conservation of the ideas and process. Sometimes little material remained, as in **Figure 210, 211** a Seaport is drawn of the coral city, though little information is delineated. However, in light of the context and material produced, the drawing, as in the work of Dominic Cole (**Chapter 1.1**), could be forensically studied and re-presented. This was a method adopted, as Hilbertz's work was consistently redrawn by his students, photocopied and hand coloured.

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[37] Catherine Dee, 'The Imaginary Texture of the Real... Critical Visual Studies in Landscape Architecture: Contexts, Foundations and Approaches', *Landscape Research*, Vol 29:1, (2004), pp13-30 (p.22).
[38] Paul Klee,*1879-1940 Notebooks*, ed. Jürg Spiller. Vol.1 : Thinking eye (London : Lund Humphries, 1961), p99.
[39] Martin Heidegger, *Poetry, Language, Thought* (London: Harper Perennial, 1975), p18.

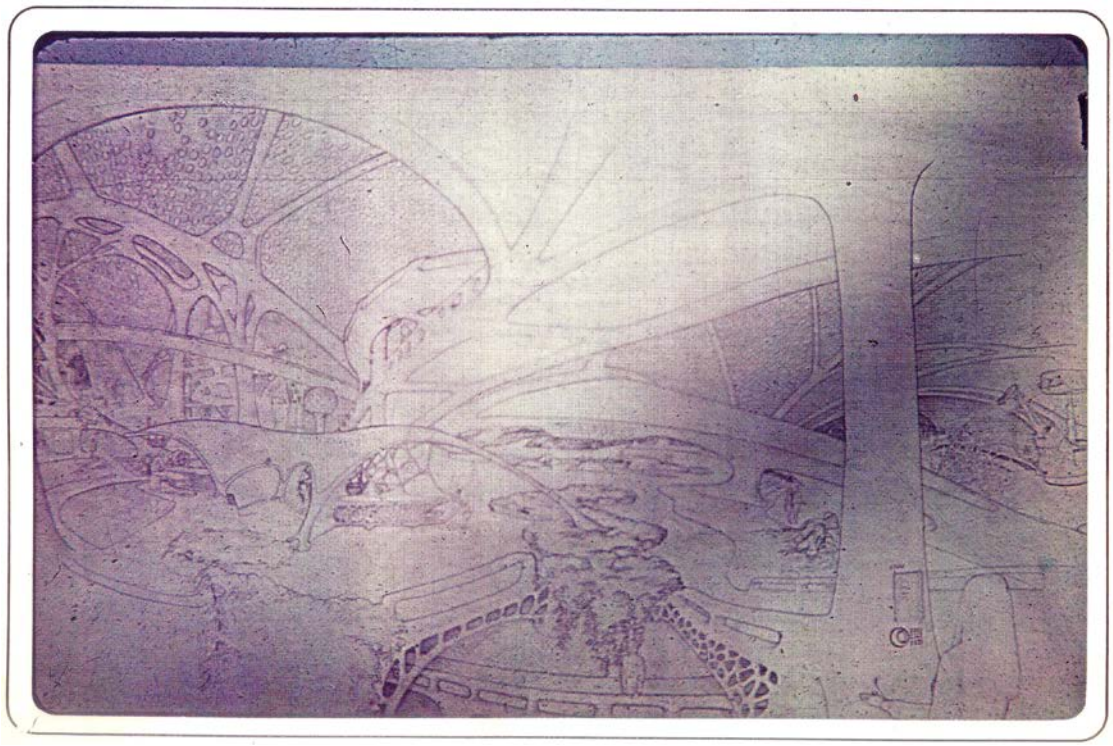


Figure 210: Newton Fallis, Seaport Interior, Pen, Fall 1970.
I suggested to Newton Fallis that there is a role of exploration, generation, and testing of ideas that the act of drawing allows. Fallis commented that ability was “how and why I began the drawing of the seaport, which was my first drawing and exploration of what a world might be like with this new technology.” He continued to comment on the process; “Certainly, as an architectural student I was interested in what the form would be. Larger philosophical questions quickly came into play, such as how would society establish/confirm hyperbolic "property lines" in 3D space or "ownership" and liability in constructs whose structural elements were massively co-dependent? But, if unbridled by such constraints, what could designers produce? What other roles would autonomous robots play?”
(Fallis interviewed by Cureton 2010).

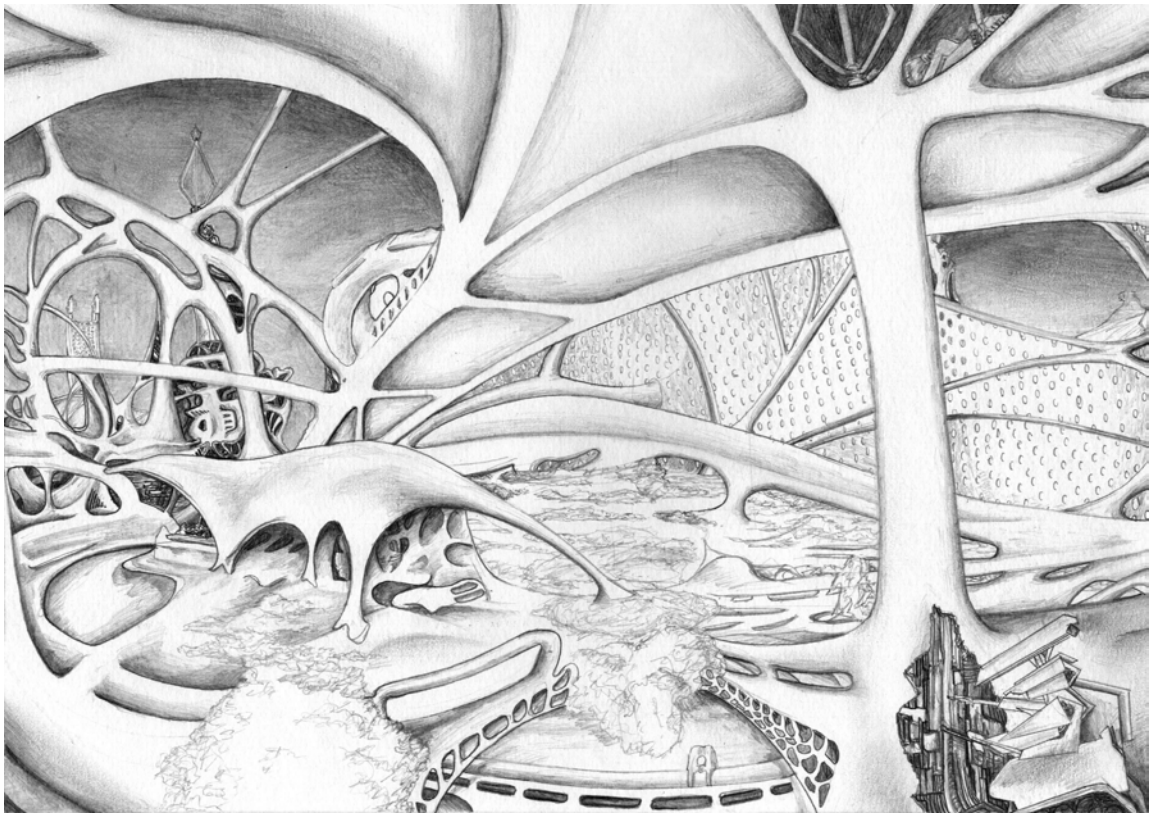


Figure 211: Paul Cureton, Seaport Interior, After Newton Fallis (1970), 2010, Pencil, 21.5 * 31cm. Based on this cursory information I redrew the seaport based on Fallis idea that autonomous robots, responded to embedded sensors in the structure or new plans were issued by someone, then robots would roam around the city and reinforce columns or beams as needed, or add new spaces. This drawing was indicative of the relationship with the engineering school and the students experimentation with robots encouraged by Hilbertz.

Autopia is an economic, material trading, with *Cybertecture* an autonomous city with radical socio-cultural-political implications in our relationship with the ocean that also exemplifies an evolutionary environmental system[40]. Based on a shallow sea floor, the construction method would allow the creation of free form internal space more akin to biology than architecture, built for the comfort of its occupants making furniture nearly obsolete.[41] Vaulted open floor plans would be developed avoiding compartmentalisation, designing and growing the space and location to the wishes of the inhabitants using the three sub-systems that Hilbertz theorised. Such form would be similar to air form and free form thin concrete shell structures.[42]

[40] Wolf Hilbertz, 'Towards Cybertecture', *Progressive Architecture*, May, (1970), pp98-103.
[41] Savage T. Marshall, *The Millennial Project: Colonizing the Galaxy in Eight Easy Steps*, 2nd edition (London: Little, Brown & Company, 1994), p80.
[42] Amy Johnson, Thin Shell Concrete Structures, Concrete Decor, November December 2009, p30-33. Online www.concretedecor.net [Accessed 9/3/2011], p1.

The space would contain entertainment complexes, hydroponic gardens, parklands and recreational space. It would cultivate seaweeds and hold fish pens. Conduit running circuitry and services would be grown in and function as the arteries of the structure, which could be extended with incisions in the structure, these incisions then being re-grown. These activities would be enacted by robots controlled by a super-computer neural network monitoring and evolving the city, responding to its inhabitants from humidity control to food production. A part of the Autopia structure involves a proposal from Hilbertz for Ocean Thermal Energy Conservation (OTEC) plants converting thermal energy into electricity.[43]The plants would involve deep shafts formed of accreted material. Again, any damage occurring could easily be repaired and the plants could be re-anchored to shift with prevailing currents. The plants could also produce refractory magnesium, the raw material for magnesium production. Possibilities other than OTECs, discussed as the project has developed as technological possibilities materialise from the original conception, include tidal turbines and wave generators.

Magnesium could also be used as the base metal for mineral accretion. Autopia would be autonomous, being free from political coercion (at least for a while) as the oceans are free from such territorial claims[44], working as both a creator of aquaculture and building components, all of which are exportable resources. Such possibilities were amalgamated into Marshall T.Savage's *The Millennial Project: Colonizing the Galaxy in Eight Easy Steps* as the title suggests under the first practical step, colonizing the oceans through 'Aquarius' and its sister colonies, **Figure 212**. The perspective is illustrative of the coral structures providing underwater zones to inhabit. The perspective was placed at the end of Hilbertz's article, a sort of speculative vision and open ended question and the development of the processes of mineral accretion.

[43] Wolf Hilbertz, et al., 'Electrodeposition of Minerals in Sea Water: Experiments and Applications', IEEE, *Journal of Oceanic Engineering*, Vol. 4, No. 3, July, (1979), pp94-113.
[44] Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations, *The United Nations Convention on the Law of the Sea*, 2011.

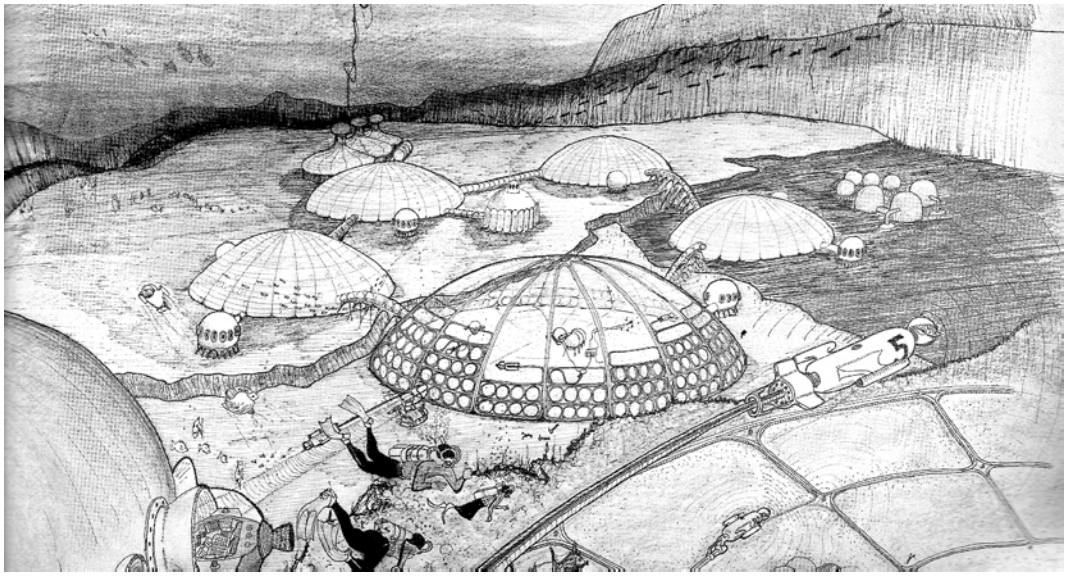


Figure 212: Cybertecture Installed in an Underwater Environment, Extract from *Progressive Architecture*, May, 1970.

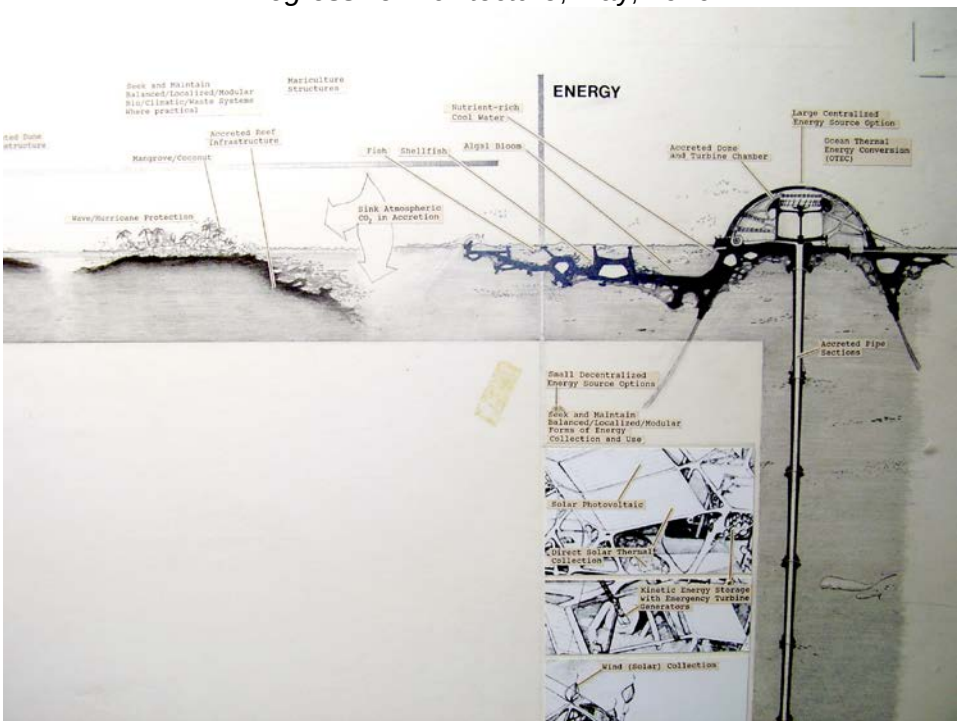


Figure 213: Design Board of OTEC Plants, Photography, Newton Fallis, ca1970. A small island is drawn to the left which has wave protection by an artificial reef. The protection seeks to provide balance bio/climatic/waste systems. An arrow is drawn to the right of the island regarding the sinking of C02 in accretion. The structure to the right is an OTEC plant, converting thermal energy into electricity to power the mineral accretion. Algal bloom and fish shelter to the left of the turbine structure. Accreted pipe sections follow to the water basin. Middle left is a number of diagrams explaining the interior energy systems which are photovoltaic, kinetic energy and wind energy. **Figure 213** communicate the actual process, whilst **Figure 212**, illustrates a futurological possibility based on the process technology, both seek an environmental redress.

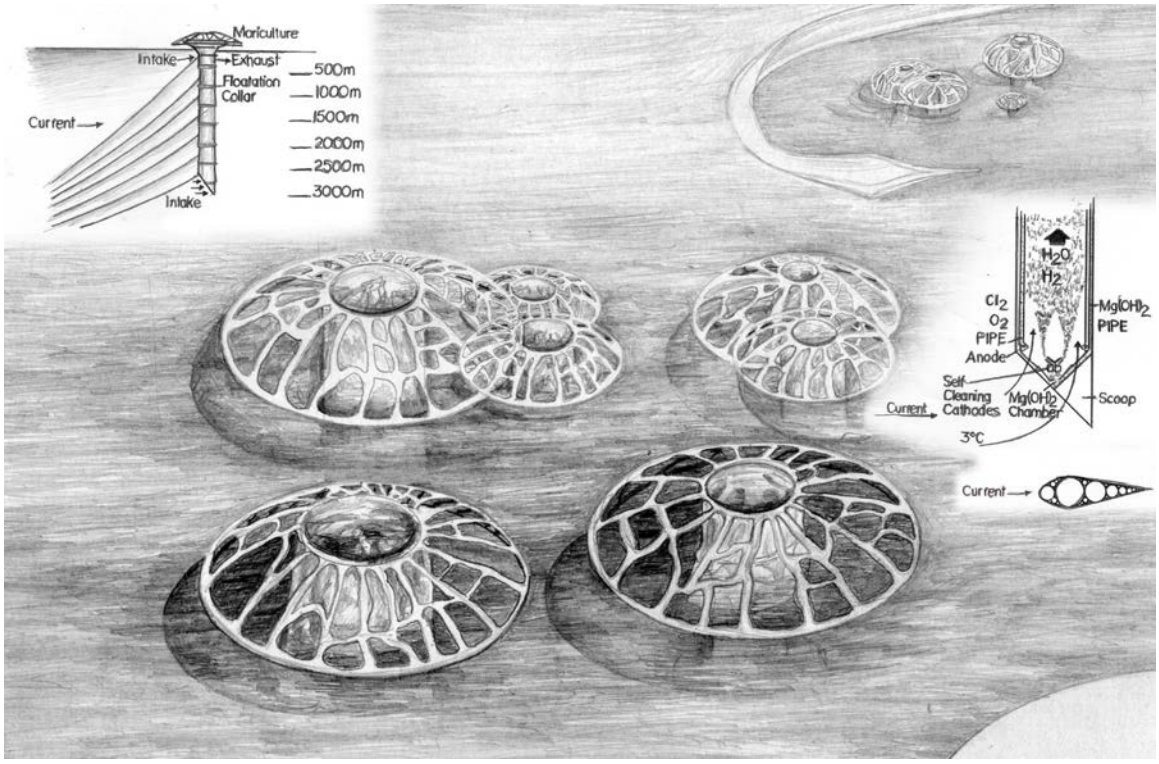


Figure 214: Paul Cureton, Structures 'Grow Out of the Ocean' (OTEC Plants), After unknown, from Wolf Hilbertz et al 'Electrodeposition of Minerals in Sea Water: Experiments and Applications', IEEE, Journal of Oceanic Engineering, Vol. 4, No. 3, July, (1979), pp94-113. 2011, Pencil, 17cm* 26cm.

Fallis worked on a number of drawings of Autopia, its interiors and the accretion process as a student of Hilbertz, alongside Forrest Higgs and the engineering school during the fall semester of 1970. Hilbertz asked the students to explore many technologies that were in their infancy such as zero-gravity based robotic constructions for use in space and oceans, and land-based recyclable surface materials. One can only speculate on the energy and excitement present in what took place there. The original Autopia drawing, using the golden mean by Fallis, was produced in large format which 'grew'; a drawing grappling with complex ideas of philosophical purpose, sociological use, natural material imitation and technological-function. Such thought processes and visualization are demonstrated by Fallis when recounting drafting Autopia,

> Farming and waste recycling would be engaged, but how could they be integrated in pleasing meaningful ways? Hydraulic, wind and solar systems would be early components, but would not be remote from the inhabitants. It really seemed inhabitants could be surrounded by the ecological processes that made their life there possible and enjoyable, if they were handled correctly. Manufacturing and hydrogen collection seemed 'natural' to maintain

at the expanding parameter. As such the act of drawing was a very freeing, evolutionary exercise.[45]

This is what drawing sometimes allows, a testing of vision for optimal solutions, (Videre, Latin. *to see, to look forward*) a pilot of pilots: *Autopia Ampere* whilst an aesthetic of the utopian, is resistant to and filters such fiction in its applicability and possibility of lived space. In **Figure 214**, we can view the process being visualised with annotation. There is an economy of drawing in play, representing each sequence in quite simple terms, whilst also conveying the complex structural form of the coral. What is evident is the way that drawing was used in the process, reconfigured as in the annotation to incorporate newer ideas from the studio. The drawings in themselves are reliant on a careful selection of pencil shades, chosen by my reading in order to communicate the complex idea. Whilst redrawing the archival fragments, the process was difficult and time consuming. However, essentially through drawing I could start to comprehend the magnitude and radicality of the ideas. This species of drawing, of which there are many types (just as Euclid offered a definition of a species of line[46]), imply wider social, political re-creations than 'form fit' architecture or architecturally similar land reclamations with sometimes problematic un-foreseen oceanographic consequences, it seemed more thought through.

Drawing, like coral, has a quality of 'becoming', as Robin Evans (1944 – 1993) would state in *Translations from Drawing to Building*, drawing has sometimes a generative role in its dual projective qualities: an 'over-determined' surface equivalence and the propelling of the myth of pictorial space to provide a visual language of communication. Ultimately, Evans would argue for the reverse directionality of drawing "the subject matter (the building or space) will exist after the drawing not before it"[47] (though not all architecture can be formed in this medium). A contemporary paradox of 'pilot' hand drawing has opened up between obsessive practitioners and those who have displaced the method in contemporary architecture & landscape architecture. Whilst drawing has a futurological ability it also functions as part of the history of ideas, and moreover can visualize intention and perhaps as

[45] Paul Cureton, Interview with Dr Thomas Goreau, Newton Fallis, Forrest Higgs, Kai Hilbertz, Ursula Hilbertz & Derrick Hilbertz, January 2010- April 2011.
[46] Aristotle, Plato, Herundes, Proculs et al offer many species and definitions towards plane geometry.
[47] Robin Evans, *Translations from Drawing to Building and Other Essays* (London: Architectural Association Publications, 1996), p165.

Stuart Cohen has argued, can *influence*.[48] This *influence* is hard to quantify but could be located in an attempt to understand and communicate the design choices and possible context. As Tuan remarks part of the process,

> To see and to think are closely related process. In English 'I see' means 'I understand'. Seeing, it has long been recognized, is not the simple recording of light stimuli; it is a selective and creative process in which environmental stimuli are organised into flowing structures that provide signs meaningful to the purposive organism.[49]

Thus applied, drawing's ability to speculate, to 'see' think and see forward, mediating the conceptual and practical combined with an arguable influence, has proven its value as a tool of information design in which architectural history is rife with examples. Fallis demonstrated this role, when interviewed on the Autopia piece, he

> Found that as your hand is filling in some forms your mind is able to ponder the vastness of the city's implications and attempt to generate new form and technological solutions to problems – Ecology was always at the forefront.[50]

Considering Fallis's comments of form finding, I drew a section of Autopia based on two drawings of which the author was unknown **Figure 215, 216. Figure 217** was the end product. This allowed me to consider how the OTEC plants could be integrated within the internal structure, to what scale could the structure be realised. Moreover, the free drawing allowed many structural shapes to emerge, each that could be integrated within the next.

[48] Stuart E. Cohen, 'History as Drawing'*, Journal of Architectural Education*, Vol 32:1, Sep, (1978), pp2-3.
[49] Yi-Fu Tuan, *Space and Place: The Perspective of Experience* (Minneapolis: University of Minnesota Press, 1977), p10.
[50] Paul Cureton, Interviews, January 2010- April 2011.

Figure 215: Unknown Student of Wolf Hilbertz, Untitled, Photocopy and coloured pencil, 60x100cm, ca1975.

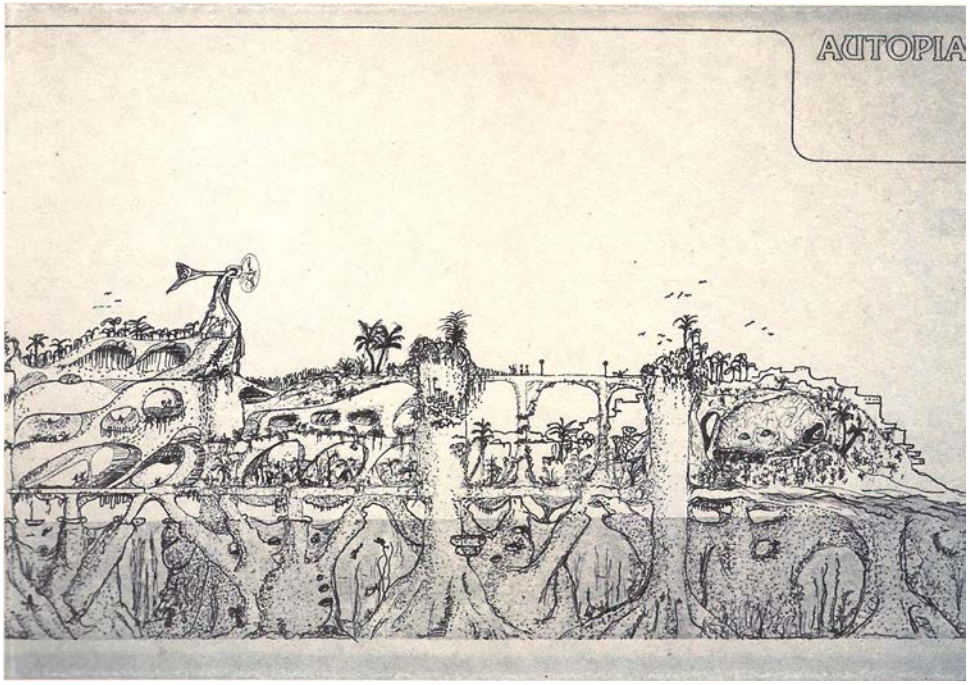


Figure 216: Unknown, Autopia, ca1975, Pen & Ink on Paper, 50x70cm.

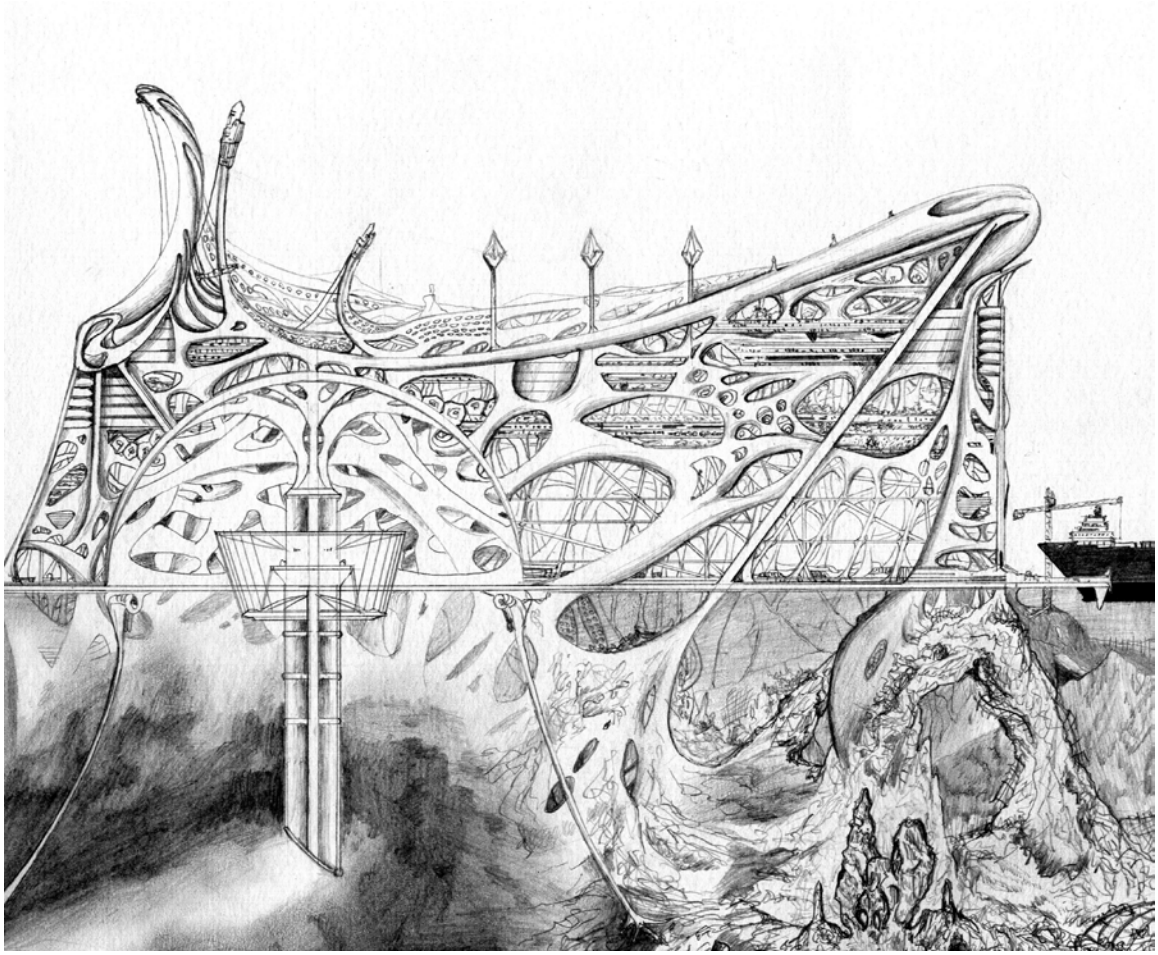


Figure 217: Paul Cureton, Autopia Ampere Section with OTEC Plants, 2011, Pencil, 26cm * 26.5cm.

Contemporary visual focus is more weighted towards the virtual object; resisting current simplified arguments positioning the hand crafted against the virtual, as this simplifies a complex inter-relationship of visual method.[51] The debates about the simulative quality of landscape architectural drawing and the danger of serperation from subject is worth revisiting as it has both similarly visible and invisible axioms to drawing in its cultural layering and points of departure. Though the digital, whilst bringing new fractals and detailing advances, as Alberto Pérez-Gómez & Louise Pelletier suggest in *Architectural Representation and the Perspective Hinge*, the drawing needs to provide a promise in the interrupting of its objectivity and information reduction: a disruption of its application & standardization of architectural

[51] William Gibson articulates in Virtual Light , that within computational design when concentrating upon the object, (in the 'Republic of Desire' using the 'Dream Walls' software) beyond it "… you get this funny sense that you were leaning out, over the edge of the world, and the space beyond that sort of fell away, forever." (1993, p.266)

production. Digital work must therefore function in a more open performative operation, similar to the process which emerged in Cybertecture[52]

Hand drawing involves the body, is resistant to spaces of alienation and in this sense defies becoming a pure visuality. We have seen examples of the resistance in **Chapter 3.0**. Landscape architectural drawing through the Calvino, 'Blood' involves a connection and immersion with landscape, which as a body centred analytical approach, can reveal certain responses to the place in question. This could also be seen in the practice of Skateboarding and Parkour, in which through this practice and understanding a manipulation of space for a purpose can be achieved. As Tim Ingold writes; hand drawing embodies its history on a single sheet.[53] As the draughtsman Oliver Regan states (pre-empting the contemporary resurgence and interest in haptics) in *Pencil Points: Journal of the Draughting Room* (Vol 1, 1920)[54] it is desirable to acquire "an acute sense of the feel of his pen or pencil on the paper, a delicacy of touch that is not unlike that of the skilled surgeon who is said to be able to almost 'see' with his fingertips." As long as the suggested ability maintains a connection with the phenomenology of our environment, this potentially, can constitute the material connector to lived space, and be resistant to detachment, vacuous formal representation and the privileging of the image (though historically drawing has been just as susceptible to literal perspective transcription and Cartesian projection). Wider implications for design can be found in Henri Lefebvre's *The Production of Space* where he warns "...we produce only the reproducible, and hence we only produce only by reproducing or imitating past production...because reproducibility is what ensures the renewal (or reproduction) of existing social relations"[55]. These social relations can in part reflect back, in a reversibility of design, the ideology of production, the ideology of representation which cannot be reductive, but needs to be consciously reductive in its choices - a form of 'speculative editing' over mimetic endeavours. As James Corner suggests in *Recovering Landscape,* we need to enable forms of representational technique with eidetic operations – specific ideational techniques for construing (imagining) and constructing (projecting) new

[52] Alberto Perez-Gomez, & Louise Pelletier, *Architectural Representation and the Perspective Hinge* (London: MIT Press, 2000), pp377-383.
[53] Tim Ingold, *Lines: A Brief History* (London: Routledge, 2007), p167.
[54] George Hartman & Jan Cigliano, ed., *Pencil Points Reader: Selected Readings from a Journal for the Drafting Room, 1920-194,*1st ed (New Jersey: Princeton Architectural Press, 2004), p6-7.
[55] Henri Lefebvre, *The Production of Space*, trans. Donald Nicholson-Smith, (Oxford: Blackwell, 1991), p377.

landscapes[56]. Drawing should not be privileged in this respect but revitalized in the role that it plays with other methods of visualization, for projection is at stake and so are its qualities of becoming:

> [it] evokes temporality and boundaries. Defining the space between light and darkness, between the beginning and the beyond, it illuminates the space of culture, of our individual and collective existence.[57]

This is moving from Lefébvre's question of "What exists, between the shadows and the light, between the conceived (abstraction) and the perceived (the readable/visible). Between the real and the unreal [?]."[58] Pérez-Gómez & Pelletier, thus call and mark out, like Lefebvre, the transitive role of projection, geometry and its abstractness, an abstractness which can enrich architectural production. Autopia marks a movement, and invites in its viewing moving beyond the image itself, to where further imagining can take place, construing a mental image of the evolution of the city and its complex inter-relationships and functions – Seascape Architecture.

[56] James Corner, ed., 'Eidetic Operations and New Landscapes' in *Recovering Landscape in Contemporary Landscape Architecture* (New York: Princeton Architectural Press, 1999), pp153-169 (p153).
[57] *Pérez-Gómez* & Pelletier, (2000), p.6.
[58] Lefèbvre, (1991), p.390.

4.1.C - Heuristic Drawing & Ecology

This notion of heuristic and projection can be evidenced in the diagrams which Hilbertz produced which provide a visual in which to view his philosophy. These diagrams were developed for the purpose of defining progressive architecture, **Figure 218 - 220** which to Hilbertz can enable socio-cultural and biological evolution and end the dominance of man over man and man over nature. It was through the diagram that Hilbertz could explain and grapple with the issues of developing mineral accretion as the first stage towards a change of attitude and belief.

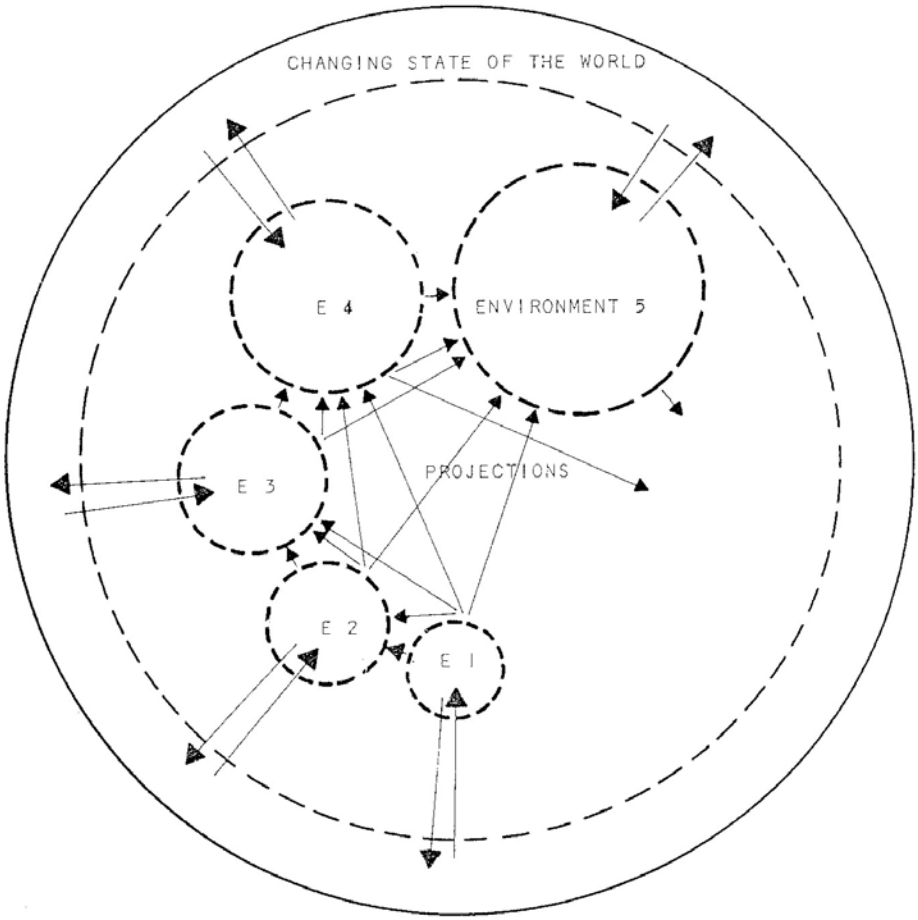


Figure 218: Wolf Hilbertz, Diagram from Strategies for Evolutionary Environments, in T*he Responsive House:* selected papers and discussions from the The Shirt-Sleeve Sessions in Responsive House Building Technologies, ed. by Stan Allen (Massachusetts: Department of Architecture, MIT, May 3-5, 1972. Here Hilbertz sets out the idea of evolutionary environments; he creates a relationship and connectedness between man, his extensions, nature, simultaneously being and end, originator and result, producer and user.

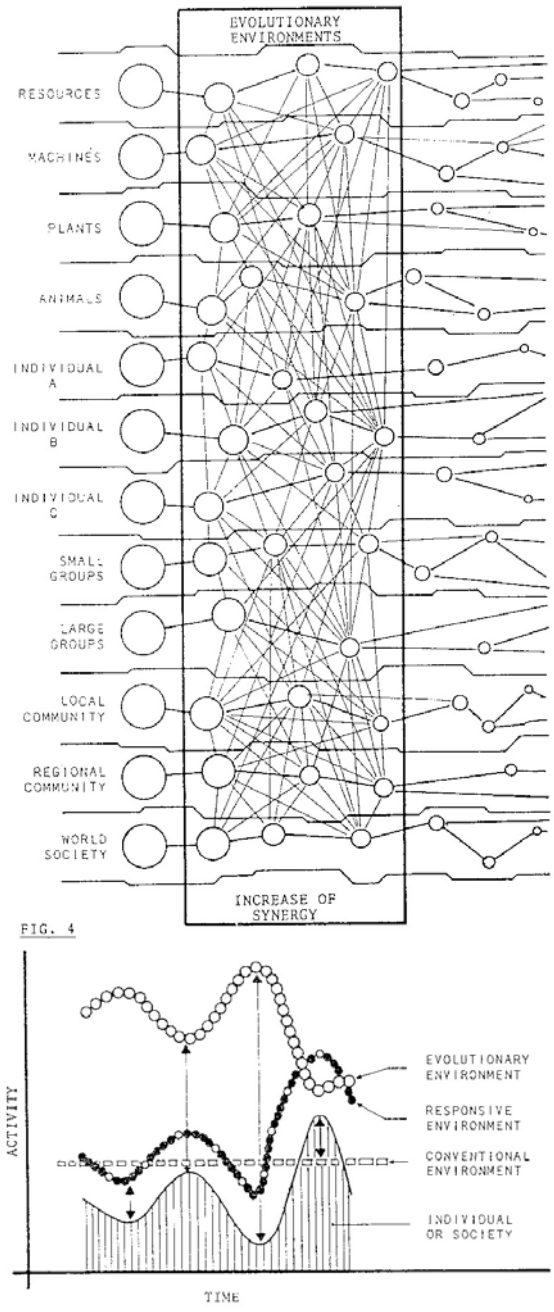
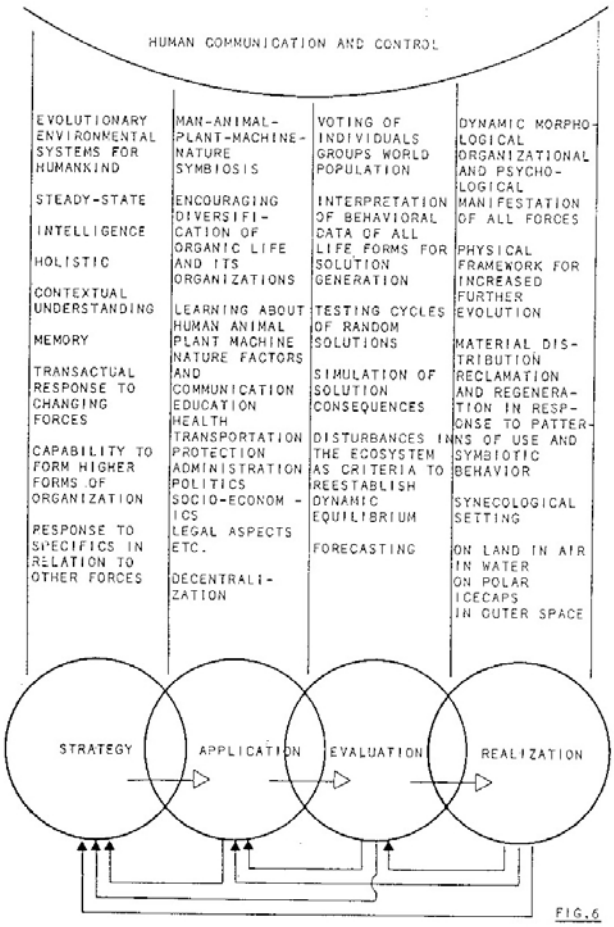


Figure 219: Wolf Hilbertz, Diagram from Strategies for Evolutionary Environments, in T*he Responsive House:* selected papers and discussions from the The Shirt-Sleeve Sessions in Responsive House Building Technologies, ed. by Stan Allen (Massachusetts: Department of Architecture, MIT, May 3-5, 1972.
Hilbertz creates a diagram which shows dynamic interrelationships, which is different from the separation of a user and its environment (Responsive Environment). Hilbertz suggests that models should be based on natural evolution, rather than our own abstract constructs, this adaptation he believes will allow sociocultural and environmental evolution at a higher rate. Hilbertz wishes to abolish what he perceives as man's dominance over man, the exploitative dominance of man over nature, development and conciliation of inanimate and animate forms. This creates a new nature and synergy.

Figure 220: In this diagram Hilbertz suggests some radical proposals to achieve the described evolutionary environment. He suggests citing; psychologists that the Limbic system (animal) and Neocortex (rationale) parts of the brain are at odds and have different drivers. The environment to Hilbertz can mediate these two drivers. Whilst this analysis seems naïve, Hilbertz adopts the most prevalent thinkers on evolutionary development at the time. However, what is interesting in the thesis is the identification of the need to address human relationships with the environment seeking conservation and responsibility.



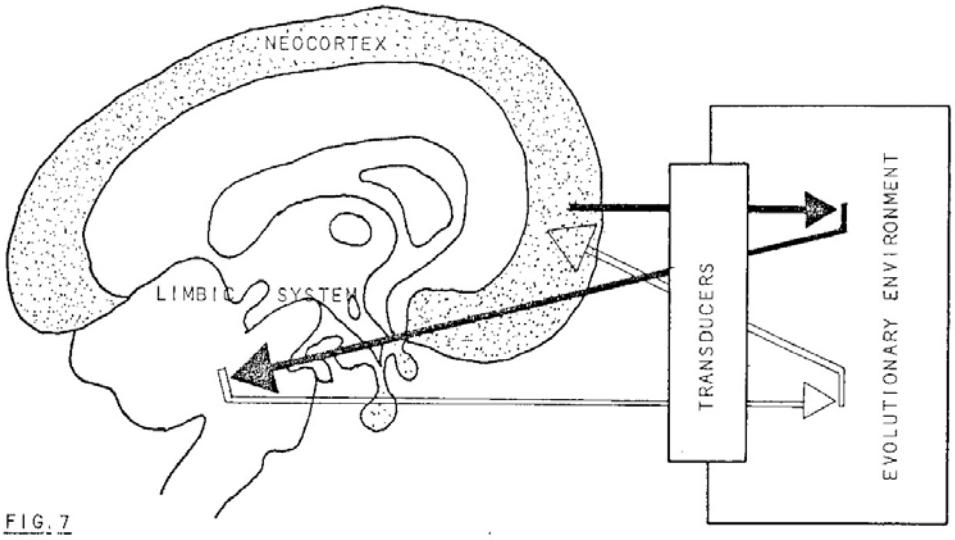


Figure 220: Wolf Hilbertz, Diagram from Strategies for Evolutionary Environments, in T*he Responsive House:* selected papers and discussions from the The Shirt-Sleeve Sessions in Responsive House Building Technologies, ed. by Stan Allen (Massachusetts: Department of Architecture, MIT, May 3-5, 1972.

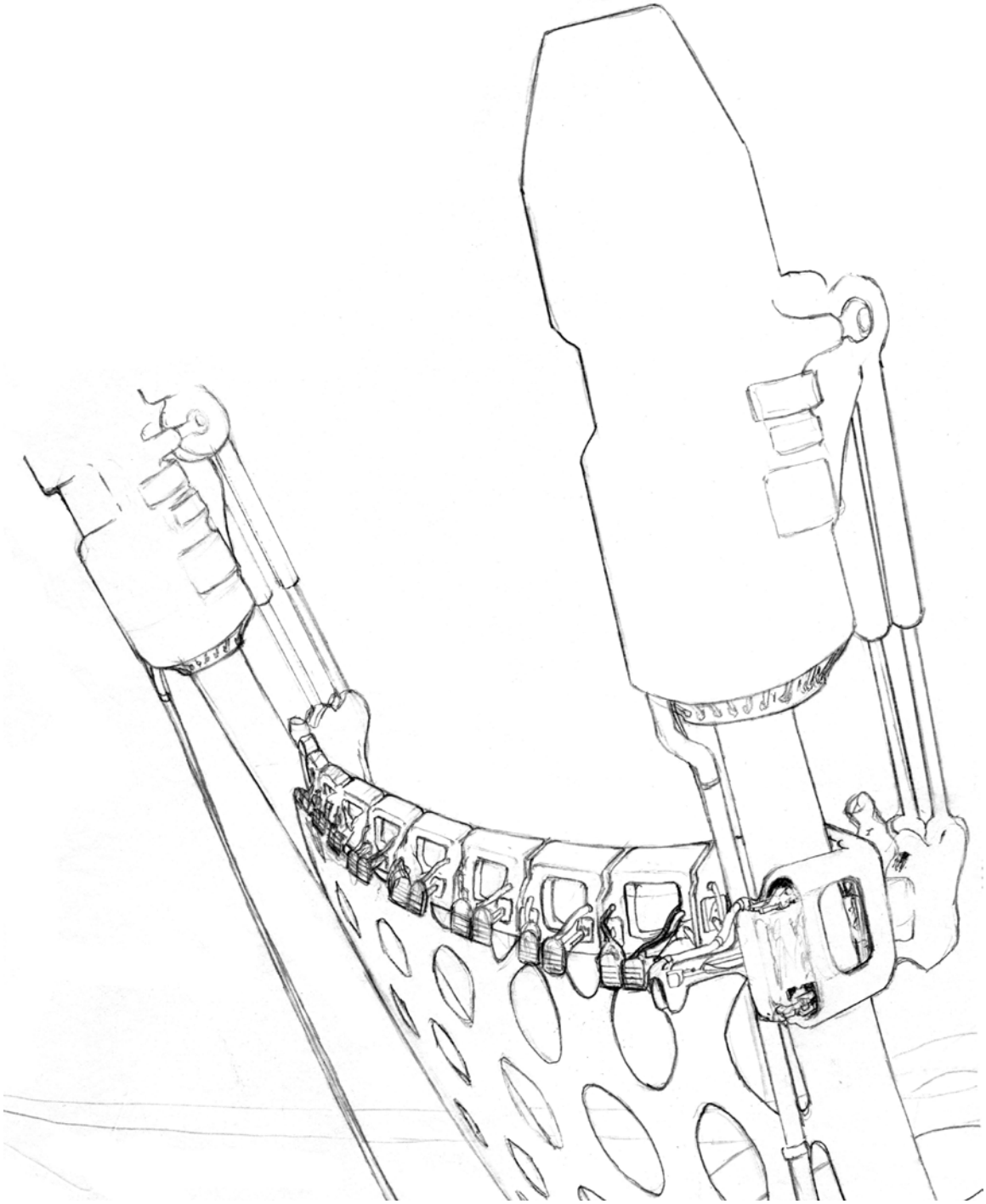


Figure 221: Paul Cureton, Brise soleil, Detail of Autopia Ampere, After Newton Fallis (1970) and Wolf Hilbertz (1978), 2009, Pencil, 18.5cm * 13.8cm.

Coral bleaching and rising sea temperatures, as well as acidification and the recent devastating Tsunamis combined with radioactive discharges, overfishing and lack of education in certain sea communities amongst many other factors make Hilbertz's endeavours highly provocative and challenging designs and plans to respond to. As Goreau states research into seascape architecture is needed as,

> protecting coral reefs for future generations may be the truest test of international commitments to sustainable development, because it places some of the most stringent constraints on doing the right thing for the environment.[59]

A small coral fragment grows anew, likewise the development drawings contained within Hilbertz and Goreau's scientific papers, and drawings produced in the 'Symbiotic Process Lab' on the accretion process, illuminate and move into the visionary- embodying an optimism borne out of collaboration and opportunity within the architectural studio to provide marine landscaping, countering the increasing degradation of the coral ecosystem promoting and educating on the importance of marine biodiversity. It requires a change of thinking for a whole system approach, involving reactive and proactive capabilities, within which humankind has a stake. Similar sentiment is found in Buckminster-Fuller,

> Humanity will be re-orientated
> From its one way entropic
> Me-first energy wastings
> To its syntropic circulatory
> Synergetical you-and-we
> Cosmic ecology regenerating functions[60]

Such re-empowerment of communities through the use of Biorock restoring fragile ecosystems, allows local management of its resources, changing scales and relations towards a one and all activity – mitigating global warming, rising sea levels, diseases (in corals) and costal pollution.[61] The possibilities represented by Autopia Ampere remain possible and pragmatic. This utopian impulse must be engaged with critically and assessed without simplistic rejection, that we can touch, 'to see',

[59] Thomas J. Goreau, Raymond L. Hayes, **(**1994), p180.
[60] Richard Buckminster Fuller*, And it Came to Pass – Not to Stay*, ed, Jamie Snyder (Baden: Lars Muller Publishers, 2008), p121.
[61] Thomas J. Goreau, Global Coral Reef Alliance, Wolf Hilbertz, Sun and Sea, e.V., 'Marine Ecosystem Restoration: Costs and benefits for coral reefs', *World Resource Review,* Vol. 17 No. 3, (2005), pp375-409 (p376).

amplify, critically evaluate and energize just one future vision. Thus provide or influence heuristically charged solutions to our changing climate as evidenced in Hilbertz's diagrams, and Fallis's form finding. As Evans states, "without the architect's faith that geometrically defined lines will engender something else more substantial yet discernable through the drawing, without faith in the genetic message inscribed on paper, there is no architecture"[62]. The emphasis is the message that is enacted by the agency of the drawing, not the aesthetic of the drawing itself. The aim of the thesis questions is to explore the relationship between representation and production of landscape. In the work of Hilbertz we can view the operation of drawing and this could be understood in the positive hermeneutics of Calvino of *Blood,* expressive gesture and form finding *Trade,* heuristic problem solving, *Authority* the dissemination of the work and *Agency* the translation of ideas from the drawn surface to built -form. These works also demonstrate a positive valence for marine ecosystems. Thus, the drawings contain a pressing philosophy to be developed and an end image of coral reefs restored and enacted, one small example counting towards an anti-homogeny and vision, a correctional synergistic activity for the biosphere – this is the time for drawing and working out... for spaces and structures then to become. As Hilbertz states,

> A beginning then, is to develop systems which can continually transform living and non-living matter into higher levels of organisation within a fully synergistic setting. All encompassing systems, in a constant state of becoming…
> (Hilbertz 1972, p.255).

Given this work and the drawings produced, set within a broader process and complete environmental realignment, it is worth further investigation of this mode of work; that is experimental heuristic drawing and form finding for solutions to environmental issues. This process and case study has been realised, thus the agency of drawing can be further established and the heuristic drawing method can be discussed as a positive valence for production.

[62] Robin Evans, *The Projective Cast: Architecture and its Three Geometries* (Massachusetts: MIT Press, 2000), p.Xxvii.

Chapter 5.1 - 'Rebuilding from the wreck'; thinking patterns and the Arcologies of Paolo Soleri

Introduction

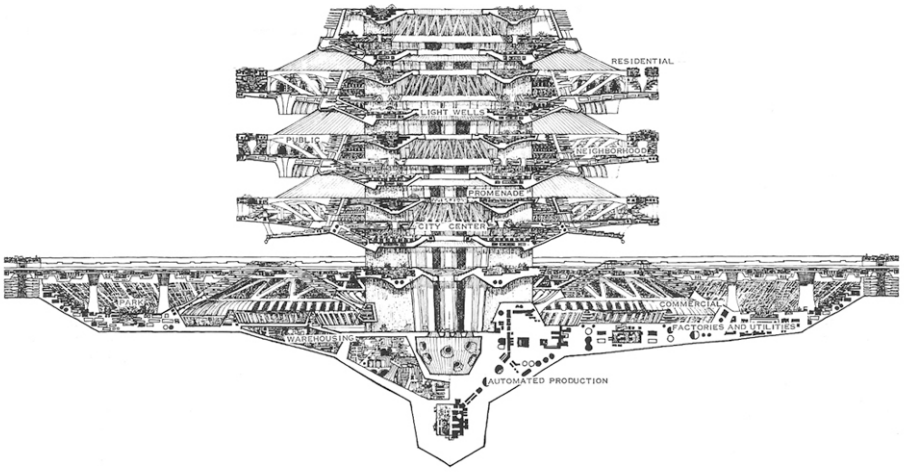


Figure 222: Paolo Soleri, Babel IIB, The City in the Image of Man (1969).

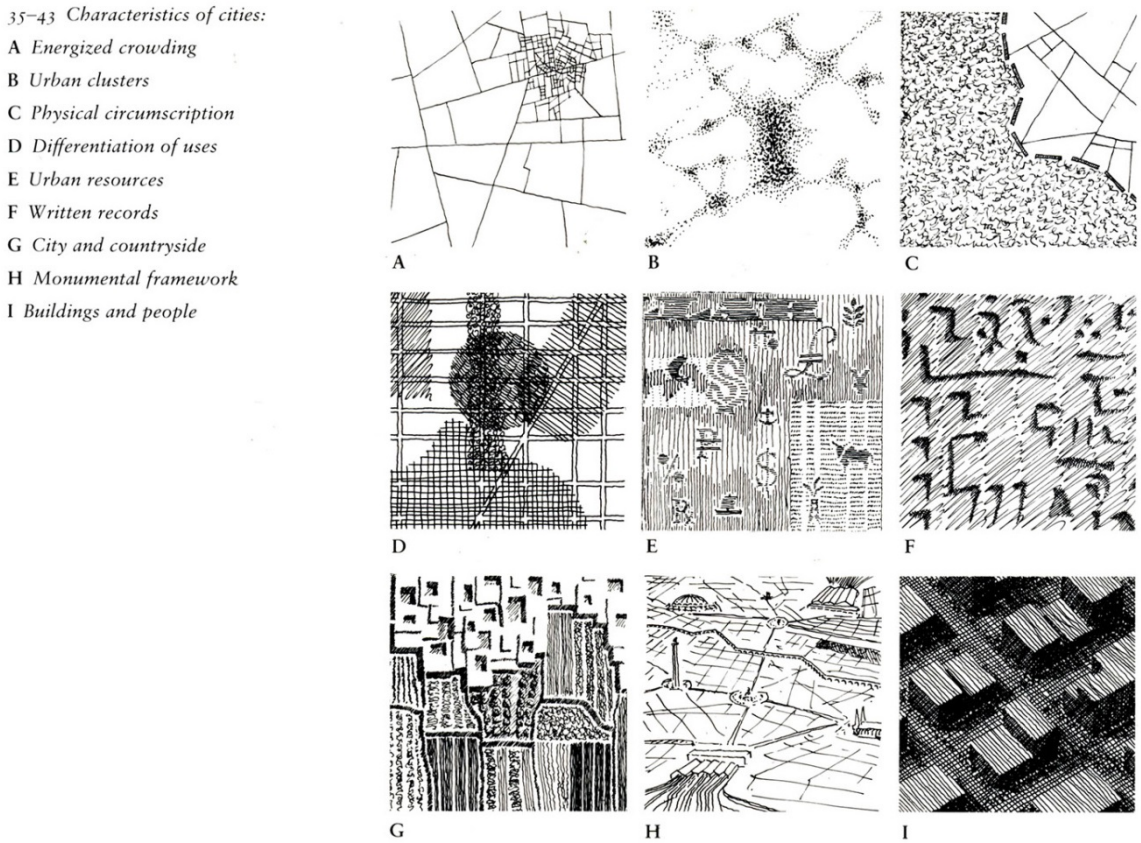


Figure 223: Spiro Kostof, Diagram of Characteristics of Cities, extract from *The City Shaped Urban Patterns and Meanings Through History*, 1993.

We have viewed a heuristic method by Hilbertz which led to Biorock and the formation of a city made of coral, part of a wider process in the development of evolutionary architectures. This process begun in several worldwide locations has the potential to save coral reefs from destruction due to the impact of climate change. The drawings discussed were essentially irrelevant in viewing the wider scheme; however, they played a fundamental role in problem solving and communicating the ideas of the Biorock process. It is worth further investigation and selection of a case in which such philosophical thinking, drawing agency and realisation can be discussed. This can be found in the work of the architect Paolo Soleri (1919 - 2013). Such discussion will further qualify the agency of drawing and approaches for a working positive valence with which landscape architectural drawing can perform. The development of these methods is important, as we have seen, for the aim of creating representational practices that do not lose connections with landscape, but that are also representative of the social and physical strands of their environment.

Arcologies – (Architecture & ecology) are a theory for the miniaturization of the city or the physical complex miniaturisation of the environment. Such emphasis means to Soleri that the structure of the city leads to performance (Soleri 1969, p.122). 'Arcologies' proposed by Soleri are containers for creativity at the juncture between man-made and the natural (Soleri 1969, 1971). Soleri sees miniaturisation as the rigorous utilization of resources in what he views as the wake of conspicuous consumption in society.[1] This consumption to Soleri is a 'technological rage' – a reliance on technologies for solving environmental problems and issues and the use of technologies to make and realise whatever is feasible - products and goods with little purpose. To Soleri this creates an unnecessary artificial imperative for society, a reliance on technology as a panacea (Soleri 1981), Soleri asks what is desirable?

> Arcology or Ecological architecture – this is the definition of urban structures so dense as to host life, work, education, culture, leisure and health for hundreds of thousands of people per square mile. The weak veneer of life ridden with blight and stillness, which megalopolis and suburbia are, is thus transformed and miniaturised into a metropolitan solid, saturated with flux and liveliness (Soleri 1969, p.31).

He proposes a city which functions as a mode of attaining humanity's' potential (Soleri 2001), proposing an architecture of fiction – architecture which continually invents itself. For Soleri the contemporary city must be analysed in what it is been made into, and how that relates to the older idea of a city, (*civis*) as a civilisation; "City made in the image of man, and therefore three-dimensional, complex, and miniaturised." (Soleri in Lima 2000, p.65). The Architect Aldo Rossi, in *The Architecture of the City*, suggests that the city is architecture that is a thing in time, a construction constantly evolving and changing itself - it retains a

[1] Such an observation can also be found in Jean Baudrillard in *The System of Objects* (1996).

memory of its form, but morphs (Rossi et al. 1988, pp.21–22). The architectural historian Spiro Kostof also sees the city as a cluster, an artefact which is complex and ever evolving. These characteristics of the city to Kostof can be derived in comparative study (Kostof and Tobias 1999). Soleri sees the city in an older mode, as a cosmic city. In this sense an Arcology would be a design-led defining mechanism for human behaviour opposed to excess consumption and environmental exploitation.

The Arcologies proposed by Soleri go through various series and revisions. Soleri essentially proposes to 'rebuild from the wreck' of the present condition and present time of urban forms. Soleri's drawings and diagramming extend such vision and are embedded in this philosophy and challenge such representative ideas of drawing as a pure imaginative activity, **Figure 222**. In this case his work essentially is part of an overt pragmatism; they make visual his philosophy of creativity which he developed from Nietzsche (Nietzsche 2003), Bergson (Bergson 2000) and De Chardin (Chardin 1970). To Soleri, "creativity may be the occurrence of something as yet non-existent" (Soleri in Lima 2000, p.66).

A grounded architectural vision[2], this chapter considers the role of landscape architecture (Waldheim 2006, Mostafavi 2010) and New Urbanism (Katz 1993, Duany, Speck, Lyndon 2009) in its contemporary philosophical position and its relationship to Soleri's ideas of miniaturization in neo-ecological[3] urban centres, and its resistance of and position against consumptive spatial patternings of landscape and mono-culturalism (Soleri 2002, 2003). Soleri's testing and drawing for Arcologies are a compelling method of representation – what can be termed 'Futurological drawing'. It is not without purpose, it is a targeted drawing acting as a vehicle, a testing of ideas, ideas which have been built at Arcosanti.

Soleri's work is indicative of an experimental architecture, what can be found or read as a DIY Manual. This artisanal approach of a DIY manual can be found in the work of the Ant Farm Collective which will also be discussed. The DIY manual in architecture has been a useful device in which to critique, though it has not emerged as a large scale form. The place for a DIY landscape architecture manual would certainly be interesting for further research, and a framework is laid out in **Chapter 6.1**. In the work of Pushwagner, **Figure 224**, *Soft City*

[2] Soleri comments on the idea of vision; "The makeup of a visionary, the person believing in things that do not exist—a delusional condition. The visionary enters the animistic world: the rock is animated, the stream is animated, the clouds are so, the mountains are so. Out of this delusional make-believe the visionary comes up with all sorts of scenarios: his or her "vision." The most passionate visionary becomes the founder of theological myths. The world of the visionary takes hold and Homo sapiens becomes captive to it. Evidently I am not a visionary. I conjecture, I simulate, I propose, I anticipate" (Soleri in Wall 1970).

[3] Arcologies act as controlling agents to enhance urban experience, minimise waste, use passive energy opportunities, and define boundaries in relation to surrounding agricultural and natural lands.

a graphic novel, visualises the almost hallucinatory story of a society tight in the grip of an omnipresent corporation, one that employs them, feeds them, informs them, entertains them–but which may or may not be what it seems. Pushwagner's drawings project the rampant societal consumption that Soleri philosophises; everyone has their material desires, everyone has a car. This pictorial novel describes the standardized daily life in an Orwellian, dystopian city. With compassion and satirical view Pushwagner perceives the life of a family in a top-down organized city. The novel visualises more serious concerns for environment, and like Soleri, it comments on urban organisation. However, Pushwagner projects extremities, Soleri approaches this consumption with solutions testing his architectural forms. Regardless, these futurological visions as in the previous chapter in the work of Wolf Hilbertz, concern themselves with mitigating human impact on the environment. The question is - What if?

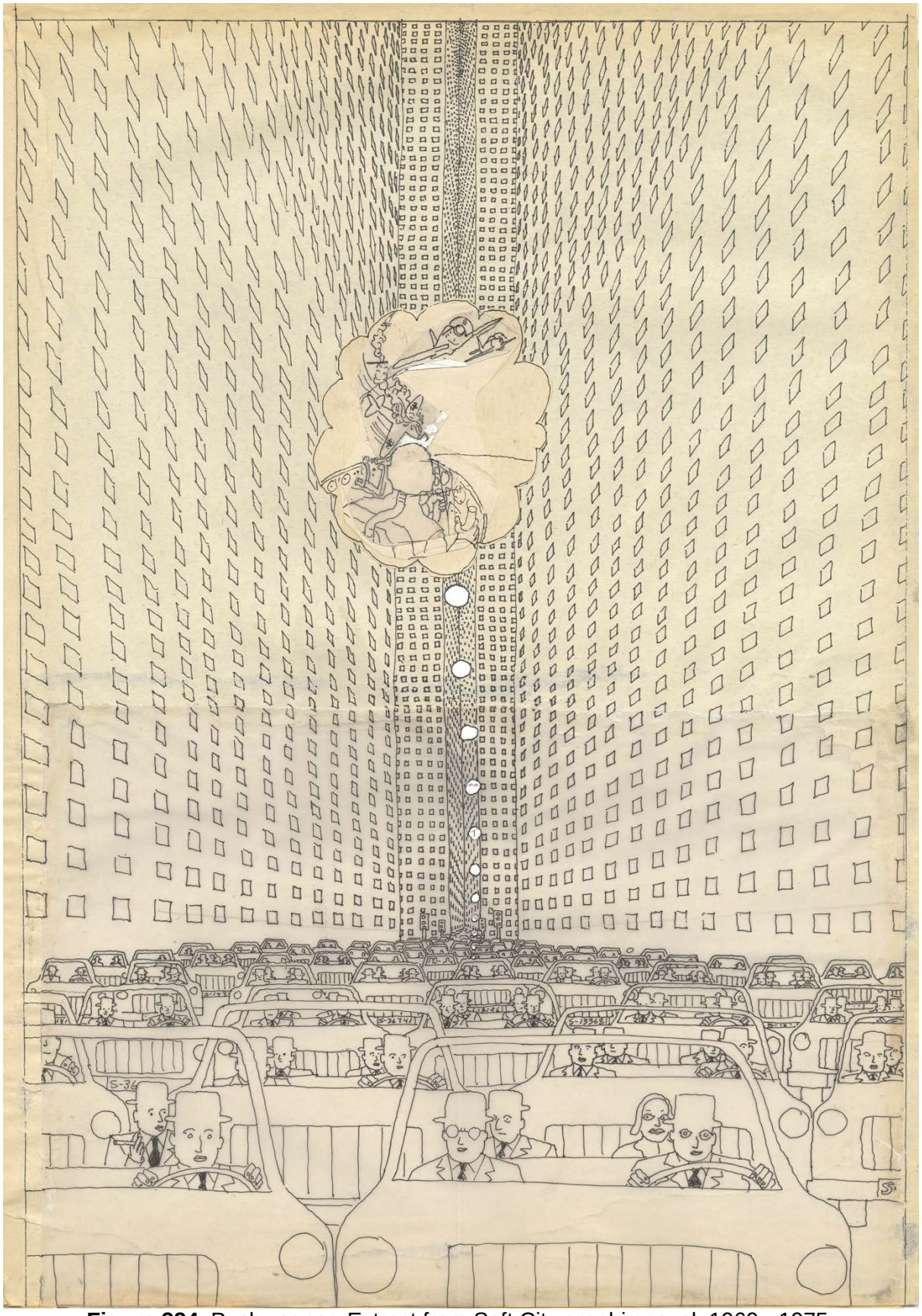


Figure 224: Pushwagner, Extract from Soft City graphic novel, 1969 - 1975, pen and ink on paper.

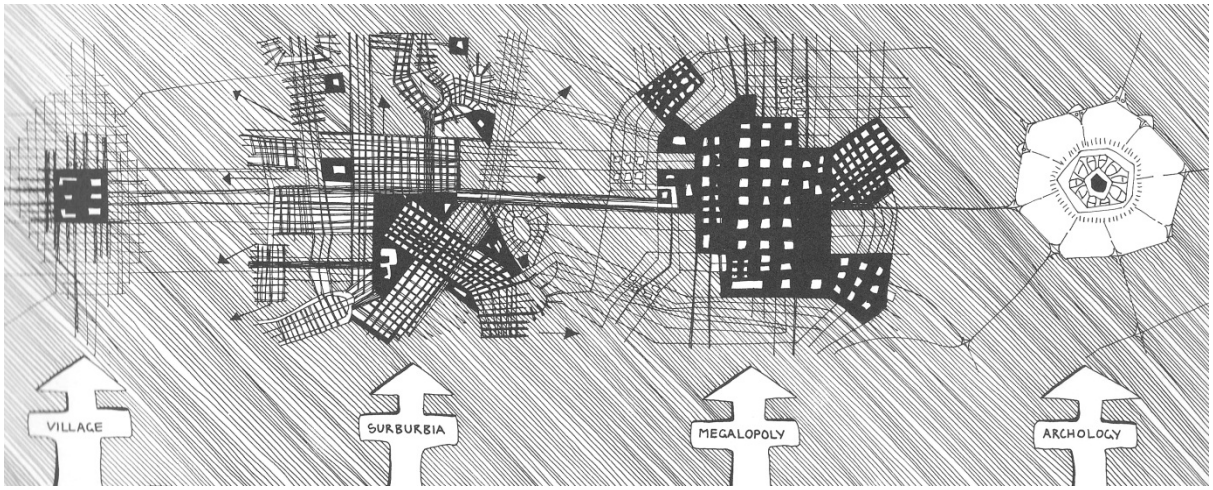


Figure 225: The Automobile Mystique and the Asphalt Nightmare, Paolo Soleri, The City in the Image of Man (1969).

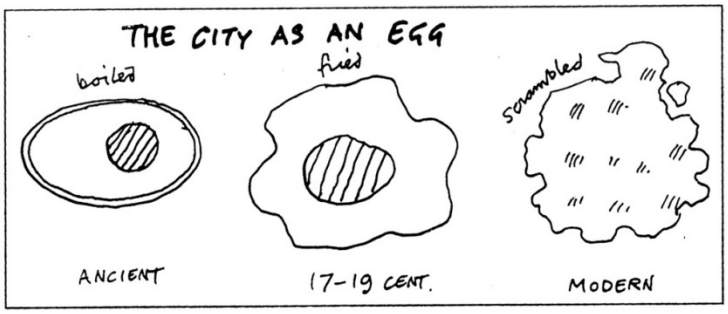


Figure 226: Cedric Price, The City as an Egg, ca1990.

Soleri essentially presents a vision of a reorganised urban life – thinking, drawing, planning, building. Soleri sees the city as a super-object – a philosophy, visualised and built which brings a more harmonious state with nature. In **Figure 225**, Soleri draws city patterns like Kostof, in which he charts a history of city form. In comparison the architect Cedric Price, created a similar study in **Figure 226**, seeing contemporary city form as a scrambled egg (Hughes and Sadler 2013). Soleri draws an Arcology and juxtaposes this with the modern megalopoly (Large city). The Arcology form is a highly constrained megastructure and formed with vertical emphasis, and resources are miniaturised. In **Figure 225**, Soleri best examples Arcology form, in which common urban patterns, village, surburbia, megalopoly, in their form to Soleri, are restrictive ecosystems. To Soleri what is more damaging is sprawl; "Sprawl is a pathological event. It suffers from gigantism with all the derivative handicaps and shortcomings: environmental disruption, waste, pollution, energy and time depletion, expensive, logistics, segregation, and urban decay" (Soleri 1987, p.27).[4]

[4] To understand Soleri's ideas of Sprawl it stems from his work with Frank Lloyd-Wright. Soleri considers such vast subjects from human geography to imperialism in his proposals that the

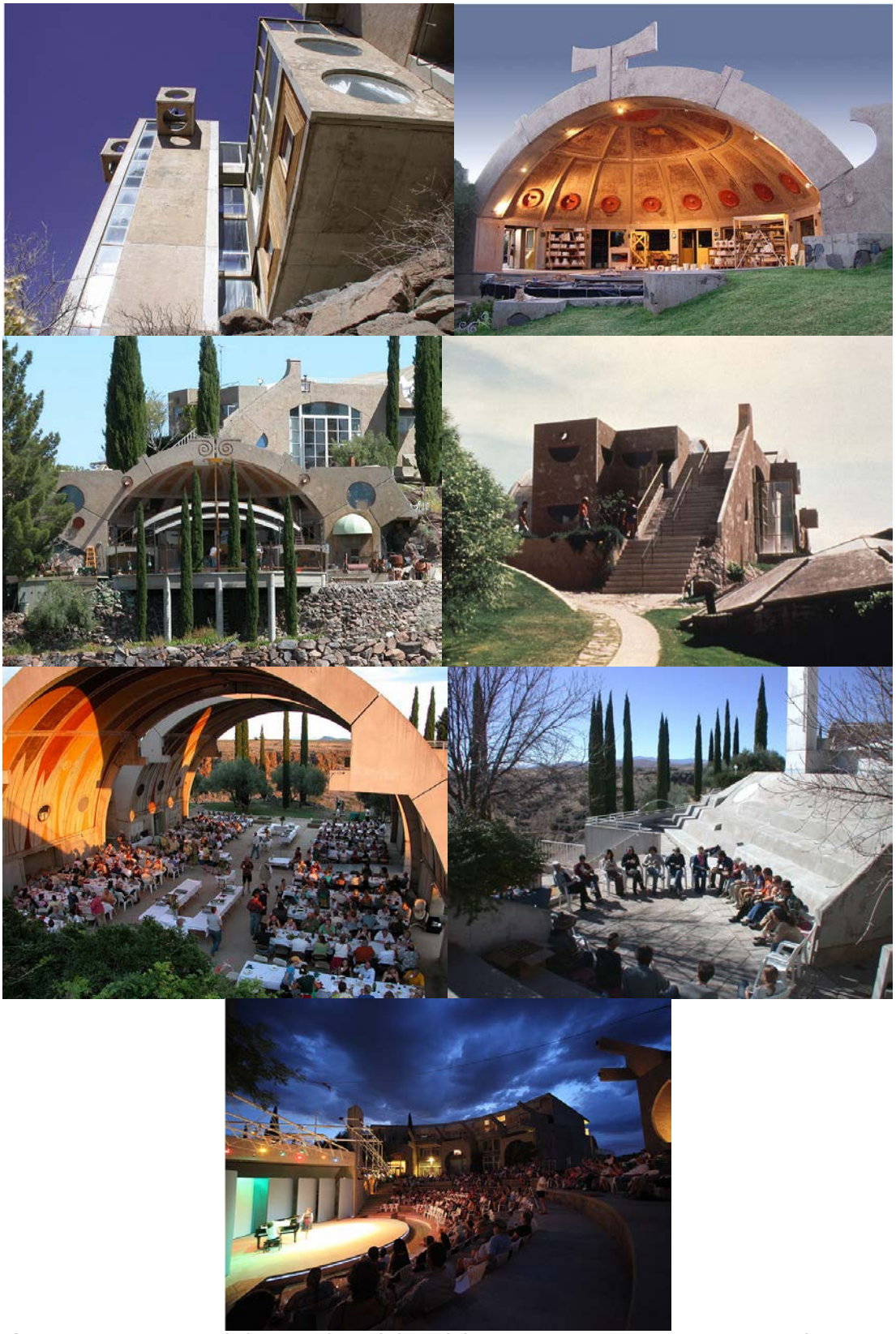


Figure 227: Arcosanti, from Left to right, Visitor Centre, Quarter Apse, Foundry Apse, Housing, Vaults, Urban Lab and Amphitheatre 1971-2000.

geographical context is hard to read. Soleri's texts start from a philosophical structure from the outset without discussion of the contemporary in any great detail.

Arcosanti became the site for Soleri to present this idea (derived from Italian, combining two words - 'anti-thing'); it is an experimental town that began in 1970 in central Arizona, north of Phoenix, USA, **Figure 227**. At Arcosanti building is condensed to a few acres of a 4,000 acre land preserve. Some 3,985 of those acres are intended to remain 'wild'.[5] The built landscape here is a working landscape laboratory. Intended to house five thousand inhabitants, the laboratory only held up to around two hundred participants at its peak. It generated income from student placements and bell production. A visitor crafts centre was one of the first structures built 1972-1977, which has a skylight directing warm air through a fabric tube in winter months. A quarter Apse, 1971 -1973 was constructed and used for bell production which Soleri was also known for. A foundry Apse, 1972-1974 was later constructed to extend production and provide additional housing. Additional housing was constructed in 1972 – 1974 which made use of Soleri's idea of the 'Greenhouse Effect', which involves giant glass doors. Vaults for performances and events were constructed between 1971-1975. A lab was constructed for various workshop activities in 1977. Additional construction includes a music centre in 1981 and an Amphitheatre in 1989. Arcosanti is thus an urban laboratory continually experimenting with architectural forms and social relations. The urban lab is anti-pollutive, in that it refrains from fossil fuels and is anti-automobile, in contrast to the vision of Frank Lloyd Wright in *Broadacre City* (**Chapter 1.2**). Arcosanti is not a utopian vision, it is what Soleri terms 'reformulation', that is to say a complete change in lifestyles which architecture helps to achieve. The site is experimental and aimed at real life change, in that the site provides the majority of resources for it to support itself or trades resources, materiality is reduced in lifestyle. Arcosanti functions with the support of architectural tourism, attracting fifty thousand visitors a year.[6] This experimental ecological architecture is worth investigating, in the way that drawing has developed this experiment and philosophy, as the second part of the thesis, purpose is to develop positive valence from drawing for landscape architectural production. Soleri draws with provocation and projects at a distance, his work can be seen as the extreme in which a heuristic and futurological drawing can be delivered.

[5] This relationship to landscape is interesting, Arcologies require substantive cultivated landscape to support the dwellers, and the external relationship to landscape is thus one of provision over 'wild' un-cultivated reserves or preservation of natural parks indeed parks are seen as recreation within an Arcology. This external landscape relationship is not explicitly explored in Soleri's proposal; the focus is on restraining human development and not the relationship with landscape after such restraint other than notions of sustainability.

[6] This is not sustainable; as some visitors see the spectacle of an urban laboratory not necessarily the philosophy of Arcological thinking.

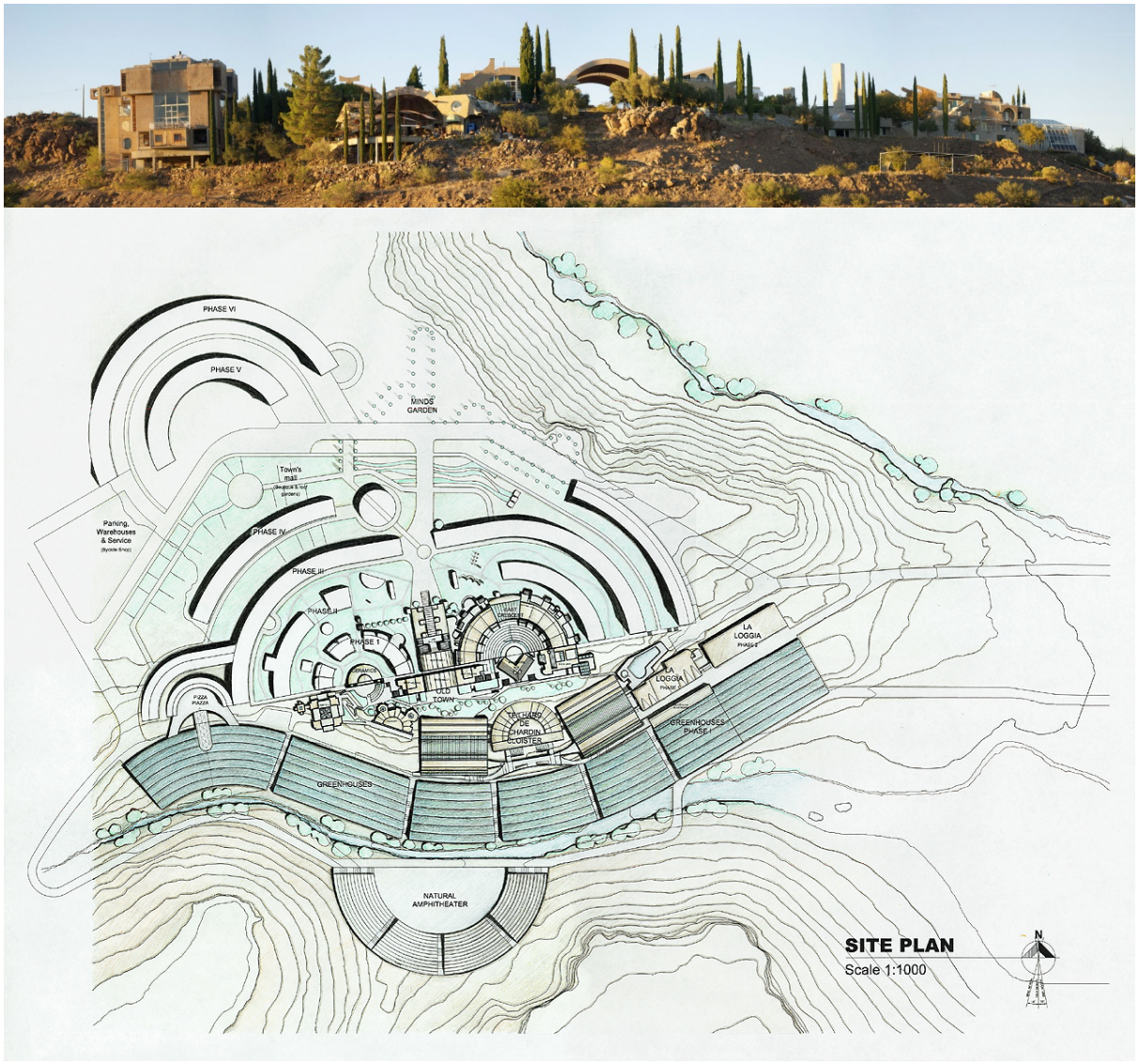


Figure 228: Paolo Soleri, Arcosanti, Panorama & Masterplan, 1963.

Arcosanti is not meant to be viewed or walked through in a passive sort of way, but to really function, and relate to the buildings that it surrounds. Much writing has been devoted to Soleri's ideas (Wall 1970; Corn et al. 1996; Burden 2000; Lima 2003), and Soleri himself has been prolific in publishing his philosophy (Soleri 1969; Soleri 1973; Soleri 1981; Soleri 1987; Soleri 2001). However, what is underpinning Soleri's central evolutionary treatise is arguably that architecture leads to human ecology. However by implication his proposals also suggest a human and landscape relation which is both educative in land use and also in the sustenance of Arcologies. This can be seen in the use of green walls, productive systems, solar energy and water conservation and rejuvenation.

> It would be the unmistakable expression of man the maker and the creator. It would be diverse and singular in all of its realisations. Arcology would be surrounded by an uncluttered, open landscape (Soleri 1969, p.13).

Arcologies have different concerns to Landscape Urbanism[7]. Landscape Urbanism can be defined by Charles Waldheim as "the ability to produce urban effects traditionally achieved through the construction of buildings simply through the organization of horizontal surfaces" (Waldheim 2006, p.37). The concern of landscape urbanism is centred on contemporary development - unlike Soleri who projects into the future. Landscape urbanism In comparison to Soleri is marked,

> Man has been experiencing what one might call flat spaces. It is congruous with the space age itself that man acquaints himself and lives with the deep spaces an arcology creates. As man lives intensively on the horizontal, the density of his societies can only be achieved vertically (Soleri 1969, p.31).

Soleri states that in *The Last Whole Earth* catalogue that “a warning is necessary for the student. The graphics are not to be taken literally. The symbolism is evident and… the complexity of the system would in any case preclude the possibility of well-thought-out detail in the general context in which this book should remain” (McKirk 2013). The tendency of the seduction of the drawings within his text can obscure his intent, and the reader must be mindful of this. The drawings are worked up from sketches, shaded, and additional detail added. Though they present coherence they must be seen as proposals which only ask a question and present partial answers. This tension is interesting; the agency of drawing here mediates between fragments and what can be seen as cohesive whole projections. Soleri needs to communicate this philosophy, though he knows his work is a provocative proposal; his drawings circumnavigate the answer due to the distance and time he discusses. For example in the diagram **Figure 229**, Soleri draws a number of environmental effects, particularly the Apse (Arch/Vault). Through this form it acts as a passive solar device that allows the sun to enter into the space in the Winter when the Sun's angle is lower in the sky, but acts as a barrier in the summer when the Sun is higher. Soleri’s diagram is intended to support the argument that Arcologies are able to mitigate these environmental impacts structurally, by design. However, the Apse effect has not yet been able to produce the intended results for passive solar design. Soleri’s drawings are projections far into the future, and in that distance of projection, the validity becomes soluble.

The other effects that an Arcology would mitigate are greenhouse architecture and garment architecture (Farbric Shades) to reduce the energy usage of the city, especially in terms of

[7] Landscape Urbanism “draws upon ideas from Kenneth Frampton’s critical regionalism, Ian McHarg’s sieve-map approach to regional planning, Peter Rowe’s writings on housing and urbanism and Rem Koolhaas’s questioning of programmatic architecture” (Thompson 2012, p.8).

heating, lighting and cooling (Soleri 1987). These terms are the 'Greenhouse effect', which would provide intensive agriculture, the 'Chimney effect' which provides air movement and heat distribution and the 'Heat Sink' effect which provides heat storage through suitable masonry; it flattens out temperatures through thermal mass.

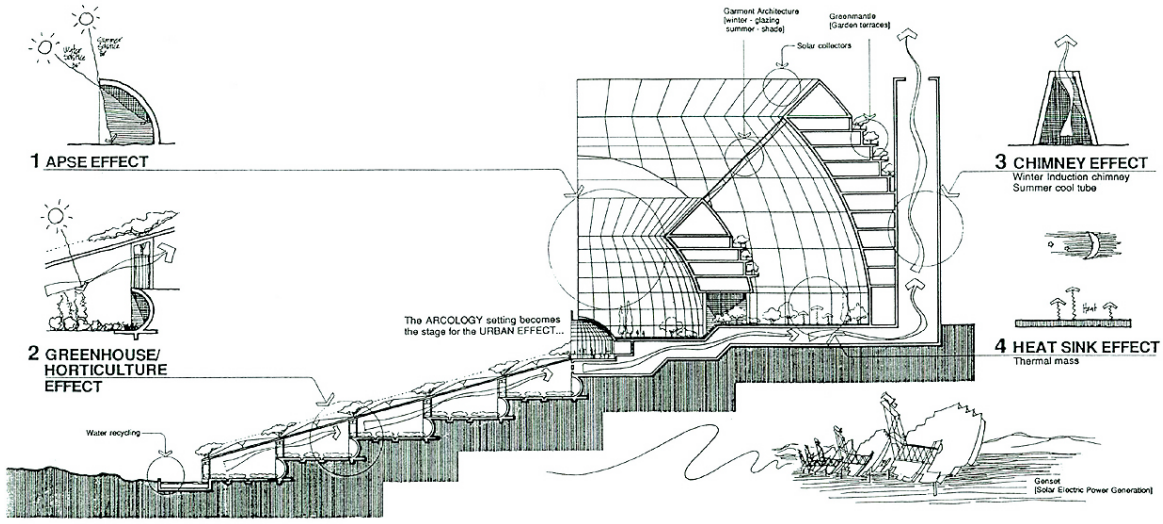


Figure 229: Paolo Soleri, Arcosanti, Apse Effect Solar Performance Diagram, 1965.

Arcolgies are singular directed city forms projected far into the future in comparison to Landscape Urbanism which features more holistic responses to urban conditions. In comparison New Urbanism[8] is centred upon municipal development and strategic housing and zoning and traditionalist approaches, again in the same time frame as Landscape Urbanism, though it operates in a different vector (Congress for the New Urbanism and Talen 2013; Evans 1999; Helbrecht 2012; Katz 1994). However, the possibility is that an Arcology's direct proximity to uninhabited 'wilderness' would provide the city dweller with constant immediate and low-impact access to rural space as well as allowing agriculture to be situated near the city, maximizing the efficiency of a local food distribution system**.** In comparison Landscape Urbanism concerns itself with connective green spaces within urban patterns; it remains ideological however in the addressing of the whole urban space itself. It

[8] New Urbanism was established in the 1990s through a charter to create principles of development concentrating on liveable streets arranged in compact, walkable blocks. Esssentially New Urbanism is focused on American planning. Developments called for mixed housing to cater for a diversity of populace. This housing requires services easily reachable through transport. The emphasis is human-scaled design which is thought to enrich people's experiences (Talen 2005). However, community emphasis in New Urbanism involves certain aesthetics which can create simulations over real connectivity. New Urbanism by implication is the antithesis to nature; it does not contain its own pattern. New Urbanism, Landscape Urbanism and Soleri all identify urban decay, though travel on completely different vectors for solutions.

concerns itself with in-between connectivity and an ecological aesthetic and is a collective response between disciplines and communities (Waldheim 2006). Arcologies set limits, and by effect stop more conspicuous energy urban forms from emerging. Stem structures with supporting superstructures are located within the Arcologies all at complex levels, continuing the miniaturization philosophy. Landscape Urbanism is posed as a contemporary ecological solution, New Urbanism as a timeless solution to urban decay; Arcologies are projected far into the future.

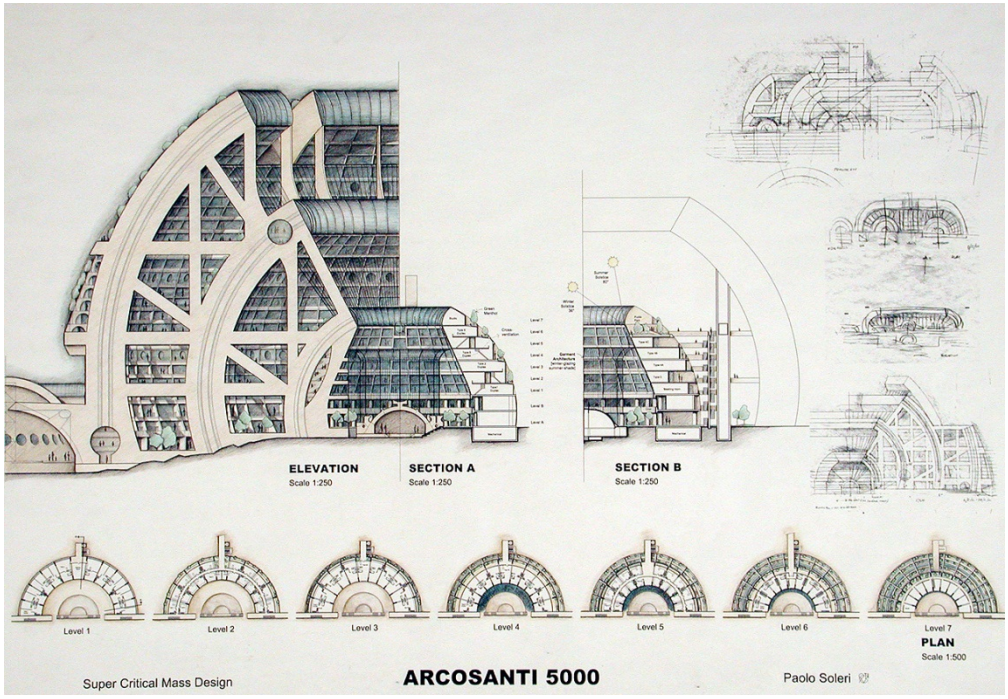


Figure 230: Paolo Soleri, Arcosanti, Section 001, Diagram, 1963.

Such work essentially positions Soleri as the designer of such new environmental centres. These drawings function at a large scale **Figure 229**, and create a paper space which is devoid of context, and to an extent this gives room for Soleri to draw without much compromise for particular environments. However, Soleri is cautious to an extent; each Arcology is given a specific world context in which each one is drawn, one Arcology for desert terrains, one for mountainous regions another for underground (Soleri 1969). There is some evidence of constraint in that Soleri's drawings attempt to address consumption. The miniaturisation philosophy means that an Arcological design must make use of as little land as possible, maximise agricultural terms and have the capability for culture. The drawings propose but are contained by the rules and principles of that proposal; the form of the drawing is always establishing miniaturisation.

Soleri's work does not always manage to hold a balance between visionary philosophy and specific ideas and details. Such problems are not resolved, as Soleri's subject and the Arcologies work to address three paradigms:

- Complexity – living processes are made of many clustered process – thus the makeup is hyper complex.
- Miniaturization – part of complexity miniaturization, which means in a sense rigorous utilization of resources.
- Duration – process implies extension in time. Temporal extension is warped by living stuff into acts of duration. A possible resolution of 'living time' is the metamorphosis of time into pure duration, i.e. the eventual 'living outside of time' (Soleri 1969).

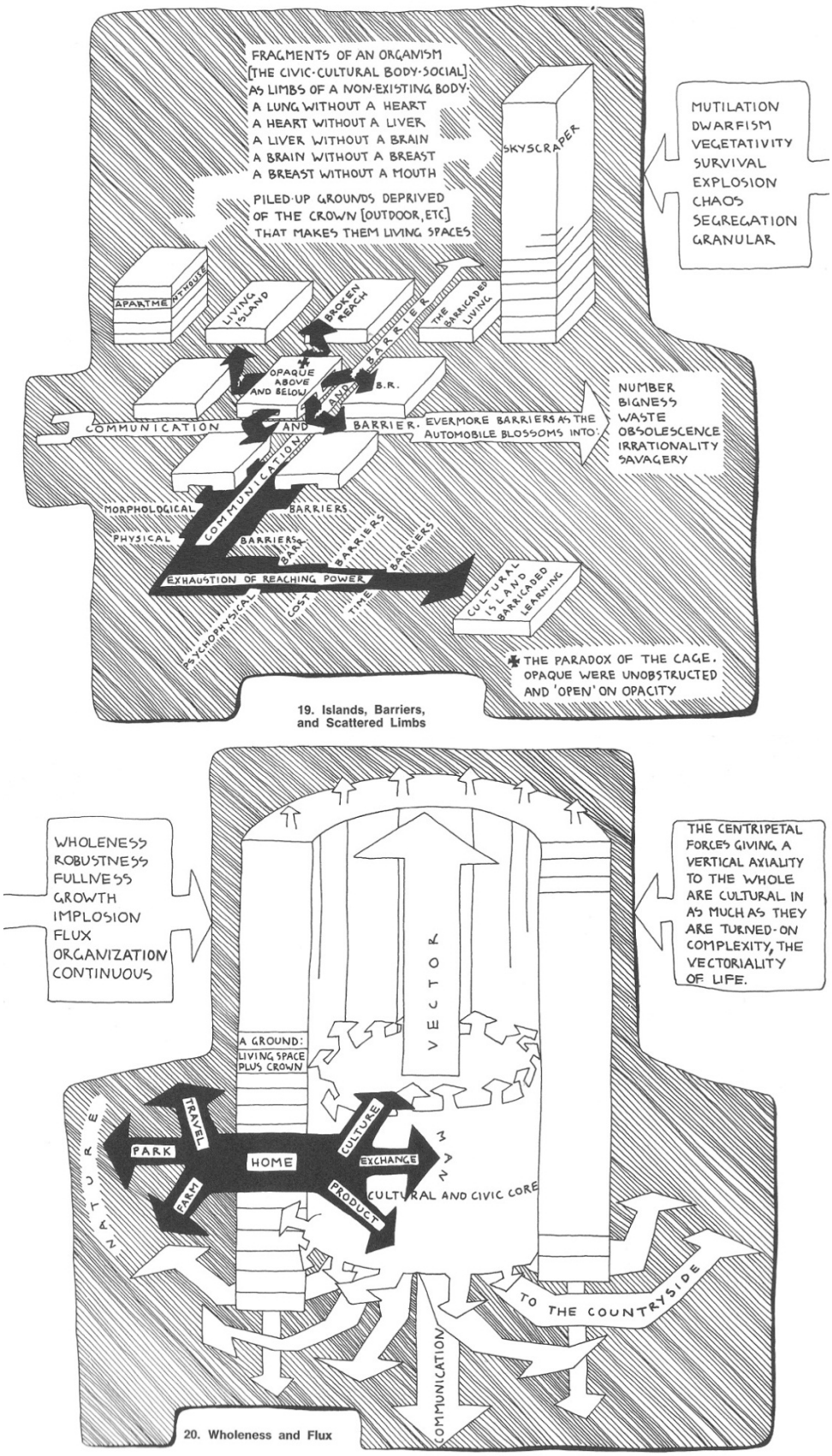


Figure 231: Islands, Barriers, and Scattered Limbs & Wholeness & Flux, The City in the Image of Man, by Paolo Soleri, 1969.

Arcosanti proposes frugality as a better way of life, attempting to re-address rampant consumerism. To Soleri consumerism reveals itself as master of the absurd, the automobile is predominately responsible for urban sprawl (Soleri 1969, p.63). To Soleri, materialism is an innate human quality, not in itself a wrong trait, but by increasing scales of population it becomes problematic in our relationship with 'nature'. Materialism to Soleri is the antithesis of nature, we may for example, as Soleri contends, create 'green' vehicles, though it does not stop the purchase of additional ones. Such invention in itself does not solve environmental issues (Soleri 1981). Soleri draws substantially upon the Jesuit philosopher, palaeontologist and geologist Teilhard de Chardin (Chardin 2008). In Chardin's work, he holds that there is at work a cosmic 'miniaturizing process': evolution advances from geological matter to organic stuff, to responsive animality, to human reflectivity and communication. Given Chardin's thesis, Soleri anticipates a further step where human beings will use their spiritual powers to rise above the present materialistic chaos towards a higher state of consciousness (The Omega Point) (Soleri 1981). For Soleri, Arcologies help bring about collectively, more frugal living and therefore a unified consciousness and more spiritual potential along the lines of the theory of De Chardin's *Omega Point* – the apex of thought & consciousness.[9] Architecture and design to Soleri are agents for human evolution; such design led emphasis relates to religion, his abstracted geometries mimic renaissance harmonies that sought to reveal the truth and omnipotence of God (Wittkower 1998, pp.38–39). Soleri, like renaissance architects, draws Arcologies as the most appropriate expression of the divine and the vector towards it. Soleri then operates and reforms one of the earliest principles of architecture; mathematics and proportions as the correspondence between microcosm and macrocosm. This is an imposition by Soleri on a previous spatial history long forgotten. Such a unity between spatial practice and architecture as practice which the renaissance city sought rests on a goal directness and political will that could only result from an oligarchy (See Lefebvre **Chapter 1.3**). The renaissance city could not contain its harmony; it evolved and fragmented into another spatial history. The similarity to Arcologies suggests that such a proposal is counter-intuitive for cultural development and the everyday life of its citizens unless a radical change of human behaviour ran tangential to the architecture.

The emphasis of spiritual purpose in De Chardin can, if we will but will it in Soleri's terms, bring about at least a semblance of the civitas dei (City of God) here on earth (Soleri 1973).

[9] This directional evolution is interesting, though to Soleri, humans have escaped such directional lines in the age of reason and science but through architecture, it enables ecology of humankind towards supreme consciousness's.

> The urban effect as universal effect is the transformation of mineral matter into mind via the potentially unlimited power of complexification and minturisation. Such is the case of organisms: single, composite, associative. In eschatological terms, the upper limit of the process could be the concluded aesthetogenesis in a cosmic seed, the omega seed (Soleri 1969, p.92).

So to Soleri, in his diagram **Figure 231,** he visualises an Arcology compared to city form, and uses that comparison as a basis to argue for a reshaping of human relation. This comparison is seen through the lens of Chardin, towards the end of time, as in futurological terms, evolution continues as a process of complexity and development. This complexity can lead to a higher consciousness in which humanity must bear likeness to God, as humans become 'light from light' and we are drawn with the universe towards God, this vector is drawn upwards in the Arcological diagram. De Chardin evidences this complexity from the development of "subatomic units to atoms, from atoms to inorganic and later to organic molecules, thence to the first subcellular living units or self-replicating assemblages of molecules, and then to cells, to multicellular individuals, to cephalised metazoan with brains, to primitive man, and now to civilised societies" (Chardin 2008, p.16). Chardin's view is that in nature, complexity is evident through evolution and given this complexity, human resources should also run on the same vector and this philosophy emerges in Soleri's work. This view sees the world rolling in on itself; the evidence to Soleri falls in the fact that mankind has achieved and integrated high levels of mental activity which can only converge further towards complexity and miniaturisation. This overall vector is called the Noosphere, a third phase of human thought that emerges after the Geosphere (inanimate matter) and Biosphere on Earth (biological life) (Chardin 1970).

To Soleri, as nature follows these complexity and miniaturisation patterns, therefore cities must follow the same design pattern, making it part of an overall evolutionary process where the city helps us attain high social, spiritual development and more complex social organisation. Soleri therefore proposes an uncompromising ecological necessity for miniaturisation; our inherent material tendencies constitute a destructive force on nature. Such issues to Soleri are solvable through architecture. However, it is not just architecture that would complete this vision. Many other design disciplines would be involved; landscape architecture would need to find a method of managing and creating a suitable agriculture to support the needs of the arcologies, for whilst this may be efficient, landscape is still purposed towards human use. The extent of the landscape architecture that is required is not stated as clearly other than the provision of recreational parks and food systems. The Arcology vision needs this context.

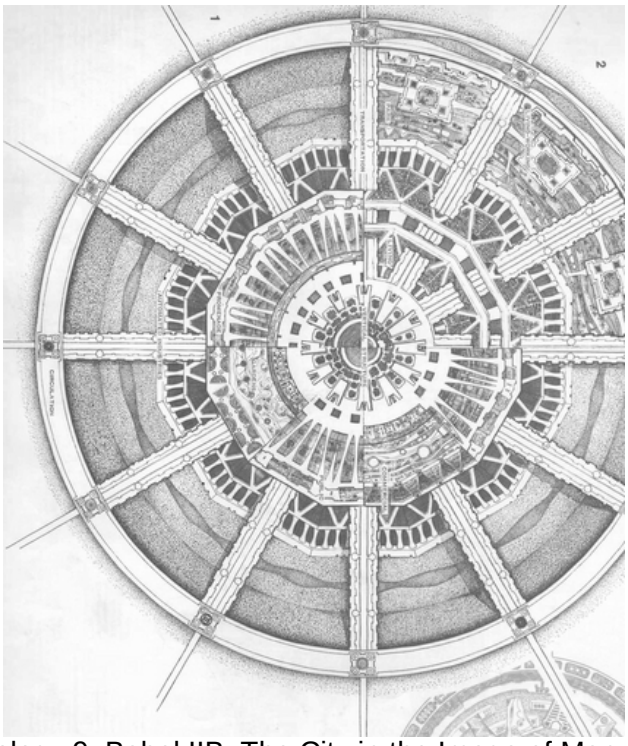


Figure 232: Arcology 9: Babel IIB, The City in the Image of Man, by Paolo Soleri.

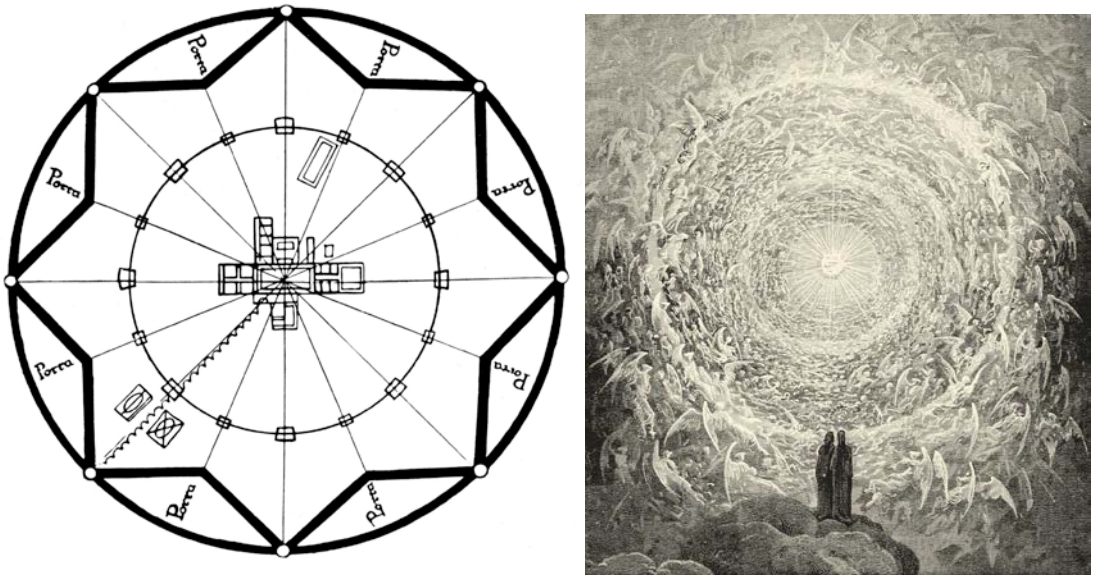


Figure 233: Antonio di Pietro Averlino (Filarete), extract from Libro architettonico, circa 1465. Paul Gustave Doré, *The saintly throng in the shape of a rose,* Based on Dante's Inferno, *1868.*

To Soleri, miniaturisation must feature as the overall concern in which an Arcology is formed **Figure 232**. The form is akin to the geometries and levels of Dante's Inferno, and similar to the work of Filarete, **Figure 233**. Such geometrical alignment, concentric circles and centres mimicked, like Soleri, cosmological ideas. It is worth comparison to note the readings of the

architectural historian Rudolph Wittkower in *Architectural Principles in the Age of Humanism,* that in renaissance architecture,

> In such centralised plans the geometrical pattern will appear absolute, immutable, static and entirely lucid. Without that organic geometrical equilibrium where all the parts are harmonically related like the members of a body, divinity cannot reveal itself (Wittkower 1998, p.7).

In Soleri's plans, such association and divinity is refocused towards an evolutionary vector - a sort of city typology. A sort of design led activity is postulated in order for the spiritual development of the mind. The drawing structures this vector. It makes tangible his ideas. By Utilising high density structures it enables the convergence that De Chardin postulates. The capability and agency of the drawing is present, for example developing Soleri's vector,

> The computer age offers an unprecedented access to the integration of the three major components in life – living, learning and working. The habitat grid we have constructed for ourselves in the last 100 years is totally alien to such integration. It will be a long and costly battle to redefine a landscape that enables a society to really identify with the habitat it constructs for itself (Soleri 2001, p.32).

To Soleri the computer age has the possibility for convergence, though paradoxically the landscape produced with such technology creates landscapes that are far from ecological principles of minimum land use. To Soleri this is crucial for unification for the *Omega Seed*,

> This is the age of packaging. In the information field, such packaging has become all-pervasive. The videotape is the icon of 'knowledgeability'. This, and all the other powerful devices for learning, bypass the body experience and reach straight into the brain. Minds so cultivated can become immensely amoral. They suffer the deprivation of content, i.e., of emotional, sensorial, environmental sensitization necessary to ethics religion, and aesthetics. The more we plunge into the computer age, the more we must cultivate our senses and our emotions to carry on as whole organisms (Soleri 1987, p.43).

The point certainly warns of a feature of drawing digital landscape architecture. The metaphor of disconnection is diagrammed as a metaphor of broken limbs in comparison with whole body – hyper structures **Figure 233**. Soleri suggests that we need to become involved in our own histories, not separated by technology. Computer systems to Soleri will be part of a cybernetic structure which helps support Arcologies – Cybernetics (Like Wolf Hilbertz) plays an important role in developing a multi conscious layered city (Hight 2007). This argument is similar to Constant Nieuwenhuy's *New Babylon* in which an anti-capitalist automated city will create new social relations and city forms to the desires of the inhabitants (Sadler 1999). There is a pervasive disjunction between tightly knit urban organisation and human cultural evolution. As we have seen in the work of De Certeau such agency in

architecture does not necessarily lead to its intended social use, appropriation of space is at the forefront in everyday life.

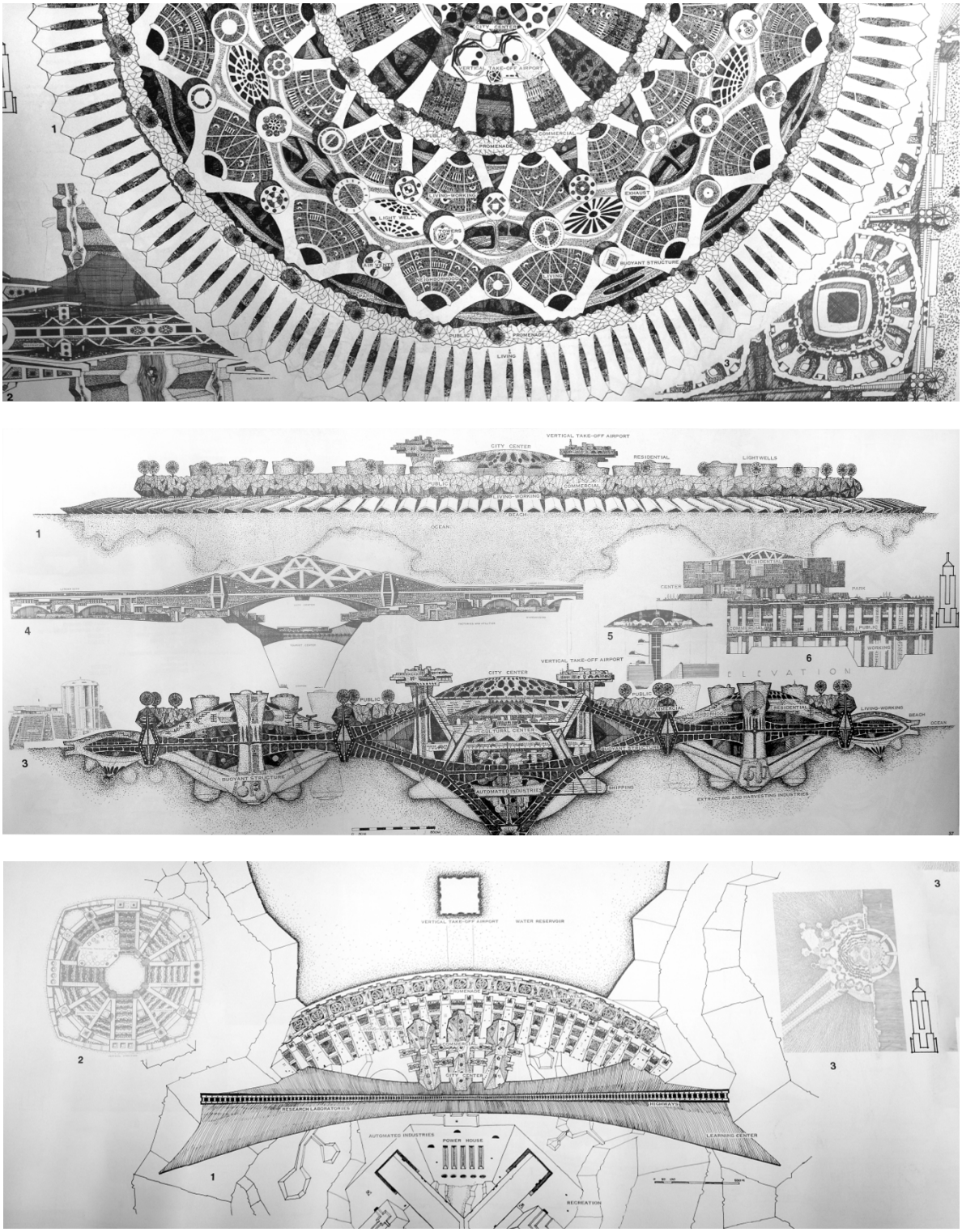


Figure 244: Novanoah Arcology, Novanoah Arcology II, Arcodiga, The City in the Image of Man, by Paolo Soleri, 1969.

In ‘The City in The Image of Man’, Soleri’s sketches are worked as illustrations,

> There is an indivisible connection between the stated (theory) and the form (visual) in which such a statement is materialised: change the form and the statement changes; change the statement and the new form is the inadequate, true one (Wall 1970).

The drawings manifest themselves in diagrammatic form for his complexity-miniaturization theory. Here existing patterns are compared with the De Chardin influenced spiritualised development **Figure 244**. Black and white spaces give stark contrast, as arrows act as Soleri’s evolutionary developmental necessity. The Arcologies are in section and plan, created and refined, with the initial sketch ideas placed alongside. In **Figure 244**, three different Acrolgies are given context, one situated on the continental shelf (Top), one on the coast (Middle) and one situated on a dam (Bottom). *The Novanoah Arcology*, (New Noah’s Arc), is purposed for ocean harvesting, research and housing, a sort of closed bubble - an urban implosion. The drawings are carefully laid out and zones are created for each function, demonstrating the sense of consideration of the functioning of the Arcology culturally and economically. However as with earlier criticism the site context is never clearly defined, it is a city constructed anew and by implication means the near abandonment of complete civilisation. To Soleri as his projection is far into the future, humanity if it is to save itself and the environment has no choice.

The precedent certainly exists in the *Biosphere 2* projects by the University of Arizona, 1987 – 1991 and their experiments with an ecologically closed cybernetic system. The Biosphere project conducted two closed experiments in self-sufficiency, was overridden by crazy ants, subject to intense infighting and issues of malnourishment of the research team and subject to criticism of an overriding environmental philosophy prevalent in the scientists (Alling et al 1994, Poynter 2006).

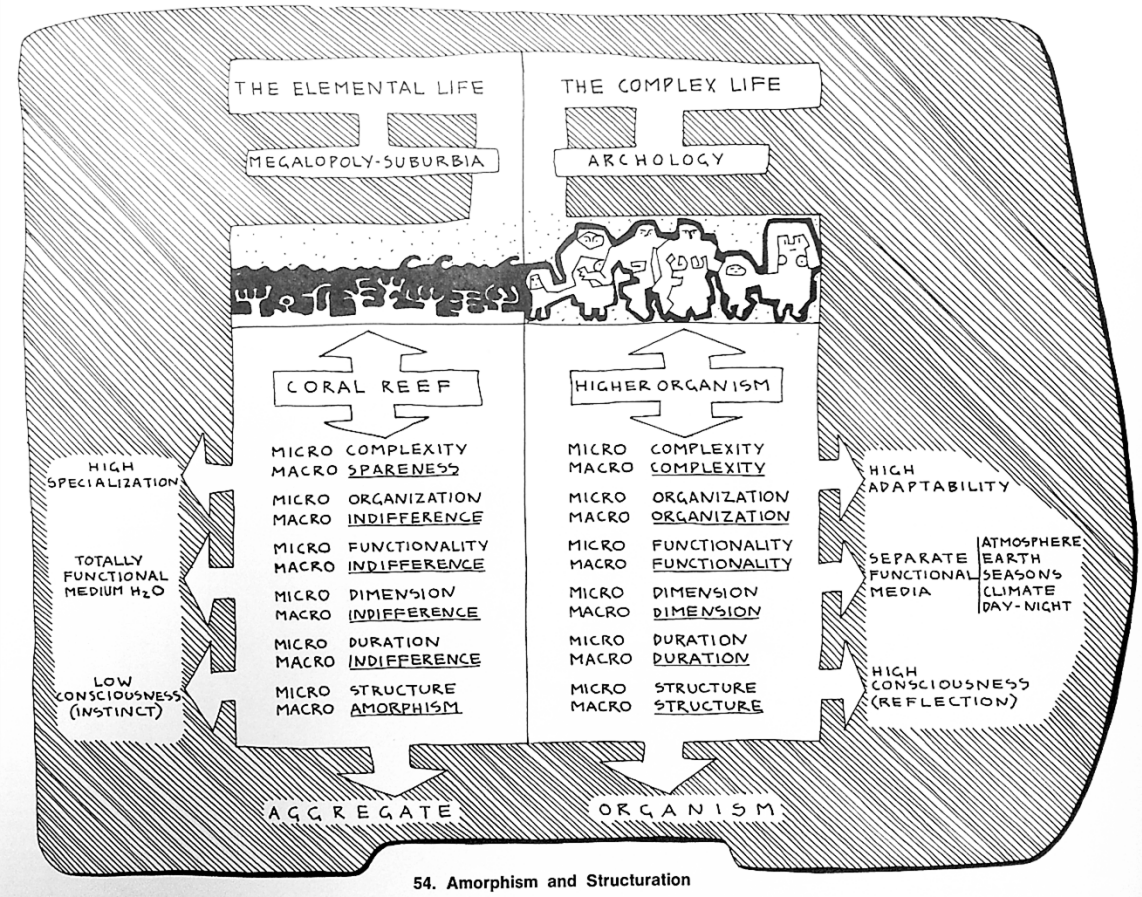


Figure 255, Amorphism & Structuration, The City in the Image of Man, by Paolo Soleri, 1969.

Soleri's drawings must then be understood as illustrative of his complexity-miniaturisation theory, rather than aesthetic formalisations, and cannot be read as such as in **Figure 255**, Soleri envisions De Chardin's *Noosphere* by Arcology, the diagrams and drawings are instrumental towards realising Arcologies; thus there is a schism between what is drawn and what is stated (Wall 1970). This tension is not always resolved, as the projection is so far into the future, has no reference, so how do you draw architecture without recourse to site, context or precedent?[10] Formally the drawings of cosmological geometries slip into fantasy, which is the reason why Soleri's work has been appropriated by Sci-fi so vividly[11]. However, it is the philosophy that informs the drawings and contains the ideas and gives certain credibility, for example showing land use in comparison to a megalopolis. Arcosanti realises his ideas to an extent, it had become the urban laboratory to his paper fantasy.

[10] Such work can be seen by Giovanni Battista Piranesi, Lebbeus Woods, Hugh Ferriss et al.
[11] Arcologies can be seen in the work of Peter F. Hamilton, (Coruscant) Star Wars, Robert Silverberg, Arthur C. Clarke, (Tyrell Corp) Bladerunner, (Trantor) Isaac Asimov, (Neuromancer) William Gibson and (Oath of Fealty) Larry Niven and Jerry Pournelle.

In the text he draws thirty Arcologies in the most inhospitable locations; cliffs, mines, quarries, dams, deserts, seas and space. In the Novanoah Arcology **Figure 254**, the purpose is for sea harvesting, research and residence. Soleri sees the sea in a different way to Hilbertz (**Chapter 4.1**) see also **Figure 255**, seeing coral as an unordered system in comparison to an arcology.

> Life came out of the sea when the time was ripe for a next step towards complexity. The ecological flood came to cleanse the earth and let the elected few reengage in the homogenises of the earth. The biological flood invested in the human species is now enduring man toward the same seas that eons ago saw the exodus of some of its creatures (Soleri 1969, p.36).

This relationship is further defined, the city floats on canisters interconnected, and the city follows the currents, moves with and responds to sea conditions,

> He does not just exploit the new environment, he works and lives in it, with it. This is not in order to make a sea a more 'humane' element, though this may be very fundamental in the long run, but because a new world opens to him who is by nature a world-maker (Soleri 1969, p.35).

Soleri does not see Arcologies as coral colonies, both continually grow, though coral systems are subject to environmental conditions. Arcologies are seen as structures for higher consciousness and reflectivity. There are criticisms of such a treatise, specifically religious debates regarding the work of De Chardin. In the Dam site, Arcodiga **Figure 254**, Soleri asks, "why do we divert rivers, move and re-move mountains with our hands. Why should we not put our minds and hearts in it and live by it also? These structures are begging for life" (Soleri 1969, p.36). Whilst dam sites are chosen for this Acology it raises wider questions, are dam sites created for an Arcology, or are they based on existing structures? How much of landscape, even efficiently purposed for Arcologies, make use of the natural, unordered and unproductive? The text sets out to answer such questions that there is no equivocal possibility; it is borne of an ecological necessity. Arcologies are purposed for human ends and see relationships with landscape as fundamental to preserve, however landscape and nature is purposed, human ends and needs. This extremity of necessity is carried through Soleri's work with little compromise.

The sense of rigid geometries pervade, essentially in thought that such form is divisible, therefore compartmentally sound for the development of dense mega-structures. What's more, the drawings help contribute to one of the widest criticisms of Arcologies, that by the complexity and the interaction between fragments, there is little choice but to have Arcologies designed by Soleri himself. The drawings are intended to act as universals[12], in

[12] This is problematic in that the drawing can be read as ethnocentric programme.

that any culture or system can adapt to purpose, therefore giving aesthetic form to the will of its citizens (Wall 1970). The ideas that Soleri has developed and tested at Arcosanti, show the importance of drawing as a vehicle for dealing with pressing environmental problems, and envisaging solutions. These were particularly interesting in passive technologies for structures, however the larger ideas of Acrologies are yet to be realised. The drawings are Utopian, though there is a sense of a heuristic method. This method can be seen as influential in the work of Foster & Partners in the proposed design Crystal Island **Figure 256**, currently on hold due to economic uncertainty. There is a deviation from Soleri here to be noted in terms of purpose. Though dense vertical architecture is visualised similar to the Arcologies of Soleri, here the visualisation utilises photo-realistic renderings.

Figure 256: Fosters & Partners, Crystal Island, Aerial Daytime, Perspective, Digital, Postponed, 2007.

The tower is formally similar to an Arcology 450m high, with a total floor area of 2.5 million square metres. Crystal Island formally and functionally is commercially intended to house

theatres, exhibition spaces, hotel rooms, apartments, retail and businesses as well as a school. Crystal Island is intended as a self-contained[13] city in Moscow. Here Arcological principles are re-employed; Soleri's vector is abandoned for commercial purposes, with parks and recreation forming an outer ring, which then spirals in converse directions towards a centre. Here the geometry plays towards regulating and capturing energy, providing a buffer for winter and protector for intense summers. Ventilation systems, wind tunnels and solar panels help circulation. Winter gardens are terraced in-between the outer shell and inner mega frame.

[13] Such work is a ghettoisation of society, both in the separation of marginal communities and high income, educated class.

5.1.A - Soleri, Ant Farm & DIY

Whilst we have seen some interpretation of Arcologies and discussed Soleri's philosophy and drawings, the heuristic element is still to be explored. Soleri in the text *Earth Casting* (Soleri and Davis 1984) develops his Arcology philosophy, in terms of developing instructions, future vision and testing of his ideas, mediated through drawings. Here architecture is dealt with through an instruction manual, an alternative guide to creating. Like Hilbertz, Soleri and Ant Farm[14] work in an artisanal mode of architectural production. Soleri projects his philosophy at a distance and huge scale, abandoning city configurations for compact vertical central structures. Hilbertz also projects at a distance and scale, though was more technologically focused on saving existing coral reefs. Ant Farm functioned more in a mode of critical media and communication. Ant farm created drawings and experimented with air pods, acting as critiques for environment and isolation of mass media communications, **Figure 257 -259**. Hilbertz also experimented with air pods, which were sprayed with water which froze, the pod was then deflated which left an ice structure, **Figure 257**. Soleri as we have seen experimented with passive solar technologies (Apse Effect). In each case drawings are used to solve issues and act as an agent for the generation of particular structures. This agency is enacted from small or individual collectives and qualifies the argument of the heuristic dimension of drawing and more importantly the potential of this method as a positive valence for landscape production.

Soleri and the Antfarm collectives' work was published at the same time in *AD Journal* 1969 (Smith 2012, p.90). The drawings are both action focused not independent objects, but sequences and strategies for alternative environmental interventions. The notion of DIY was coined by Catherine D. Smith (Smith 2012) in her comparison of Ant Farm and Soleri – "a somewhat radicalised educational mechanism for promoting an alternative, experimental way of life (and building) to that found within mainstream American society"(Smith 2012, p.87).

[14] 'We wanted to be an architecture group that was more like a rock band … We would be doing underground architecture, like underground newspapers and underground movies, and [a friend] said, "Oh, you mean like an Ant Farm?"' (Lewallen and Seid 2004, p.41).

Figure 257: Ant Farm, Clean Air Pod, performance with Andy Shapiro and Kelly Gloger, 1970.

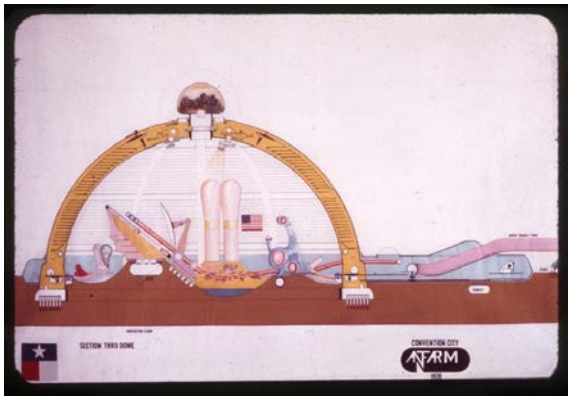


Figure 258: Ant Farm, *Convention City,* Model: wood, clay, neon, plastic, and 35mm slides, 1976, 1972.

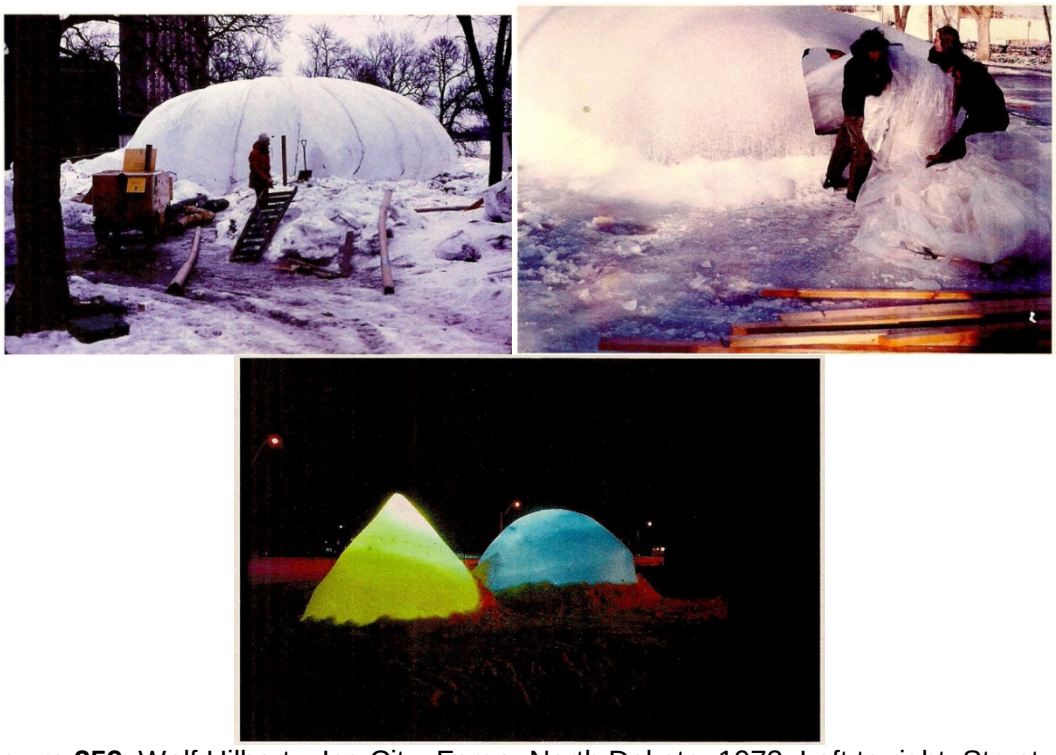


Figure 259: Wolf Hilbertz, Ice City, Fargo, North Dakota, 1973. Left to right; Structure created by spraying water over an inflatable form. Inflatable removed and structure lit at night.

Ant Farm collective concerned themselves with the critique of mass media and consumerism. Soleri's work functions as a DIY architecture manual for ecological necessity like that of Ant Farm collective. In the 1970's Ant Farm created giant inflatables to showcase rising pollution and published *Inflatocookbook* a DIY manual for creating inflatable habitats. They were heavily influenced by the work of Stewart Brand who created *The Whole Earth Catalog*. A text functioning and "Rejecting the professionalization of design, the Catalog took sustainability to be a concern for the citizenry at large, one best approached as a "design Wiki," so to speak, refusing to cede to political and industrial hegemony, or to the supposition that nature is a limiting condition on society"(Sadler 2008, p.108). Similarly, Wolf Hilbertz was experimenting with alternative building materials, and constructed habitats. In *Ice City*, ice was used with computer control, to create temporary shelters. In comparison, Soleri's artisanal mode concentrated on bell production and free form concrete structuring.

Between 1970-1978 Ant Farm developed *Dolphin Embassy*, **Figure 260, 261, 262, 263** an embassy in the dolphin's world. The idea was drawn as a floating structure, self-sustainable, with sail. The purpose was to provide interspecies communication developing what Ant Farm called harmonious co-evolution. The project was to be thought of as a way of marketing nature as a two way relationship rather than a human dominance. Their use of drawing to visualise this idea rests on authorial graphics, stamps and blueprints which give seriousness to their ideas.

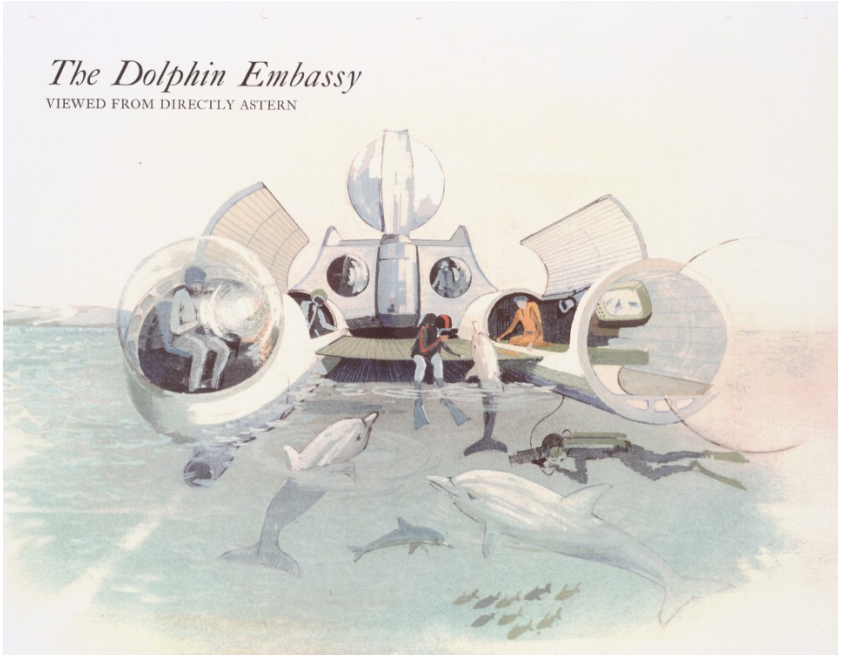


Figure 260: Ant Farm, The Dolphin Embassy Viewed from Directly Astern, Colour Xerox, 1977, 21.5*28cm.

Figure 261: Ant Farm, Ocenia, Dolphin Embassy Sea Craft, 1977, Rubber Stamp, collage, pencil and blueprint, Doug Mitchels & Alex Morphett, 55*62cm.

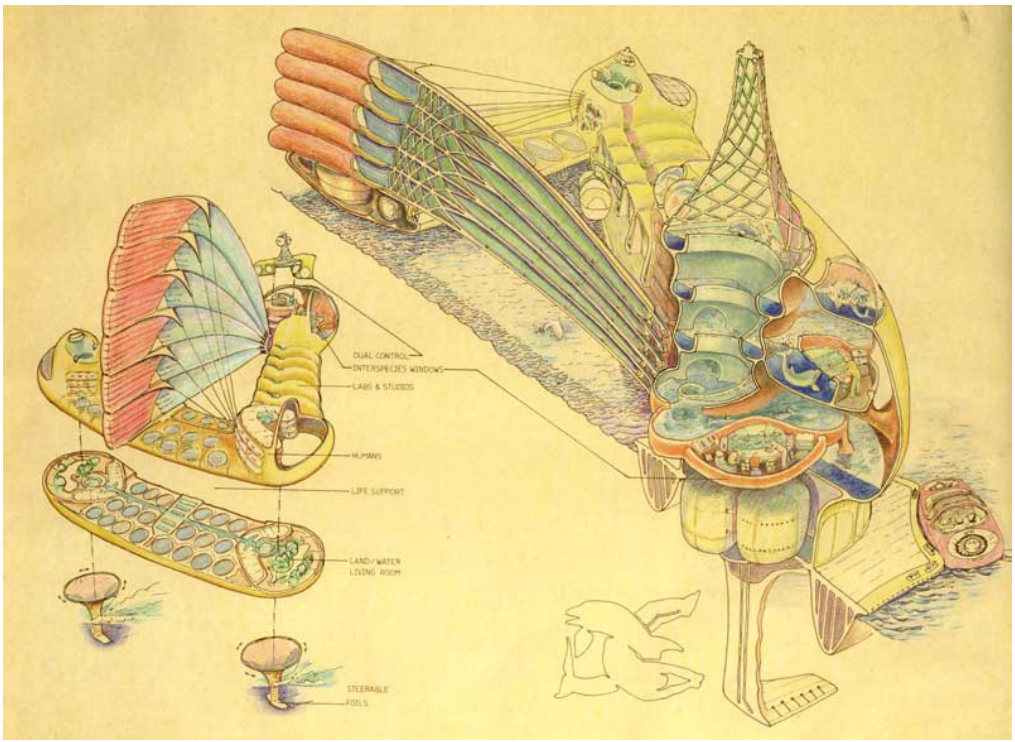


Figure 262: Ant Farm, DOLØN EMB 2, 1975, Hand coloured Brownline, Cutis Schreier, 46*56cm.

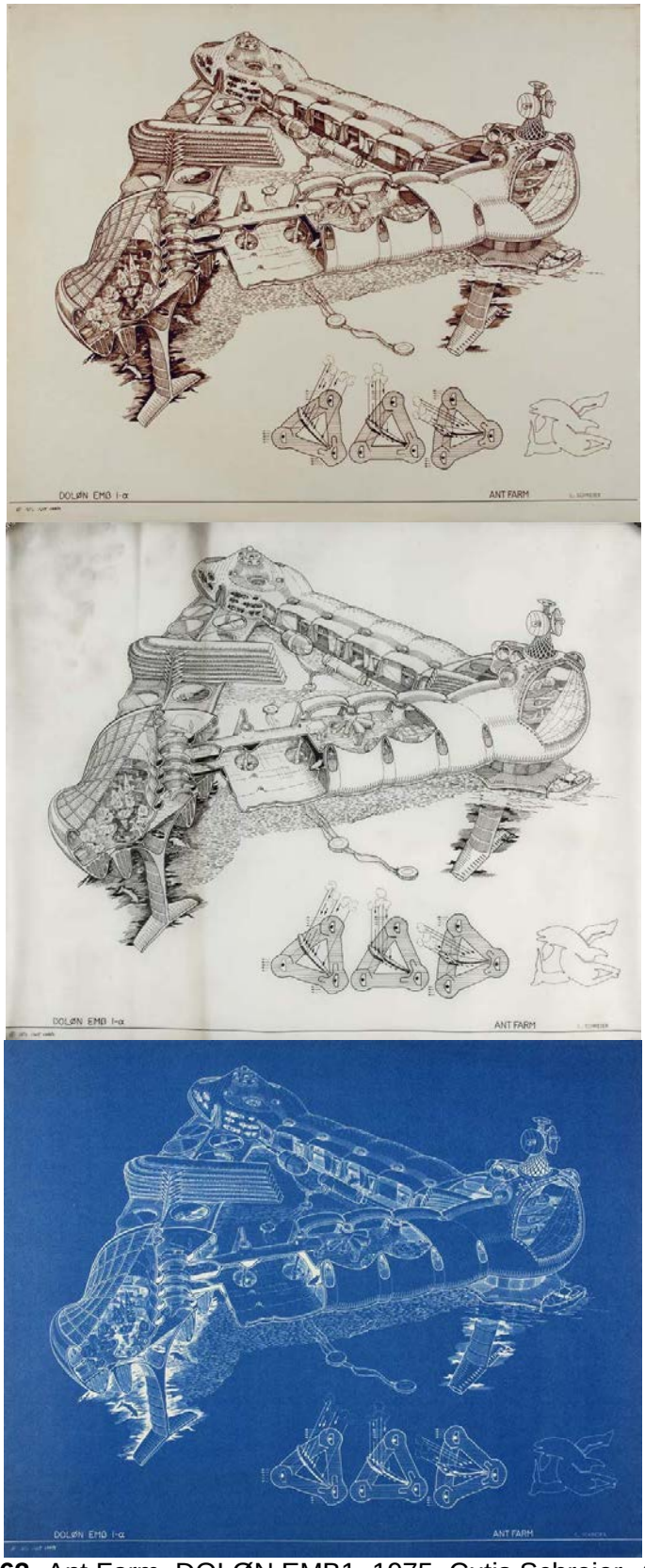


Figure 263: Ant Farm, DOLØN EMB1, 1975, Cutis Schreier, 46*56cm.

Such work by Ant Farm addresses representational issues directly, the audience can grasp ideas with an image, it opens up a dialogue and that dialogue must be public for the most suitable ideas to come to fruition. Soleri's work functions at Arcosanti as an urban laboratory, a DIY manual for action that changes perceptions of the form of cities. Whilst Soleri offers a purely design based solution and radicalised his design towards addressing urgent environmental degradation, his drawings begin that process, heuristic tools for testing and developing the journey for the *Omega Seed*. In Ant Farm, the method of a DIY architecture rests in an authoritative manual which mocks the medium of the message. The DIY manual perhaps has not taken off in Landscape Architecture, as the scale at which it deals with issues, the relationship with professional practice and the economic validity limits the scope of enquiry. However, the cases of Soleri and Hilbertz as well as Ant Farm provide an example of innovative uses of representation which embody the philosophies of the practioner, where the drawings are the agents for these ideas. As the aim is not only to chart methods for representational practices connected to landscape but also to consider social, human relations to environment, the implication of such work discussed here, is that more speculative experimental work and critique has real possibility to communicate and effect change. Such work allows projection. As landscape design representation must consider another time, then it is worth exploring the extremity of projection as found in Soleri and the *Omega Seed*. The dangers of fantastical paper surfaces with little connectivity allowed a free form to emerge; this form was open to critique. However, the philosophy that Soleri developed justifies his extremity and acts as a sort of constrainer, though his proposal is not wholeheartedly formed; there is a disjunction between programmatic architecture as an agent of human ecology. Moreover the relationship between renaissance cities and Arcologies give precedence to the ability to create contained urban patterns. However, the work is important as it presents futurological possibility and represents an extremity where such heuristic drawing can be projected.

In Soleri's view rampant consumption and materialism must be resolved in the light of environmental degradation without compromise. Verticality and centrality is the defining form of his drawing, the geometries become divisible to accommodate and compact functionality; in geometry he sees complexity. For Jean Baudrillard this consumption is important, he suggests in advertising the image neither acts as hallucinary satisfaction nor practical mediation with the world, it provides false dawnings with objects and false worlds. Thus advertising avoids reality, the images' agency is to lead to another image which provides gratification and repression, which to Baudrillard are core features of a consumer society focused on the accumulation of objects (Baudrillard 2005, pp.192–193). Baudrillard like

Soleri sees consumption as a relationship to the world, a systematic activity and global response that founds our entire cultural system (Baudrillard 2005, p.217). Soleri sees environmental degradation as the result of consumption; the object as the satisfaction of needs. He seeks the abandonment of this towards new human behaviour of collectivity and culture. His proposals use images recognising the agency of images (as in advertising) for a directive question, what if? How do we evolve? How do we adapt? Soleri projects something different, though it is not without issues; it attempts to break current systems in which to approach urban questions.

Arcosanti allowed the testing of these paper ideas and to some extent was successful in the experimentation with passive energy saving systems. Thus Hilbertz, Soleri and Ant farm evidences a representational experimentation which I would argue is an important condition in escaping the current landscape representational paradigm that is faced, demonstrating both negative and positive effects of such projection. In these works, the operations are enacted over a time, they are not immediate. Further work on representational modes which contain an agency and human connection is important in addition to these sources. Additional discussion of the work of the landscape architect Lawrence Halprin will allow a more programmatic mode to emerge particularly through discussion of scores and performance which emerged in the planning determinism of London Southbank and the strategic plan of Milton Keynes. Experimental functionality and immersion found in student drawings demonstrated the need for haptics and media free play and this is extended in a digital context, particularly in computational invention, which paradoxically was not mimicked in landscape architecture digital processes. As the thesis postulates the positive hermeneutics of Calvio's *Blood*, *Trade*, *Authority* and *Agency* into a set of defined models for landscape representation the agenda of answering Corner's call for innovation can be understood and defined. Such work is important as the implications for practice are high. Thus, heuristics and scoring have a positive valence in landscape production.

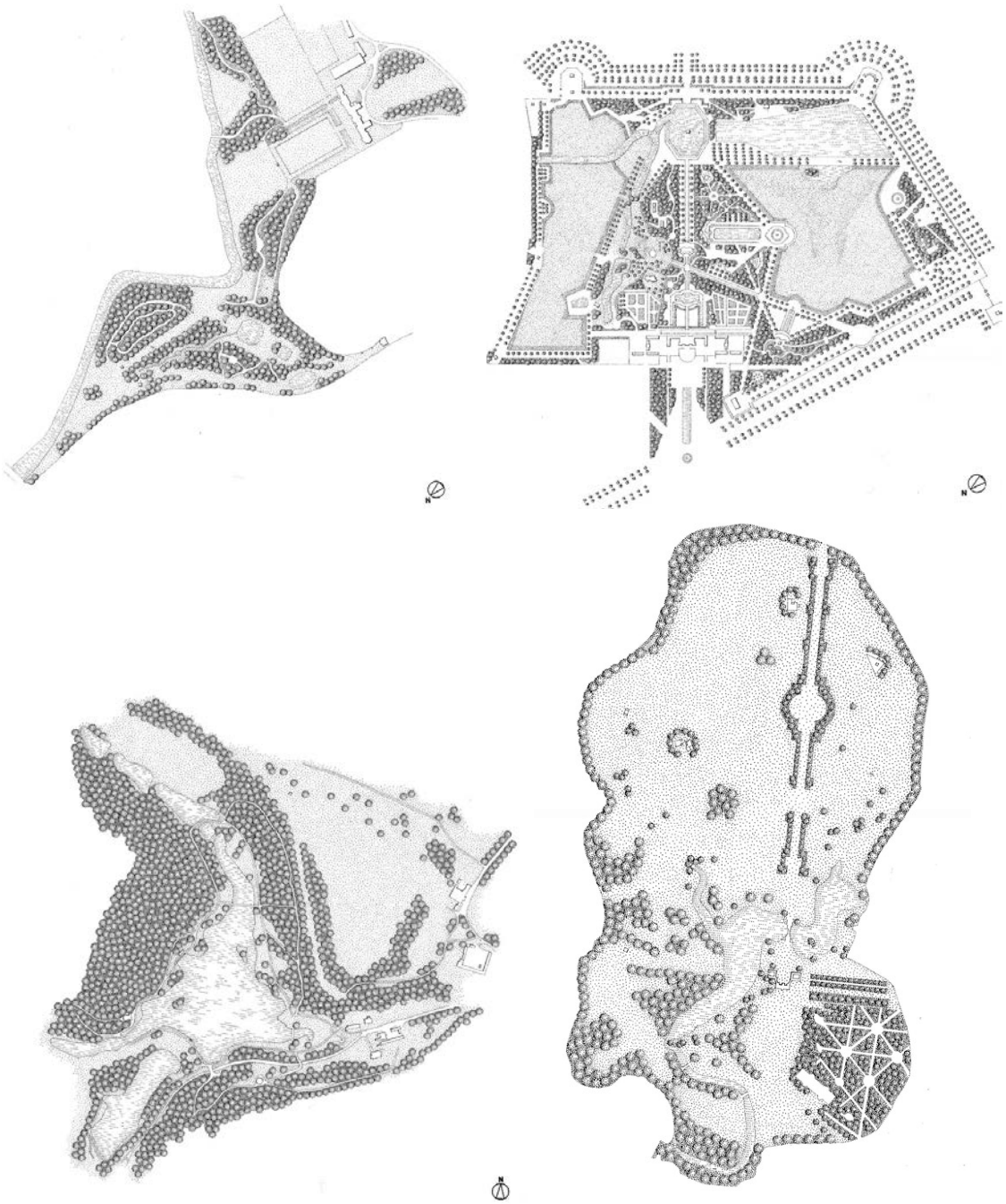


Figure 264: Left to Right: Rousham, Oxfordshire, 1720-37, Stowe, Buckinghamshire 1715-45, Stourhead, Wiltshire 1740-60, Parco di Blenheim, Oxfordshire, 1764.

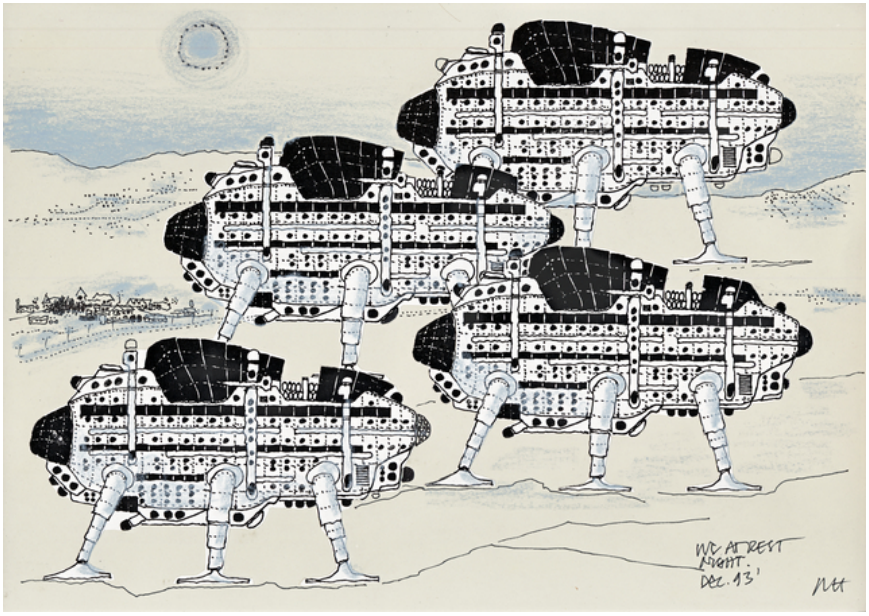


Figure 265: Ron Herron, Walking City, Walking City at Rest / Night 3 of 3, Pen & Ink, 1964.

The late Landscape Architect Lawrence Halprin stated that Landscape architecture was a discipline that grasped "the whole sphere of environments"[1], yet such grasp cannot be demonstrated in current representations, nor can it be understood in the context of eighteenth century landscape design. This was formatted for the spectacle, whether pervasive geometries or meandering curves which both opened the vista, the perspective, the disinterested appreciation of nature, as understood in Immanuel Kant's terms **Figure 264**. Landscape architectural representation as previously discussed could be taken as a history of pictorial conventions, inventions and strictures – from the plan and section of Vitruvius, perspective and mapping of Leon Battista Alberti, Humphry Repton's *Redbooks*, Modernism of Leberecht Migge, Archigram[2] **Figure 265,** Ian Mcharg's 'Layer Cakes' and Bernard Tschumi's *Parc de la Villette* to name but a few (See **0.1 Introduction**). However, to grasp the whole sphere of environments relies on a landscape embodiment, to understand its temporality and time. Henri Lefebvre developed a framework in which social relations and space were joined, and in that sense, can be interesting for landscape architecture which seeks operations that explore and develop works for everyday life, over an a priori strategy

[1] (LH, Oral History Video, Cultural Landscape Foundation) http://72.27.230.88/sites/default/files/pioneers/halprin/videos/index.html

[2] "The ideas propounded in these projects generated, within the architectural community, a whole range of emotional responses extending from outright rage, and dismissal of the ideas as pure fantasy, to great enthusiasm akin to adulation. The drawings, because they broke with the tradition of architectural drawing, borrowing as they did from the art world, cartoons, advertising art and science fiction graphics, elicited similar outbursts of ridicule or admiration." Ron Herron – December 1979.

of prescriptive urban form. The positive valence of landscape architectural drawing and the developing methods discussed previously must not make assumptions about the spatial practices of its users. Rather the implications in Lefebvre's work involve not only a politicisation of landscape representation, but also an engagement with the users of that space - thus the 'everyday' research area is important within this valence.

Given this vector, in the work of Paolo Soleri and Wolf Hilbertz we can study a heuristic and projective mode of thinking and testing about space which can inform at representational level representation methods of the everyday; a speculative, inclusive, viable, instrumental embodied approach in which the actions of the hermeneutics of Calvino; *Blood, Trade, Authority* and *Agency* become encoded. Contemporary design and visualisation must be explored and this exploration requires a renewing of the very concept of process, a re-orientation of the implications of representation. The visual, at once reductive[3] is challenged by its apparent inability to capture time and space. Thus, representation of the landscape is a critical issue for landscape architecture, an issue that at once challenges processes of design, reception of and understanding of site as well as cultural conditions – it is part of a generative activity of a process of production.[4]

Given these conditions, and the idea of 'grasp', Lawrence Halprin's 'scores' play an important role within a wider history of landscape architectural representation in their innovative ability to represent and map human movement in landscape, over time. Developing a series of symbols that convey bodily movement in space with reference to a map, as well as developing a way of recording the perception of the individual drawing, Halprin's research of scores[5] as a symbolisation of process, of activity, developed with his wife the choreographer Anna Halprin analyses the non-static. The score in itself as Halprin notes in the *RSVP Cycles* (1969) cannot deal with the 'humanistic aspects of life situations

[3] An artefact of action, if understood in Michel De Certeau's terms; a walk could be conducted, though if graphically recorded it would be a line, though that line is a trace of the walkers action. However, whilst this line does not hint at the temporality and duration of the walker, this notion is open to challenge as in this chapter.

[4] Drawing to the architect Rafael Moneo is "in fact, the discipline that connects sight and knowledge. The act of seeing, since it allows us to enter into knowledge of the world of things in which we live, is the first and foremost means by which we come to possess these things. To take this one step further, the connection between drawing and knowledge can be thought of as the natural extension of the relationship between sight and the outside world. It can be said, then, that drawing is knowledge. Therefore, there exists no better demonstration of our knowledge of the external world than the ability to draw it. Through drawing we strive to possess the world that exists outside us, and to make it part of ourselves" (Moneo in Scolari et al. 1987, p.2).

[5] "Score is a term I use to generate activity. It is based on the musical analogy of a composer putting notes down on a piece of paper to be handed to a musician to play… the elements of the score are location, time, space, people, activities and other things, too. Everybody has a different way of writing a score" (Halprin and Hester 1999, p.45).

including individual passions, wills and values" (Halprin 1970, p.2). His scores feature as part of a cycle, these scores have letter codes, **Figure 266**:

Resource – motivations/ aims/ human/ physical resources

Score – prescribed activities

Valuaction – value of the action

Performance –implementation of the score

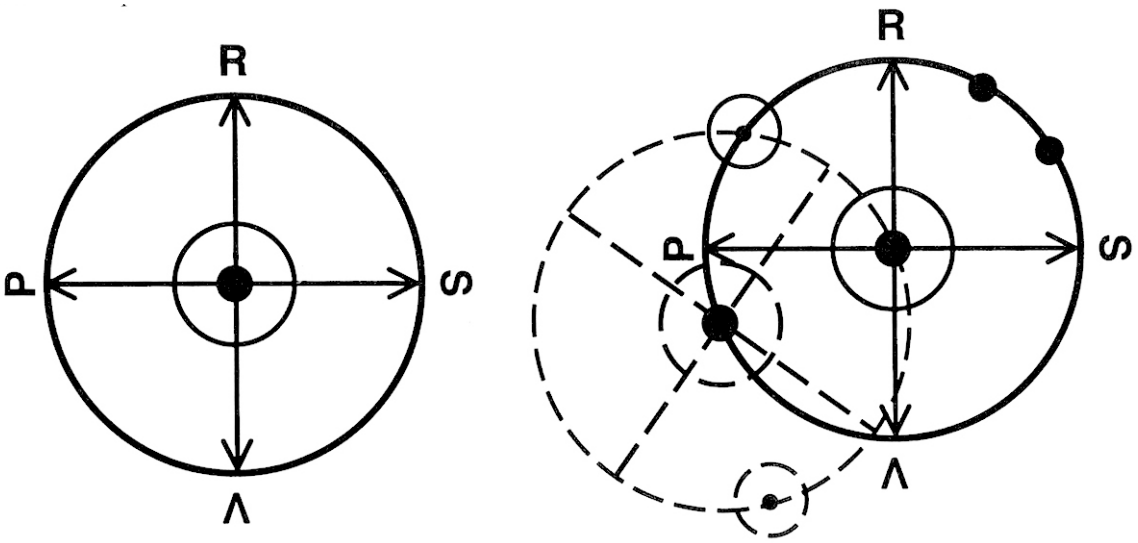


Figure 266: Lawrence Halprin*, RSVP Cycle*, Extract from RSVP Cycles,1969.

Informed by Laban and music notation, apropos Rudolf Laban (1879 -1958), Noa Eshkol (1924 -2007) & Abraham Wachman (1931-2010), John Cage (1912 -1992) and Morton Subotnick (1933 -) (Guest 1998)[6], the score becomes a democratic reference device for environment (Goodman 1976).[7] The scores can be closed giving reference to specific actions, the parameters are from small to very open processes.

> Lawrence Halprin developed a complex scoring process to handle complex layers of design information. The Score was applied as a multi-purpose tool— as a guide to community engagement, an approach to laying out design proposals, and as a way to examine specific elements in a project, such as sun angles, fountain noises, and movement patterns (Wasserman 2012, p.35).

[6] Halprin was particularly influenced by Jung and Gestalt Psychology, as well as an idealist belief in human commonality (Hirsch 2012).

[7] Nelson Goodman's *Languages of Art: An Approach to a Theory of Symbols* sees the score as representative in-between for the communication of thought to action, a mode of reference: "it determines which performances
Belong to the work, and at the same time, is determined by each of those performances" (Goodman 1976, pp.129–130).

Within these scores, Halprin devised feedback loops which enabled analysis before and after the score was created, so there would be a sense of maintaining the reference; “Halprin manipulated scores to explore how form emerged from an assemblage of disparate parts” (John-Alder 2012, p.56).

Drawing for landscape architecture has paradoxically suffered from a lack of critical attention, yet has been key to much production. Revisiting James Corner, he stated that drawing for landscape architecture must mediate and function between an artistic process, (Not merely as an object) and also be resistive of overly technical dryness (that is not purely instrumental). Such possibilities exist in innovative notational systems and hybridisation. As he notes,

> Techniques of representation are central to any critical act in design. If it is true that there can be no concept of landscape without prior imaging [...] then innovations in image projection are necessary for the virtual to be conceived and actualised (Corner 1999, p.8).

Given new urban conditions and changes - particularly through landscape urbanism championed by Harvard Graduate School of Design, which has concerns with ecologies, partnerships and multiplicities’ of the city - the study of human movements by designers, is an important area of enquiry (Waldheim 2006).

Christophe Girot and team from the ETH Zurich recognise the difficulty of today’s contemporary landscape representation crisis in seeking a moving picture, coining the term ‘Movism’ for contemporary landscape design (Koll-Schretzenmayr et al. 2010, p.199). ‘Movism’ is a film process to capture time in landscape and to understanding its structure. Essentially, Girot suggests that such work is necessary to keep pace with a more globalised and digital world and its transience (Certeau 2002, pp.111–114). Girot argues that a scientific model of landscape architectural practice, post-McHarg displaces any remaining images in design processes, where the aesthetic of landscape becomes mute to other scientific ecological conditions and as Girot states this promotes “disinterest with visual thinking” (Girot in Waldheim 2006, p.202). Similar work by Kathryn Moore (2011) in *Overlooking the Visual* (Moore 2009) talks of the pedagogic importance of the development of visual thinking skills in contemporary landscape architecture education.[8]

Representation is a reference for something else (Herrington 2008, p.33) and Girot calls for a re-invention of landscape representation and aims for a multiplicity of landscape views through video making. However some caution must be held regarding the benefits of new

[8] Perception and cognition is explored in Rudolf Arnheim’s text *Visual Thinking* (Arnheim 2004).

technologies, New media can provide modes of visual thinking as Girot states “where the relativity of time, space, and motion are all present” (Girot in Waldheim 2006, p.96). However, filmmaking is not without it’s issues - Ingmar Bergman commented that he sought in processes of production “a kind of notation which would enable me to put to paper all the shades of my vision, to record distinctly the inner structure of a film” (Bergman 1960; Bergman 1990). By vision he means the performance – or goal and end - and by this the landscape architect/student/ filmmaker is put at odds in finding the communicative message and intention of filming, as such work can create noting but fleeting fragments, fragments that add to the fragments of the urban state being filmed. Film making is of course an extensive field of enquiry beyond the thesis, though in Girot’s work we can see an example of a landscape architect attempting to address time and representation.

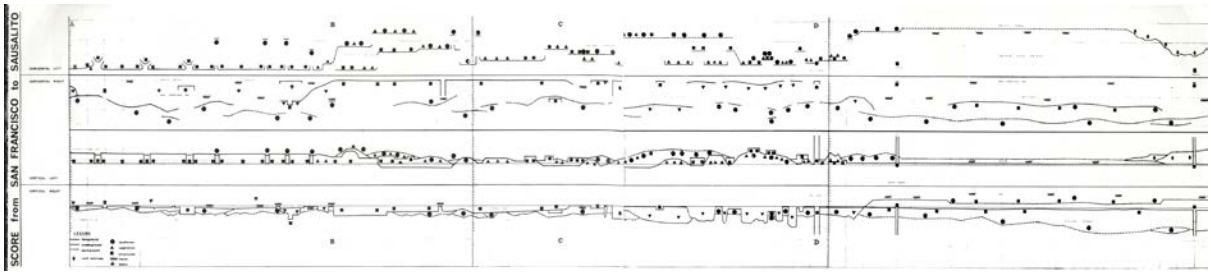


Figure 267: Lawrence Halprin, Score for San Francisco, Extract from Cities (Halprin 1963).

Such new media work, beyond plan and perspective which have maintained a tyranny over the domain of landscape architecture, is beneficial, and as Halprin states there was once a time when the plan acted as a score, to which craftsmen enabled a latitude (Halprin 1970, p.10). The score found in the RSVP cycles acted to enable creativity through partnership working using drawing, such as in the 1972 project - *Take Part: A Report on New Ways in which People Can Participate in Planning Their Own Environments*. This project selected, with the aid of Psychologist Paul Baum, ‘mixed groups’ of people and looked at various psychological, physical and social effects of specific urban regeneration zones (see Alison Hirsch for an excellent critique) (Hirsch 2011). Halprin enabled a participatory nature in planning processes, given the tense cultural conditions of the time towards a democratic environmentalism.

> Halprin’s carefully choreographed sequence of activities and programs was thus deliberately organized to progressively transform people’s environmental values based on the firm’s long-established principles in environmental responsibility and enriched human experience in the city (Hirsch 2011, p.139).

The process was not without its problems, Halprin & Asscoiates often entered the process with clear goal sets as Radolph Hester states, “There is no question that the person who writes (the composer) and leads (the conductor) the score exercises considerable control, but Larry argued that the score is like taking a horse to water: it cannot make the horse drink” (Hester 2013, p.136). However, the aim of Halprin and Girot is not too dissimilar, each sought a new way of representing the complexity of landscape and its changing conditions and a new approach for the understanding of landscape. As the sociologist and landscape architect Shlomo Aronson reflects on Halprin’s notation practice,

> The notation system, I believe, was part of Larry's attempt to address a lack of fundamental philosophy underlying the practice of landscape architecture. That he was, in my view, unsuccessful at providing this through his notation system is nevertheless an important indication of his concern with this intellectual gap in the conceptual base of the profession. The lack of a modern intellectual base for the practice of landscape architecture is something that deserves a great deal more attention from all of us working in the profession (Aronson 2013, p.226).

Both endeavours also sought to find a new communicative medium in which to debate the urban condition, space and time and both have a participatory element - A process orientated approach – the score for Halrpin, ‘Movism’ for Girot.

Given such attempts, it is also worth considering Henri Lefebvre’s final work, *Rhythmanalysis* published posthumously. It is a body-centred work which considers surroundings, it concerns itself with rhythm[9] as a tool of analysis, (Lefebvre 2004, p.xii) in various contexts, but for the purpose of this chapter, with the notion of urban everyday life, what happens every day, and as the Lefebvre scholar Stuart Elden notes, to think of space and time differently, and to also think of them together (Elden 2004). This work joins the dislocated elements of space as found in the earlier work *The Production of Space* (Lefebvre 1991): production, representation and the lived, as a unitary theory. As Lefebvre’s overall project is to re-unify the spatial, his critique thus discusses the privilege of the visual over the sensory, everyday and lived. Whilst this work may seem at odds with the ambition of re-ignition of an aesthetic for landscape, such a project just as Halprin’s, locates the body as the centre of such analysis (Lefebvre 2004, p.xii). An example of this scoring and body centred analysis can be found in UC Berkley seminar notes in which Halprin develops his movement notation **Figure 268**.

[9] “Rhythm can be defined as movements and differences in repetition as the interweaving of concrete times, but it always also implies a relation of time to space or place. Lefebvre talks about a localized time or a temporalized place to underline the spatio-temporarleality of rhythms and their participation in the production of space” (Simonsen 2005, pp.8–9).

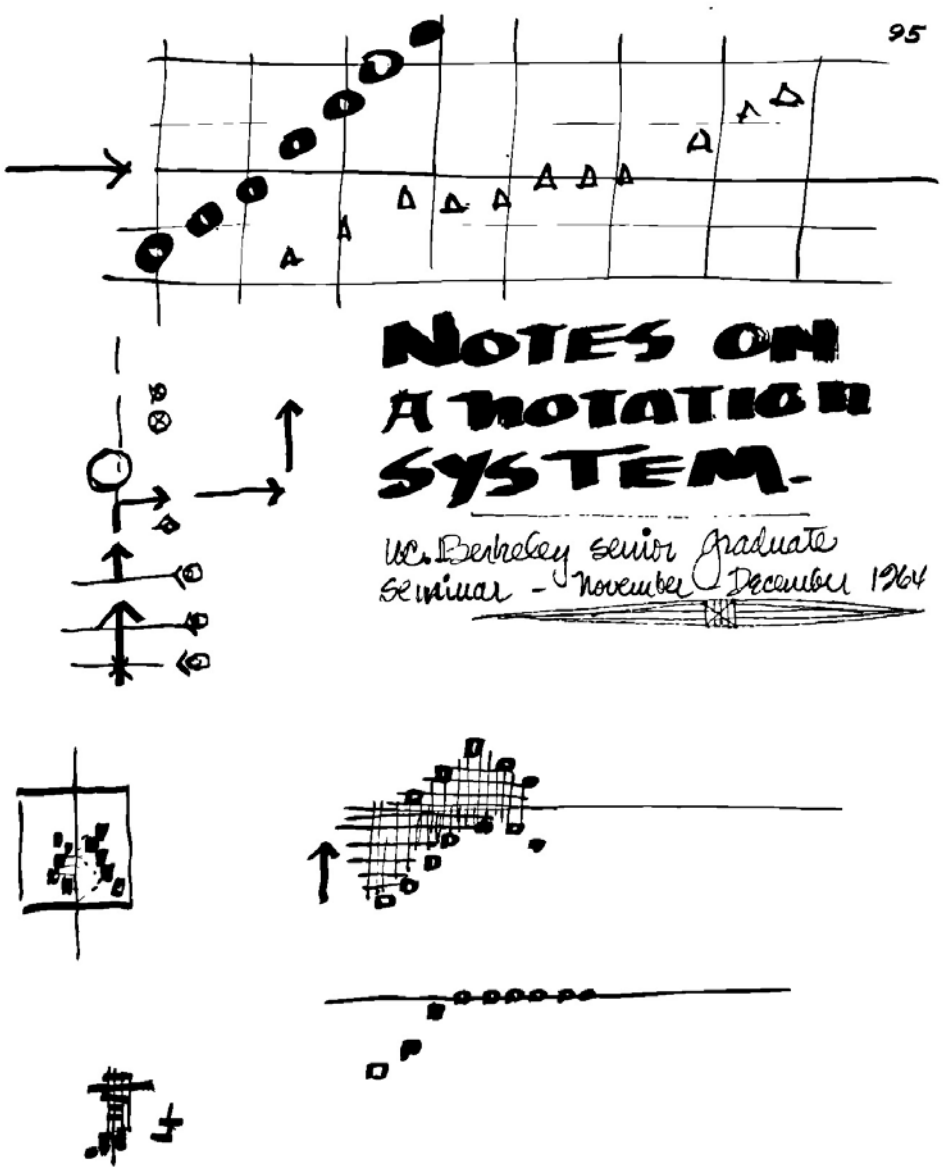


Figure 268: Lawrence Halprin, Notes on a Notation System, University College Berkeley Graduate Seminar, November – December 1964.

Halprin devises his notation on the philosophical base that there has not been a system to describe human motion, he draws a track in which he records small squares indicating distance and speed travelled. He also records a separate track which describes fixed objects, recorded in this movement. Thus he begins the development of a system which records surroundings, but also records the rhythm of the walker.

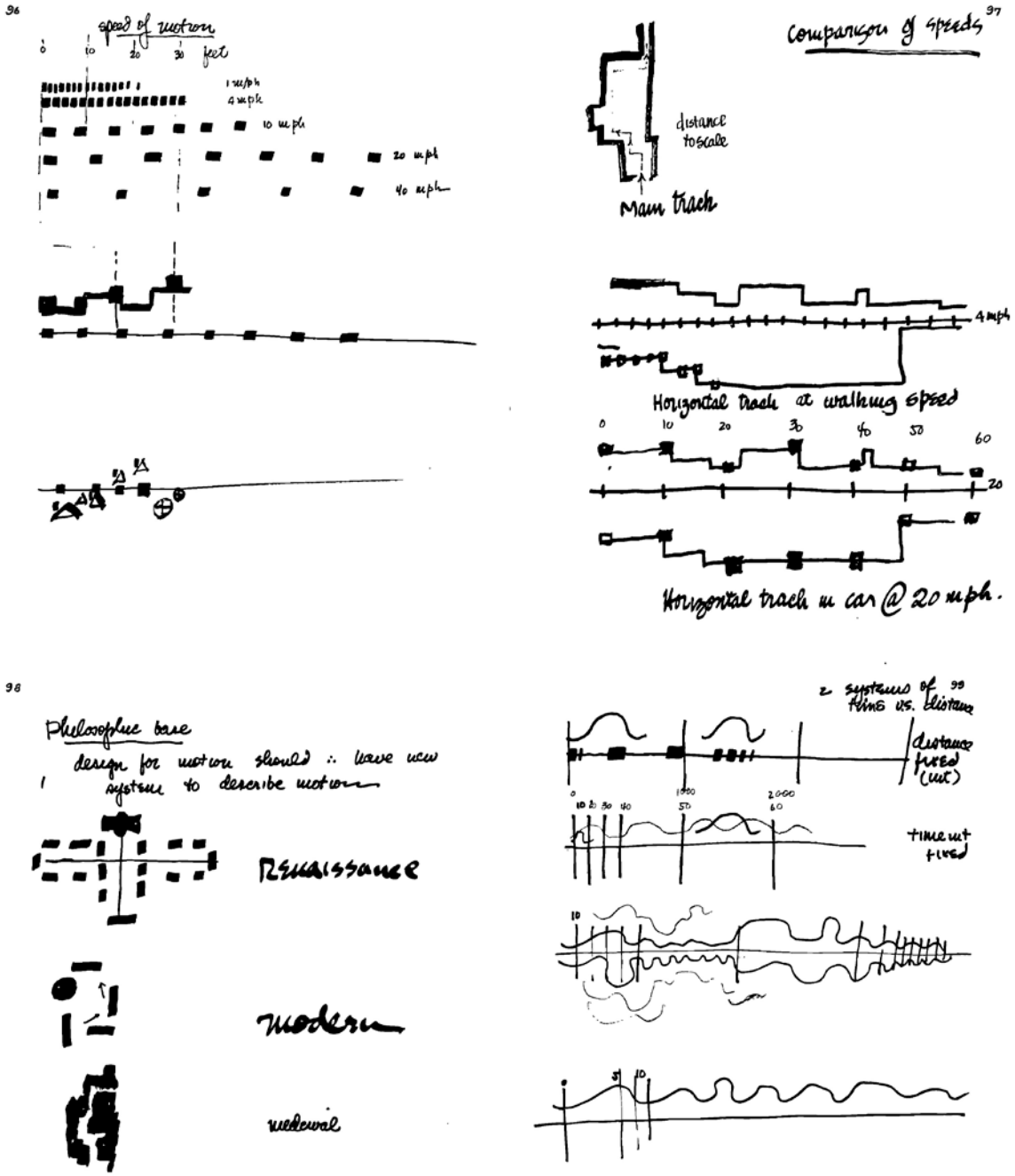


Figure 269: Lawrence Halprin, Notes on a Notation System, University College Berkeley Graduate Seminar, November – December 1964.

The use of freeform lines to describe time, fits well with the squares of fixed objects, and shows some testing to a small area, shown upper right. This movement is recorded in feet and at intervals.

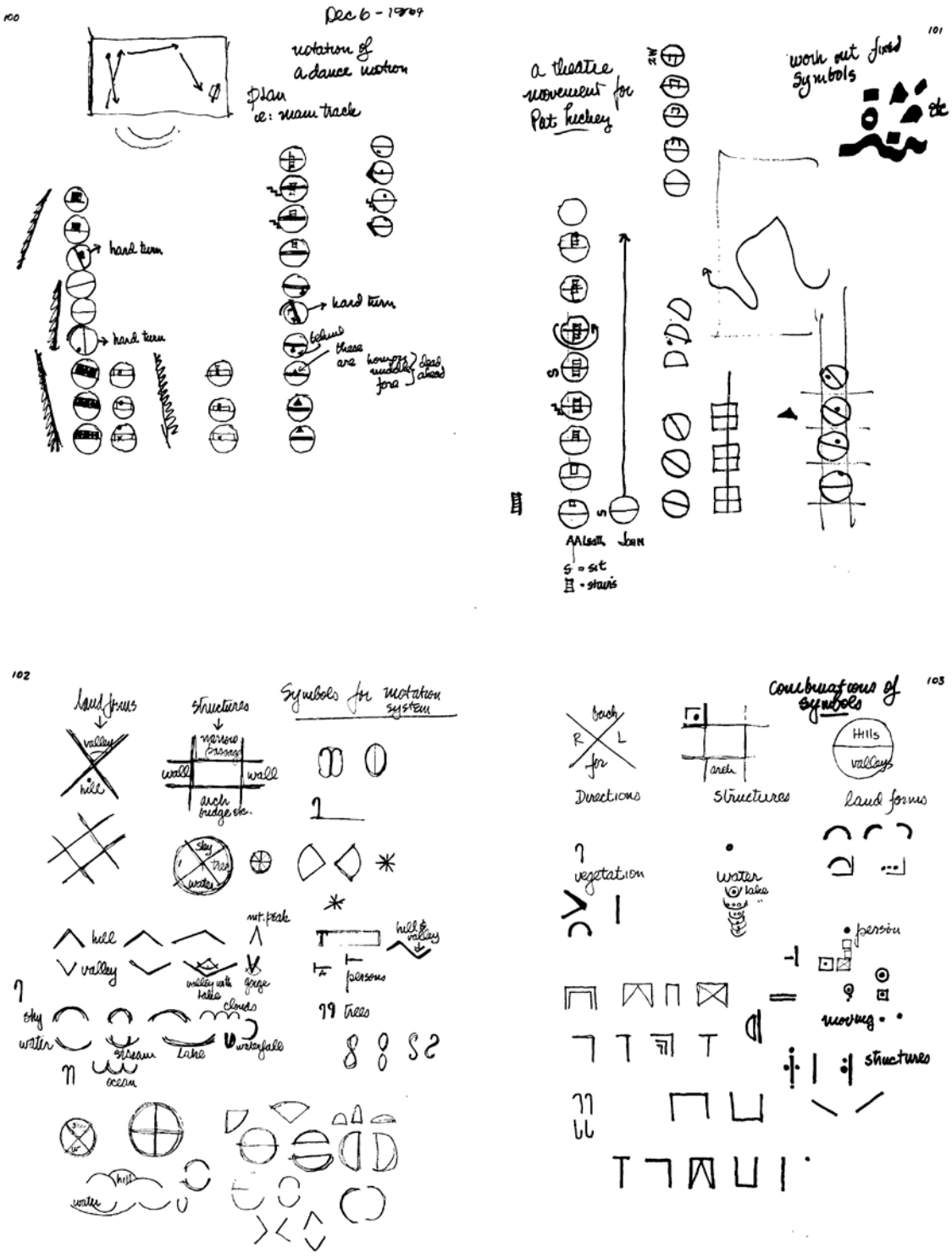


Figure 270: Lawrence Halprin, Notes on a Notation System, University College Berkeley Graduate Seminar, November – December 1964.

Halprin records movement of a dance routine (Top Left). Having defined the system of work for recording movement, Halprin then sketches the symbols of movement (sitting and standing top right) and the symbols used for fixed objects, from fountains to trees (bottom left). These objects are subject to further definitions, vegetative and structural.

To Halprin, the notation formed part of a score in which it would be evaluated and implemented.

> The score is the mechanism which allows us all to be involved, to make our presence felt (Halprin 1970, p.4).

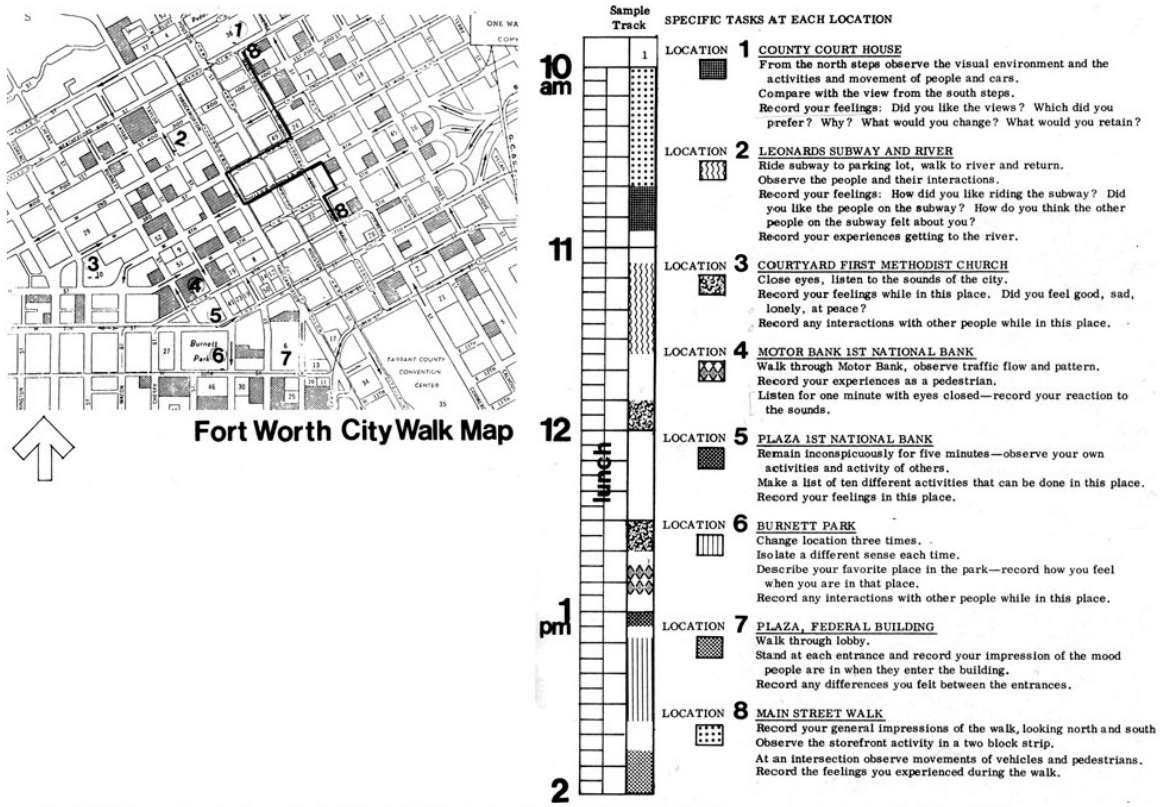
In comparison to Lefebvre,

> Rhythmananalysis transforms everything into presences, including the present, grasped and perceived as such... temporalities and their relations within wholes (Lefebvre 2004, pp.22–25).

Both concern themselves with time and body and re-education – the score is a device for creativity for Halprin, those participants enhance his design through their understanding of surroundings, for the rhythmanalyst they function as an inter-disciplinary listener who considers the scientific and poetic everyday life of urban quarters. To Halprin this mechanism is useful, however in comparison with Lefebvre, it is not as inclusive as the framework which is devised in *Rhythmanalysis.* To Lefebvre there can be surface rhythms, speaking, moving, and breathing but also deep (opaque) rhythms which are more evasive such as sexuality or social lives (Lefebvre 1991, p.201). Rhythmanalysis just did not set out clear terms in which to explore this opaqueness, however the relationship between Halprin and Lefebvre can be understood in the exploration of body-time relationships and responses to sensory environments. We must of course be careful of the ambitions of Halprin compared to Lefebvre, the former interested in creative collective endeavour and ecology[10], the latter extending and critiquing the Marxist dialectic (Elden 2004). Such theories were also geographically located and assumed specific cultural localities[11]. Between the three endeavours, concerns of time and space, representation and urban conditions we can find and develop both a whole system process approach, to think of the collective rhythm, the creative score of participatory plans, and a more nuanced approach, utilising drawing, perhaps bringing forward a new humanism in landscape architecture that relates to the fragmented urban condition.

[10] "ecology defined simply as the relationship of an organism to its environment, including all other organisms
in that environment" (John-Alder 2012, p.53).
[11] See Jeremy Ahearne for an excellent discussion of post-war French politics and state and the French Republics and Revolts that created a spirit of demonstration and urban revolution (Ahearne 2002).

6.1.A - Motation



3. Fort Worth City Walk Map and "Specific tasks at each location" (Slides in the Halprin Collection, AAUP; published in *Taking Part: A Workshop Approach to Collective Creativity*, 1974, pp. 78–79).

Figure 271: Lawrence Halprin, Fort Worth City Walk Map, 1974.

In **Figure 271**, we can view a score for a walk at Fort Worth. Here participants are asked to describe and record their impressions of plazas and parks with specific tasks and time durations. The results are then compared and evaluated for similarity and experience. This works sets and references a social practice, a performance in which the participant defines their relationship with place. This relationship as a process shows the participant the signs of the order and structure of the space. These signs and complex symbols represent the code of the space, a code which is recoded in paper form and compared. These comparisons allows the study of the iterations and similarities of the participants; a sort of participatory urban rhythm. To Lefebvre this work would be important as he reads the importance of the street;

> When you eliminate the street, there are consequences: the extinction of all life, the reduction of the city to a dormitory, to an aberrant functionalization of existence… [But the street] contains qualities ignored by Le Corbusier (Lefebvre et al. 2003, pp.29–30).

In comparison the *Taking Part* workshops offered the chance for an open score, a democracy to participate in the planning process, to consider the street, experiential learning that informed the designer, over closed scores, that is linear thinking. These scores however were slightly controlled and directed by Halprin's firm which questions the open nature of design through particpation, and in this case the comparative to *Rhythmanalysis* (Hirsch 2012, pp.120–121).

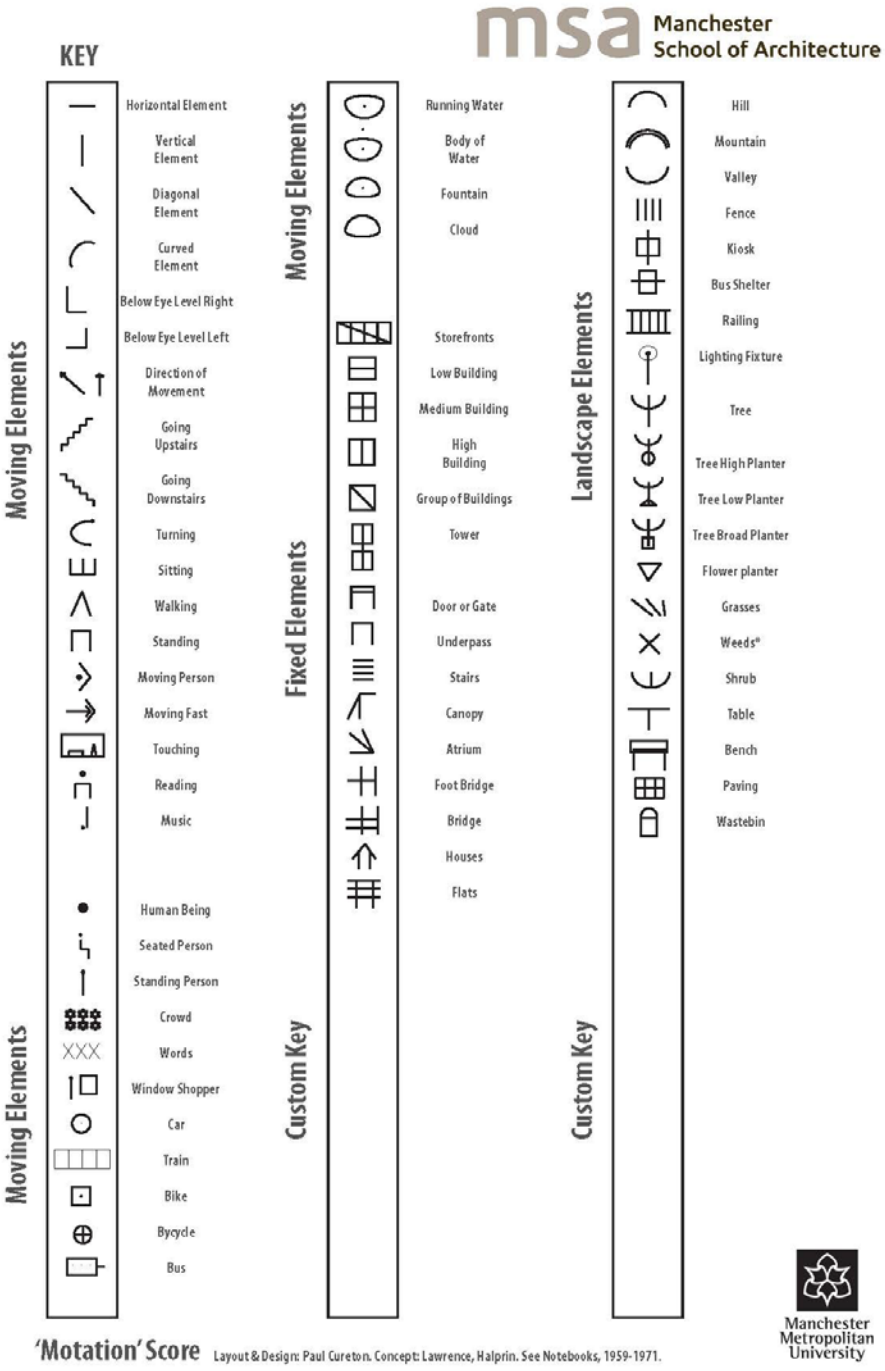


Figure 272: Paul Cureton, Motation Score Sheet & Typology, Digital, 2011.

Given the scores developed by Halprin associates, a score has been revised and developed, **Figure 272**. Halprin has devised a system of notation for urban exploration and rhythm related to Lefebvre's unfinished project. Here there is human focused activity, a phenomenological approach to everyday experience; it is an understanding of what a place represents, through a graphic representation.

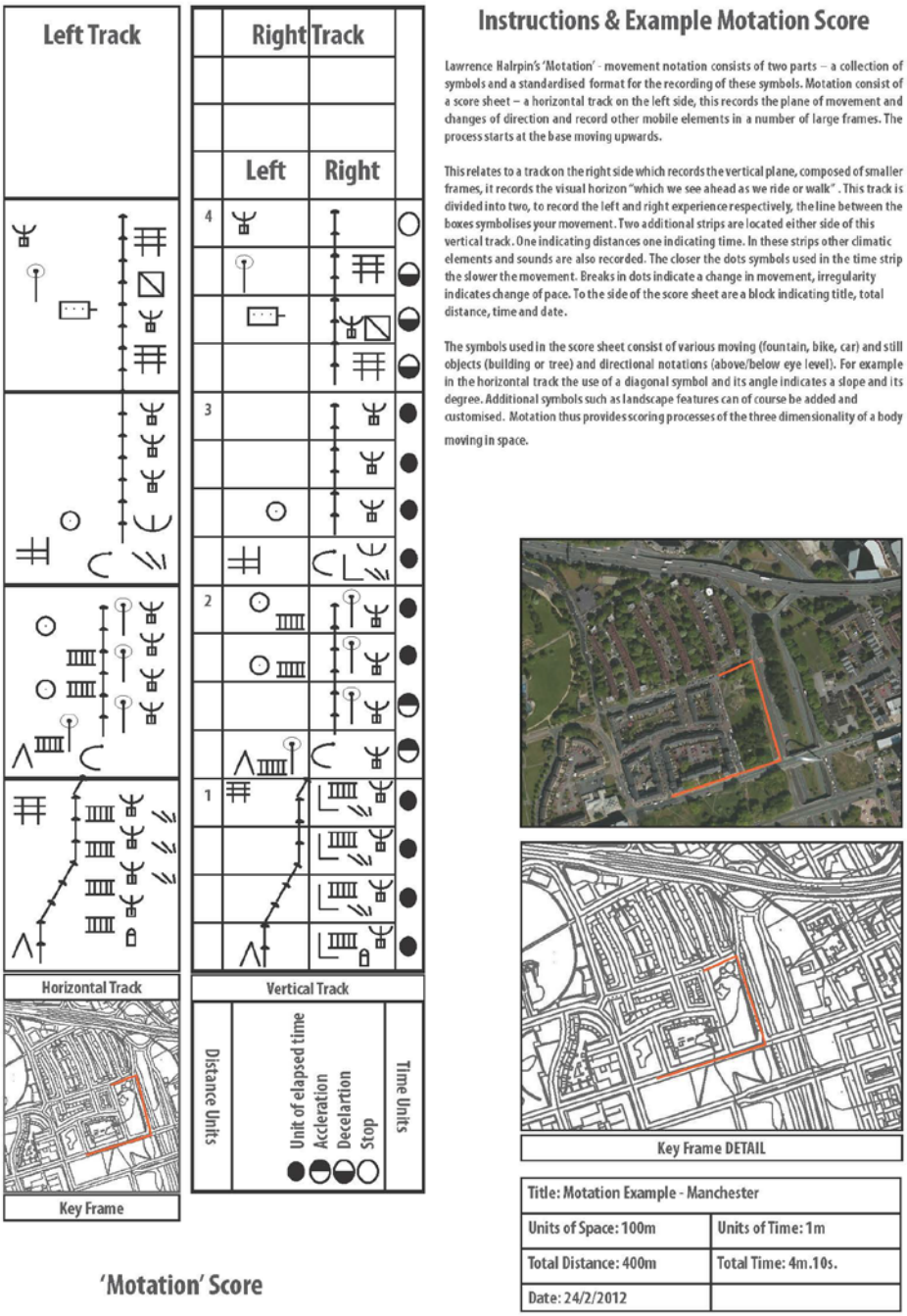


Figure 273: Paul Cureton, Motation Score Sheet & Typology, Digital, 2011.

This revised score was developed as a workshop activity for year 3 Landscape Architecture students at Manchester Metropolitan University. The walk route was devised and plan provided. Two scores were performed, the first around one university building so that the students could understand the symbol system used, for notably the appropriation and understanding of reference is important here (Goodman 1976). The second involved a mixed

terrain of brownfield, industrial and modern zones. The scores were given a time frame of execution.

Lefebvre suggested that in Rhythmanalysis, the body should serve as a metronome (Lefebvre 2004, p.19), that timing, temporarily and awareness of presence should be recorded. For Halprin in comparison,

> Landscape architects hold a unique role amongst the design professions, that of navigating through the ephemerality of nature and the complexity of communities in order to lay out a process, and finally a design to accommodate and invigorate fluidity, flexibility, and a world in motion (Halprin 1961, p.47).

One form of scoring – Halprin's 'Motation' - movement notation consisted of two parts – a collection of symbols and a standardised format for the recording of these symbols (Halprin 1965, p.129) **Figure 274**. Motation was informed by Kevin Lynch, Gordon Cullen and Phillip Thiel (Halprin 1965).

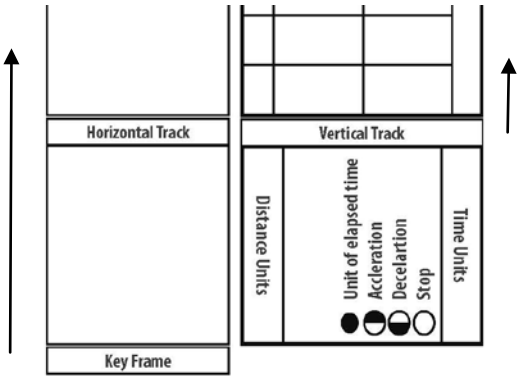


Figure 274: Motation Score, Track Extract.

Motation consist of a score sheet – a Horizontal track on the left side, this records the horizontal plane of movement and changes of direction and record other mobile elements in a number of large frames. The process starts at the bottom of the page moving upwards, as the arrow shoes.

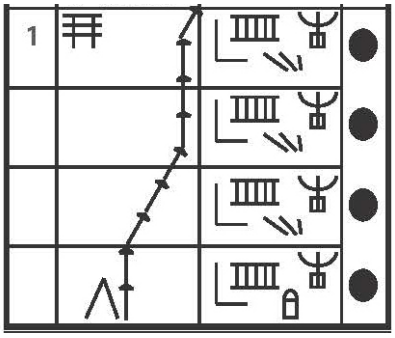


Figure 275: Motation Score, Vertical Track Extract.

This relates to a track on the right side which records the vertical plane, composed of smaller frames, it records the visual horizon “which we see ahead as we ride or walk” (Halprin 1965, p.130). Here a walk is recorded at each frame and railings, shrubs and trees are seen to the right and Flats to the left as the walk progresses. This track is divided into two, to record the left and right experience respectively, the line between the boxes symbolises your movement.

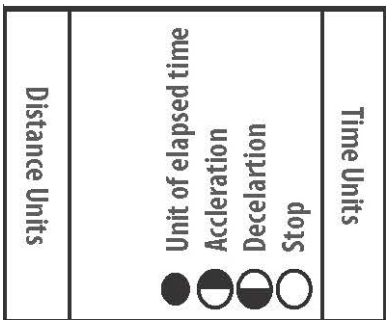


Figure 276: Motation Score, Time & Distance Track Extract.

Two additional strips are located either side of this vertical track. One indicating distances and one indicating time. In these strips other climatic elements and sounds are also recorded. The closer the dot symbols are used in the time strip the slower the movement. Breaks in dots indicate a change in movement, irregularity indicates change of pace. To the side of the score sheet are a block indicating title, total distance, time and date. The symbols used in the score sheet consist of various moving (fountain, bike, car) and still objects (building or tree) and directional notations (above/below eye level).[12] For example in the horizontal track the use of a diagonal symbol and its angle indicates a slope and its degree. Additional symbols such as landscape features can of course be added and customised.

[12] In Lefebvre’s work the fixed objects that Halprin describes are not in fact fixed, they function in another rhythm.

Motation thus provides scoring processes of the three dimensionality of a body moving in space and raises perceptual experience,

> His scores choreographed the body to respond to the ‘‘sensuous environment’’ with heightened perceptual awareness (Hirsch 2011, p.139).

Engaging in such scoring process can enable the Lefebvre project; the notations are essentially irrelevant - just a tool of analysis - the focus is on body centred situationism. The aim of the work is not to frame but the capturing or understanding rhythms, and urban conditions, for Lefebvre “everywhere where there is interaction between a place, a time and an expenditure of energy, there is rhythm” (Lefebvre 2004, p.15). Between Halprin and Lefebvre are movement and process, an opening up and interpretation of urban areas to frequency, sound and feeling. Halprin is pragmatic, to Lefebvre this is a theory to see the city not as a thing. These emotives are not necessarily revealed in the Halprin score, but emit from the evaluative action once the performance is complete. These rhythms may be the ritual of collecting bread, taking coffee, and the sounds of dogs in a neighbourhood or the shattering of glass when the recycling refuse is collected. Lefebvre continues, in order to describe these rhythms,

> The rhythmanalyst will not be obliged to jump from the inside to the outside of observed bodies; he should come to listen to them as a whole and unify them by taking his own rhythms as a reference: by integrating the outside with the inside and vice versa (Lefebvre 2004, p.20).

Graphic works, to Lefebvre, mean that you ‘have to have confidence in it’ , through a kind of magic it evokes something else, “copies conforming to a standard, parodies of presence”(Lefebvre 2004, pp.22–23). Though the rhythmanalyst sees the simulation in this process for rather than seeing the static graphic, it is to re-orientate our thinking of this work, the evocation and notes of its’ rhythm, its operation and end, locating it within a presence. To think in this way, makes drawing, and particularly the score, recognisable in its mobility, to become present, in an act of formation - situating the score in a world of presences. For example do we view a landscape perspective design as a static object, with fidelity or more of a metaphor of things in time, things changing?

This heightening and perception of presences through participation in Motation helps to hone, to distinguish interactions. It is to think of a work of art not as the drawing, but the body movement which enabled it, “no camera, no image or series of images can show these rhythms” (Lefebvre 2004, p.36). Motation however is the closest thing challenging such statements and is more akin to moods and times – of rhythm. As someone walks through a city,

> [t]he cross movements and staccato qualities arise only from other pedestrians who establish movement patterns on their own. The crisscross sense of overlapping comes mainly from these opposings and crossings, and they create eddies of motion, like water currents in a river (Wasserman 2012, p.41).

Such attempts raise sensual awareness in environments, by rhythmanalysis or through Motation. Anna Halprin in the dance workshops *Circle the Earth* creates a 'Taking Part' approach (similar to Larry's approach to planning); the dance is to learn a common language, a language beginning with the body.[13] Secondly, natural movements and expressions are utilised – "body patterns reflect and influence the patterns of our lives" (Serlin 1996, p.122), Halprin uses drawings in her workshop to image thoughts and associations and the content and meaning of movements to provide "an externalised reflection of our subjective experience" (Serlin 1996, p.122). This knowing in walking is important; Katrin Lund articulates this claim further, where the foot meets the ground.

> I want to claim that this meeting does not separate the foot and the ground as two entities, rather the nature of the meeting is an entanglement in which any assumed boundaries between the body and the landscape blur. Thus, the materiality of the landscape is shaped through the movement of walking, not prior to it (Lund 2012, p.225).

This materiality in landscape is important for understanding social relations; it assists readings of everyday life, the rhythmanalyst finds encounters, discussions, negotiations and practices in a city and continues to find them.

The quality of Motation relates to Phillip Thiel's *People, Paths, and Purposes: Notations for a Participatory Envirotecture* (Thiel 1996) he distinguishes between; performance specification – describing a goal or end - and a construction/management specification for a means towards an end (Thiel 1997, p.121-122). Essentially the distinction is between a guidebook for a specific tour as compared to a score, which is an alternative open process of environmental discovery. Thiel argues that design approaches should be centred on users' experiences at eye level, which develops participatory design. This analysis concentrates on rhythm, like Lefebvre,

> Rhythm is always linked to such and such a place, to its place, be that the heart, the fluttering of the eyelids, the movement of a street or the tempo of a waltz. This does

[13] "In such a phenomenological field the environment cannot be objectified; rather it a totality continuous with the participant. An environment can be designed to work in this mode or it can be structured to oppose it. It can be shaped to encourage participation or to inhibit, intimidate or oppress the person. When design becomes humane it not only fits the shape, movement and uses of the body; it also works with the conscious organism in an arc of expansion, development and fulfilment. This is a goal which consciously articulated aesthetic can help accomplish, and the challenge of such an aesthetic can be a powerful force in the effort to transform the world we inhabit into a place for human dwelling" (Ihde and Silverman 1985, p.125).

> not prevent it from being a time, which is to say an aspect of a movement or of a becoming (Lefebvre 2004, p.89).

The possibilities for new urban scoring open up body centred analysis, not scored for, but actively scoring in contemporary urban analysis. Such work restores landscape architecture and agency, towards the right of the city- “it cannot be conceived of as simple visiting right or as a return to traditional cities. It can only be formulated as a transformed and renewed right to urban life” (Lefebvre 1995, p.158). However, the ability of scores must be identified as Alison Hirsh states,

> Larry because during the years of his most dynamic practice, urban social ills and injustices were more immediate public concerns than site-scale civic nature experiences to which Larry was primarily committed. Where his priority meshed with the clients' and public's motivations, his projects were spectacular. When social problems trumped his priorities, Larry, like most designers floundered, and, as Alison B. Hirsch concludes, acted disingenuously (Hirsch 2012).

What Hirsh alludes to is the ability of his RSVP cycles which included Motation, to deal with sociological issues during the process, Halprin sought to refine the data of Motation and the public’s perceptions into a refined model for design; creative consensus. Whilst the process was a cycle, the editorial consequences remained.

6.1.A - Portland Sequence - Sketching Movement: Pragmatism, Keller Fountain & Lovejoy Plaza, Portland, Oregon

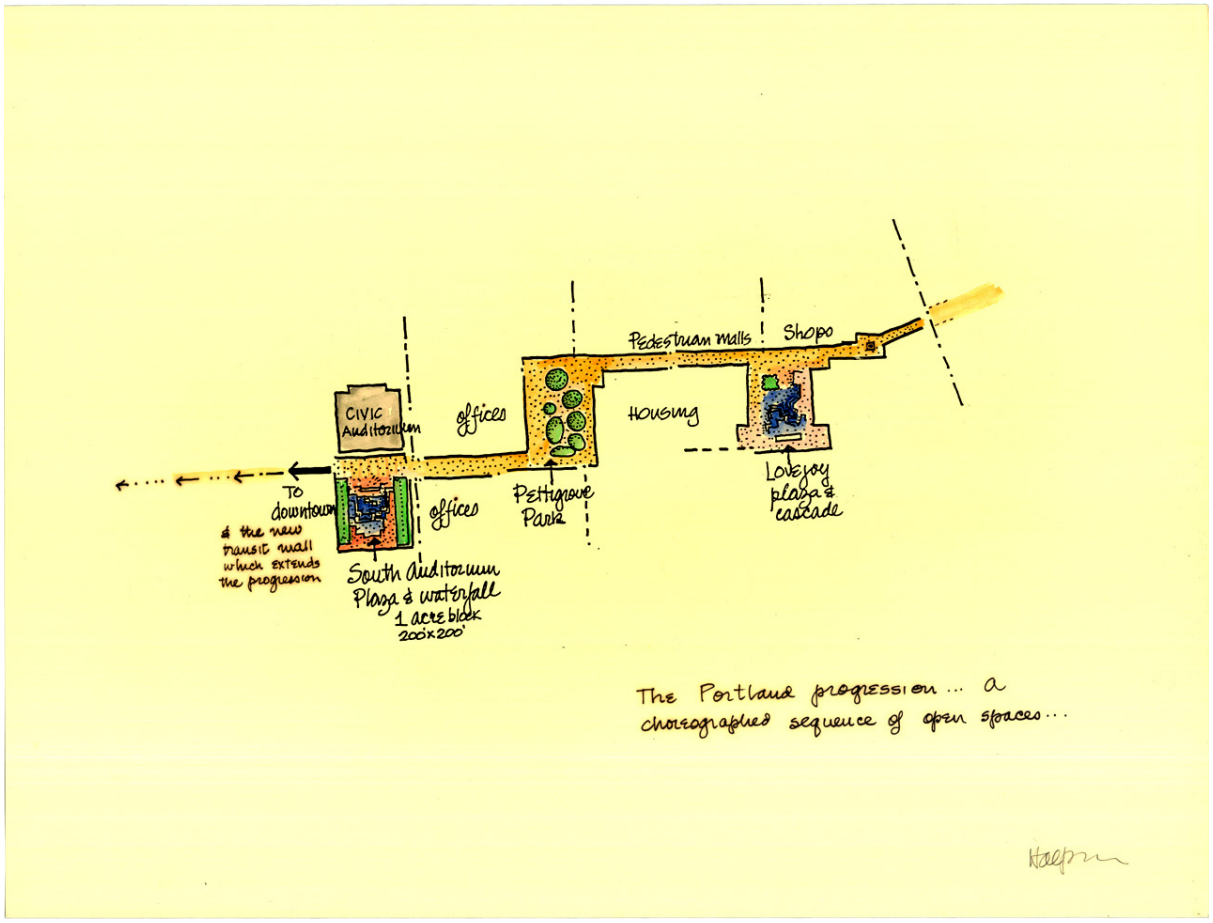


Figure 277: Lawrence Halprin, Portland Sequence, Oregon, Sketchbook 1962, pg 10**.**

An example of this scoring process can be found in the Portland sequence from Lawrence Halprin's notebooks. The drawings give examples of what Catherine Dee calls 'Dialogic drawing' (Dee 2004) which places a balance between drawing and writing. The drawings and ideas for this sequence, as Mark Treib has argued, emerge from Halprin's early garden design work in which he began to experiment with spatial configurations and layouts (Treib 2013). The Portland sequence was one of Halprin's greatest works, not in scale but as Randolph Hester states,

> The experience of nature he brought to the city is the essential foundation for eco-literacy, stewardship, and the capacity to inhabit science necessary to address threatening difficulties (Hester 2013, p.139).

The Portland sequence was intended to be a tranistion between spaces on foot, and the journey between each area of retail, of park space, was intended to be punctured, a sort of rhythm was scored for Halprin's design.

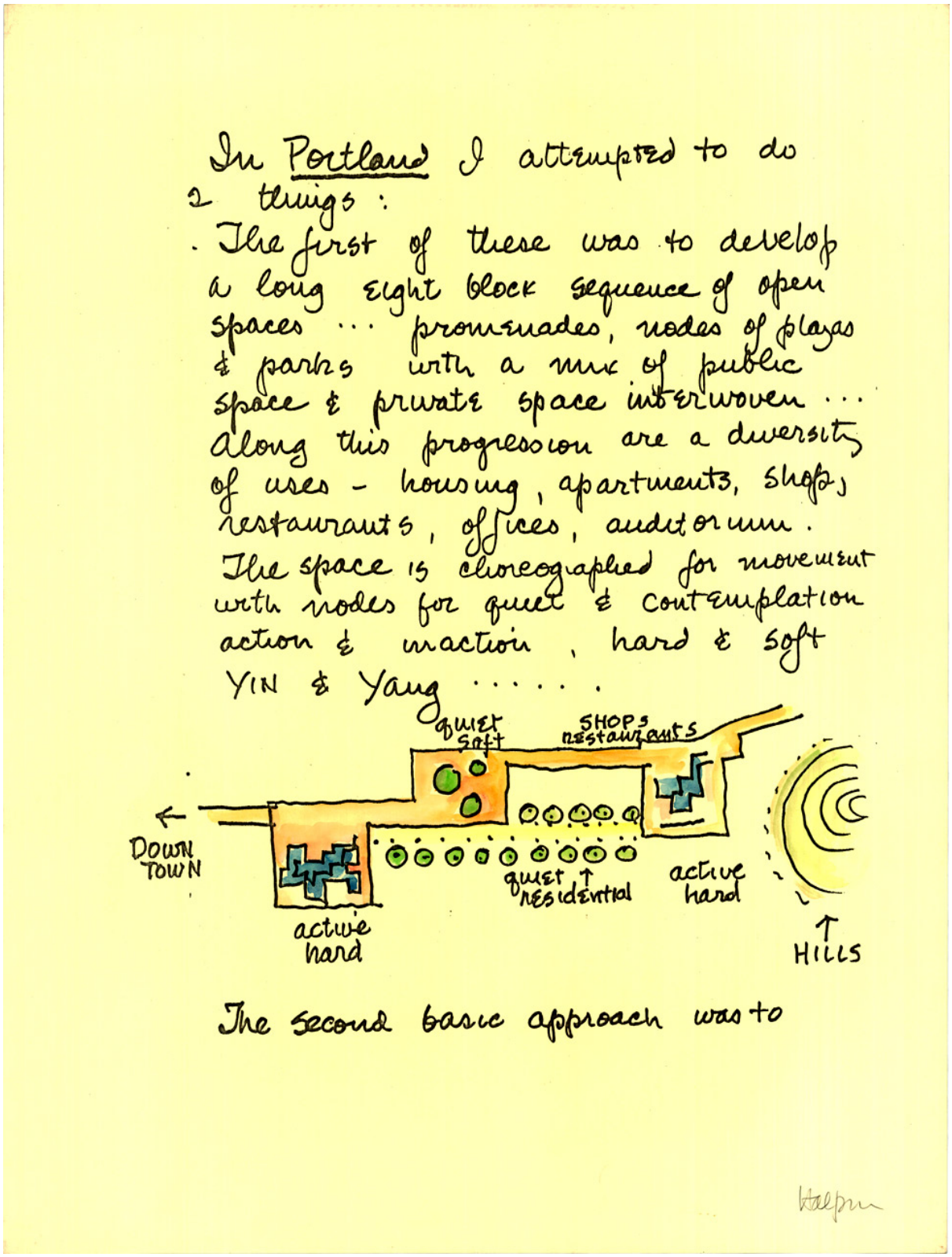


Figure 278: Lawrence Halprin, Portland Sequence, Oregon, Sketchbook 1962, pg 1**.**

Halprin creates a narrative with his text and this is referenced in plan. He employs his ideas about Choreographing the city - here hard and soft features are set out as complimentary.

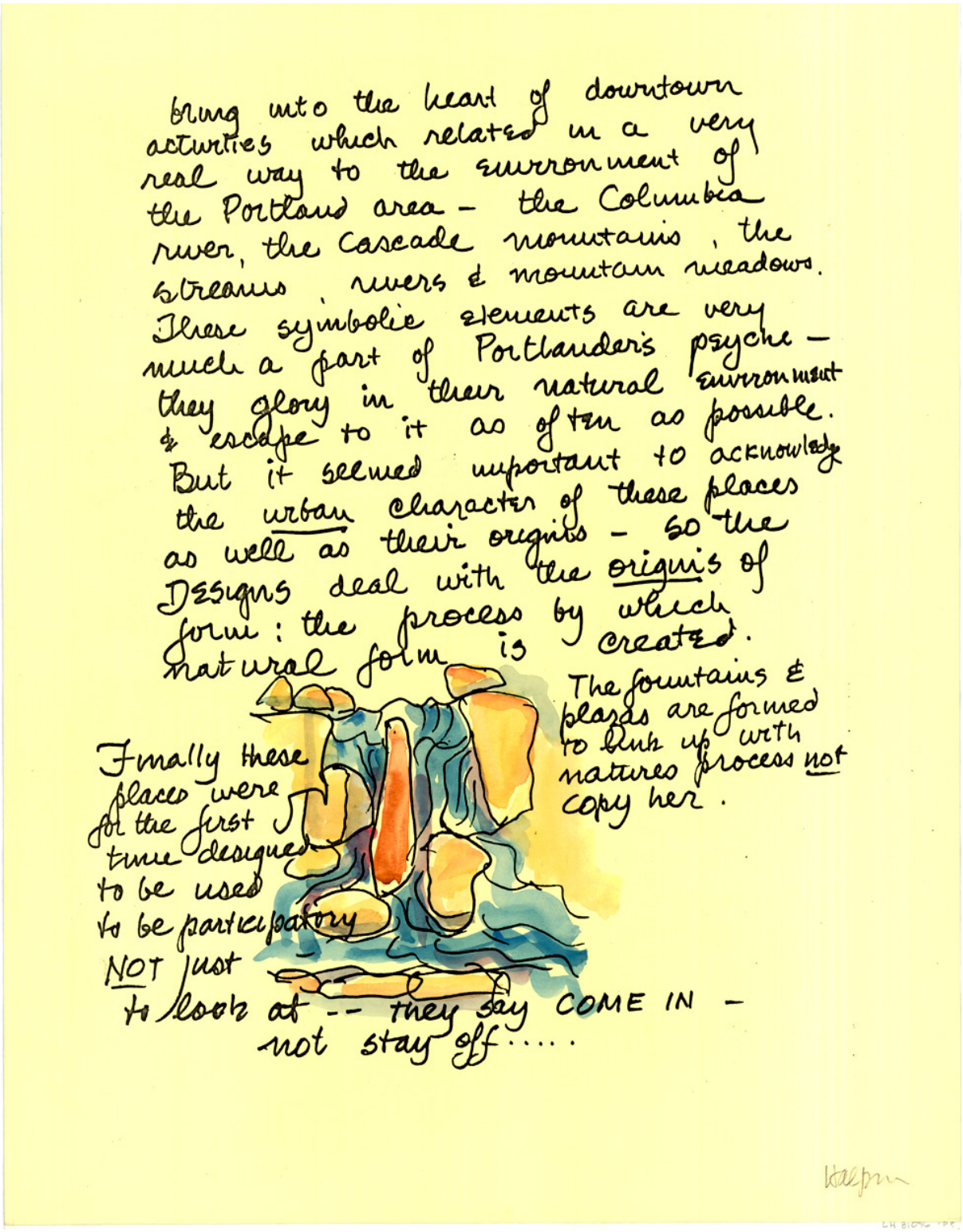


Figure 279: Lawrence Halprin, Portland Sequence, Oregon, Sketchbook 1962, pg 2**.**

Halprin studies the surrounding topology as a basis to find form, he looks for the origins for the new recreation areas, here deciding that such public space must invite particpation. Halprin is attempting to recreate natural process, not just formal re-plantation.

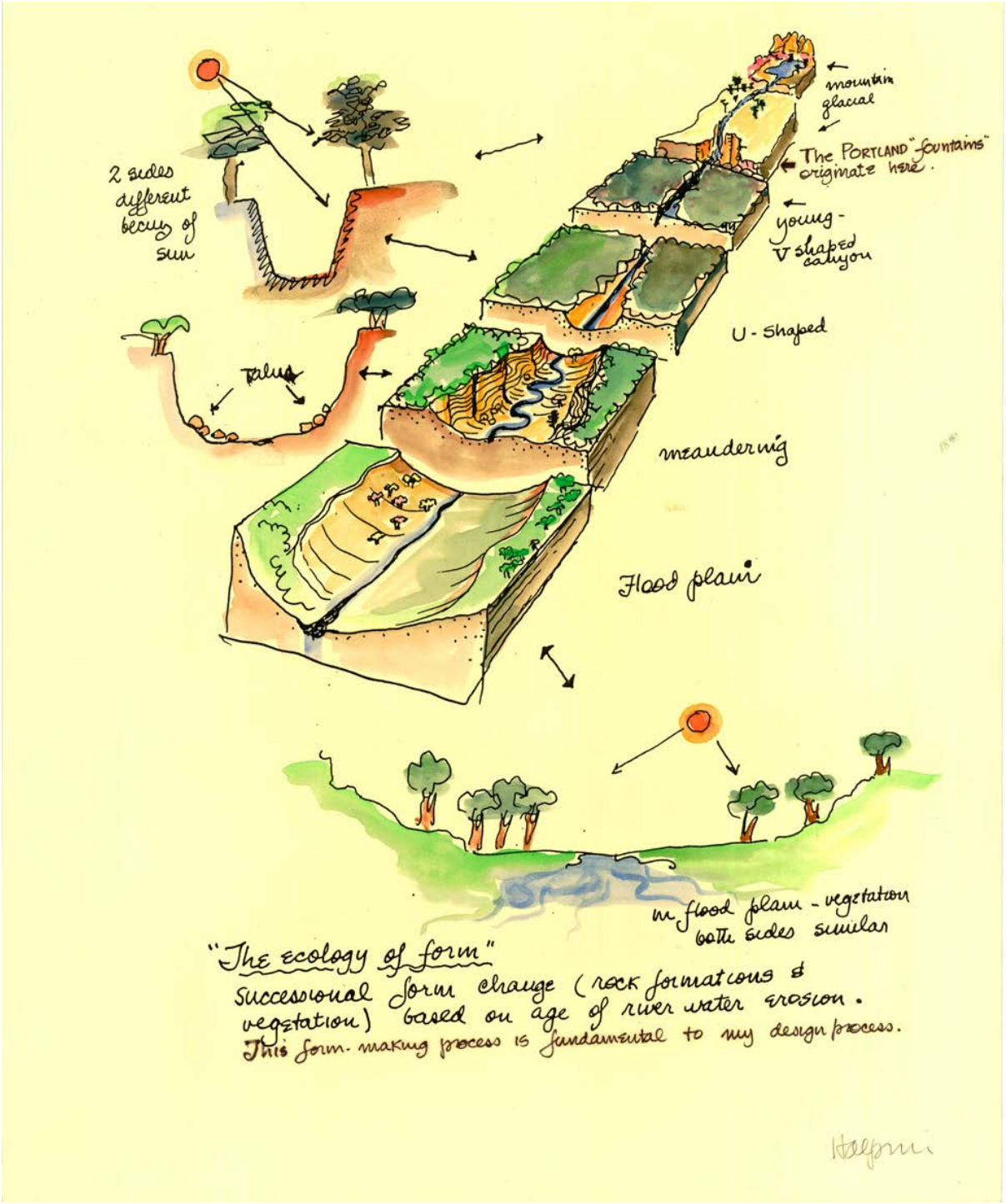


Figure 280: Lawrence Halprin, Portland Sequence, Oregon, Sketchbook 1962, pg 4**.**

Given Halprin's brief of the ecology of form[14], Halprin draws various cross sections to demsontrate the role of water in the shaping of the landscape, how the river creates its basin and sediments, how the geology forms under water currents. The drawing emphasises time

[14] "the science of ecology is a science of process, and … in ecology what is significance is not so much the understanding of what exists at any given moment in time, but that the existence is ephemeral and in constant motion, constant change" (Halprin 1970, p.98).

and process. The drawing helps Halprin define his design brief, that is the emphasis on which he wishes to work.

Figure 281: Lawrence Halprin, Portland Sequence, Oregon, Sketchbook 1962, pg 5**.**

Figure 282: Lawrence Halprin, Portland Sequence, Oregon, Sketchbook 1962, pg 6**.**

Figure 283: Lawrence Halprin, Portland Sequence, Oregon, Sketchbook 1962, pg 7**.**

Halprin makes studies in the high-sierra mountains - making studies of water movment and adding annotation. Pen and wash are employed and the swell and wash of the water is recorded.

Figure 284: Lawrence Halprin, Portland Sequence, Oregon, Sketchbook 1962, pg 8**.**

Halprin records the rock formations, using different colours to distinguish faces. He abstracts the form drawing simple flat planes supported by vertical faces.

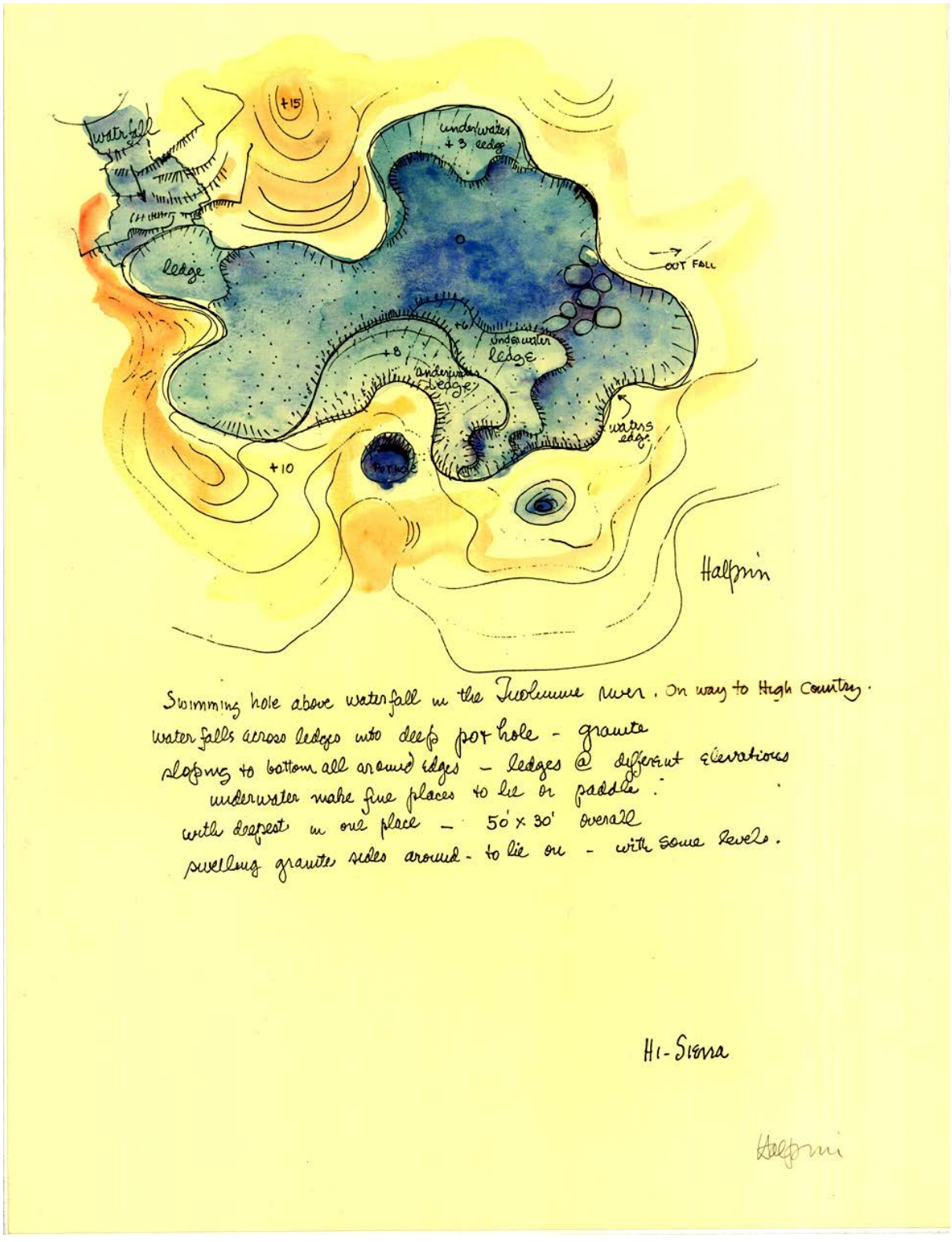


Figure 285: Lawrence Halprin, Portland Sequence, Oregon, Sketchbook 1962, pg 9**.**

Halprin makes a study of a swimming hole recording depth and drawing by way of contours. The Pen and wash again are employed, though succesfully to develop a sense of depth to the water pool.

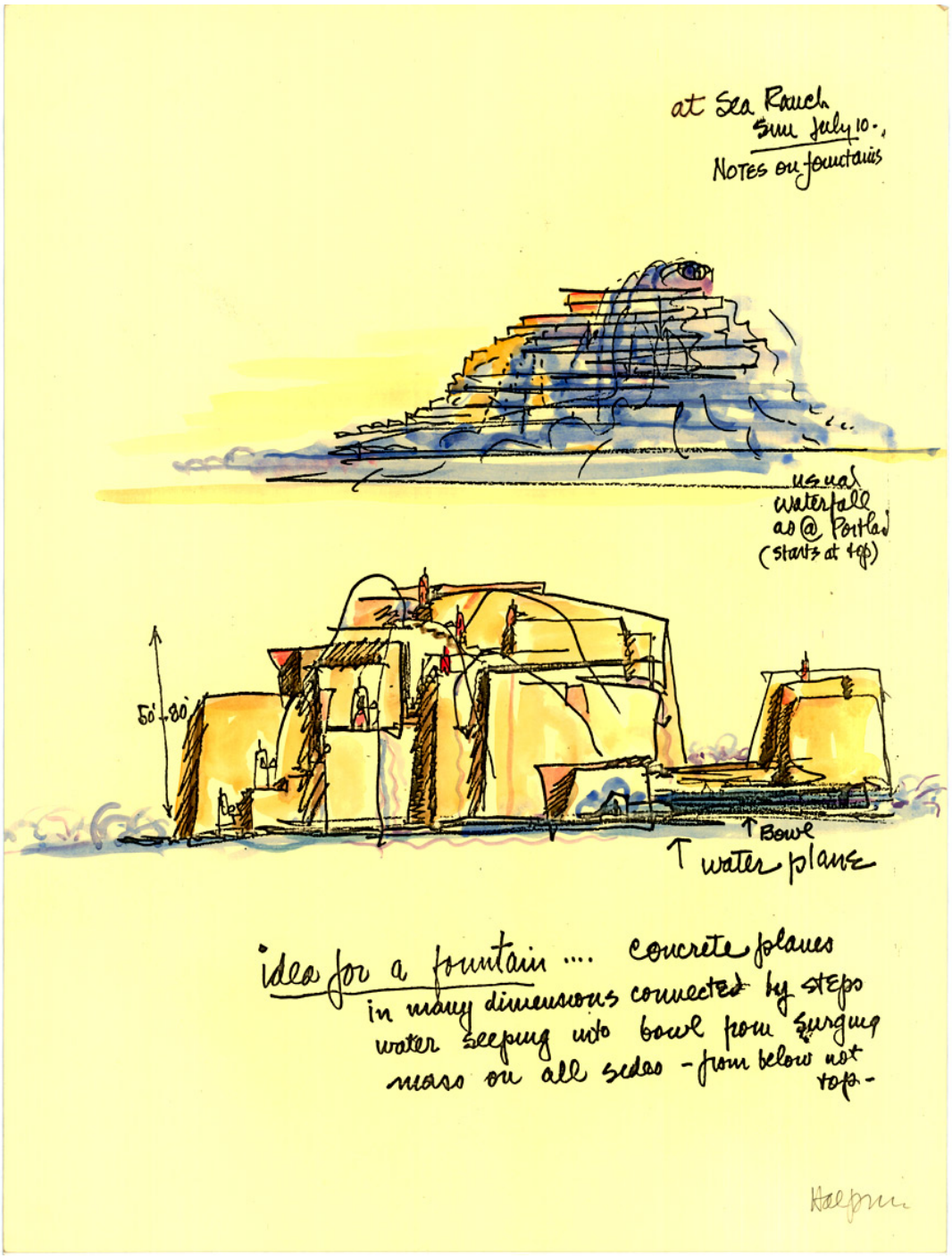


Figure 286: Lawrence Halprin, Portland Sequence, Oregon, Sketchbook 1962, pg 11**.**

The idea of erosion and rock form are used here as a basis to draw Halprin's ideas for a foundation. Water bowls and a plane are established siginfiying the catchment and change of flow. Concrete planes are drawn, creating a stepping sequence to the basin. The rocks are derivied from his abstraction studies and re-assembled.

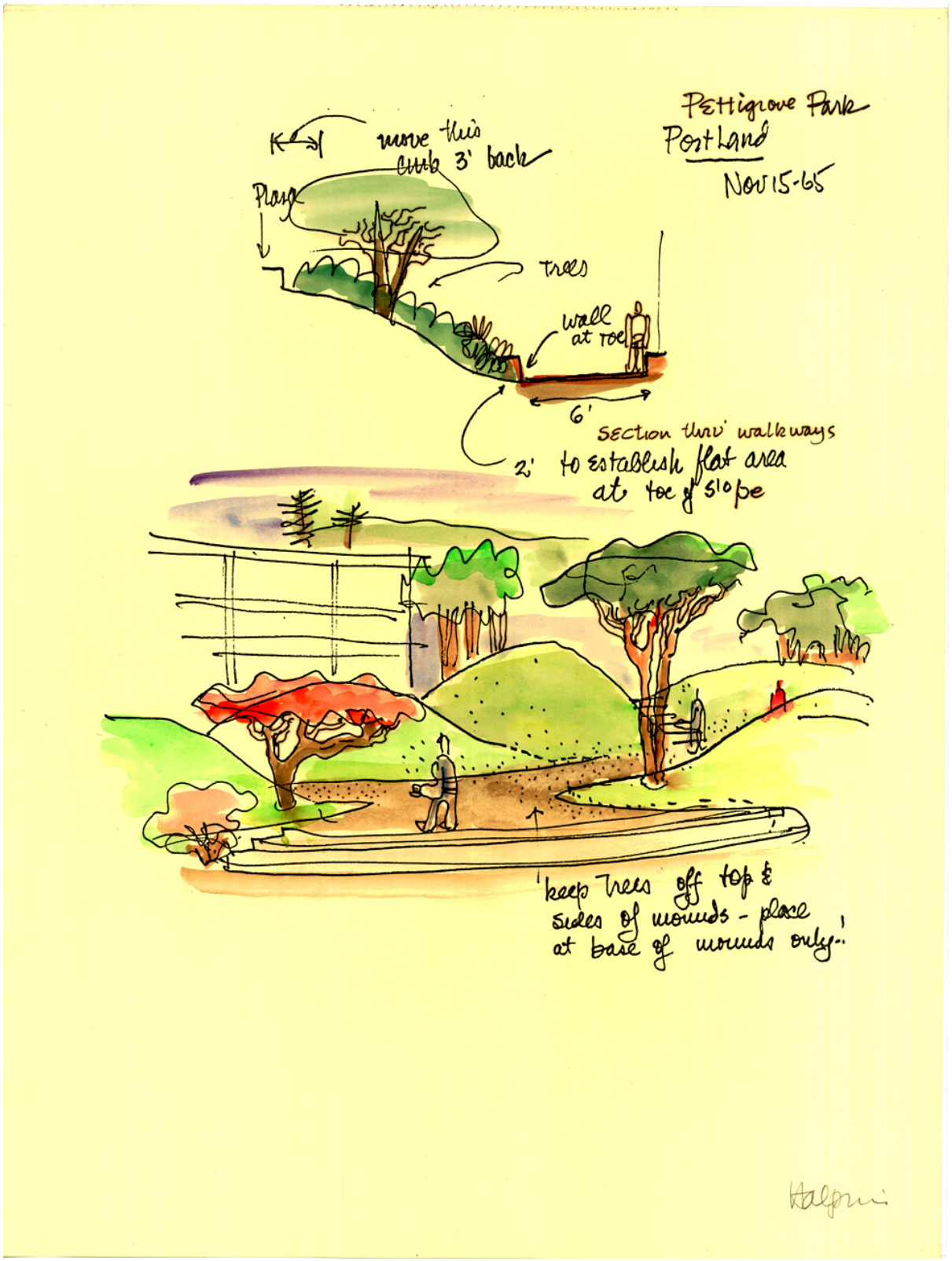


Figure 287: Lawrence Halprin, Portland Sequence, Oregon, Sketchbook 1962, pg 12**.**

In this study, Halprin draws his ideas for Pettgrove Park, thinking of the walker passing through and the visual phenomena that mounds provide. These mounds are collaged with the tree specification, to keep the trees clustered around walkways.

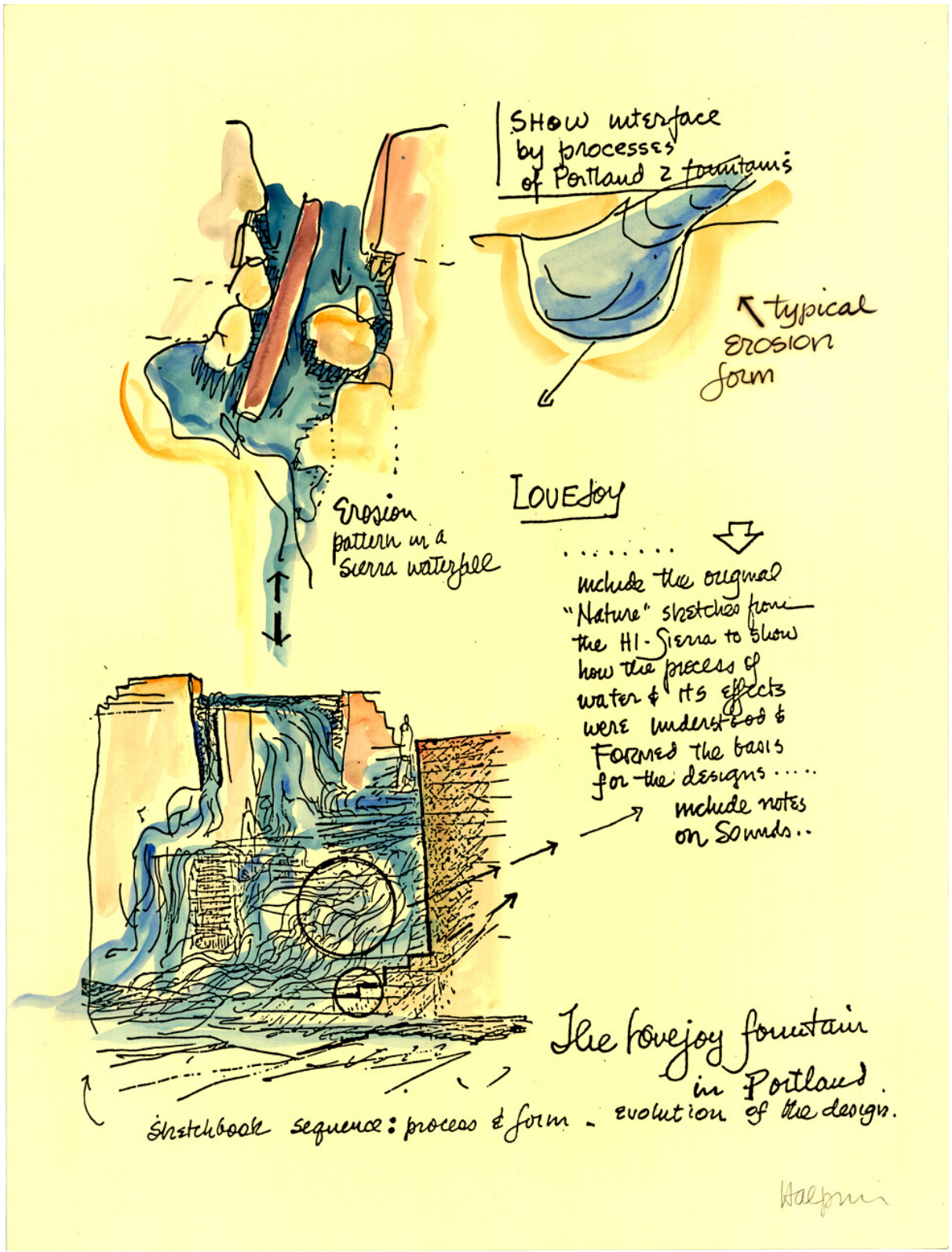


Figure 288: Lawrence Halprin, Portland Sequence, Oregon, Sketchbook 1962, pg 13**.**

The erosion sequence for the fountain is again redrawn emphasising the ecology of erosion and form. Here diagrams and a small perspective are assembled, a process of scoring, describing the elements and reference for the performance.

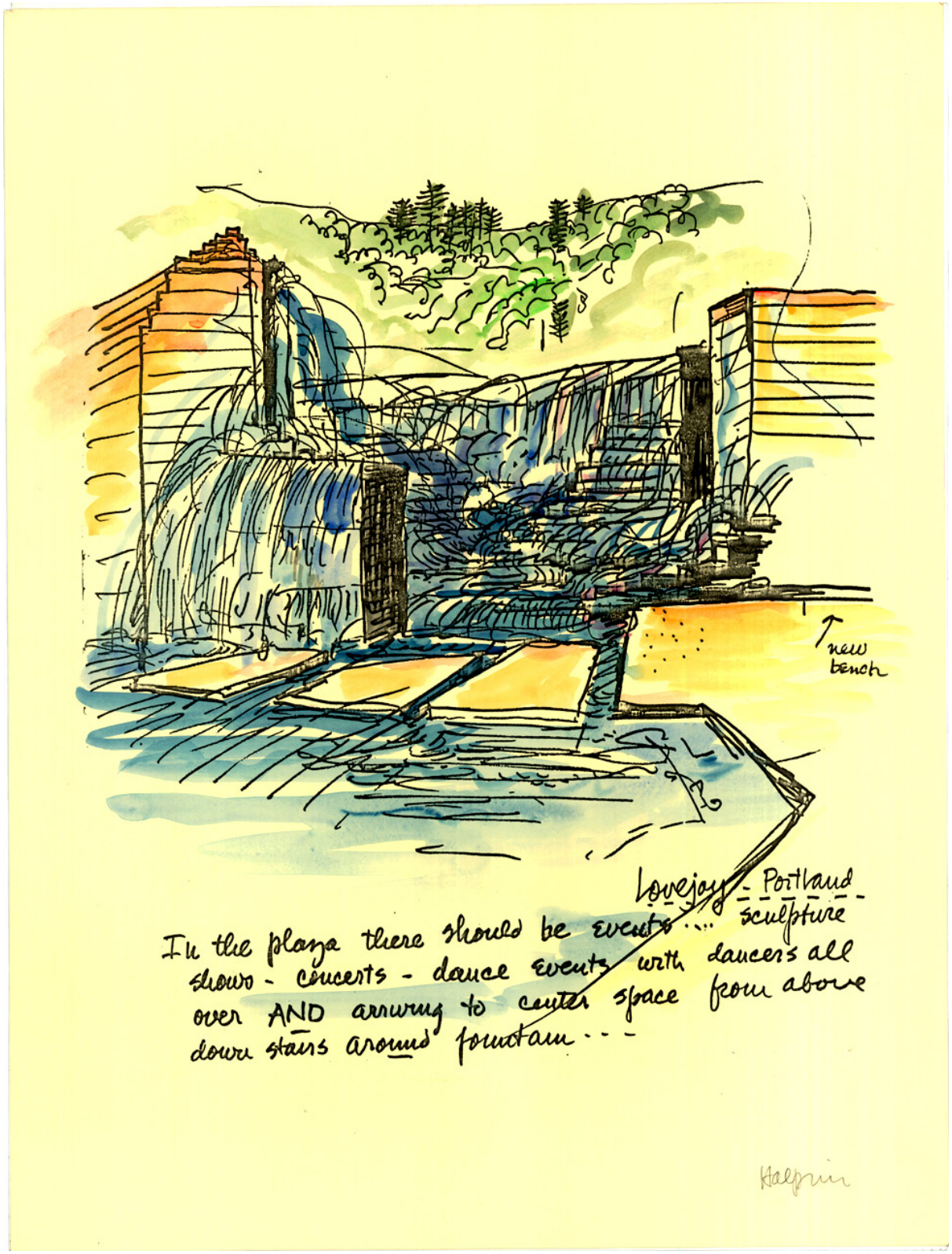


Figure 289: Lawrence Halprin, Portland Sequence, Oregon, Sketchbook 1962, pg 13**.**

The plaza basin is drawn, with stepping stones and a large table for Halprin's ideas of congregation and performance. The landscape is intended to become the supporting frame for human activity and play.

At the opening of the Keller fountain, Halprin's view of open spaces as a theatre of operations materialised, allowing complex rhythms of water and peoples' movement to intersect. A formal opening was disrupted by members of the public jumping straight into the fountain, as the historical commentaries show,

> ... it was more suited for a playground or a recreation area than for a State Capitol Campus[15] - Lt. Governor Cherberg
>
> Lawrence Halprin - It encouraged my intuition. A waterfall is not intellectual.
>
> Anna Halprin - The thing that is so nice about a waterfall is it is out of control. It's spontaneous. (Leigh Brown 2003)

Halprin and associates developed a long block series of open spaces, interwoven between public and private, all with a variety of uses - parks, shops, restaurants, apartments - a choreography of the area allowing mixed use (Halprin Sketchbooks (Halprin 1972)). Lovejoy Plaza (1966) named after Asa Lawrence Lovejoy, first owner of the Portland townsite, was developed first, then the Keller foundation (1970), and named after Ira C. Keller (1899-1978) chairman of the Portland Development Commission (1958-72). The Keller fountain was designed by Angela Danadjieva with Soviet constructivist influences[16] **Figure 11 - 22.**

Figure 290: Keller Fountain, Portland Oregon, Photo Charles Birnbaum, courtesy of the Cultural Landscape Foundation, 2009. http://tclf.org/news/pressroom

[15] Washington State Office of Archaeology and Historic Preservation and the Washington State Arts Commision, Water garden, Lawrence Halprin and the East Capitol Campus, October 2004, p6.

[16] "There were job files that included preliminary and working drawings (along with before and after photographs of the site) and contract files that usually included informal contracts and correspondence… With the exception of grading, the office did do careful working drawings. These always included a layout plan, a planting plan, and pages of details for benches, pavements, walls, fences, and steps." (Walker 2013, p.31)

The work made conceptual reference to the area around Portland, the Columbia River and Cascade Mountains, developing a water garden and series of modernist concrete terraces at various irregular elevations, strategically deep at each side to which there was an edge and drop. This removed the need for a safety barrier, allowing flow to a more contemplative basin below. The work was influenced by Halprin's own sketches from hikes in the high sierra, and aims to "reveal a relation to the rest of the city, emphasising movement through the malls" (Halprin and Burns 1986, p.23). As Mark Treib writes, Halprin:

> sought to bring the experience of the rock and water of the mountain landscape for those dwelling within the brick and stucco of cities—so that they could share the experience of nature, even if in a fabricated form (Treib 2013, p.23).

The fountains have not been without maintenance issues as in the life of any park, however such work has become well known in design and the publics' understanding in that the area acts as a playground, a place for congregation, and what was described as a place for 'hippies' and all when it was unveiled. Such work owes this in part, to the use of scoring movements through the space, but also to Halprin's graphic ability and perception of nature as a diverse collection of rhythms. These are two operations that enabled the design, first the sketches to understand nature's processes and then the transplanting of these to another area in abstract form, which in some sense was part of a wider modernist landscape response (Treib 2007). As Halprin states, his "sketches, are an internal form of making decisions"[17] and in his water studies they offer interesting insights into both his recording and understanding of sites. The sketches show boulders, the shaping movement of the stream and dancers performing on the lower basin. The sketches oscillate and concern themselves with "urban characters of the places" (Halprin 1972) the origins of natural form: the process by which natural forms are created. Thus, the site is a reflection, mediated through drawing, of ecologies, flows, erosion, shaping and event. More of an internal mode of representation, rather than community based participation, these works however still fit within his process -orientated approach and have been integral in the successful production of these areas (John-Alder 2012).

[17] Interview with Lawrence Halprin, Oral History Module, Culutral Landscapes Foundation. 2011 www.tclf.org

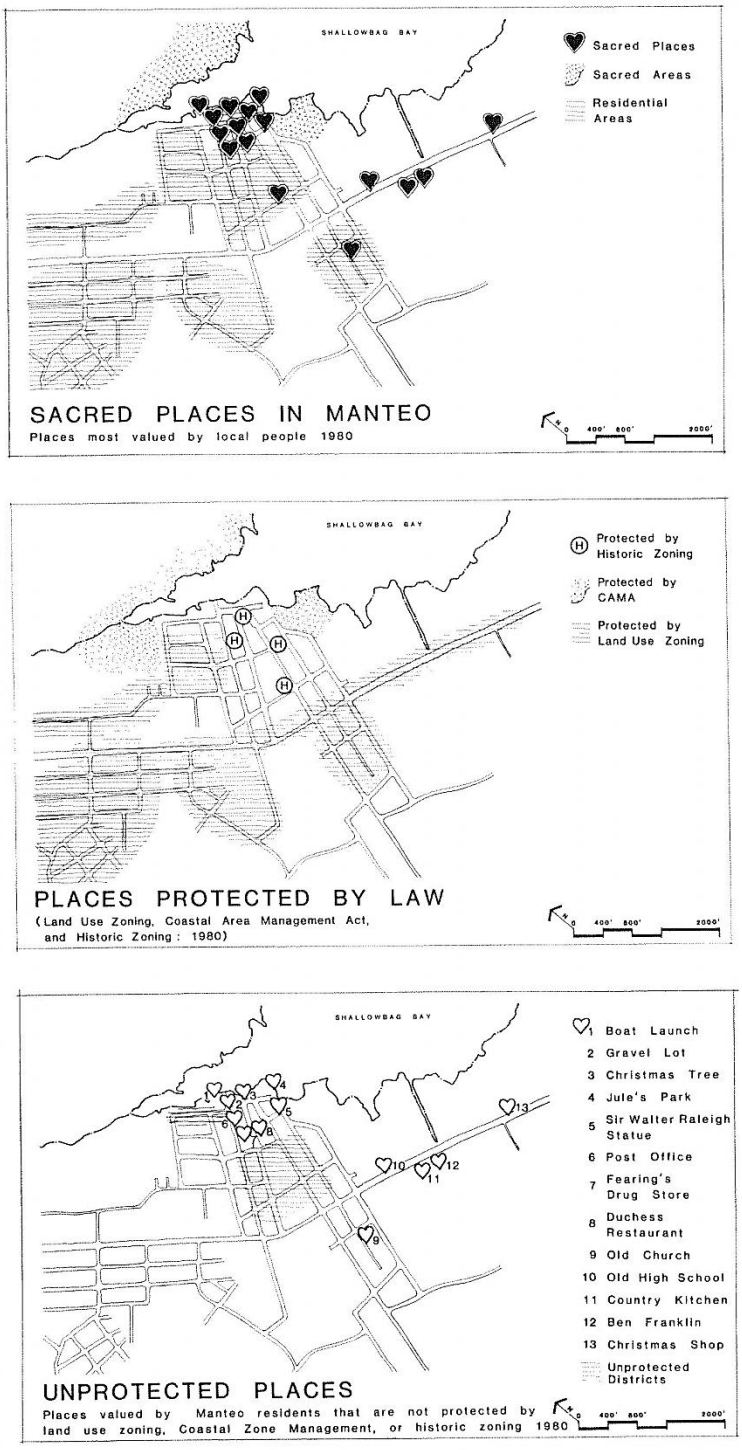


Figure 291: Randolph Hester, Mapping Manteo, 'Sacred Spaces' Method, 1985.

The second approach in this work is scoring, and data collection from Motation studies was radically different. This method was an evidence collection exercise to validate design, but it was more fundamentally a body centred analysis of the understanding of the eight blocks.

The method envisioned a sequence for movement; it created fixed objects for human activity, activity which was not prescriptive (Walker 2013). For Randolph Hester, the landscape architect and sociologist, drawing is but part of a process of 'representational acts of representation'. Hester uses drawing and scores for an ecological democracy 'representative representation' which is termed government by people emphasising direct, hands on involvement. Drawing and scores are used by Hester towards creating actions guided by understanding of natural systems and social relations locally and wider structures (Hester 2012; Hester 2010; Jr 1984).

> By "representative representation" I refer to the way drawing engages the public through grassroots democracy for designing open space, neighbourhoods, cities, and regions. This requires representing both the public and the landscape. Face-to-face collaborative drawing provides the political representation. Graphic depictions provide what we professionally call "representing the landscape." The complex combination gives us a special way of drawing: representative representation (Treib 2007, p.97).

When Hester was asked to become a community designer for Manteo, North Carolina **Figure 291**, Manteo faced deep issues having had a freeway bypass the community (Seamon 1993). Hester worked with the community through workshops and walking tours to identify what he calls 'sacred spaces'[18], which is the identification of important social patterns and areas, and the results were collated into the drawing. There are those which are protected by law, and the places which the public hold important to in their everyday life, these places are termed 'Sacred'. These areas were not just monuments but more localised places such as post offices, grocery stores or libraries. To address unconscious feeling of place by the residents, Hester conducted behavioural mappings and collated the sketches giving a cultural mosaic. What Hester found is what could be related as Spatial Stories[19] articulated by De Certeau (2011). Hester notes, that "daily ritual was place specific, and the cultural dependence on places seemed more widespread than people had reported" (Seamon 1993, p.273). These results were then advertised in newspapers to residents and

[18] The drawings resulted from workshops which explored a number of participant's views and mental maps of places, drawing was used as a tool to elaborate, clarify the space. "Drawings done after a hypnotic visualization are amazingly clear in dimension and in more ephemeral aspects like light quality. These drawings help people to re-visualize values embedded in place and create nurturing, supportive designs. These remembered places allow us to be much more critical and realistic about how big a site is, what fits, what doesn't, when a site is too crowded and the impact of a low tree canopy versus a tall canopy. The informed design discussions that result could never happen without the detail of precedents visualized and drawn. This is particularly useful in determining what people mean by 'natural,' a key concept for landscape design and one that has many abstract interpretations. Drawings make the abstract value concrete enough to guide design" (Hester 2004, pp.190–191).

[19] De Certeau investigates how everyday 'tactics' of individuals form a subversive response to 'strategy' (power structures). In the Spatial Stories chapter, narrative has the capacity to connect sites by selecting and linking them into an itinerary. This process makes it a spatial trajectory.

the residents were asked to rank the more important or sacred and return the survey. Thus, the information could be used to feed planning and design responses for the re-invigoration and metamorphosis of the community. What Hester develops through the ‘Sacred spaces’ process is a phenomenological and ecological process for landscape. In comparison, to Halprin, Hester’s work develops design activities conducive and interactive with societies at large, and fits with the general theory from Lefebvre of creating a ‘right to the city’, of inclusive democratic shaping of urban centres and the research of everyday life. The possibilities for urban scoring have real applicability in addressing landscape architectural representation interested in multiplicity, embodiment and agency.

Figure 292: Lawrence Halprin, Extract from Notebooks, Lawrence Halprin Archives, Architectural Archives of the University of Pennsylvania.

Figure 293: Lawrence Halprin, Extract from Notebooks, Lawrence Halprin Archives, Architectural Archives of the University of Pennsylvania.

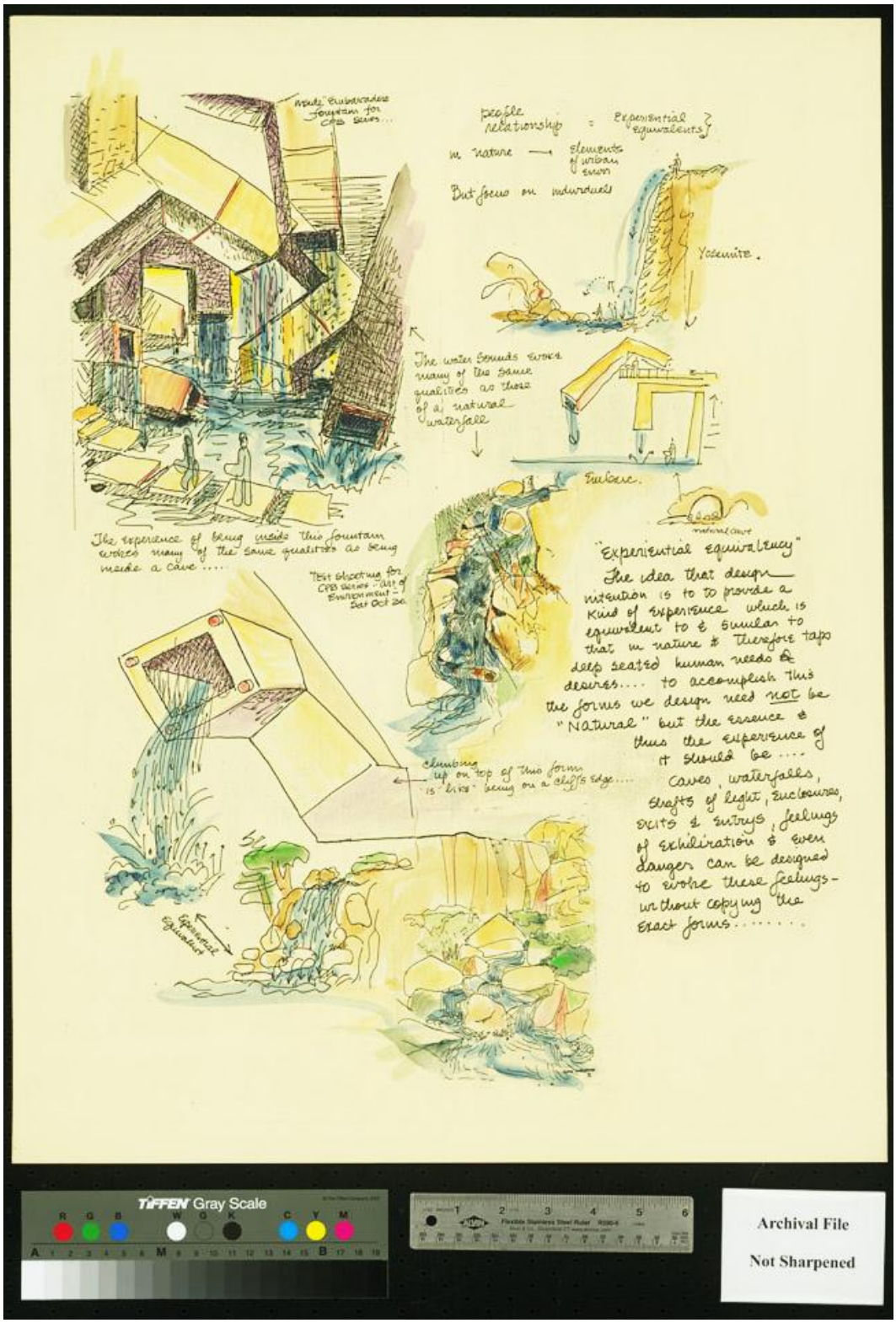


Figure 294: Lawrence Halprin, Extract from Notebooks, Lawrence Halprin Archives, Architectural Archives of the University of Pennsylvania. The drawings illustrated are copies made by Halprin from his notebooks for a travelling exhibition. The images were enlarged (photocopies on watercolour paper) and hand coloured by him sometime in the late 1980s or early 1990s. These are original drawings in that they are signed and coloured by Halprin.

Such success of production in the park is more telling in the public consultation on the future of the design, with the majority of the community in 2004 wishing to retain '*The Water Garden'* even without water being restored to the fountain! Such a design can be traced back to its conceptualisation, solidly and sensitively researched, in which 'drawings work out'. Similarly like his scores, Halprin's designs were in a constant state of becoming, ever changing, sometimes negatively as in Freeway Park. In the case of Freeway Park a renovation took place as plants and tress matured, giving the sense of a shaded unwelcoming parkland by its visitors (Robertson 2012). This restoration brings out tensions between designers intent and natural processes and which of these should be maintained. In this case his open score went beyond what the public wished. Halprin was aware of such activity in time as he states,

> Since movement and the complex interrelations which it generates are an essential part of the life of a city, urban design should have the choice of starting from movement as the core - the essential element of the plan. Only after programming the movement and graphically expressing it, should the environment—an envelope within which movement takes place - be designed. The environment exists for the purpose of movement (Halprin 1963, pp.208–209).

That movement appears in the environment also, which in turn changes human movement, in the case of Freeway Park making it an area to avoid; "plants are the part of the landscape that is never static, always in the process of becoming something else" (Robertson 2012, p.79).[20] Thus the ability to effect rhythms of a thing in transition becomes an issue, setting scores does not necessarily resolve all of the issues for landscape architecture. The complexity of rhythms means that sometimes these are oppositional. The Rhythmanalyst analyses the rhythm of the house or street, they listen to the repetition of everyday life, putting the body first as the mode to investigate rhythms. With Halprin the body is placed as the mode, though emphasis is placed upon the analysis of rhythms; a pragmatic usage to design space. Lefebvre positions rhythmanalysis as a new mode to replace psychology (Lefebvre 2004, p.XiV), and Halprin Motation as a mode in which landscape architecture becomes performance. Nethertheless both work and emphasise rituals, movement and activities in urban quarters, seeing that such understating of space is fundamental in order to improve it; they recognise time, duration and activity in the city. To Lefebvre no camera or image can capture the rhythms of the street, it requires the full senses available (Lefebvre 2004, p.36). However, Halprin goes some way to counteract Lefebvre's assertion; he creates a system in which to record these observations.

[20] Such a notational system was used within the Landscape Architecture program at Manchester School of Architecture, and will also feature in a summer program 'design for desertification' in which his scores will be redeveloped for the purpose of rural site analysis surveying environments and human movement of rural inhabitants in the issue of desertification of the Mediterranean region.

Halprin's drawings and activities attempt to re-unify and involve in a creative process for new urban conditions, which makes me consider him a type of uncompleted rhythmanalyst, one in touch with presence, one who draws and conveys the everyday and one who involves community in drawing.[21]

Seen in this way, Halprin can be indicative of the capacity of the agency of landscape representation, both in its ability to decode space and in its ability to collectively find common ground and difference in landscape perception. Such work removes the need of *Blood*, an expressive act of drawing, as the performance is set within a symbol system for operation. The *Trade* of the work, rests on its ability to use a common language, though it does require the learning of the language in order to communicate. The authority of the drawing is focused on perceptual experience, and through repetition has the ability to hone the users ability to operate in this way. Thus, the possibilities for scoring in landscape architecture, alongside heuristic approaches as previously seen, whilst tangentially operating at a large scale creating open sequences, as in the case of Milton Keynes, develops a theatre of operations. This is also similar to the ideas found in DIY architecture manuals in which the city is critique and treated as a laboratory. These case studies develop a framework in which to truly reinvigorate and innovate the current representational landscape architectural paradigm which it practises. According to Kyle Brown and Tori Kjer

> If landscape architects are going to respond to the needs and concerns of marginalised and informal populations, they not only need theoretical perspective but also a practical tool kit of methods and techniques for appraising local conditions and empowering participants (Brown and Kjer 2007, p.34).

This concern of practicality can be evidenced by the agency of *Motation* for Portland. Halprin's work is by no means the palliative for the complexity of representing landscape phenomena. Though it is more inclusive, the designs to which the process contributed are still testimony to that in the public's appreciation, even when some of his works are in disrepair. Halprin's role as director of the scores is also open to question and his ability to tackle social issues and concerns has also been critiqued (Hirsch 2012). The positive valence of landscape architectural scores and the developing methods of heuristics discussed previously do not make assumptions on the spatial practices of its users. Rather the implications in heuristics and Halprin's scores and Lefebvre's work not only involves a

[21] Extensive discussion of Halprin's contribution can be found in (Aronson 2013; Halprin 2011; Halprin 1997; Halprin and Burns 1963; Helphand 2012; Hirsch 2012; John-Alder 2012; Walker 2013; Treib 2013; Rainey 2012; Jost 2010).

politicisation of landscape representation, but also an engagement with the users of that space, thus the ‘everyday’ research is the positivity for enriching landscape production as a result of understanding the process in which drawings are made.

Chapter 7.1 - Conclusion

The relationship between conceiving landscape, drawing and designing, and producing landscape architecture is a complex process. The thesis examined relationships between representation and production of landscape and established a positive hermeneutics based on Calvino in which drawing and its many manifestations could be understood. This process to the author is cyclical; drawing both evaluates and communicates ideas *of* sites and also communicates designs *for* sites. The thesis sought to address this cycle by creating thematic areas of **Context**, **Case Study**, **Pedagogy**, and **Heuristics and Scoring**. From this analysis emerged a number of drawing methods which can create a positive valence for landscape architectural production. These two intertwined research questions and the resulting discussion established two axes to address *Drawing in Landscape Architecture its Fieldwork, Poetics, Methods, Translation and Representation*.

A brief discussion of landscape architectural history of representation demonstrated the role of revision and experimentation at different periods and showed how the drawings embodied cultural understanding of landscape. This foregrounded a visual study of twenty two perspectives from various scales and firms, published in professional magazines as exemplars in which landscape idealism was prevalent. These works supported the argument of a contemporary dominant representational paradigm in landscape architecture. This pervasive idealism in some cases treated different locations with the same finish, without reflecting the complexity of landscape. The works functioned as a homogenising force and between the competing companies certain treatments and compositional standards emerged. For example, the images featured figurines in grayscale and the use of birds to emphasise perspective and distance on the picture plane. Moreover within the perspectives, there was an overall static idealism, in which all of the flora and fauna were immaculate and the weather season was always in perfection. A sun kissed landscape featured, with little cloud. Of course the practices have an economic imperative to secure work and function, though in light of the brief history discussed, the visual essay established a substantive argument to address its dominant representational paradigm.

This paradigm was also spoken of in James Corner's work in *Word and Image* (1992) and later in *Recovering Landscape* (1999) which marked out a study in which Corner called for innovative modes of representation and experimentation. Corner established three principles and difficulties of drawing for landscape architecture; 1. The designer's indirect and detached, remote access to the landscape medium, 2. The abstractness of drawing in

relation to subject i.e. the actual phenomena of landscape experience, 3.The function of drawing and its generative role. However, this well-constructed argument did not substantially mark out a mode of practice in which to perform these operations which the thesis addressed.

Developing a landscape drawing hermeneutics based on Italo Calvino's *Invisible Cities* (1997), the terms of *Blood, Trade, Authority* and *Agency* were developed. These were marked out as a framework in which to evidence and respond to Corner's call; *Blood*, articulating abstract thoughts, giving expression to cultural understanding of landscape. *Trade* in which the landscape architect or student attempts to convey and communicate their understanding of the site as seen. *Authority* as the form of learning that the tutor attempts and the student practices to suggest ways in which both the translation and communication of these processes could be edited, selected and rephrased. *Agency* of drawing is the recognition of the social relations that occurs from design conception to production as Calvino states; "spider-webs of intricate relationships seeking a form" (Calvino 1997, p.76). Agency is the resulting action from the other forces; *Blood, Trade* and *Authority* which are at work.

The notion of *Agency* was particularly important. However, before populating that operation, the role of *Blood* and *Trade* needed expansion and this was conducted in the research exhibition *The 43 Uses of Drawing* (2011). In the work of Dominic Cole, we could evidence a type of *forensic drawing* in which historical plans were overlaid upon a topology, this allowed a decoding of site and the intent of designers over the centuries. This overlay then became the overall masterplan for action on the site. In the work of Mario Botta, we find Botta drawing as *construction* - materials and relationships are marked out with various hatchings on the paper surface. These drawn materials are then subject to lighter areas signalling daylight, this allows the architect to explore light and material conditions in an abstract way, to 'form find'. The exhibition allowed the exploration of a number of practices and approaches though did not allow the exploration of the works *Agency* to a full extent.

Henri Lefebvre's work *The Production of Space* (1991) was discussed in order to contextualise the *Agency* of drawing. Lefebvre writes capitalist spatial histories in which the conceived space bears relation to the social space, thus the renaissance city informed by platonic and cosmological readings, builds itself according to sacred geometries. Modernist space separates abstract space and social space creating a technocratic system and (Capitalist) dominance over its citizens, through prescriptive urbanism which leads to alienation and dis-attachment. Lefebvre's project is to re-unify space, which is the

conceived, perceived and lived urban space. By doing so Lefebvre hopes to re-invigorate everyday life with new social relationships, providing a 'Right to the City'.[1] This large scale philosophical project is useful to trace the *Agency* of drawing on the creation of these spatial histories, the American Sublime painters were shown as agents who created a sign of nature. These works were an antithesis bought by city dwellers idealising nature, seeing landscape in those pictorial terms. Frank Lloyd Wright's drawings embodied his ideas on 'Organic Architecture', a relationship between built form and site. In this case that relationship was the primary vehicle and the drawings were only illustrative of this phenomenon. Buckminster-Fuller's works attempted to define a re-orientation of our image of the world for the goal of world peace. This *Dymaxion Map* proved influential in ideas of connectivity from energy structures to participatory simulation. The notion of everyday life would prove an interesting point of enquiry in relation to heavily contested landscapes and urban zones.

The map, one form of representation, has proved useful in attempting to cover these questions of what is known in its use, its translation or agency. More usefully this explanation offered ways in which landscape design, contributes towards 'everyday life', and a greater liberation of the city and engagement with how these areas are programmed i.e. community led design. Thus the positive valence of landscape drawing has implications for everyday life and responsive design. With this repositioning of mapmaking and instigation of poetics and narrative, i.e. maps of metaphors, then by implication when producing and drawing maps there is a time to represent. This re-orientation was important as the map could be located as a transitory work; *Trade*, carrying the message for performance whilst also describing that very ground *Agency*.

The discussion of the London Southbank site proved fruitful in the application of radical mapping practices. The site had been chosen as it continues to be a contested space, and has undergone transformation at key periods in British architectural design and continues to provoke controversy in further developments. The site was home to alternative sports and was in stark contrast to the gentrifying development taking place. Southbank was an excellent case in which to further develop De Certeau's theorisations of uses of space, walking, appropriation, tactics and strategies, and to analyse what is liveable and familiar and to evaluate drawing within such a context (De Certeau 2002). The work demonstrated

[1] That right, he asserted, was both a cry and a demand. The cry was a response to the existential pain of a withering crisis of everyday life in the city. The demand was really a command to look that crisis clearly in the eye and to create an alternative urban life that is less alienated, more meaningful and playful but, as always with Lefebvre, conflictual and dialectical, open to becoming, to encounters (both fearful and pleasurable), and to the perpetual pursuit of unknowable novelty. (Harvey 2013, p.x).

an a priori[2] environmental determinism in the work of Space Syntax and Rick Mather Architects as well as in FCBS, for a privatisation of public space and creation of mass retail. The study showed that a number of issues in the design strategy and the scope of enquiry for the Southbank Site caused particular frictions to alternative sports users who did not feel consulted. The 'everyday' is arguably an important area for enquiry in the understanding of the use of our built environment. The involvement of wider groups at strategy level is interesting; however the Southbank is still a site undergoing rapid transformation. What developed from the discussion is that a study of a site and identification of the agency of drawing would have broadened the conceptual base of design strategies which would have levitated such criticism of the urban design. The Southbank demonstrated the role of drawing to represent social practice; however the translation of drawing to built-form was still to be defined further.

As one of the biggest and earliest landscape architecture projects in the UK, built from 1967 onwards, Milton Keynes was chosen to demonstrate this translation. It was through the application of design diagrams that an open strategy for the town could be envisaged, these were supplemented by storyboard perspectives giving character to each grid square of proper character and density. It was from these storyboards that local identities could be thought of and designed. The design of Milton Keynes showed that whole spaces were adjusted to new axis, which was only achieved through the translation of drawing, carrying mathematical precepts to built-form, as in the City centre. This was evidenced more so in the way that Helmut Jacoby's perspectives were viewed as authorative documents, both demonstrating quality of design, due to Jacoby's own acclaim and the ability of his drawing technique to carry information 'as if it was real'. The utopian vision for Milton Keynes of course became narrowed with the reality of city formation, and economic downturn, but it still retained a space to breathe. The insistence on flexible urban textures in which new social relations worked out, still proves a suitable response to the whole endeavour. The designers were involved in place making, and as such, ideas for landscape were wild and unthought-of, *CMK Park* (1975 - 1976) and *Cowcommon Canyon* (1973) showed the agency of drawing to deal with design issues such as reclamation of quarries and the use of spoil from road construction. Some of these works were abandoned on economic grounds. Explicitly the drawings allowed a free play with form in order to instigate *meaning* on the terrain. With the new town, came the responsibility to make 'places' thus sculptural and spiritual geometries of ancient England became revised and placed in the MK green space; thus the *Agency* of

[2] A central concern for landscape architecture should be the extent to which they view their work as maintaining and/ or reinforcing existing social/power structures within society, or transforming social/power structures to address inequalities and injustices. (Brown and Kjer 2007, p.33)

the drawings was the attempt to create *meaning* in landscape, but also design a space for alternatives to be accommodated over time.

This study led to the question of how these ideas emerge, the designers of Milton Keynes were educated in certain values and precepts and as such it was worth inquiring into Landscape architecture education, to see how students draw, and for what purpose. The analogue typology developed by Sobell and I showed that drawings can be understood in their ability to describe process, and demonstrated a variety of media to achieve it. Pedagogic theories supported the argument that drawing reflects cultural values and professional expectations. The wider educational theory of 'deep level' learners (Biggs 2003) correlated with extensive drawing practice by students, the drawings helped them engage with landscape and its complex phenomenon, demonstrating deeper engagement in the subject, it was through immersion in the landscape that it was possible to gauge, on paper, the mode of their interpretation. That perception and immersion of environment was cognition of landscape. It was through a phenomenology, reduced by the act of drawing that proved useful in analogue works. This phenomenology was less prevalent in digital processes. Whilst digital drawing allowed a collaging of ideas and assimilations, it was removed from the analogue immersion, thus the connectivity could prove difficult in the fact that the work was a simulation which had little contact with reality. Given this connection issue a manifesto was formed of spatial the practices of Pyscho-Geography and Superstudio which was synergised with the computational invention of Sketchpad, GML and GPS. These differing works each have innovative approaches, and in combination help to address the dominant representational paradigm previously mentioned, but more importantly situate digital landscape drawing more closely to the subject.

Moving forward the importance of the *Agency* of drawing is also to include *vision*. The discussion of futurological drawing is on the basis that, whilst drawing must be instrumental in communicating landscape design, such instrumentality does not mean in any terms, the scaling, removal or reduction of alternative ideas for landscape. Seeing drawing as a heuristic, as a problem solving device, the work of Wolf Hilbertz was discussed and the visionary drawings that were produced developed into the mineral accretion technology Biorock. This technology allowed the repair and establishment of coral reefs preserving marine ecosystems. Such re-empowerment of communities through the use of Biorock through restoring fragile ecosystems, allowed local management of its resources, changing scales and relations towards a one and all activity – mitigating global warming, rising sea levels, diseases (in corals) and costal pollution. Wolf Hilbertz's work embodied his philosophy for evolutionary architecture and this was seen in *Autopia Ampere* (1975-1985)

and his diagramming process in which he drew vectors for humanity, cybernetics and evolutionary development.

In discussion of the work of Paolo Soleri, his drawings tested ideas of Arcologies, which he realised at Arcosanti, Arizona which works as an urban laboratory. Soleri created a DIY manual for action that changes perceptions of the form of cities. Whilst Soleri offers a purely design based solution and an uncompromising environmentalism against consumption and materialism, his drawings begin that process, heuristic tools for testing and developing his vector towards the De Chardin *Omega Seed*. Soleri projects his work into a distant time in which technological and cultural conditions are hard to understand, likewise this projection means that site context is not situated. Soleri's work represents the extreme to which a heuristic mode of drawing can extend. However, the results in Arcosanti and developments in passive energy technologies demonstrate that Soleri, was not an architect drawing without restraint, or pure fantasy. In the Ant Farm collective (1970s), the method of a DIY architecture rests in an authorative manual which mocks the medium of the message. What emerged was that there was not a DIY manual in similar form for Landscape Architecture. This DIY manual could take the form of scoring systems for landscape, which was pioneered by Lawrence Halprin.

In the *Portland Sequence* (1962) ecologies, participation and movements all became combined by Halprin in his design. Halprin's work and his drawing activities attempt to re-unify and involve in a creative process for new urban conditions, which makes me consider him a type of *Rhythmanalyst* after Henri Lefebvre (2004), one in touch with presence, one who draws and conveys the everyday, one who involves community in drawing. Between landscape architecture, environmental aesthetics, phenomenology, planning, notation and info graphics, of art and science, falls the score and the possibilities of understanding and designing richer landscape – a landscape of meaning in increased globalised cyber states this would be the philosophy of the manual. This is a connected environment where the designer walks, draws, listens interprets and scores intervention against centrist planning, alienation, poverty and injustice.

The thesis creates an opening for continuing research work on scoring processes for landscape architecture, where the contribution to knowledge is the recognition of the four positive hermeneutics from Calvino; *Blood Trade, Authority, Agency*. We have recognised through theoretical and contextual bases this operation, the implications of drawing for landscape architecture. Drawing in Landscape Architecture involves an imperative immersive fieldwork in which perception and cognition of landscape become encoded on a

surface, this could be a forensic operation (precedent) or abstraction and a number of approaches were discussed. This work was important, in that it does not become the deterministic approach for the landscape, there is more to know, a drawing is only a temporal surface in which ideas are embodied, but can also be misread, misunderstood. The methods of this encoding lead to a *poetics*, for example the map, where I have argued for a re-orientation of its condition. This re-orientation can be a map of metaphors of narratives of the spatial trajectories of walkers based on the work of De Certeau (2002)[3]. These works give performance; they *translate* or *trade* direct and order by their own configuration. However, we have seen that such methods also order space negatively, in that subsequent production is not always representative of the space it seeks to change. Drawings *become*, they take designers conceptions, refine, reduce and instruct something else, they are a reference and directive for action. The instrumentality of drawing or *Trade* is important here, though the case studies (Southbank and MK) demonstrated that more open processes allow a certain tolerance for change and complexity.

With environmental change, and given Robin Evans recognition that drawing in architecture is different (1996), as in landscape architecture it exists before the thing (*Reverse Directionality*), given this projective ability, the drawing as a futurological device was important here, it was an appropriate method to solve, at least on paper in the first instance, issues in landscape of tomorrow. Scoring processes demonstrate possibilities in participation and planning for landscape, and in the work of Lawrence Halprin, show that such activity enhanced his work. Through the recognition of difference and consensus evaluated from Halprin's workshops, Halprin could perform, design and create highly transitory sequences. Creating visual works for landscape architecture in itself is not an issue; it is the hierarchy in which the visual becomes dominant. This domination is a type of gaze on environment which induces fantasy, as if landscape experience was framed, muted disinterested experience (Eggener 2002). The possibilities for scoring move away from this issue, it does not operate a priori, it provides a new aesthetic in which to view landscapes, and in turn changes landscape experience, as they are embedded within the world, immersed, yet are also vehicles that can translate and move out of it. In this sense the need for landscape architects to become increasingly focused on social relations given globalised networks, for the sake of place, ecology and stewardship can be achieved first through a vehicle of the understanding of people's ideas and visualisation of space and the structuring that makes it. This is the inclusion of that messy, perhaps even contradictory fluid representation. The emphasis on

[3] De Certeau investigates how everyday 'tactics' of individuals form a subversive response to 'strategy' (power structures). In the Spatial Stories chapter, narrative has the capacity to connect sites by selecting and linking them into an itinerary. This process makes it a spatial trajectory.

fluidity is out of the recognition that scores can record time in a representation which is analogous to landscape.[4]

Drawing in landscape architecture has been discussed in terms of sole practioners, or focused an individual's activities; though not seen in a wider cycle. Calls for innovative and experimental processes can be found in the literature of the discipline, though such cases demonstrating these calls were scarce. Moreover the agency of drawing as part of a design process which shapes spaces was under discussed. Thus, the thesis addresses these shortcomings in the offering of a framework of understanding, and a positive valence for representation, a re-orientation and understanding of the possibilities of the medium. This is an introduction to understanding and becoming aware of drawing practice of landscape architects. Representations of landscape architecture rest on certain cultural values, symbols and understandings of the mode in which they work. Given the increasing complexity of urban environments and environmental change, the need for design toolkits which at a representational level have greater application and a multiplicity function is ever more pressing. Drawing in Landscape Architecture involves: appropriate fieldwork, recognition of *poetics*, representative methods, understanding of its agency or translation and understanding of the representation that spaces provide and a mode to understand this.

If Lefebvre is correct in saying that every society creates its own space, it is important to think of how to analyse this creativity. For Lefebvre the everyday ritual was the mode of body centred analysis which could make us aware of our presence, and thus begin to collectively have a stake in the creation of space.[5] Lefebvre's large philosophical project leads out of the scope of the thesis, though it gives a theoretical frame for the representational operations described in the thesis. The formation of Landscape architecture as a profession in the United States has been examined through a sociological study of general professional formation since the eighteenth century by Timothy Baird and Bonj Szczygiel (2007) who see the future in the following lens;

[4] As Anne Whiston Spirn states, "for designers, new techniques of notation and representation are required. Conventional techniques are inadequate to the portrayal of time and change, and they encourage the continued focus on visible and static form" (Spirn 1988, p.124).

[5] David Harvey interprets Lefebvre's Right to the City; "What kind of city we want cannot be divorced from the question of what kind of people we want to be, what kinds of social relations we seek, what relations to nature we cherish, what style of daily life we desire, what kinds of technologies we deem appropriate, what aesthetic values we hold. The right to the city is, therefore, far more than a right of individual access to the resources that the city embodies: it is a right to change ourselves by changing the city more after our heart's desire"
(Harvey 2008, p.23).

> The need for greater attention to ecological issues, strong support for the aesthetics of landscape architecture, and the need to expand practice with respect to societal benefit over that of the individual (Baird and Szczygiel 2007, p.18)

Landscape architectural critic Simon Swaffield has called for ethnographic research on the make-up of the profession for the requirement of understanding commonality in the profession (Swaffield 2002). This call for commonality fits within Baird and Szczygiel's criticism and apparent need; though both operations do require each other; that is *who* is involved and *what* is done.

By comparison when this thesis was begun, four years previously a provocative manifesto surfaced from two faculty members from Iowa State University which claimed that the profession has become outmoded, titled *Landscape Architecture an Apocalyptic Manifesto* (2004). The manifesto posits the idea that landscape architecture has become an outmoded discipline,

> At the start of the 21st century, landscape architecture is a troubled profession, more distinguished by what it lacks than the qualities that it actually possesses. It has no historiography, no formal theory, no definition, direction, or focus. A vast schism currently exists between its academics and professional practitioners. In universities across the nation, researchers poach methodologies from other, more vibrant disciplines. Meanwhile, in professional offices, designers yoked to the bottom line crank out pedestrian design (Hohmann and Langhorst 2004, p.1).

The passage though deliberately inflammatory, is certainly revealing in the array of research material used to enable this thesis, per se, translations between academic practioners and practice raises certain pedagogic anxieties at a representational level, though the notion of apocalyptic is rather dubious. The manifesto lists various deficiencies but asks that landscape architects should be '*Unblinked*', this means that landscape practioners need to look "at details but should also have an eye for the big picture: in historical, philosophical, artistic, political and economic terms" (Iowa 2004). Such debates prove difficult for the goal of understanding representations of built landscape, when the profession cannot reach some common values or consensus on its professional make up or the extent in which it reaches and the methods it utilises (Kaplan 2009). This makes understanding of how landscapes are designed interpreted, re-used, understood or even re-designed difficult, shifting and fluid.

While we can take heed of these warnings, the positive agency and valence of landscape representation cannot be ignored. These issues of wider scope in the discussion of representation in landscape architecture have certainly been addressed, the rich variety and texture across a variety of sources, periods and contexts have been situated within Calvino,

a positive hermeneutics, the thesis seeks to extract operative practice; representational process has been defined here for some *positive* operations for landscape design.

Figure 295: Hasell Studio, Field of Colour, Walsh Bay Sydney, 2013.

Figure 296: Martha Schwartz Partners, Grand Canal Square, Dublin, Ireland, 2008. Courtesy of MSP.

Figure 297: Dan Flavin, Alternating Pink and Gold, 1967, David Zwirner Retrospective, 2000.

Critique can be levied at the thesis in the variety of context and cases, however such a method was imperative, when so many works are produced in the same lens, individual 'places' imitate other designs, which recreate; authenticity is faked. *Placemaking*[6] in this case paradoxically involves fakes. Take for example the real similarity between the landscape architects Hassell Studio's *Field of Colour*, Walsh Bay, Syndey, landscape architect, Martha Schwartz's *Grand Canal Square*, Dublin and artist Dan Flavin's *Alternating Pink & Gold*. For Hassell studio **Figure 295**, geometrically placed light tubes are clustered and rotated per cluster, playing with light and reflectivity. In **Figure 296**, Schwartz's red tubes illuminate in response to pedestrian movements using sensors creating 'vibrant energy fields'. For Flavin, **Figure 297**, his fluorescent lights function as three dimensional drawings which 'energise' areas and claim spaces through light reflections. All claim specific place making and identity yet the similarity of concept and design is close, as is the nine hours travel between, New York, Dublin and Sydney; the city *becomes* the same. This small comparison is arguably indicative of the lack of focus on the agency of representation in landscape architecture which the thesis sought to address through the exploration of a wide

[6] "As confounding as this interdependence of science and cultural relativity is, it is now understood by scientists and city-makers. Both describe a metropolitan landscape shaped by alienating governments and their corporate sponsors networked in a global economy that moves fast enough financially that enduring metropolitan structure is unimportant… From this worldview of transitory financial networks, cities and their inhabitants can simply be abandoned once useful resources have been depleted. Biological and cultural diversity are equally unvalued. Place is irrelevant" (Hester 2007, p.68).

variety of sources.[7] Lack of critical attention by implication, implies the creation of a society complicit in the homogenisation of the city. This of course requires further qualification, though the thesis builds a framework for this further analysis in future research. This research will focus on diverse representational modes for professional landscape practices. This will also be focused towards visualising large scale city forms and evaluation of historical visualisation material.

By comparison the design group Terreform 1 (**Figure 298**) could be cited as indicative of a landscape practice seeking a variety and plurality of landscape representation. The work involves cross-disciplinary working using unsolicited feasibility studies and master planning for cities, the non-profit multidisciplinary research team functions as *urbaneers* presenting multi-layered sustainable city visions with community involvement.

Figure 298: Terreform 1. Urbaneering Red Hook Brooklyn and Governors Island, 2010.

[7] "Whereas ecology has changed and enriched the field of landscape architecture substantially, it has also displaced some of landscape architecture's more traditional aspects and prompted a somewhat ambiguous and estranged disciplinary identity (the oft-asked question: 'Is it art or science?'). A number of schools of landscape architecture, for example, now teach little visual art, design theory, or history, focusing instead upon natural science, environmental management, and techniques of ecological restoration. Although these aspects of landscape study are important, one cannot help but feel a concern for the loss of foundational traditions, especially landscape architecture's agency as a representational and productive art, as a cultural project" (Thompson and Steiner 1997, p.85).

Whilst a number of dominant paradigms of established themselves, the thesis has argued for a broadening of practice and the revitalisation of historical and successful modes within it. For example the establishment and potential of heuristic and scoring drawing methods develops further research and implementation for professional practice particularly at community consultation stage.[8] The focus on heuristic and scoring processes is not preferential, but cited as a mode of representation lacking in contemporary practice though having a rich and successful historical context. Further work on notational systems and the dissemination and hopeful adoption in professional practice will encourage the positive representational valence identified within the thesis. These methods are not for individual benefit but for the establishment of design toolkits and 'DIY' design manuals that assist in decoding the complex rhythms of landscape and urban zones. Through such closer understanding human relationship with landscape can become more connected and from this basis lead to a greater preservation of our environment. If Landscape architecture can decide on its purpose, as one more connected and embodied within an moral ecological imperative dealing with social relations and place making alongside other disciplines, not concerned with creating fakes but place specifics, then a rich variety of representational practice is required.

What is meant here is that the thesis has shown a variety of spatial textures in which representation has had a negative or positive impact in the production of that space. It is imperative that the landscape designer is aware of the agency of representation, this agency is the imaging for natural space, and it makes the case for an ecological approach but also a humanistic argument. If landscape representation reflects our cultural understanding of landscape, which I have argued, then we must reflect on that vision and change if necessary, design approaches in which images are produced in a reduced lens which can arguably create sterile urbanism. Representation filters through the process of realising a space from design perception of site to public perception of place and as such is a vital generative issue for landscape architecture. Recognising this cycle and function is imperative for the landscape of tomorrow.

[8] LI Work Stages A-C.

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Appendix

i. Publications and Exhibitions list 2009 -2013

‘Hypergraphic -Superstudio: A Digital Manifesto for Landscape Architecture’, Published Proceedings, Published Proceedings. Digital Landscape Architecture Conference 2013, June 06 - 08 2013, Bernburg and Dessau, Germany. Connectivity and Collaboration in Planning and Design 14th International Conference on Information Technologies in Landscape Architecture.

Drawing Time & Lawrence Halprin, ‘DRAWING TIME NOW!’, Amsterdam Academy of Architecture, 25.01.2013 – 01.02.2013.

Co-Curator, ‘Rhythm/ Presence’ Dance & Civil Engineering, C4RD, London, RIBA Hub Manchester, IADT, Dublin, Feburary 4th - April 30th

‘21st Century Rural Museum’, Lisbon, Porto, Madrid, Corsica, Naples, Athens, November - January 2013, Group Exhibition.

‘Motive Forces: design ecologies and the drawings of Lawrence Halprin (1916-2009)’, Drawing Out Conference 2012, The University of the Arts London, 28th -30th March, 2012.

Co-Author, ‘Thinking Drawing: image typologies for processes in landscape architecture’, in Representing Landscapes, ed., Nadia Amoroso, Routledge, March 2012.

‘Drawing - The crisis of representation’, ‘ Landscape Art - Free of Tradition?’ Series, Milton Keynes Gallery, 29th January 2012, 7pm - 9pm.

‘Videre: Drawing and Evolutionary Architectures’, M.A.D.E. Journal, no7, Welsh School of Architecture, Cardiff, November 2012.

‘Visualising Architectural Design’, 24th World Congress of Architecture, Design 2050 - Union of International Architects - TOKYO, Design 2050, September 25th - October 1st, 2011, Group Exhibition.

‘The Representation Driver - towards Interdisciplinary Methods for Resistive Desertification’, Seminars: Dynamics and Perspectives in the 21st Century, Faro, Algarve, Portugal, 14th -17 September, 2011.

Co-Author, ‘Thinking Drawing: aesthetic choice as ethical marker in student drawings’, ECLAS, University of Sheffield, 7th - 10th September 2011.

Co-Author, ‘Why 43?’ in ‘The 43 Uses of Drawing’, Rugby Art Gallery, October 2011.

Co-Curator, ‘The 43 Uses of Drawing’, International Exhibition, Rugby Art Gallery, September 2011- October 2011.

Participant, Reading/ Working Group, Landscape Urbanism, World Landscape Architecture Magazine, February – August 2011.

‘Re-Scale, Drawing & Radical Cartography: Notes after Michel de Certeau’, Scale, 7th AHRA International Conference, Kent School of Architecture, University of Kent, November 20th - November 21st 2010.

‘Encounters and ‘Seeing Through’: Scaling Informatics, Fidelity and Representation’, Emerging Landscapes, Between Production and Representation, School of Architecture and the Built Environment, University of Westminster, 25th -27th June, 2010.

Co-Author, ‘Central Orbits and Corporeal Realities: Drawing and the Renaissance Workshop’, The Artist at Work in Early Modern Italy (c. 1450-1700): Methods, Materials, Models, Mimesis, Association of Art Historians, University of Glasgow, 15 – 17 April 2010.

Smörgåsbord, GX Gallery, Camberwell, London, 16th January - 4th February, 2010 Group Exhibition.

‘Drawing: Art or Information Design’, Outside Edge, Garden Design Journal, Issue 90, December, 2009, pg 46.

Salisbury Arts Centre Open 2009 – Drawing, Tuesday 3rd November -Saturday 12th December, 2009, Group Exhibition.

ME Design Magazine: Emerging Talent Interview: Paul Cureton, 9th November 2009. Online http://www.medesignmag.com/talent/1664/hyper-reality/

‘Species of Drawing in Landscape Architecture’, Journal of Green Places, September, Issue 58, 2009, pp 40-41.

Co-Author, ‘Of Blood, of Trade, Authority, Agency: Sought After Forms and Drawing Today’, Drawing in the

Expanded Field, Association of Art Historians, Manchester Metropolitan University, 2nd - 4th April 2009.

Co-Author, ‘The Life of Paolo Uccello: Drawing Transitions Through Curriculums’, Transitions, University of

Northampton Teaching & Learning Conference, 27th May, 2009.

Without The Walls That do Not Last, Drawing Exhibition, Co-Curator, Avenue Campus Gallery, University of Northampton, September, 2008. www.expandingdrawing.com