RE-ENVISAGING THE PICTORIAL LANDSCAPE: A PROCEDURAL METHODOLOGY AND IMAGING TOOLBOX

by

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(Under the Direction of Cecile Martin)

ABSTRACT

The graphic practices associated with the profession of landscape architecture instead of providing an impartial and holistic representation of the landscape, may deny deeper modes of existence, interrelationship, and creativity. Specifically, the ability to represent the landscape as a temporal entity engaged in reciprocal relationships within a multi-sensory environment is not possible using current two-dimensional imaging techniques. Through a historical examination of the development of pictorial conventions in urban planning, the Renaissance, and Naturalistic painting shortcomings are associated with existing graphic practices and opportunities to diversify and improve them are identified. The outcome is a three-stage procedural imaging methodology and toolbox that contains strategies that resolve the identified shortcomings and diversify and complement existing graphic practices. A contextual application, based on a site in Athens, GA is presented to demonstrate the efficacy of the methodology and toolbox in re-envisaging the landscape by highlighting processes, relationships, temporality and sensory experience.

INDEX WORDS: Landscape Architecture, Landscape, Pictorial, Pictorial Conventions, Graphics, Imaging Strategies, Picturesque

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CHAPTER 1

INTRODUCTION

The profession of landscape architecture plays a decisive role in the design, construction, and management of the built environment. Professional work usually involves transferring the requirements of a client, in the form of a proposed design, to a specific urban, suburban, industrial or rural site. Regardless of the variation in scope and context between projects, most share a commonality: they involve the manipulation of the Earth's surface primarily towards human needs. Although the outcome may mimic the form and certain processes of the natural world, it is certainly not natural but rather a distinctly human creation. In the words of J.B. Jackson, a Harvard educated landscape designer and avid writer on the topic of 'vernacular' landscapes:

> "[A] landscape….. [is] a synthetic, man-made system of spaces superimposed on the face of the land functioning and evolving not according to natural laws but to serve a community. A landscape is thus a space deliberately created to speed up or slow down nature" (1984:8).

Projects typically involve disturbance to human, animal, and environmental systems during the process of construction and alteration. To minimize impact, a specific set of ethics, originating from Olmsted during the nineteenth-century, has evolved into the current American Society of Landscape Architects (ASLA) code, which governs professional conduct under the following principles: ''dedication to the public health, safety and welfare, and recognition and protection of the land and its resources'' ("professional ethics"). Environmental stewardship is not unique to the profession of landscape

architecture but reflects a growing public awareness, which has resulted in the creation of government environmental agencies and academic disciplines such as ecology and environmental aesthetics, directed towards its study. A comparison between Jackson's definition of landscape and the actions of many landscape architects and the wider public suggests a possible disconnect between the intention to facilitate environmental stewardship and the practical realization of such a goal.

When Jackson states that ''A landscape is thus a space deliberately created to speed up or slow down nature'', he is not merely voicing an abstract opinion; he is drawing attention to the pervasive attitude that the profession of landscape architecture and the wider public has towards the environment (1984:8). Practices that ''speed up or slow down nature'' are routinely carried out: the construction of roads produce barriers impermeable to the growth of future vegetation; storm water is conveyed at various velocities and quantities in ways that increase or reduce erosion; landscapes are designed to require maintenance that either reduces the effects of growth through mowing and pruning, or encourages it through fertilizer application; and forested sites are often cleared to make way for impervious structures such as homes, car parks and strip malls (Jackson 1984:8; Crandell 1993).

These interventions in the environment are what ecologists term disturbances, defined as ''events that disrupt ecological systems'' (Dale 2000:653). Disturbances often result in the damage and dislocation of ecological networks. This threatens species survival and reduces the efficacy of ecosystem services on which both human and natural communities rely for water and air purification, nutrient cycling and pollution control.

The actions of society perpetuate the ''disturbance'' of the environment in contradiction to existing environmental ethical guidelines. This is not simply an environmental concern; it also has broad social implications. The degradation of the natural environment, along with the systems that sustain

life, will negatively impact the ‘‘public health, safety and welfare’’ of the population (“professional ethics”).

Therefore, decisions made by landscape architects have a significant influence on the environment. As McLennan states, ‘‘in many ways, the environmental crisis is a design crisis. It is a consequence of how things are made, buildings are constructed, and landscapes are used’’ (McLennan 2004:xiii). Consequently, any environmental impact of a project managed by landscape architects reflects not only practices endemic to the profession, but also the demands of a client or the public, as well as the constraints imposed by the construction industry. Accordingly, the mandate under which the profession of landscape architecture manipulates the landscape is dictated by the consensus of a broad social context.

This consensus is apparent in the homogeneity of attitudes within Western culture towards the landscape. We design and maintain public parks, and private yards and gardens according to similar stylistic conventions; we display similar scenic habits in the type of views we seek for pleasure, and even in the composition of landscape photographs and paintings we find pleasing. If a survey were to be conducted of the images most people associate with an ideal landscape, there would likely be agreement on trees and grass, and maybe a river or mountains seen from a distance. It appears that a certain congruency exists in how Western society views, acts, constructs and manages the landscape, and this reflects a far-reaching cultural milieu that transcends the influence and actions of landscape architects (Crandell 1993).

Where did such a pervasive cultural attitude towards the landscape emerge? Why do both the public and the profession of landscape architecture perpetuate practices in design, construction, and management which result in disturbances to the environment, when ethical guidelines suggest

alternatives? O.W Markley identifies the importance of "guiding images" in the forming and transforming of culture and how they can lead to adverse behavior:

> "If the 'progress' of the human system outstrips that of its traditional images, its policies and behavior (which are based on the old dominant images) become increasingly faulty – even counterproductive – precipitating a period of frustration, cultural disruption, or social crisis" (1976: 214).

The most significant "guiding images" associated with landscape architecture are the graphic practices of plan, section and perspective that form a *visual language* fundamental to the profession. This *visual language*, as Anne Whiston Spirn points out, can become a powerful force in shaping perception and constructing culture: "Language has its consequences. It structures how we think and what kinds of things we are able to express." (Sprin 1992:180). It would require a considerable leap of faith to suggest that the graphic practices of landscape architecture are responsible for the pervasive attitude Western culture has towards the landscape. Indeed, these graphic practices rather than forming society's perception simply reflect and reinforce the influence of a much broader legacy of developments. The graphic tools of landscape architecture were not created *ad hoc* for the profession but were inherited from artistic conventions derived largely from pictorial sources. These sources evolved progressively from the sixteenth-century through to the nineteenth-century, from graphic innovations such as the emergence of perspective during the Renaissance and additional developments during the Naturalistic painting movement (Crandell 1993).

The average person in the Western world, whether or not they own an original or copy of a Naturalistic painting, will have encountered the style numerous times via images (often of a pastoral scene) on TV commercials, post cards, and magazines and will be familiar with its conventions, if only subconsciously. The assimilation into Western culture of imagery and conventions associated with Naturalistic painting is undeniable; but is it plausible that the pictorial conventions associated with

landscape paintings could determine pervasive scenic habits and practices across society? As Hegel explains, ‘‘the highest function of all art is not to entertain or to amuse, but to articulate a binding world view; to express to human beings who they are and who they should be’’ (Harries 1993:51).

According to Corner, the ‘‘binding world view’’ inherited from historically derived pictorial conventions, has led to a:

> ‘‘pictorial impulse [that] denies deeper modes of existence, interrelationship, and creativity with the landscape; it conceals the agendas of those who commission and construct it, and it seriously limits the design and planning arts in more critically shaping alternative cultural relationships with the earth’’ (Corner 1999:158).

This thesis contends that the conventions inherited from pictorial sources must come under scrutiny to determine if they prevent a comprehensive understanding of the landscape by limiting the scope of representation. If this is the case, landscape architects, under the mandate of the ASLA code of ethics, have a duty to identify and utilize additional imaging strategies that represent the landscape according to a broader set of concerns. Towards this end, this thesis asks the question: **‘How can landscape architecture re-envisage the pictorial conventions of graphics used to represent the landscape?’**

Re-envisaging suggests not only a reformulation of the visual artifacts that result from graphic practices, but implies the ability to re-conceptualize the mental picture of the landscape contained within one’s mind (Merriam-Webster).

Goal

The purpose of this thesis is firstly to identify whether certain graphic practices in landscape architecture are historically derived from pictorial conventions and prevent a gestalt understanding of the landscape, thus obscuring the natural and social systems that it supports. Secondly, this thesis will

identify strategies that allow us to reinterpret the conventions used to graphically represent a pictorial site analysis or communicate a design proposal. Many of the strategies presented in this thesis relate to the display, manipulation and composition of visual information which is congruent to both activities.

An application demonstrating the efficacy of a toolbox and related methodologies will be presented in terms of a pictorial site analysis from the point a view of a single individual with an engineering background. The author is interested in expanding his knowledge of and exploring image making theories and techniques in order to enlarge his communicative skill set within the field of landscape architecture. The exploration contained within this thesis represents the subjective and logical response of an individual with a background in engineering to historic and contemporary visual philosophies and graphic systems. The overall goal of this thesis is to establish how visual media could assist in fostering a meaningful and intimate connection between humans and the landscape by highlighting temporal processes that are engaged in reciprocal relationships in a multi-sensory environment.

Definitions

This thesis requires the definition of three terms. The first, *landscape*, should be understood as a combination of natural and man-made environments, occurring within a rural, urban, or suburban context.

The second term, *pictorial conventions,* should be understood as artistic practices that determine specific habits for viewing nature and influence behavior towards the landscape. These practices have resulted in the artistic canons that specify how the landscape should be represented through visual media. The pictorial convections this thesis will investigate relate to artistic practices defined through Renaissance perspective and the Naturalistic painting movement. Specifically, these

relate to conventions such as the use of rectangular framing, a single eye-level vantage point viewed by a 'solo' spectator and the inclusion of painterly information such as form, color, shadow, and light.

The third term, *eidetic,* is defined as the ability to recall images, sounds, or objects in memory with extreme accuracy and in abundant volume. The use of *eidetic imaging* in this thesis relates to an artistic practice that involves the thoughtful layering, collaging, and manipulation of visual media in an open-ended process that promotes associative relationships between disparate elements. The purpose is to create a richer, more meaningful depiction of phenomena, stimuli and processes, by representing sensory, temporal and interactive properties of the landscape as a 'gestalt' composition.

Delimitations

In attempting to broach how pictorial conventions may be re-envisaged, it is important to appreciate the breadth and diversity of a topic that spanned millennia and evolved across cultural and geographical boundaries. The literature review of pictorial conventions and imaging strategies will not be exhaustive, rather, this thesis will approach the issue by highlighting the most salient and influential aspects identified from the literature review, focusing on developments within Western society, starting with Ancient Greece and concluding with American landscape art, while exploring contemporary imaging strategies.

The methodology and toolbox of imaging strategies contained within this thesis are considered suitable for site analysis and design communication purposes. The application demonstrated in chapter six will focus on analyzing a site in Athens, GA by depicting it pictorially. Due to the need to limit the scope of a thesis the methodology will not be used to depict an actual design with a specific program. The application will primarily use photographs and sketches to create compelling images. This process

could be easily adapted to communicating a proposed design by using sketches and digital stills taken from a three-dimensional modeling program.

The imaging strategies contained within this thesis will focus on methods that improve and diversifying the technique of perspective within the limitations of the two-dimensional format. Other representational strategies such as plan view, section, elevation, modeling, and three-dimensional digital modeling are widely used within the profession of landscape architecture. A detailed examination of these practices will not be presented; instead a brief discussion concerning their relevance to site analysis, design communication, and the profession of landscape architecture will be presented where appropriate.

Methodology

A brief historical review will be conducted to understand whether and how the legacy of pictorial conventions has limited our perception of the landscape. This will be followed by a literature review that draws upon a selection of academic disciplines and identifies specific imaging strategies that complement and diversify existing graphic practices used by the profession of landscape architecture. The strategies will be arranged to form an imaging toolbox based on a three-stage procedural imaging methodology. This methodology will be used on a site-based application, to demonstrate the efficacy of the toolbox in re-envisaging the landscape.

The identified strategies will be based on proven imaging techniques that demonstrate an innovative approach to representation. Many of these strategies are currently used in the profession of landscape architecture. The purpose of the toolbox and methodology is to increase their frequency of usage and encourage them to be combined in associative ways that lead to beneficial insights and enhance the efficacy of visual media in communicating properties of existing and proposed landscapes.

Research will be directed towards answering the following sub-questions:

- "What are the pictorial conventions associated with imaging the landscape?"
- "How should the landscape be re-envisaged from existing pictorial conventions?"
- "What does a re-envisaged landscape look like?"

Chapter Contents

Chapter two begins with a historical review of the evolution of pictorial conventions. It starts with ideas that developed in the ancient world of Greece, pays particular attention to the emergence of perspective during the Renaissance and further developments during the Naturalistic painting period, and concludes with the artistic contributions of nineteenth-century American art. It links pictorial conventions of the past with imaging techniques currently used by landscape architects, and suggests opportunities for diversifying existing graphic practices.

Chapter three defines a three-stage procedural imaging methodology that provides the framework for integrating forthcoming strategies within an imaging toolbox for re-envisaging the landscape.

Chapter four consults theories and strategies from a number of academic fields: philosophy, anthropology, cultural geography, landscape architecture and art, to identify strategies that complement and diversify existing graphic techniques used by the profession of landscape architecture based on the opportunities identified in chapter two.

Chapter five will reorganize the strategies identified in chapter four according to the three-stage procedural imaging methodology of chapter three and present them in terms of an imaging toolbox that landscape architects can use on site and within the office for re-envisaging the landscape.

Chapter six will demonstrate the efficacy of the three-stage procedural imaging methodology and the associated imaging toolbox via a contextual application.

Chapter seven will evaluate the efficacy of the imaging methodology and associated imaging toolbox against existing pictorial practices, and discuss the possibilities for future research and further development of imaging practices.

The aim of this thesis is primarily to initiate a dialogue concerning practices endemic to the profession of landscape architecture and the wider public which often go unchallenged. The desire is to promote awareness of the historical events that shape the way we understand our world and challenge them in new and advantageous ways. The imaging toolbox and associated methodology developed in this thesis are intended to complement existing practices within the profession of landscape architecture. Landscape architecture has the ability not only to ameliorate its own practices, but as a true art form, it also has the responsibility to influence the cultural agenda. It can achieve this goal through the development and proliferation of new sets of graphic approaches that speak to the true nature of landscape, and no longer pay lip service to artistic conventions of by-gone eras.

CHAPTER 2

HISTORICAL REVIEW OF PICTORIAL CONVENTIONS

Graphics form the basis of landscape architecture's visual language facilitating a productive dialogue between designer, site, client and contractor. They provide the visual syntax through which site context can be analyzed, a design response developed, and the final design intent communicated. The flexibility and fidelity of these tools becomes paramount when, as in the profession of landscape architecture, they form the basis for decisions that may result in the disruption and damage of natural and cultural systems and processes. According to Corner, a prominent landscape architect, the pictorial conventions associated with the graphics of the profession, instead of providing an impartial and holistic representation of the landscape, may 'deny deeper modes of existence, interrelationship, and creativity'; and unwittingly foster detrimental practices within landscape architecture and amongst the general public (Corner 1999:158). This point of view is not exclusive to Corner, but shared by man respected commentators (Daniels 1989; Thomas 1993; Howett 1993; Czerniak 1998; Bender 2006).

The pictorial conventions that influence the graphic practices of landscape architecture evolved out of a long heritage of observing and depicting the landscape through artistic endeavors such as painting, theatre, literature and poetry aimed at creating convincing illusions of the world outside (Crandell 1993). Re-envisaging current graphic practices requires that the key historical developments that have created existing conventions be highlighted and their relation to the practice of landscape architecture and the manipulation of the landscape be identified. This historical review will begin with the pictorial conventions of ancient Greece through to the practices associated with American art. The

purpose of this review is to identify opportunities where existing graphic practices can be diversified and their shortcomings addressed.

The Ancient Greek and Hellenistic Period

Evidence exists that humans have depicted the landscape for the last nine thousand years, demonstrated by the map-painting on a crumbling wall at Catal Huyuk in ancient Anatolia dated to 6200 B.C.E (Casey 2002). Actual pictorial images of the landscape, involving the realistic depiction of nature did not occur until the Hellenistic period in Greece. Prior to this period no evidence exists that the ancient Greeks pictorialised the landscape, as no extant examples of paintings or pictures remain (Crandell 1993). The ancient Greeks perceived the landscape as inhabited by divinities which led to a reverence and worship of the natural environment (De la Croix and Tansey 1991). As a sign of respect for their mystical landscape, the ancient Greeks only experienced their environment at its true scale through a first person mode of encounter (Crandell 1993).

The first developments that initiated our current pictorial conventions began during the Hellenistic period of Greece, and are represented not by images but by urban planning principles. Greek society during the Hellenistic period had evolved to interpret the world through the pure reason of mathematics and geometry, facilitated by the intellectual developments of philosophers such as Plato and Aristotle (Jellicoe and Jellicoe 1975). Society became more concerned with truth, deduced from the scientific collection of facts, lessening the influence of the pantheon of gods. As a result, the relationship between people and the landscape changed to accommodate the needs of humans over those of their divinities (De la Croix and Tansey 1991). This resulted in the creation of the Hippodamian urban grid used to design the city of Priene, consisting of an orderly network of streets arranged orthogonally, which enabled inhabitants to navigate the town logically and efficiently without getting lost (see figure 2.1).

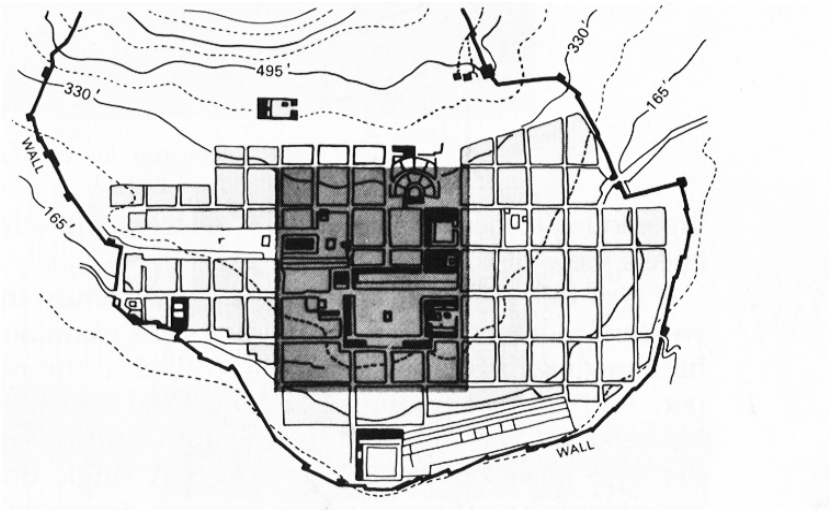


Figure 2.1: Layout of Hippodamian City of Priene, fourth-century B.C.E (Gardner 1991:181)

The structure imposed by the grid maintained a perpendicular relationship between the viewer and the landscape. The relative distance between features of the landscape and an inhabitant could be altered by moving along the grid, but the scenic composition of the external view remained constant (see figure 2.2). This initiated a scenic habit amongst inhabitants, for viewing the landscape as a static backdrop to the events that took place within the urban context (Zucker 1959).

Figure 2.2: Relationship between Landscape and People Imposed by the Grid

Hippodamian town planning principles and the scenic habit they had initiated became incorporated into design of the theatre. The theatre of Epidauros, located on the Saronic Gulf, consists of a crescent shaped terraced seating gallery built into the side of a hill that situates spectators towards distant land forms (see figure 2.3). Crandell suggests that the theatre was placed so that the landscape formed a scenic backdrop behind the dramatic events of a play (1993).

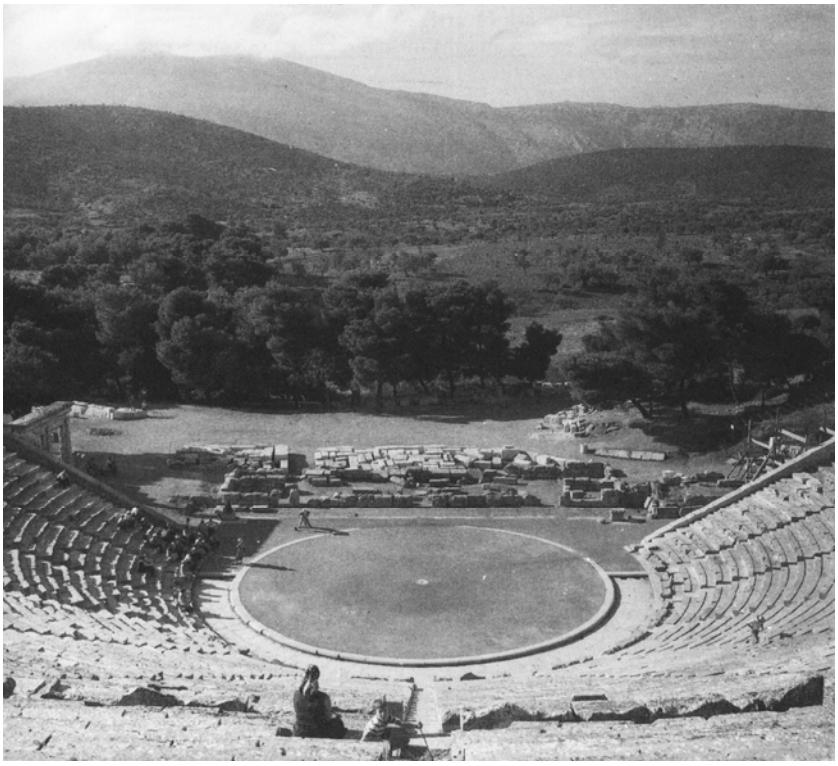


Figure 2.3: Vincent Scully, Theater at Epidauros (Crandell 1993:33)

Increasing the sophistication of theatrical productions, the Hellenistic Greeks (323 B.C.E to 30 B.C.E) developed "stage screens" to organize the theatre stage. The challenge was to produce the illusion of interior space that would complement the external setting of the theater and correspond to specific scenes in the play. What evolved was an arrangement that split the stage into three vertical sections, consisting of two outer wings, which defined interior space and framed a central section that

revealed the landscape as a backdrop (Kernodle 1944). This practice, called 'coulisse' allowed precise control over the composition between internal and external scenery by framing the exterior landscape and unifying it to the interior spaces, resulting in a magnified illusion of space. This technique would be applied later to painting and after additional developments to the landscape itself (see figure 2.4). We can see this effect in the design of parks where strategically placed clumps of trees frame scenic effects as initiated in the theatre, defining vistas, framing space, and giving the illusion of greater depth.

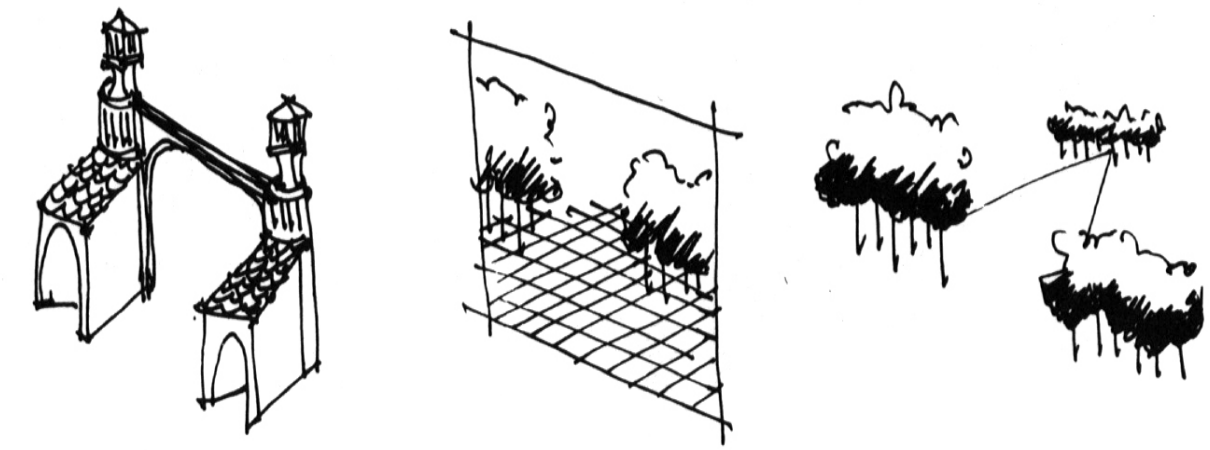


Figure 2.4: Coulisse on Stage, in Painting, in the Landscape (Crandell 1993:36)

By the fourth-century B.C.E. stage sets in Greek theatre had become so tall that views of the landscape were blocked. As a result, panels painted to resemble the landscape were inserted between the wings of the 'coulisse'. This, according to Crandell, is highly significant in the development of modern pictorial conventions (1993). It may represent the first time Western culture was motivated to pictorially depict the landscape, and distort its scale by fitting it within the limited space of the stage screen. Crandell suggests that once citizens became accustomed to viewing the landscape as a stationary backdrop within their urban environment, the transition involved in replacing an actual view of the landscape with a static painted depiction became logical (1993).

While no Greek "stage screen" panels exist to this day, we can observe a Roman equivalent, which, according to Vitruvius, imitated those of the ancient Greek theatre (see figure 2.5). *The Arrival of Ulysses in the Land of the Laestrygonians* is a painted scene that adorns the wall of a Roman house dated to 100 B.C.E. (Vitruvius 1960). The scene includes painted columns and pilasters similar to the practice of 'coulisse' that break up the panoramic scene into sections. It suggests a view of a continuous exterior landscape, seen from inside a house through windows or a columned structure, "reinforced by the preservation of foreground continuity across succeeding panels" (Leach 1988:38). The deliberate choice of an internal vantage point suggests that the artist and client desired a certain separation between themselves and the depicted landscape.

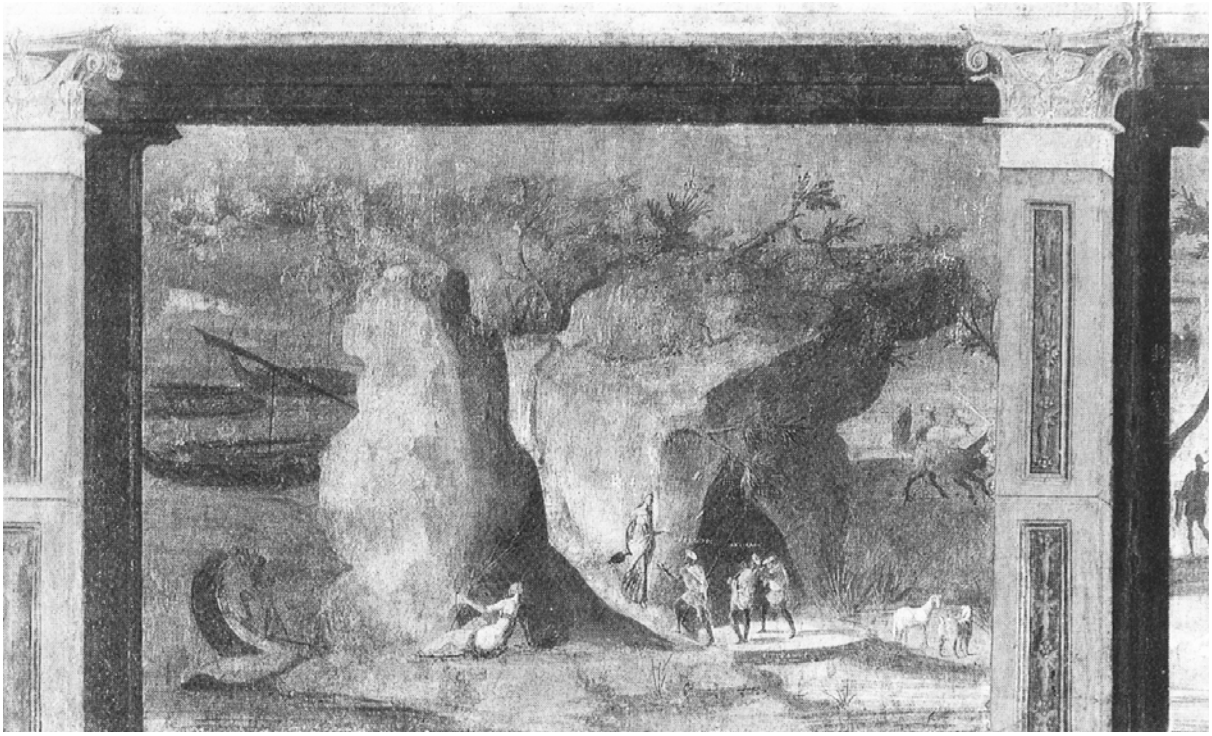


Figure 2.5: The Arrival of Ulysses in the Land of the Laestrygonians (Crandell 1993:38)

This thesis contends that the development of the Hippodamian grid and its influence on the theatre created a scenic habit that persists today, and encourages people to assume a static stance

while viewing depicted scenes of the landscape. The development of stage screens provided the impetus to begin pictorialising the landscape as a replacement for the real thing. The practice of 'coulisse' initiated framing of external views that would later become encoded within the development of Renaissance perspective.

The Renaissance and the Development of Perspective

Developments by artists during the Renaissance led to the creation of perspective as a technique that could accurately depict the deep views and spatial properties that landscape scenes required. Perspective developed alongside the changes society was undergoing as it evolved from medieval times. The emphasis shifted from the internal focus of the medieval period and its pursuit of religion, to an external gaze that attempted to rationalize the properties of the natural world according to advancements in mathematics and geometry (De la Croix and Tansey 1991). The geometric properties of perspective represented the world according to logical principles, resulting in the "eye being rendered the window to a rational soul" (Cosgrove 2003:250). As a result, vision became the principal means of interpreting the landscape and the significance of the other senses was reduced.

The technique of perspective underwent a progressive series of refinements until it was fully realized by Brunelleschi. Perspective was defined in terms of conventions that required a scene to be depicted from the eye-level vantage point of a solo spectator. These conventions currently determine how the landscape should be pictorialised, based on the hegemony perspective has achieved as an infallible method of representing what the human eye sees. Perspective is a technique that achieves a high degree of visual realism, however, it is not an absolute form of representation, but rather one of many abstract representational techniques that could be used (Podro 1982). As a result, the default position of an eye-level vantage point taken from the position of a solo spectator could be limiting.

Alberti formalized Brunelleschi's perspective technique in his 1511 treatise, "*On Painting"* which describes a perspective painting as a window through which we look out towards the visible world (Baxandall 1985:14). Alberti's stance reflects a continuity of tradition related to Hellenistic theatrical conventions, where the arbitrarily framed picture plane corresponds to the boundaries of the 'coulisse'. The use of framing creates a composition that is only a partial disclosure of a broader scene and suggests that the spectator is viewing the landscape from a window, and is therefore external to the depicted scene. Fillippo Lippi's *Annunciation* (1440) demonstrates the association between the practice of 'coulisse' and perspective (see figure 2.6). 'Coulisse' is used to depict the landscape as a backdrop, through the use of a centralized column that obscures a direct view and focuses attention on the foreground characters. In addition, the painting is mounted onto an elaborate architectural wooden frame borrowed from theatrical conventions that implies a boundary where the viewer is separate and outside of the scene (Crandell 1993).

Figure 2.6: Filippo Lippi, Annunciation, Lorenzo, Florence, 1440 (Crandell 1993:65)

Another version of the *Annunciation* painted by Solario demonstrates Alberti's premise that a perspective painting is a window through which we look out towards the visible world (see figure 2.7). The landscape scene viewed through the window more closely resembles a painting, than an actual external view.

Figure 2.7: Antonio Solario, Annunciation, 1485 (artchive.com)

Descartes and the Enlightenment

Developments during the Enlightenment, under the influence of philosopher Descartes, were to further codify the act of separation between the observer and the scene initially implied by Alberti. Descartes proposed a cognitive model according to which all the activities that consciousness became directed towards, should be defined through dualistic principles. The propensity that exists in the Western world to objectify and define relationships in terms of boundaries and distinctions such as

mind/body, human/nature, and subject/object is inherited directly from Descartes (Law and Benschop 1997; Cosgrove 1985). The objectification of the world implied by Cartesian rationalism appears to "reposition [humans] as viewers and interpreters of a domain of objects" (Thomas 2006:48, Dovey 1993, Riegner 1993). Law and Benshop explain how Descartes' objectified world view relates to the practice of perspective and amounts to a separation between the observer and the landscape:

1. The *observer*
    - Is a *point* (constituted by the rules of perspective) at which matters are drawn together (a coherent point and a point of coherence)
    - Is a point that is *not included in the world* it observes
    - Is a point which is to some extent *in a relationship of control* with the world
2. Meanwhile, the *world*
    - Is *separate* from the observer
    - Is a *volume containing objects* and is three-dimensional and Euclidean in character
    - Exists prior to its depiction, *awaiting discovery*
    - *Contains discrete objects,* which pass through time with significant stability or differences, the latter of which are explicable in terms of determinable object interactions, collisions etc.
3. Finally, *representation*
    - Is *illustrative:* the world and its narratives are already in existence, they simply require depiction (1997).

The objectification of the landscape suggests that it is composed of static entities devoid of reciprocal relationships and temporal processes. This is evident in many of the practices landscape architects use to represent the landscape. Sites are analyzed and inventoried according to the objects they contain rather than the processes they display. For example, consider a prototypical site analysis, where the majority of information is concerned with the relationship between the viewshed of an observer and specific objects and focal points of interest within the landscape such as trees, shrubs, and

hardscape. Another example, demonstrated by an environmental resource analysis manual, attempts to comprehensively inventory the natural systems of a region by depicting soil variations, hydrologic activity, and climatic regions as defined entities within specific boundaries (Harris 1967). The natural systems, rather than being represented as dynamic and interacting across interfaces, are objectified and depicted as static. A similar logic persists with the naming of Atlanta as the "city of trees"; it suggests that Atlanta's tree population (the objectified quantity of trees) is of greater significance than other properties. While this is certainly true for air purification, soil erosion management and aesthetic appeal, it obscures the more important fact that Atlanta ranks near last in area of park land *per capita* among cities of similar population density, with 8.9 acres per thousand residents (Atlanta Parks). The propensity that exists within Western culture to objectify the environment reduces it to a collection of static objects that denies the ephemerality of natural processes and the relationships they foster.

The assimilation of Cartesian rationality within Western society has created a phenomenal distance between humans and their environment (Thomas 2006, Dovey 1993, Riegner 1993). While, such a claim may appear abstract, the implications can be understood by examining the pervasive nature of the modern scientific paradigm which has evolved several hundred years after Descartes' initial theory. It suggests that humans have become accustomed to experiencing the world based on a detached and value-free mode of enquiry, analogous to the process of scientific hypothesizing. A hypothesis channels the investigation of phenomena according to predetermined knowledge and in doing so rejects openness to contingent elements that do not fall within its remit. Such an approach is claimed to limit the scope of investigation, reduce the potential for curiosity, obscure the presence of influential parameters, and bias findings towards agreement or rejection of the hypothesis. This relates to the viewing and rendering of perspective images through the habit people have of envisaging visual information in terms of preconceived notions that prevent a full disclosure of the phenomena they have witnessed, limiting their ability to acquire unexpected and unique insights.

Naturalistic Landscape Art

The work of artists such as Claude Lorrain and Salvator Rosa, during the eighteenth-century, legitimized the landscape as pictorial subject in its own right (Crandell 1993). Their paintings, along with other naturalistic artists' work, influenced people to interpret the landscape in terms of painterly qualities such as "the stillness of the air, the strong lights and shades, the tints upon the mountains, and the polish of the lake" (Hussey 1984). This suggests that people had adopted a certain way of seeing the landscape acquired through the conventions of Naturalistic painting. These conventions are still apparent in the way the landscape is represented by landscape architects. Perspective vignettes are typically limited to representing landscape scenes in terms of properties such as form, color, light, and shadow.

The work of Naturalistic artists not only influenced scenic habits, but also provided a template for the landscape to be altered according to their paintings. A selection of the English aristocracy elected to embark on a trip to Italy, during the eighteenth- century, called the "Grand Tour"' to observe ancient sculpture, Renaissance architecture and the emerging trend for landscape paintings. Copies or original paintings by Naturalistic artists were brought back to England and influenced the modification of the English countryside (Crandell 1993). Castle Howard located in Yorkshire is directly influenced by Claude Lorrain's painting, "Landscape near Rome with a view of the Ponte Molle" (see figure 2.8 and figure 2.9). A clear association is visible between the use of a round building, the Mausoleum and the Palladian bridge that straddles the water. Other famous sites, such as Painshill, Surrey, Stourhead, and Stowe demonstrate a clear association with the work of Naturalistic painters such as Lorrain, Rosa, and Gaspard.

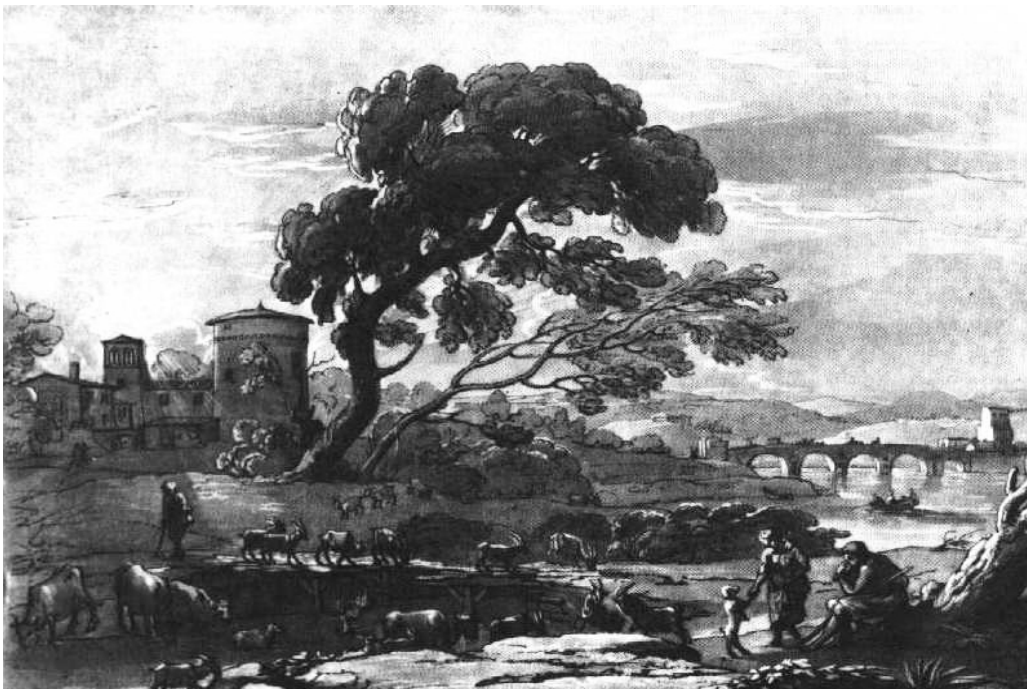


Figure 2.8: Claude Lorrain, Landscape near Rome with a View of Ponte Molle, 1645 (Crandell 1993:119)

Figure 2.9: Robert Harvey, Photograph of Castle Howard, Yorkshire (Crandell 1993:118)

During the middle of the eighteenth-century an emerging interest in form, provoked by the landscape painting of Naturalistic artists, prompted an enquiry to determine why certain compositions were considered more visually pleasing than others. Two popular theories were put forward: one by Edmund Burke in his publication *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful* (1756), and the other by William Hogarth in *The Analysis of Beauty* (1753). Key concepts such as Burke's conception of "beauty" and Hogarth's serpentine 'line of beauty' were to directly influence perception concerning what constituted a pleasing arrangement of form and therefore is considered beautiful.

British landscape architects such as Downing, Repton, and Loudon used the concepts proposed by Burke and Hogarth to create pastoral landscape gardens for wealthy aristocrats whose boundaries were imperceptible from the surrounding landscape. Follies, grottos, statues, mottos and inscriptions were disposed of. The lawn was swept right up to the edge of the house, and all distinctions between the garden and the wider region were eliminated, forming a charming naturalistic scene imperceptible from nature (Howett 1993). As a result, organic form became associated with the work of nature, even when it was a contrived element of a designed and constructed landscape. Angular or geometric and organic forms are both natural properties of the landscape. When they are used in the design of man-made landscape people recognize the artifice of an angular or geometric form but often mistakenly confuse organic features as naturally occurring. Consequently, organic form became a way of hiding the human agency used to create landscapes. It prevented a full and honest disclosure of the effect of man's actions on its environment, by concealing it under a stylistic artifice (Corner 1999; Mitchell 2003).

The New World

The advent of the American nation instigated the largest quantity of landscape paintings in the history of art. The relative infancy of America as a country meant that it had not the artistic, cultural or architectural artifacts to rival Europe. Instead, artists were inspired by newfound geological knowledge that determined the rugged features of the American landscape to be considerably older than even the most ancient European cultures (Crandell 1993). A scientific rationale therefore determined that the "nature" of the New World could be deemed superior to the "culture" represented by the Old, and prompted artists to promote nationhood, by depicting the wilderness of their country.

Compositional conventions and choices of views were heavily influenced by European landscape artists (Thomas 1993). Durand, in a painting entitled *Progress*, depicts civilization in the American wilderness using conventions almost entirely borrowed from Lorrain, and traditions based on the theatre (see figure 2.10). The upright high branching, lacy trees, typical of a Lorrain painting, form a small 'coulisse' where three Indians look out towards billows of smoke that suggest American progress.

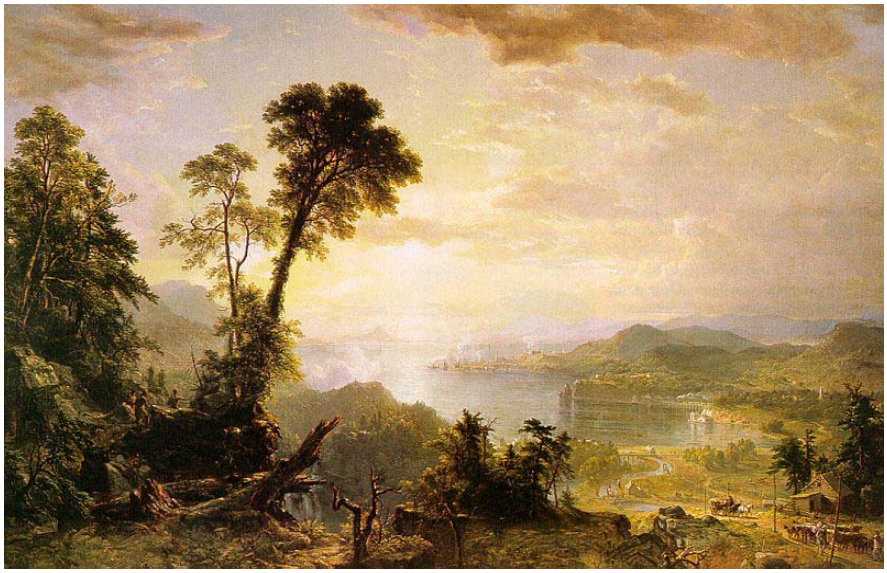


Figure 2.10: Asher B. Durand, Progress, 1853 (Crandell 1993:144)

As a result, a particularly European way of seeing would set the precedent for the types of landscape that would be superimposed on the vast terrain of the United States. Lorrain's pastorialism appropriately reinforced the myth of America as the new Eden, prompting the public to acquire a sentimental reverence towards the pastoral ideal (Crandell 1993). This was supported by key figures such as Frederick Law Olmsted, who maintained a belief that designed landscapes within urban settings such as Central Park should maintain the illusion of a rural setting. The outcome created confusion amongst the public about the true nature of Olmsted's landscape, as Spirn highlights:

> "He planted trees to look like "natural scenery" and then felt frustrated when people accepting the scenery as "natural," objected to cutting the trees he had planned to cull. His concealment of the art was so successful that it backfired. His notion of the social utility of natural scenery was lost; ultimately, it was viewed as decorative, not functional. Ironically, it was the "natural" appearance of his work that prevented people from appreciating how it fulfilled a broad range of functions" (Spirn 1996).

The consequences of concealing the labor and construction used in the landscape are the same for the American landscape as they are for the English countryside. When the English countryside is observed in its present day configuration, much of it projects the appearance of eternal naturalness. The changes that resulted from the filling of swamps and marshes and the manipulation of landforms to create the pastoral aesthetic is not evident. The manner in which the pastoral ideal is able to conceal its artifice disguises the historical legacy and unique context of a site and conceals disruption to environmental and social systems.

Summary

The historical review demonstrates that a rich continuity of tradition exists from which our existing pictorial conventions have evolved. The influence spans urban planning, theater, philosophy and Naturalistic painting. The images associated with pictorialism warrant the distinction of 'guiding images'. They have demonstrated influence in shaping scenic habits, determining what we consider beautiful, what creates a pleasing view, what is natural versus artificial in the landscape; and have motivated the English aristocracy to remodel their landscape according to painted images. The following is a summary of the shortcomings associated with historical pictorial conventions:

1) Pictorial conventions have assisted in externalizing the viewer from a depicted scene, through the use of framing which, according to Alberti, suggests the viewer is observing the scene through a window, and therefore is external and distant. Depicted landscape scenes promote a static form of engagement analogous to the viewing of landscape imposed by the Greek grid and the practice of 'coulisse', and they have created a phenomenal distance based on their association with Descartes philosophy.

2) Descartes' objectified world view and its affiliation with the technique of perspective denies the temporal properties and mutual relationships that exist in the landscape, by depicting it as a static entity composed of discrete objects.

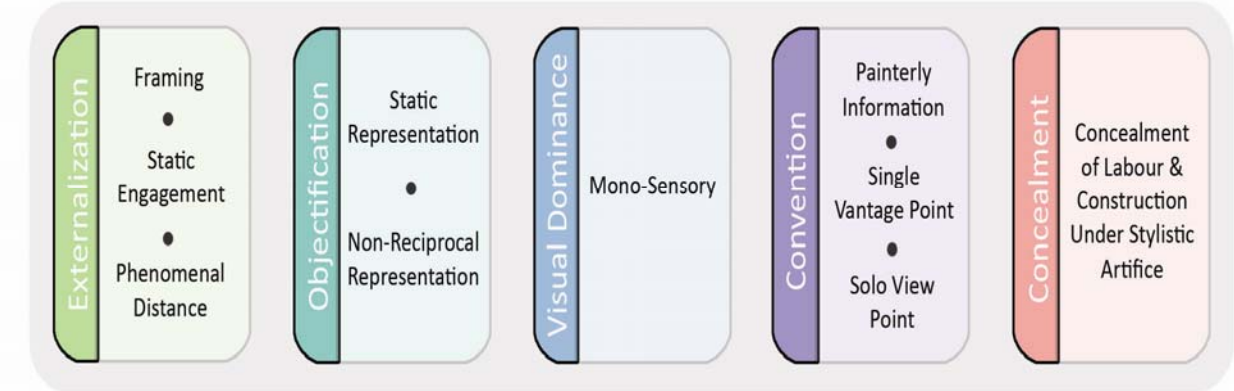
3) The ordered geometric properties of the perspective technique resulted in the "eye being rendered the window to a rational soul" (Cosgrove 2003:250). Vision and images became the primary methods for understanding and communicating aspects of the landscape, resulting in the privileging of vision and the subordination of the other senses.

4) Pictorial conventions are often used in a limited fashion. Landscape scenes are depicted according to painterly information such as form, color, and shadow without consideration for the importance of communicating other details. Through the hegemony of perspective the landscape is regularly represented according to the default conventions of a single vantage point viewed by a 'solo' spectator.

5) Discussions surrounding the composition of scenes in Naturalistic paintings determined the properties of beauty in the landscape. These became applied to the construction of landscapes as a means of concealing the distinction between natural and man-made artifice, resulting in a loss of context.

The insights obtained from the historical review can be categorized into five areas that define opportunities for existing graphic practices to be diversified and improved. The five categories are: 1) the externalization of the spectator from the depicted scene; 2) the objectification of the landscape; 3) the privileging of vision over other forms of engagement; 4) the limited use of artistic conventions; 5) and the concealment of construction and labor under a stylistic artifice. Each category is supported by several sub-categories that were identified in this review. The categories and associated sub-categories have been summarized in table 2.1.

Table 2.1: Summary Table of Imaging Opportunities Associated with Pictorial Conventions



Examples of Current Graphic Practices

To determine if the insights obtained from the historical review are still relevant to the graphic practices of landscape architecture, it is necessary to examine contemporary examples from the profession. If the same shortcomings can be associated with existing graphic practices, the imaging opportunities summarized in table 2.1 provide the framework for identifying strategies that improve and diversify current techniques. The following is an examination of three perspective vignettes, produced by different firms, depicting varied environments (see figure 2.12, 2.13, 2.14). These images are typical of the pictorial depictions landscape architects use to the represent the landscape. Other examples that use more innovative strategies to pictorially represent the landscape exist, but are not as widely used. Therefore the following images represent the 'status quo' of pictorial imaging strategies within landscape architecture.

The three vignettes depict designs that respond to a varied set of contexts, produced using differing methods such as colored pencil, computer rendering, and photomontage. They all display the shortcomings identified from the historical review. The use of perspective conventions such as *framing*, and an *eye-level vantage point* based on the position of a *solo spectator* are consistent among the three examples. The scenes provide only a visual account of the depicted landscape according to *painterly information* such as form, shadow, and color. Transitional components within each scene such as trees, people, and water are depicted as stationary entities. *Relationships* and *processes* are not evident except for the association that can be inferred from the grouping of certain people, such as the foreground figures in figure 2.14, and the parents with their children in figure 2.12. The work involved in constructing each landscape and its relation to the prior site context are not obvious. When viewing the vignettes one would likely assume a *frontal* and *static stance,* and engagement with specific *phenomena* within each scene is not possible because of the limited nature of the perspective format.

Hargreaves Associates uses a perspective vignette to depict the proposed design for Bello Gardens in Dallas, Texas (see figure 2.12). The site is located within an urban context and is composed of a mixture of hardscaping and pastoral scenery.

Figure 2.12: Hargreaves, Bello Gardens, Dallas, Texas (Hargreaves 2009:147)

Kathryn Gustafson illustrates the proposed design for the theatre commons in Seattle, the scene is predominantly urban, with seating areas for resting and trees that provide shade (see figure 2.13).

Figure 2.13: Kathryn Gustafson, Theatre Commons, Seattle (Amidon 2005:103)

Peter Walker uses a predominantly pastoral setting in the design of the Campus Green at the University of California (see figure 2.14).

Figure 2.14: Peter Walker, University of California, Campus Green (Gillette 2005:158)

The shortcomings identified by the historical review are relevant to existing graphic practices, and should inform the approach taken to identify opportunities to improve existing graphic practices associated with design and analysis activities.

CHAPTER 3

PROCEDURAL IMAGING METHODOLOGY

The goal of this chapter is to develop a procedural imaging methodology to be used by landscape architects in order to address the shortcomings associated with historically derived pictorial conventions. A key element of this methodology is a toolbox consisting of strategies compatible with visual media that exploit the imaging opportunities identified in chapter two, thereby diversifying, complementing, and improving existing graphic practices.

Defining the Procedural Imaging Methodology

A systematic approach was utilized in order to develop a methodology consisting of three-stages: stage one, *image acquisition;* stage two, *eidetic image synthesis*; and stage three, *image collation* for presentation purposes (see figure 3.1).

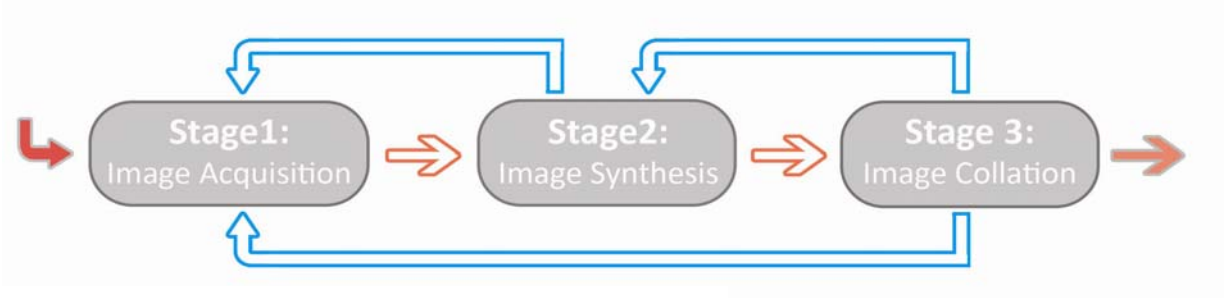


Figure 3.1: Procedural Imaging Methodology Flowchart

The first stage of the imaging methodology, *image acquisition,* requires visual images obtained via a hands-on investigation of a site-specific location or sketches and digital stills related to a proposed design. This stage includes imaging strategies that assist in representing contingent, ephemeral, and interrelated aspects of the landscape along with location suggestions that focus the enquiry towards the

most salient areas of the landscape for analysis or design consideration purposes. The combination of a suitable strategy and focus on a specific location creates the images that subsequent stages utilize (see figure 3.2).

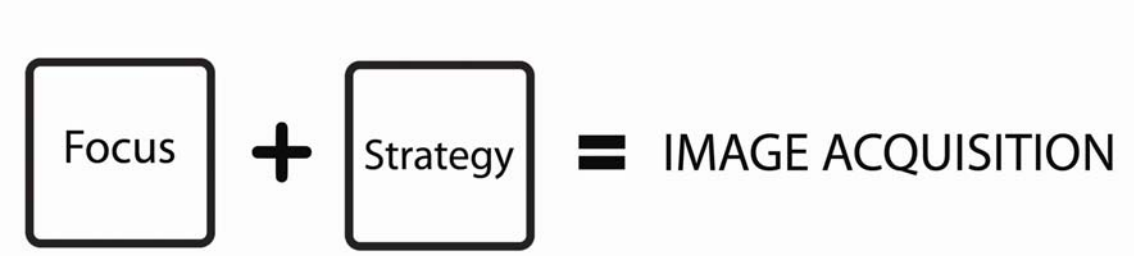


Figure 3.2: Image Acquisition Methodology

The second stage of the imaging methodology, *eidetic image synthesis,* utilizes the output of stage one and suggests strategies for thoughtfully synthesizing them into composite images that are more revealing of a site's existing or proposed context or than if considered individually (see figure 3.3). Corner highlights the benefits of composite image making through a technique he describes as *eidetic imaging.* The process of bringing together two or more visual elements through collage, montage and layering practices fosters a host of associative possibilities, enabling otherwise disparate graphic elements to be brought together into a productive and revealing relationship that often results in revelatory insights. By incorporating multiple levels of information, the depicted scene avoids the immediacy and reduction of traditional images that often causes the spectator to lose interest and divert their gaze. Instead, curiosity and exploration is promoted, encouraging the spectator to draw their own conclusions and insights, from the speculative, yet systematic unfolding of disparate visual elements as they combine to form a holistic whole. Corner suggests that the *eidetic synthesizing* of imagery can have an emancipating effect on designers, such as landscape architects, by replacing the rigid structure of existing graphic practices with an open-ended approach that can be tailored to the unique qualities of a site or the specific working style of an individual (Corner 1999).

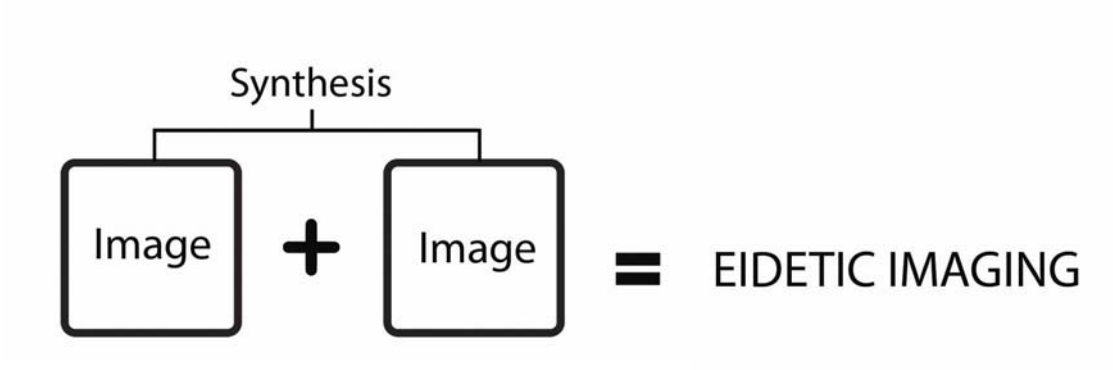


Figure 3.3: Eidetic Imaging Methodology

The third stage of the imaging methodology, *image collation*, suggests strategies that collate the eidetic images of stage two into formats suitable for presentation purposes, within the profession of landscape architecture (see figure 3.4). The goal is to develop presentation strategies that incorporate the principles of *eidetic imaging*, and therefore further capitalize on the associative benefits that may accrue from a thoughtful compositional arrangement of the *eidetic images* created in stage two.

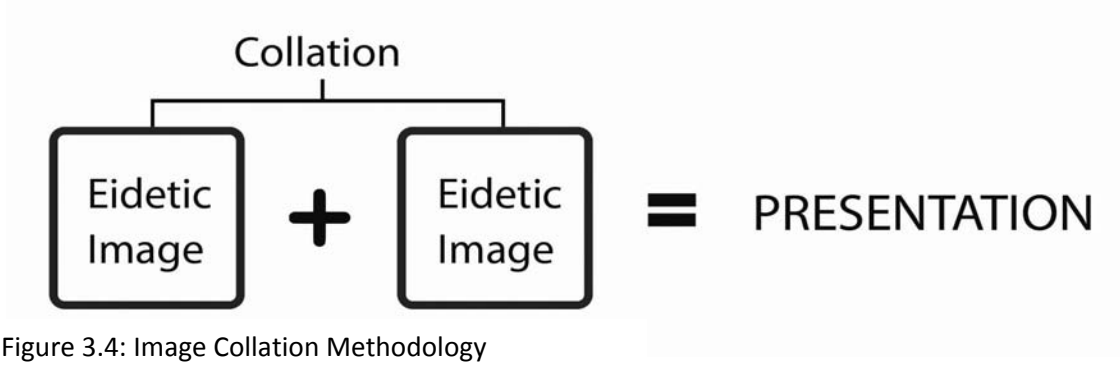


Figure 3.4: Image Collation Methodology

The three stage imaging methodology is summarized in figure 3.5. It should be understood as a heuristic process with feedback loops between each of the three stages, demonstrating that it may be advantageous to iterate the process and revisit prior stages in order to further explore phenomena or insights that were not apparent until they were revealed by subsequent stages.

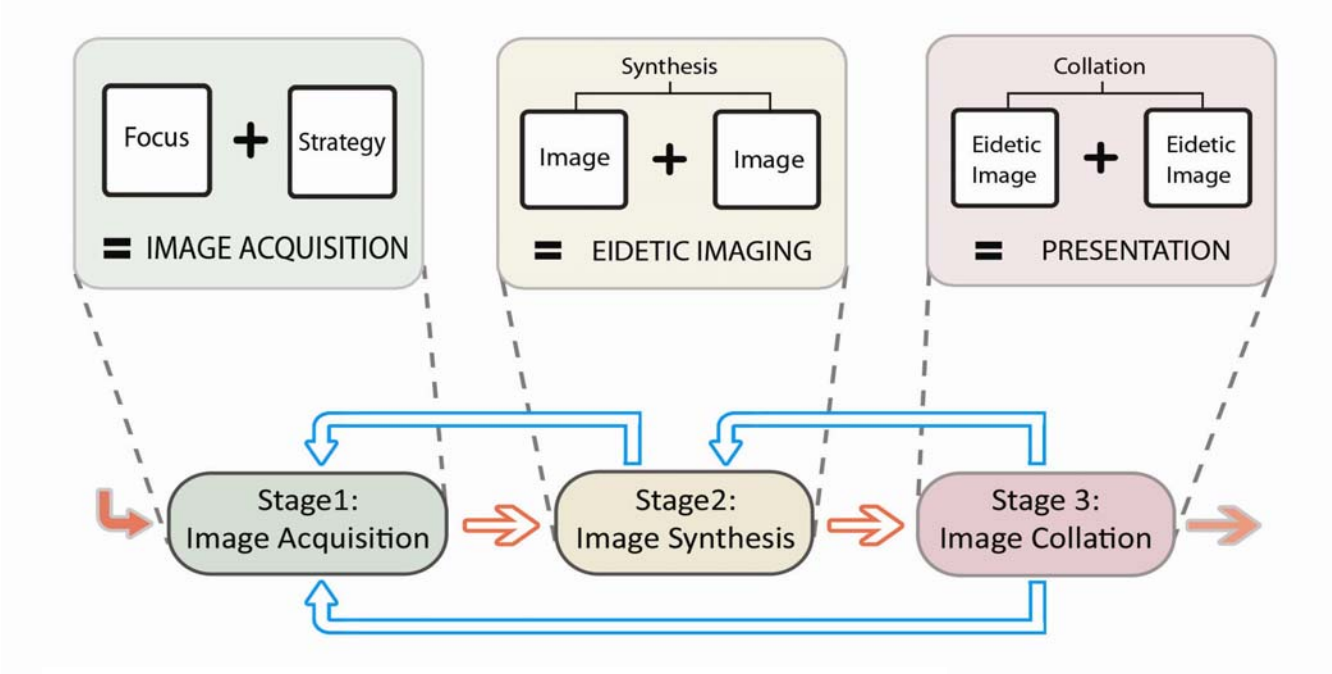


Figure 3.5: Expanded Procedural Imaging Methodology Flowchart

Populating the Imaging Toolbox

An imaging toolbox of strategies is created, effectively addressing the five identified categories of imaging opportunities: 1) the externalization of the spectator from the depicted scene; 2) the objectification of the landscape; 3) the privileging of vision over other forms of engagement; 4) the limited use of artistic conventions; 5) and the concealment of construction and labor under a stylistic artifice. A number of sub-categories identified in chapter two, for example, *framing, static engagement,* and *solo view point,* relate to each of the five main categories listed above. Imaging strategies appropriate to each of the sub-categories are identified through a broad literature review using the internet, academic journals, and books in the following academic fields: philosophy, anthropology, cultural geography, landscape architecture and art. Strategies are chosen based on their ability to address a specific imaging opportunity or shortcoming and diversify or improve existing graphic

practices. Each imaging strategy is defined in terms of the solution offered, the method of depiction, and the related stage of the three-part methodology (see figure 3.6).

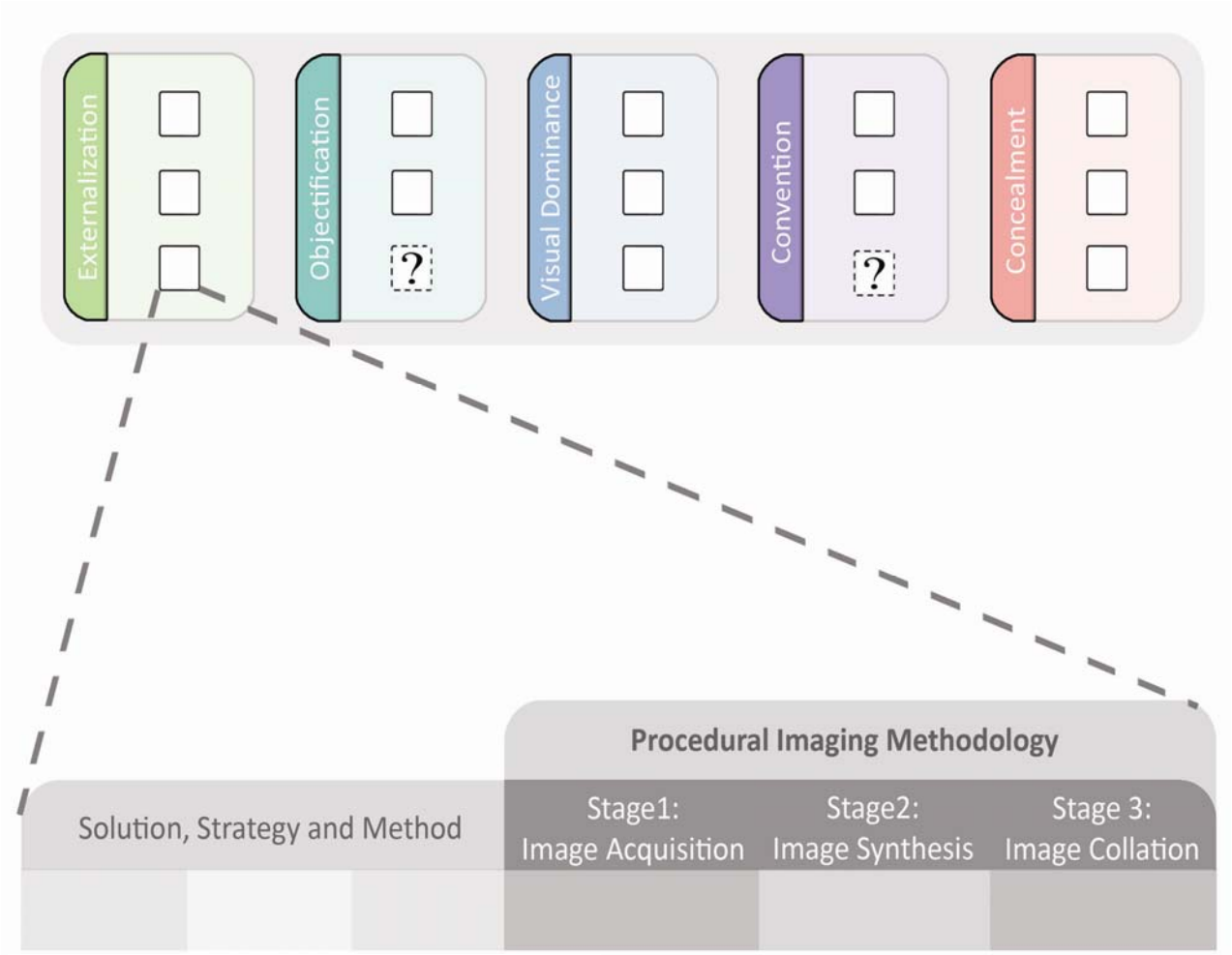


Figure 3.6: Defining each Imaging Strategy

The compendium of strategies associated with the imaging toolbox is by no means an exhaustive list. Instead, in the spirit of innovation, which this thesis hopes to promote, the toolbox is considered an evolving and personalized entity. It is encouraged and anticipated that, as additional strategies are identified or others become obsolete, the toolbox will be adapted to reflect the requirements and habits of the individual designer as they vary over time and across projects.

The strategies associated with the imaging toolbox are intended to provide the designer with greater flexibility for fulfilling client requirements and additional fidelity and resolution for capturing and communicating site context and design proposals . Crucially, the strategies, if considered in isolation, are likely to bias the viewer towards a certain reading of the landscape because the information captured will be highly discrete. Therefore, the toolbox is rearranged to integrate the disparate strategies according to their respective stage within the three-stage imaging methodology (see figure 3.7).

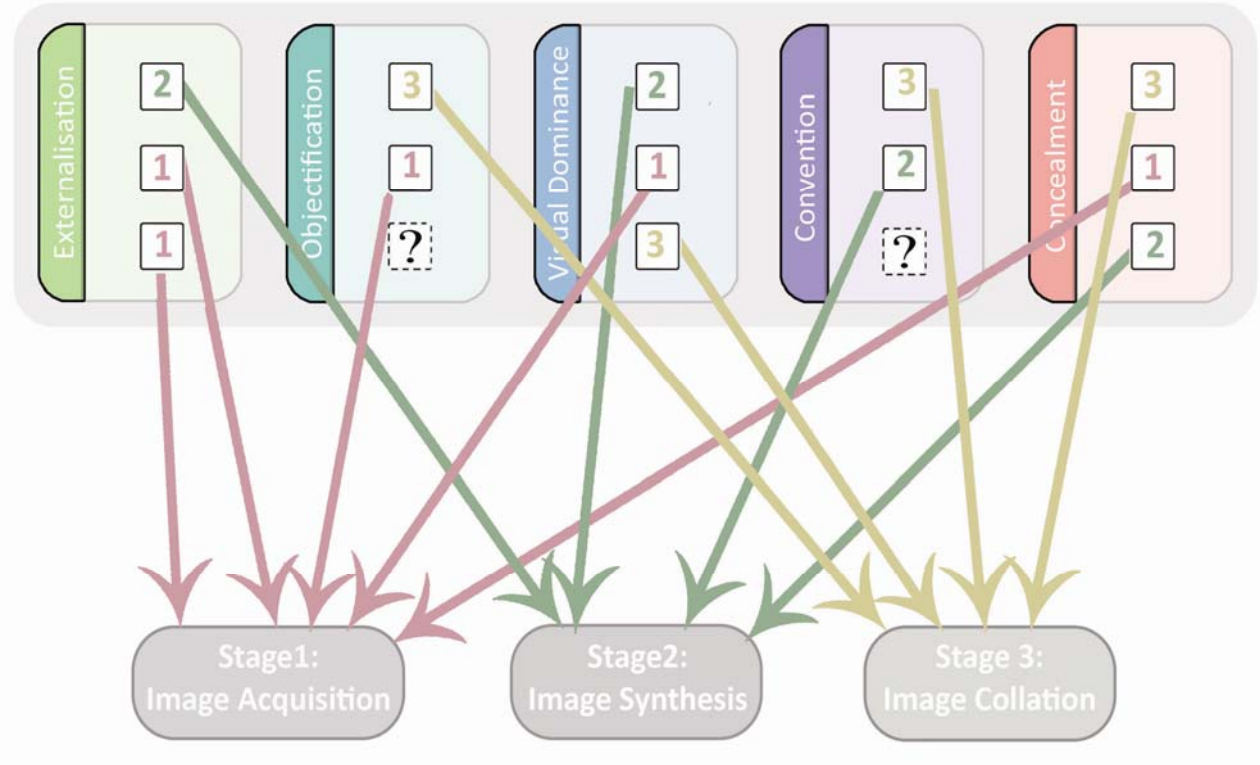


Figure 3.7: Reorganizing Strategies According to the Imaging Methodology

Representing the Imaging Toolbox

Each stage of the imaging methodology and associated imaging toolbox is represented graphically, to provide designers with a visual reference guide that can be consulted when analyzing site context or creating design drawings. The toolbox for stage one, *image acquisition,* is based on a template, shown in figure 3.8. Each strategy of stage one's toolbox is defined in terms of the phenomena it captures, a graphic thumbnail for identification purposes, and its method of depiction.

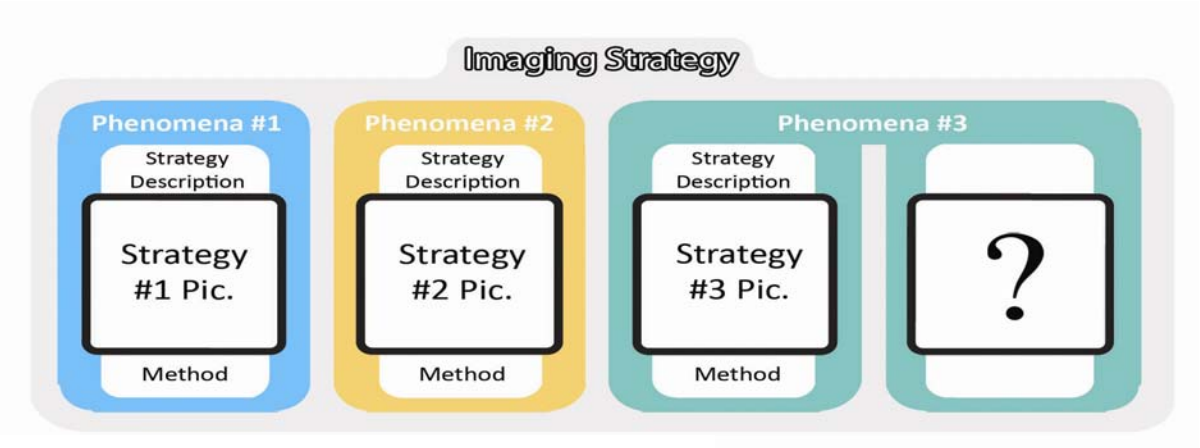


Figure 3.8: Image Acquisition Toolbox Template

The toolbox for stage two, *eidetic image synthesis,* is based on a template, shown in figure 3.9. Each strategy of stage two's toolbox is defined in terms of a graphic thumbnail for identification purposes, and its method of depiction.

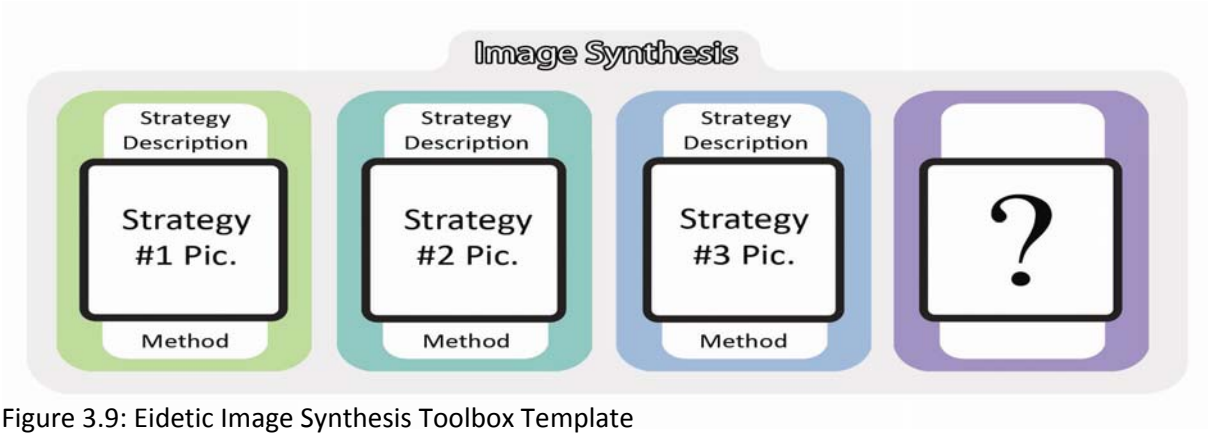


Figure 3.9: Eidetic Image Synthesis Toolbox Template

The toolbox for stage three, *image collation* for presentation purposes, is based on a template shown in figure 3.10. Each strategy of stage three's toolbox is defined in terms of a graphic thumbnail for identification purposes and its method of presentation.

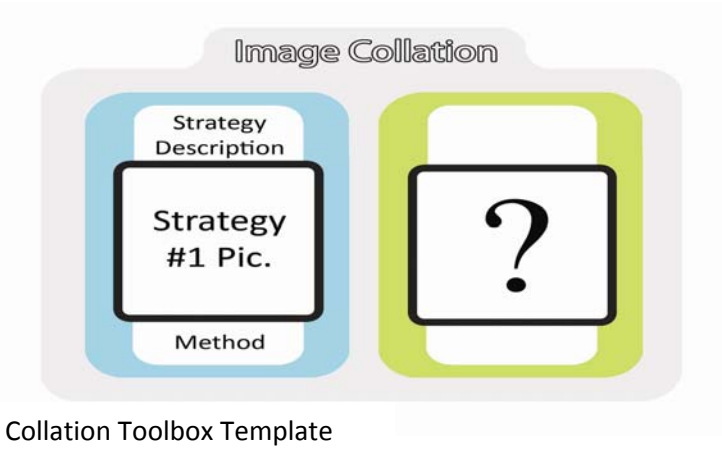


Figure 3.10: Image Collation Toolbox Template

Together the three graphic toolboxes form a visual reference guide to assist users in implementing the three-stage imaging methodology. The desired outcome is to provide landscape architects with a powerful tool that reveals or assists in depicting the social, cultural and natural properties of an existing or proposed landscape. Such features may remain hidden and contingent, until a holistic image emerges, composed of separate depictions, forming a representation greater than the sum of the individual elements. Subsequent chapters will develop the toolbox and implement it according to a contextual application that demonstrates its efficacy.

CHAPTER 4

IDENTIFYING IMAGING STRATEGIES

The goal of this chapter is to identify suitable imaging strategies that effectively address the shortcomings associated with the use of historically derived pictorial conventions in landscape architecture graphics. These are categorized in terms of the following five imaging opportunities: 1) the externalization of the spectator from the depicted scene; 2) the objectification of the landscape; 3) the privileging of vision over other forms of engagement; 4) the limited use of artistic conventions; 5) and the concealment of construction and labor under a stylistic artifice. Each category is supported by several sub-categories, for example *framing,* and *static engagement,* identified in chapter two and summarized in table 2.1.

This chapter will address each category and the associated sub-categories individually, proposing solutions which can be related to a specific strategy and method of depiction. Each strategy will be assigned to a specific stage of the three-part imaging methodology according to the table shown in figure 4.1. Visual examples from different academic fields (Philosophy, Anthropology, Cultural Geography, Landscape Architecture and Art) will be used to demonstrate the principles and efficacy of each strategy. Upon concluding the strategy review for each category, the findings will be summarized in the table shown in figure 4.1.

Figure 4.1: Example of Strategy Summary Table

1) Externalization of the viewer from the depicted scene

Chapter two determined that current pictorial conventions have created a physical and phenomenal distance, externalizing the spectator from the scene. The spectator is both the individual depicting the landscape (for instance a designer such as a landscape architect) and the client or audience viewing the finished presentation. Therefore, the strategies must address this set of circumstances to overcome the implied physical and phenomenal distance. The following sub-categories from chapter two have been identified as the primary practices that perpetrate the act of 'externalizing the viewer from the depicted landscape scene'. They are:

a) Framing: The practice of framing the view, inherited from the stage screen and the practice of 'coulisse', and encoded through the conventions of perspective, suggests that the spectator is looking through a window, and therefore separate and distant to the depicted scene.

b) Static Engagement: The graphic practices of landscape architecture promote a visual form of engagement analogous to the mode of encounter dictated by the Greek grid system and the ancient theatre that places the landscape as a static backdrop. When viewers observe graphic boards mounted on a wall, a stationary frontal stance is promoted that discourages tactile engagement and denies curiosity, mystery and exploration.

c) Phenomenal Distance: Descartes' binary model suggests that a designer analyzing a landscape is distanced from the phenomenal world due to a tendency to presuppose the outcome of events before they have happened, and therefore discretely focuses on certain phenomena at the expense of others that may provide detailed insights.

a) Framing

Conventional practice within the profession of landscape architecture is to constrain a perspective vignette within the rigid frame of the picture plane. According to Alberti, this imposes a physical distance from the depicted scene, analogous to the act of looking outwards, from the internal vantage point of a room (Crandell 1993). This convention suggests that details beyond the limits of the frame are of no consequence and that the interaction between components of the landscape is limited to the visible scene. In reality, landscapes are complex and fluctuating entities that in general do not conform to the rigid boundary of a rectangular or square frame.

The format of a traditional perspective vignette does not accurately portray the process of visual scanning that humans use when observing their environment. "Visual perception" as described by Daniel Herbert, professor of Architecture at the University of Oregon, "does not involve a subject seeing a full field of view, sharply and all at once. Rather, perception is more like a series of variably focused snapshots merging into one another in time and space" (Herbert 1993:5). Photo collage experiments initiated by the artist David Hockney established a method for layering visual information that more accurately represents the process of visual scanning humans use (see figure 4.2).

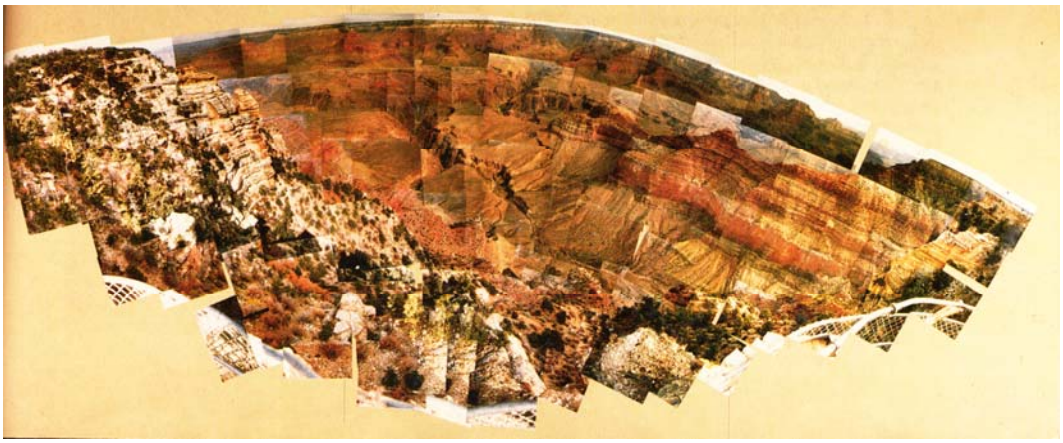


Figure 4.2: David Hockney, The Grand Canyon Looking North, 1982
(Gardner 1991:1075)

(i) Edge Modulation & Frame Breachment: The following examples demonstrate the efficacy of Hockney's photo collage method in recreating the effect of visual scanning and respecting phenomena and characteristics of the landscape that extend beyond the conventional square or rectangular plane. A photomontage vignette by MUNI uses collaged images to define an irregular edge that suggests multiple snapshots of the same scene that destroys the illusion of a unified view from a window (see figure 4.3).

Figure 4.3: MUNI, Photo Collage of Trackway at Drawbridge, San Francisco, CA
(Keeney 2000:52)

Attention is effectively directed through the thoughtful modulation of the picture edge to prominent features such as an overhead mechanical device that raises a bridge for boats to pass and to indicate the flow of traffic through the use of a projecting red band. In addition the cyclist and overhead hoarding command further prominence by actually breaching the picture plane.

Ken Smith's vignette of dumpster gardens in New York uses photomontage to direct attention to the entrance of the site through the use of a modulated edge at the bottom of the far right photo. Importance is bestowed upon the rendered dumpsters by the manner in which they breach the frame at the top and right (see figure 4.4).

Figure 4.4: Ken Smith, Photomontage of Dumpster Gardens, Queens Plaza, New York (Rappaport and Amidon 2005:18)

(ii) Frame Breachment: Examples by Corner in figure 4.5, and West8 in figure 4.6, demonstrate how the concept of breaching the frame can be applied to a non-pictorial view, such as a plan view. Figure 4.5 shows an image created by Corner of a topographical base map of a region in Faireville, North Dakota overlaid with information indicating type and location of specific mineral deposits. The composition respects the boundaries of each indicated mineral deposit by allowing it to bleed off the edge of the square base map, providing a more informative and context-specific account of a site's features. West8 utilizes an equivalent strategy to demonstrate that the meandering path of a river

extends beyond the depicted urban scene and therefore is part of a context broader than the limits of the pictorial frame (see figure 4.6).

Figure 4.5: James Corner, Pedological Drift, Faireville, North Dakota (Corner 1996:53)

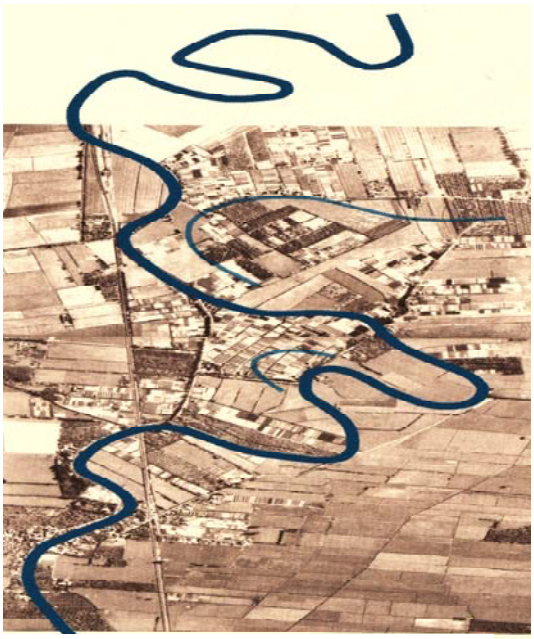


Figure 4.6: West8, Plan View Map of Viking River (West8 2008:34)

The use of *frame breachment* and *edge modulation* in photomontage represents a subjective decision on behalf of the author to highlight features and communicate elements which are deemed important. As a result, the vision presented is no less biased than a traditional framed photograph. In addition, the use of an irregular edge creates a boundary analogous to that of a rectangular frame, beyond which no details are revealed. The advantage of the technique is in the ability of the author to highlight and direct attention to specific details.

These examples provide two strategies for resolving the effects of framing, by respecting phenomena and characteristics that extend beyond the picture plane. These strategies will be

respectively referred to as '*breaching the frame*' and '*modulating the edge*' and are represented by the graphic thumbnails shown in figure 4.7 and figure 4.8. Each strategy fulfils a different role: for instance, '*breaching the frame'* allows the boundary of a site-specific feature to be respected, whereas '*modulating the edge*' draws attention to specific characteristics whose boundaries are not necessarily indicated. Photomontage or collage are possible methods of implementation.

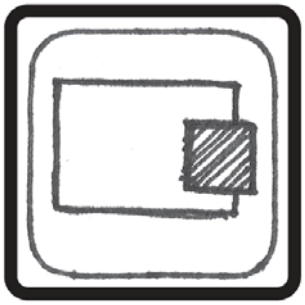


Figure 4.7: Breaching the Frame, Graphic Thumbnail

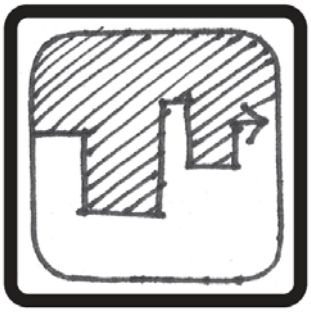


Figure 4.8: Modulating the Edge, Graphic Thumbnail

These strategies will be incorporated into stage two of the imaging toolbox, '*eidetic image synthesis'*, because they represent post-processing of images.

b) Static Engagement

The historical conventions associated with viewing images have resulted in the graphic output of landscape architecture being viewed under conditions that Dovey calls '"gallery architecture", where the spectator defaults to viewing architectural boards and mounted vignettes according to gallery etiquette, assuming a stationary frontal stance that prohibits tactile engagement and denies curiosity, mystery and exploration (Dovey 1993).

Despite the demonstrated legacy that graphic practices of landscape architecture share with art, Treib claims that designers continue to represent their designs under far more constraints than those of the art world (Treib 2009). The artistic practices of sculpture and the flip book both provide unique solutions for creating physical engagement and encouraging exploration via media that encourage the spectator to shift from a stance of viewer to participant.

(i) Sculptural Engagement: Sculpture according to Potts "tends to activate a more directly physical and bodily engaged response from the viewer than a painting;" it intrudes on the surrounding space, encouraging a kinaesthetic reaction prompted by curiosity, and the need to explore and understand (Pott 2000:viiii). When done well, it can achieve what David Smith describes as the 'adventure' of viewing and assist in internalizing the viewer in the experience: "My position for vision in my works aims to be in it" (Smith 1952:76). Therefore, the principles of sculpture can be considered a valuable tool in engaging the spectator and internalizing the experience.

An example of how the practice of sculpture can be applied to presentations is demonstrated by figure 4.9. Orthogonal landscape views and circular panoramas can be constructed into a three dimensional exhibit by arranging graphic boards as shown. The arrangement mobilizes the viewer in order to experience it in the round as opposed to a frontal and static gallery arrangement.

Alternative presentation techniques such as model making and three-dimensional digital modeling are widely used within the profession. Their efficacy in internalizing and mobilizing the spectator has been demonstrated by practitioners such as Kathryn Gustafson, George Hargreaves and Adrian Geuze. Future studies should consider the advantages of integrating these methods into the proposed sculptural arrangements shown in figure 4.9.

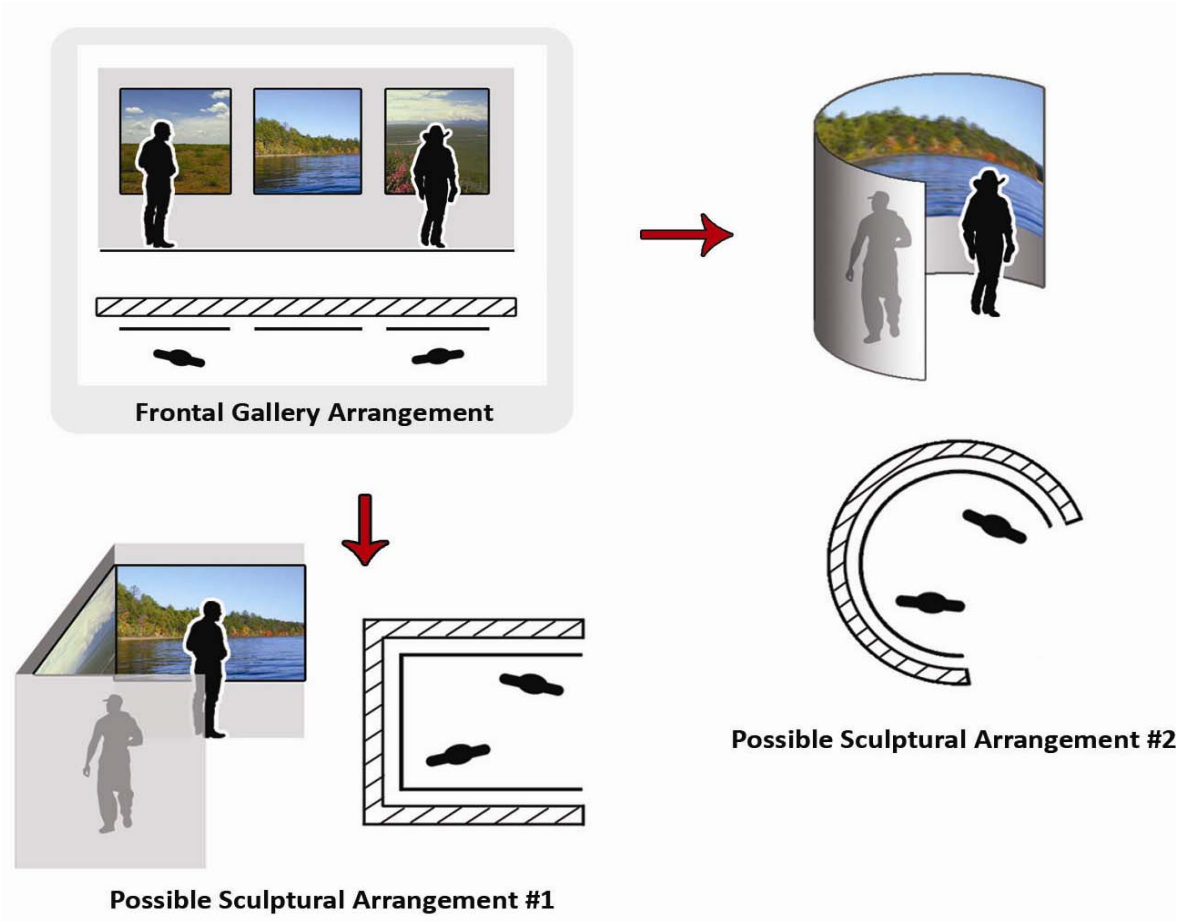


Figure 4.9: Sculptural Arrangement of Landscape Views vs. a Static and Frontal Gallery Arrangement

(ii) Tactile Engagement: Flip books consisting of graphic overlays provide an alternative method for internalizing the spectator by provoking engagement and curiosity. Figure 4.10 demonstrates an evolution of Repton's before- and after-imaging technique, developed during the late eighteenth-century, where individual landscape views, in this case elevations, can be collated into a flip book of transparent overlays that allow a composite image to be formed by combining or removing individual views (Daniels 2008). The spectator can control the arrangement of information by including or excluding certain layers by flipping the appropriate pages to create the desired effect. This allows the spectator to digest the information present on each individual layer, while also achieving a 'gestalt'

reading from the effect of all layers simultaneously, or anything in between. The interactive and customizable aspect of the flip book guarantees a tactile response that should foster engagement and curiosity, and reduce the implied externalization that results from the traditional wall-mounted gallery ethos.

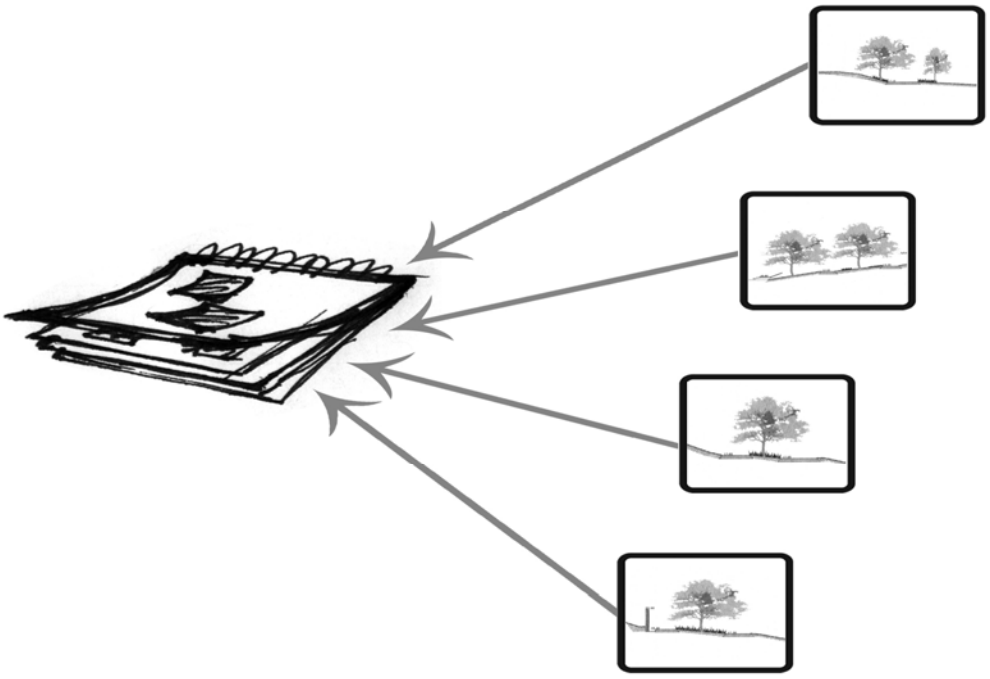


Figure 4.10: Flip Book Overlay Arrangement of Landscape Views

These examples provide two strategies for resolving the effects of static engagement, by kinesthetically engaging the spectator to become a participant. While the focus of this thesis is two-dimensional graphics, audio-visual technology which uses three-dimensional animation (SketchUP, 3D-Max) with sound and projected images could be integrated into the proposed sculptural arrangement. The scope of this thesis does not allow a thorough investigation of these possibilities but their integration should be considered complementary to the presented techniques. These strategies will be referred to as '*sculptural engagement*' and '*tactile engagement'* and are represented by the graphic

thumbnails shown in figure 4.11 and figure 4.12. These examples represent only a sample of possible iterations: the desire is to foster awareness of the benefits associated with alternative methods of presentation and promote the exploration and use of additional techniques.

Figure 4.11: Sculptural Engagement, Graphic Thumbnail

Figure 4.12: Tactile Engagement, Graphic Thumbnail

These strategies will be incorporated into stage three of the imaging tool box, '*image collation'*, because they represent the integration of synthesized images for presentation purposes.

c) Phenomenal Distance

The ramifications of Cartesian rationality detailed in chapter two are claimed to foster a detached existence between humans and the phenomenal world, caused by a tendency to presuppose the outcome of events before they have happened in a manner analogous to the hypothetical postulating of the scientific paradigm. By entering into an investigation with a preconceived notion regarding the outcome, unique and crucial insights that do not conform to the initial presuppositions will go unnoticed.

As a response to the crisis of understanding that Cartesian rationality represented, the philosophical field of phenomenology evolved to propose an alternative cognitive model that is defined by Brentano as a "descriptive psychology"(Moran 2000:9). Phenomenology suggests that the phenomenal distance created by Cartesian rationality can be severed by entering into an investigation that rejects hypothesis and all prior knowledge and instead focuses on the unbridled subjective experience of a place. Therefore, to interpret the landscape phenomenologicaly, the investigating individual must engage the environment with all mental faculties alert and open to possibilities. Material is acquired based on impulses and stimuli and all data is recorded subjectively through sketching, photography, and written description (Thomas 2006:44). To experience, understand and interpret is not just a method of inquiry, as Ricouer states, but "a mode of being" (Ricouer 1974:3). Therefore there can be no presuppositions concerning what insights or data may be collected, but rather an opening up to all the possibilities that may occur, which encourages disparate elements to emerge and combine as new insights. As Goethe explains, the purpose of a phenomenological mode of enquiry is to "Seek nothing beyond the phenomena; they are themselves the theory" (Goethe 1790).

The following examples demonstrate the type of conclusions that are possible from a phenomenological mode of enquiry. The findings describe the insights of numerous observers, who through collecting and comparing the morphological characteristics of plant and animal communities were able to determine how specific characteristics within a biome reflect a region's varying environmental attributes. Each example describes how individual details concerning the morphology of flora and fauna, such as leaf shape, orientation of foliage, form and color of flowers and fruits, are in harmony with their particular landscape, and therefore the insights obtained from each detail can be considered a partial disclosure of the whole (Riegner 1993). As Bortoft states, "it is through the parts that the whole is encountered" (Bortoft 1985:182).

(i) Qualitative Analysis – Plant Morphology: Two investigations drew similar conclusions on the variability of plant morphology along the stem of a species and its association with changing environmental conditions along the stem length. According to Goethe, one can examine a leaf sequence from the base of a typical herbaceous plant up the stem to its apex and observe that the shape changes successively from one leaf to the next (Goethe 1790). Figure 4.13 shows the variation in leaf morphology of bindweed and figure 4.12 depicts the foliar variation of several varieties of cotton plants.

Figure 4.13: Leaf Morphology of a Bindweed

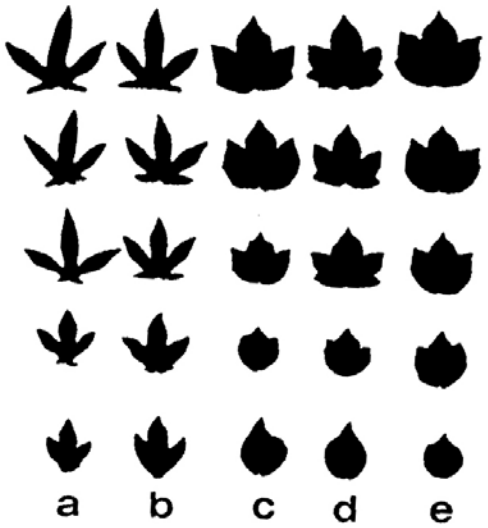


Figure 4.14: Leaf Morphology of Five Cotton Varieties

Both examples display a tendency for the morphology of the leaf to become increasingly differentiated from the basal leaves upwards (Sinnott 1960). The suggested conclusion is that the plant morphology is an expression of the qualities that characterize a landscape. For example, the increasing differentiation of the leaf can be associated with greater exposure to light and wind, and a reduction of moisture as it migrates away from the damp, dark understory, representing a morphology of dryness. Conversely, the leaves nearest the ground are more round and less dissected, displaying a compact form that suggests an association with the moist properties of soil (Riegner 1993). Therefore, the landscape

can be understood in terms of varying degrees of dryness or dampness by observing the morphology of foliage within that area.

(ii) Qualitative Analysis – Animal Morphology: Similar insights have been observed concerning the morphology of specific animal species and their native habitat. The previous example suggested that plant morphology, when in a moist habitat, often produces rounded, undivided, relatively undifferentiated leaves. The "watery" quality is thus revealed through the roundness and structural simplicity that epitomizes the form of a water droplet (Goethe 1790). An examination of the form of various aquatic animals, the sea lion, sea otter, muskrat, beaver, and marsh rabbit, shows they are all exemplified by heavy-set bodies and less "refined" forms (see figure 4.15). By comparison, equivalent terrestrial species, such as the weasel, chipmunk, squirrel, desert cottontail rabbit, exhibit more delicately refined bodies, longer tails, and svelter figures as shown in figure 4.16 (Riegner 1993).

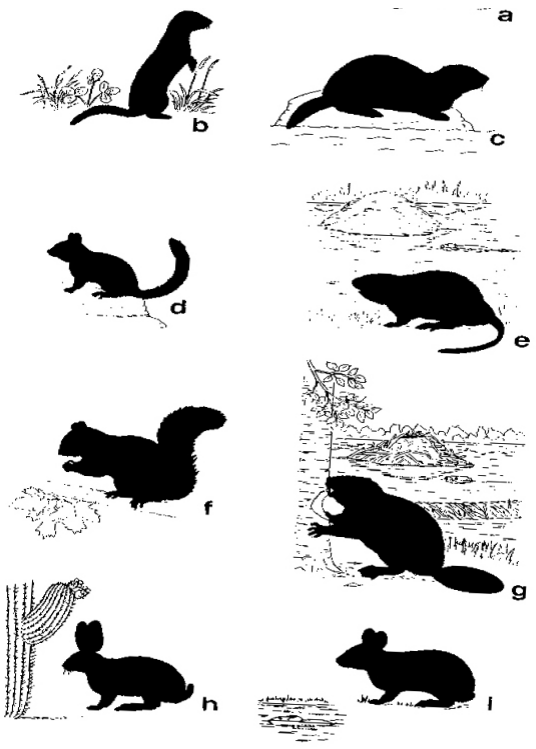


Figure 4.15: Animal Morphology of Terrestrial and Aquatic Species

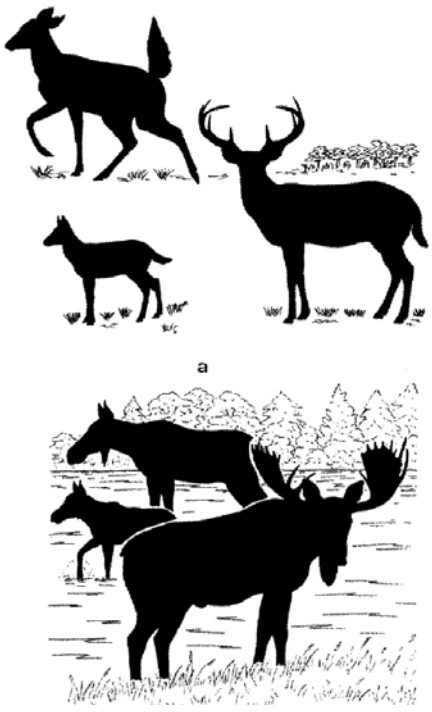


Figure 4.16: Comparison of Animal Morphology within the Deer Family

This relationship between animal morphology and endogenous climate is also evident in the deer family (see figure 4.16). A comparison of the moose, which is associated with aquatic environments and the white - tailed deer, shows the former to be more massive and the latter to have more delicate features. These morphological tendencies are also expressed in the antlers of the two animals – those of the bull moose are broad and heavy, while those of the white-tailed deer buck are slender and branching (Riegner 1993).

The relevance of such phenomenological insights is that they were obtained through no prior presuppositions. Instead, an embracing of the unbridled subjective experience of a place allowed powerful insights to be discovered that connected specific environmental characteristics of the landscape to the observable properties of animals and plants. Such insights assist an observer in understanding characteristics of the broader landscape without the use of scientific equipment: a disclosure of the whole, through the observation of detail. Therefore, a phenomenological method of analysis is proposed that involves the conscientious observation of the landscape, coupled with the collection of material and evidence through photography and sketching.

A phenomenological approach to interpreting and representing a site can never truly avoid a hypothetical reduction of the observed phenomena and processes. The subjective nature of the method incorporates the individual's point of view and therefore relies on prior knowledge and experience. Such a bias could be minimized by incorporating multiple individuals in the investigation to broaden the perspective of insights obtained.

This strategy will be split between the observation of animal and plant morphology and referred to as '*qualitative analysis – plant morphology*' and '*qualitative analysis – animal morphology*'. It will be represented by the graphic thumbnails shown in figure 4.17 and figure 4.18. The breadth of phenomenological investigations need not be limited to animal and plant communities -although these

do represent powerful indications of environmental conditions – but can be expanded to encompass all possible phenomena.

Figure 4.17: Qualitative Analysis– Plant morphology, Graphic Thumbnail

Figure 4.18: Qualitative Analysis– Animal morphology, Graphic Thumbnail

These strategies will be incorporated into stage one of the imaging toolbox, '*image acquisition'*, due to the requirement for an on-site embodied collection of raw information.

A summary of the strategies used to exploit the imaging opportunities created by the 'externalizing of the spectator from the depicted scene' is shown in table 4.1. The table is arranged according to the solution each strategy offers, the suggested method of implementation, and the respective stage of the three-part procedural methodology to which they relate.

Table 4.1: Summary Table of Strategies Used to Exploit the Imaging Opportunities Created by the Externalizing of the Spectator from the Depicted Scene

					Procedural Imaging Methodology		
	Detrimental Practice	Solution	Strategy	Method	1: Image Acquisition	2: Eidetic Image Synthesis	3: Image Collation
Externalization	Arbitrary Framing	Respect Phenomena Beyond Picture Plane	Edge Modulation	Montage, Photomontage		✓	
			Frame Breachment			✓	
	Static Engagement	Audience Participation	Sculptural Engagement	Orthogonal Construction of Views			✓
			Tactile Engagement	Flip Book Portfolio - Sequential Overlay of Views			✓
	Psychological Separation: Phenomenal distance *	Phenomenological mode of enquiry	Qualitative Analysis: Animal and Plant Morphology	Sketching, Photography, Material Collection	✓		

2) Objectification of the Landscape

The insights obtained from the historical review determined that the conventions associated with Naturalistic painting, perspective and Cartesian rationalism have reduced understanding and representation of the landscape to a domain of objects that appear static and devoid of interaction. The following sub-categories have been identified as the primary practices that are responsible for objectifying the landscape, by denying process, relationship and temporality.

a) Static representation: The practice of depicting the landscape as a static entity devoid of motion or temporality.

b) Non-Reciprocal representation: The practice of depicting the landscape as a discrete set of independent objects that do not engage in interactive relationships or processes.

a) Static representation

The conventions associated with Naturalistic painting sought to create increasingly realistic illusions of the external landscape. In doing so, artists depicted features such as trees, terrain, buildings, and people as static entities. Artistic developments initiated by the Impressionists towards the end of the nineteenth century explored new ways of seeing the landscape that blurred the lines of pictorialism (De la Croix and Tansey 1991).

(i) Gestural Temporality: Van Gogh's post-impressionistic painting, *Starry Night*, is an example of the explorations that artists were able to make once pictorial conventions of the past were abandoned (see figure 4.19). According to De la Croix, van Gogh deliberately chose not to illustrate the evening sky as he viewed it, in terms of a dark expanse filled with twinkling pinpoints. Instead, he demonstrates the temporality of the vast domain by depicting it as a mass of immense swirling vortexes and radiating spheres that interact with adjacent cosmic bodies as they migrate across the sky (1991:936).

Figure 4.19: Vincent van Gogh, Starry Night, 1889 (Gardner 1991:937)

(ii) Subtractive and Additive Imaging: Dee in figure 4.20, and South in figure 4.21, both employ similar techniques to illustrate the movement of wind through a cornfield by focusing on representing motion through broad charcoal strokes and the movement of a hand through continuous gestural pencil lines. Such images effectively communicate a sense of temporality through the gestural manipulation of media.

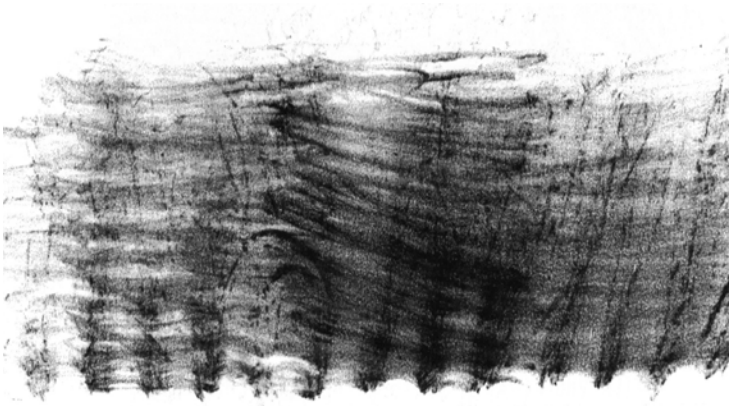


Figure 4.20: Catherine Dee, Charcoal Drawing Indicating Wind in Maize Field (Dee 2003:202)

Figure 4.21: Helen South, Gestural Pencil Drawing of a Hand (South)

Dee suggests the practice of erasure as an additional method for injecting a sense of temporality into the depicted scene. Erasure usurps the notion that once marks have been made on paper they are permanent, by demonstrating the efficacy of subtractive and additive imaging as a valuable tool for tracking changes in time, idea, and form. Consider the sketch of a horse by da Vinci: the transition of form over time is apparent through the ghost-like remnants of the temporal snapshots (see figure 4.22), creating a critical tension that directs attention equally to the obscured as well as the prominent (Dee 2008:67). Contemporary artists such as Richard Diebenkorn would draw, erase and correct, layering visual information in a style evocative of the unfinished paintings of Piet Mondrian and the corrected charcoals of Matisse. The outcome revealed the searching process of the artist and highlighted changes such as light, shadow and motion (Livingston and Diebenkorn 1997). The erasure method represents an effective tool for depicting temporal processes within the landscape; it allows formal qualities to be defined, while indicating their transition through time.

Figure 4.22: Leonardo da Vinci, Sketch Drawing of a Horse (Brown 2008:70)

These examples provide two strategies for depicting temporality that can be transferred to depictions of the landscape. These strategies will be respectively referred to as '*gestural temporality*' and '*subtractive – additive imaging'* and are represented by the graphic thumbnails shown in figure 4.23 and figure 4.24. Suitable media are pencil, pen or charcoal.

Figure 4.23: Gestural Temporality, Graphic Thumbnail

Figure 4.24: Subtractive – Additive Imaging, Graphic Thumbnail

These strategies will be incorporated into stage one of the imaging toolbox, '*image acquisition'*, because they involve the creation of images based on an existing or proposed site.

b) Non-reciprocal representation

The following graphic examples from artists and landscape architects provide strategies for effectively communicating the reciprocal nature of the landscape by demonstrating processes and relationships.

(i) Temporal Sequencing: During the late nineteenth-century, Eadweard Muybridge conducted a series of photographic studies concerned with identifying the successive stages in human and animal motion (see figure 4.25). Photography provides a useful medium for capturing the process of evolving phenomena that are often too ephemeral to be effectively sketched. Muybridge's thoughtful

arrangement of each photographic still clearly communicates the progressive moment of a single action that is understood as a temporal continuum because of our Western habit of reading books by beginning at the upper left corner and scanning right before descending to the lower row (De la Croix and Tansey 1991:902).

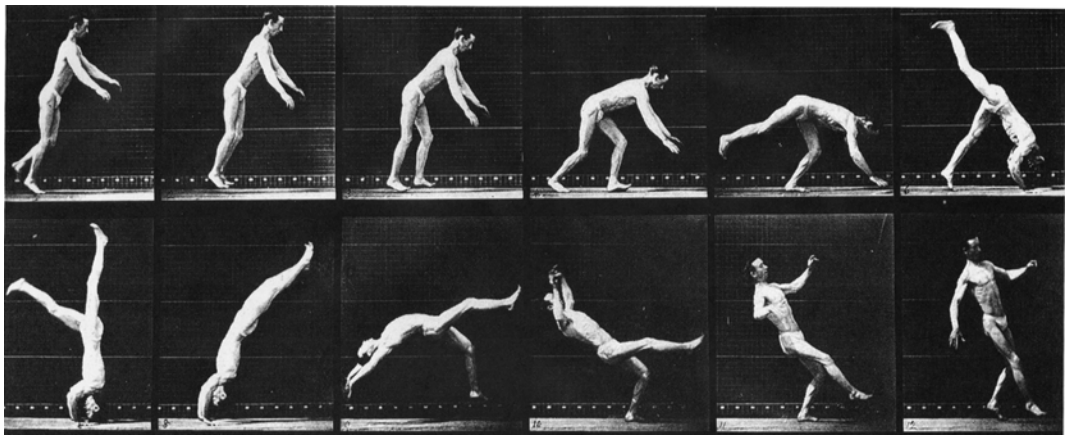


Figure 4.25: Eadweard Muybridge, Hand-Spring, A Flying Pigeon Interfering, 1885 (Gardner:1991:902)

For the remedial design competition at Fresh Kills Park, Staten Island, Corner uses a transitional study to demonstrate the successional evolution associated with his proposed design. Tree cover and species diversity are effectively communicated via the three depicted stages that combine plan and elevation views (see figure 4.26).

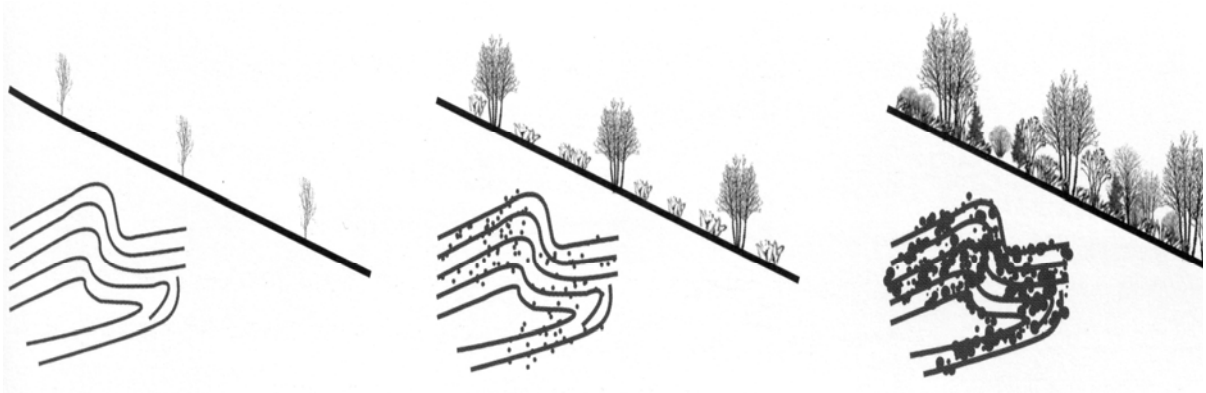


Figure 4.26: Field Operations, Successional Development at Fresh Kills Reserve
(Reeser and Schafer 2002:25)

Corner depicts the longhouse cave of Mesa Verde, Colorado as a landscape intimately connected to daily and seasonal variations, by using a series of evolving graphic stills (see figure 4.27). The transitional images demonstrate how the fluctuation of solar activity interacts with the cave overhang to maximize the amount of shade during summer months, while providing passive solar radiation during the cold winter months.

Figure 4.27: James Corner, Longhouse Cave. Mesa Verde, Colorado 14 x 20 (Corner 1996:141)

West8 utilizes the equivalent strategy to demonstrate the seasonal variation in a proposed planting scheme at a park in Enschede Holland (see figure 4.28). The transition in color and variety of blooming species is effectively depicted.

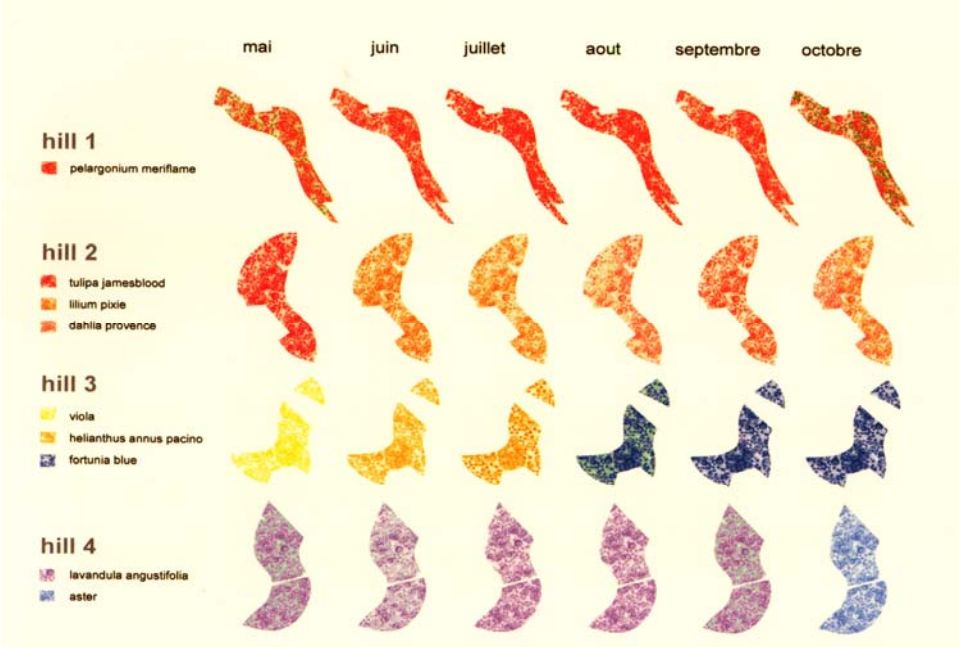


Figure 4.28: West8, Seasonal Vegetation Growth Patterns (Gueze 2008:60)

These examples provide a practical method for documenting the processes that are observed within the landscape; this strategy will be referred to as *'temporal sequencing'* and will be represented by the graphic thumbnail shown in figure 4.29. Suitable mediums for depiction are photography or diagramming.

Figure 4.29: Temporal Sequencing,
Graphic Thumbnail

The *'temporal sequencing'* strategy will be incorporated into stage one of imaging tool box, '*image acquisition'*, because it involves the creation of images based on an existing or proposed site.

Crucially, this strategy is not only effective at depicting processes but is also adept a conveying motion as demonstrated by Muybridge's example in figure 4.25. Therefore, this strategy should be considered complementary to the strategies of '*gestural temporality'* and '*subtractive – additive imaging',* described earlier*,* and can be used to depict either motion and/or process.

(ii) Spatio-temporal Analysis: The strategies presented so far in this section refer to the depiction of processes. However, given the interdependence that exists between components of the landscape, most visible processes are the result of dynamic relationships. The following examples demonstrate how such processes can be depicted as relationships that occur over space and time.

The artist Rube Goldberg constructed elaborate sequential drawings to explain complicated processes of cause and effect (see figure 4.30). His analytical drawings investigate how things work and interact, and are effective tools for making the viewer 'keenly aware of the effects of time and motion across space (Sullivan 2008:65). Rube's depiction vividly demonstrates the relationship between disparate elements, and should be considered a plausible method for representing process and continuity in the landscape. For instance, by depicting the movement of wildlife, water, and humans and how they relate and interact within a closed system.

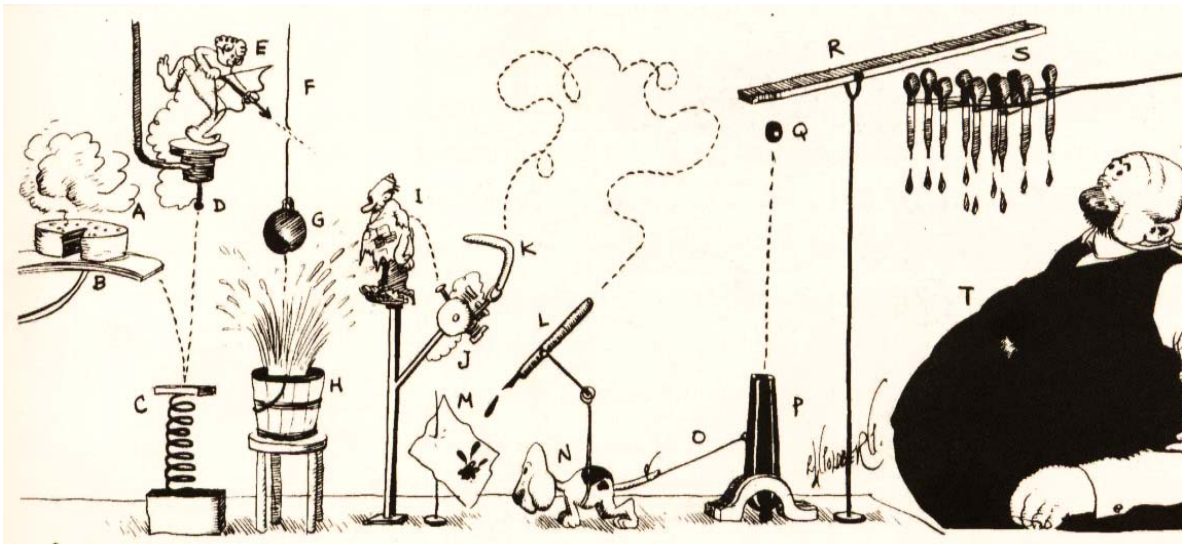


Figure 4.30: Rube Goldberg, Hiding a Gravy Spot, 1920 (Sullivan 2008:65)

Newman demonstrates an innovative graphic technique to illustrate the annual life-cycle of the Japanese beetle; physical space and calendrical time are combined into a graphic continuum that reads from left to right and effectively communicates the arthropod's relationship to its environment as well as it process of reproduction (see figure 4.31).

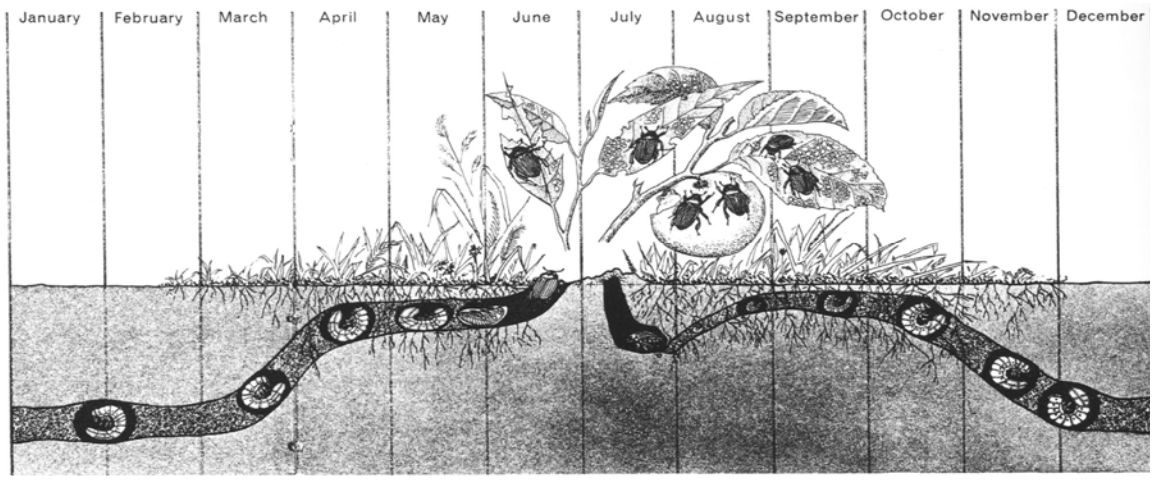


Figure 4.31: L Newman, Annual Life-Cycle of Japanese Beetle, 1965 (Tufte 1990:110)

Eric Sloane used analytical pen and ink drawings to understand how machines and tools of the past were fabricated and used. Working systematically, Sloane could summate the insights gleaned through drawing, and analyzing the device's interstitial functions, in order to obtain a comprehensive visual account of its operation (Sullivan 2008). Figure 4.32 demonstrates the function of a grist mill, reconstructed and visualized by Sloane according to his methodology.

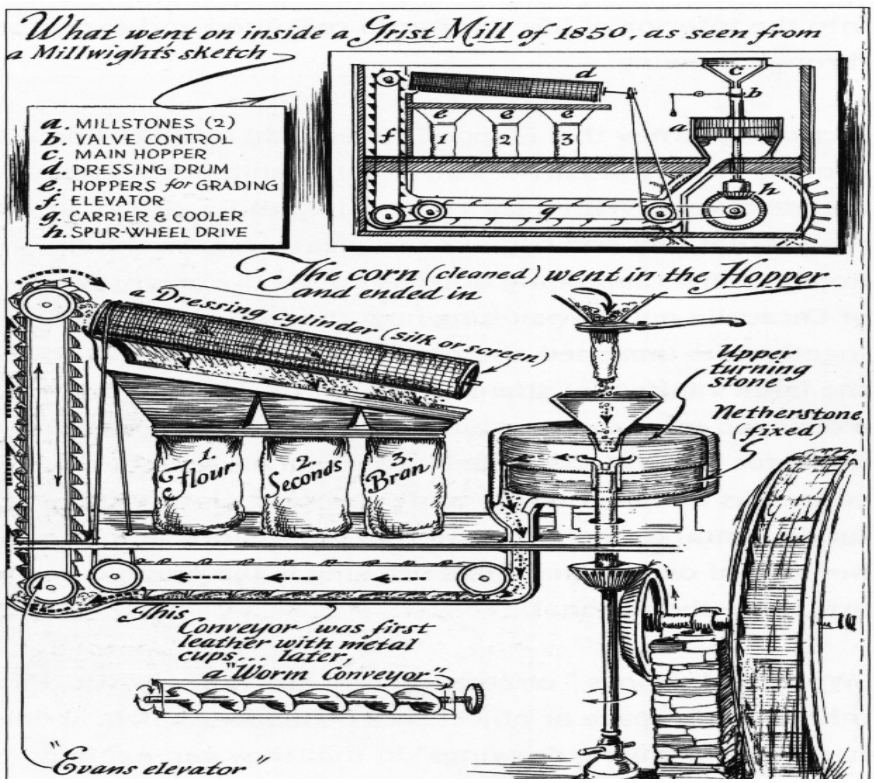


Figure 4.32: Eric Sloane, Grist Mill of 1850, pen and ink drawing, 1955 (Sullivan 2008:64)

These examples provide different suggestions for how relationships and processes can be simultaneously conveyed across space and time. As their abstract nature will not suit all situations, they should be considered as stimuli for experimenting and creating additional representational strategies for depicting relationships and processes. These strategies will be considered under the common title of

'spatio-temporal analysis' and will be represented by the graphic thumbnail shown in figure 4.33. Suitable methods of depiction are mapping and diagramming.

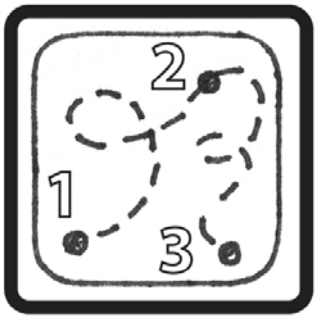


Figure 4.33: Spatio-Temporal Analysis,
Graphic Thumbnail

The '*spatio-temporal analysis'* strategy will be incorporated into stage one of the imaging box, '*image acquisition'*, because it involves the creation of images based on an existing or proposed site.

(iii) Systems Mapping: The following mapping examples demonstrate how relationships between elements of the landscape can be depicted without associating them with processes. This would be advantageous in isolating the co-dependence between flora and fauna, or between specific locations within a site that may lead to insights otherwise obscured by the presence of additional information. Figure 4.34 shows an ecological systems map that illustrates the relationship between flora and fauna in the landscape. The use of systems mapping need not include the level of detail shown in the examples, but it can be used in a more simplified format to demonstrate the relationship between individual or discrete elements of the landscape.

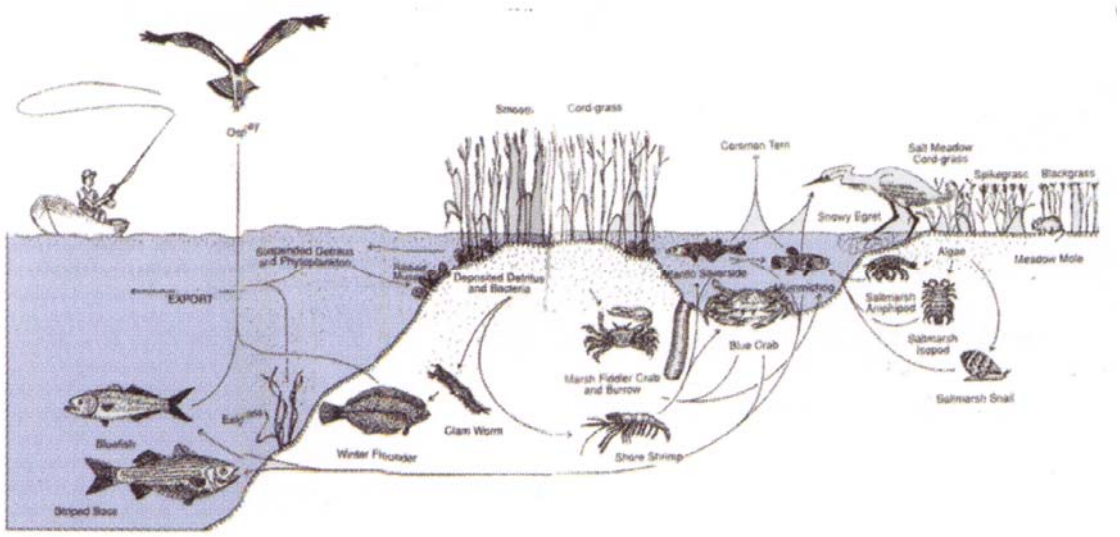


Figure 4.34: Ken Smith, Study of Ecological Processes, East River Ferry Landings, New York (Rappaport and Amidon 2005:18)

Cosgrove and Dutoit recommend the efficacy of mind maps for capturing the experiential essence of a site (see figure 4.35). They suggest the mental image of perceived relationships within a site may provide a more accurate account of its experiential qualities than a spatially accurate, objectified image such as a photograph or geometric map (Cosgrove 1999, Dutoit 2007).

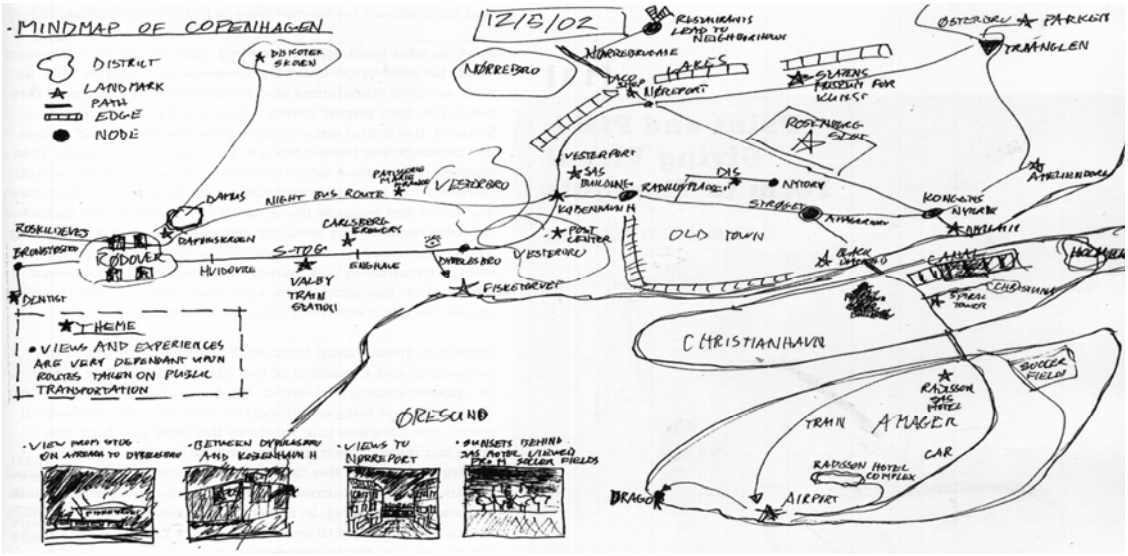


Figure 4.35: Ben Audrain, Mind Map, 2002 (Dutoit 2007:158)

These strategies will be referred to under the common title *'systems mapping'* and will be represented by the graphic thumbnail shown in figure 4.36. Suitable methods of depiction are diagramming and mind mapping.

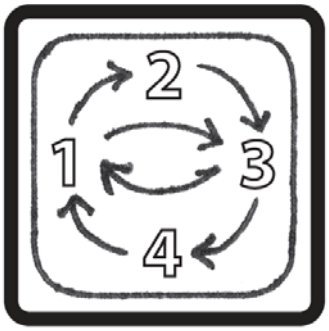


Figure 4.36: Systems Mapping,
Graphic Thumbnail

The '*systems mapping'* strategy will be incorporated into stage one of the imaging tool box, '*image acquisition'*, because it involves the creation of images based on an existing or proposed site.

A summary of the strategies used to exploit the imaging opportunities created by the 'the objectification of the landscape' are shown in table 4.2.

Table 4.2: Summary Table of Strategies Used to Exploit the Imaging Opportunities Created by the Objectification of the Landscape

					Procedural Imaging Methodology		
	Detrimental Practice	Solution	Strategy	Method	1: Image Acquisition	2: Eidetic Image Synthesis	3: Image Collation
Objectification	Static Representation	Depict Motion/Temporality	Gestural Temporality	Sketching	✓		
			Subtractive/Additive Imaging	Erasure + Sketching	✓		
			Temporal Sequencing	Diagramming, Photography	✓		
	Non-Reciprocal Representation	Depict Processes		Mapping, Diagramming	✓		
			Spatio-Temporal Analysis				
		Depict Relationships	Systems Mapping	Diagramming, Mind Mapping	✓		

3) Dominance of Vision

Chapter two demonstrated that pictorial conventions are responsible for privileging vision as the primary mode of engaging the landscape. In Western culture, seeing is equated with believing. This belief permeates our everyday life with phrases such as, "a picture is worth a thousand words". However, there exist numerous accounts detailing how the other senses, particularly sound and smell can be more powerful and immediate in shaping emotional response to a specific place whilst also being the primary stimuli for memory recall (Cosgrove 2003; Thomas 2006). For instance, landscape accounts from visually impaired people, demonstrate the role the other senses play in constructing mental maps (Cosgrove 2003). Joan I Font, in studying the way farmers of the Catalonia region in Spain interpreted the landscape, discovered the indispensability of the other senses in relating to the land:

> "Paths, for example, are spoken of according to their surface – stony, muddy, with or without grass. If there is doubt about the name or the qualities of a plant, the first thing a farmer will do is smell it. Smell, even more than appearance, is the most important vegetative trait for farmers in the case of medicinal plants" (Font 1993:172).

Geographer Yi-Fu Tuan, cites indigenous, aboriginal populations as examples of how the landscape can be engaged at a multi-sensory level. A particularly salient example is that of Aivilik Eskimo on Southampton Island:

> "to the Eskimo, space is not pictorial or boxed in, but something always in flux, creating its own dimension moment by moment. He learns to orient himself with all his senses alert. He has to during certain times of winter when sky and earth merge and appear to be made of the same substance…..Under such conditions the Eskimo cannot rely on points of reference given by permanent landmarks: he must depend on the shifting relationships of snow contours, on the types of snow, wind, salt air and ice crack. The direction and smell of the wind is a guide, together with the feel of ice and snow under his feet…..On horizonless days he lives in an acoustic-olfactory space" (Tuan 1974:11).

Sensory information is not easily captured and represented graphically. Therefore, what is required is a method for representing such experiences within a graphic format that does not employ pictorial

conventions which cause the viewer to default, whether subconsciously or not, to a reading of a depicted scene only in terms of historically derived preconceptions.

(i) Imagetext: W.J.T Mitchell offers the idea of imagetext as a viable tool for representing intangible phenomena such as sensory data within a visual format. The principle is based on the notion that textual accounts of phenomena such as sensory experiences can be combined graphically with supporting visual media so that both text and image exist in concord and reinforce one another to create a composite representation which Mitchell calls imagetext (Mitchell 1985, 1994). Corner advocates the use of imagetext, as a tool for effectively uniting otherwise disparate parts and bringing them into a productive relationship (Corner 1999:166). Text provides an effective tool for describing sensory experience, and is sufficiently divergent from existing pictorial conventions enabling it to reduce the primacy of visual dominance.

Recent innovative developments for representing text such as Worlde (World Clouds, see figure 4.37) and Tag Clouds (see figure 4.38) allow text to be communicated in terms of a hierarchy of importance, and therefore maximize the efficacy of the imagetext relationship.

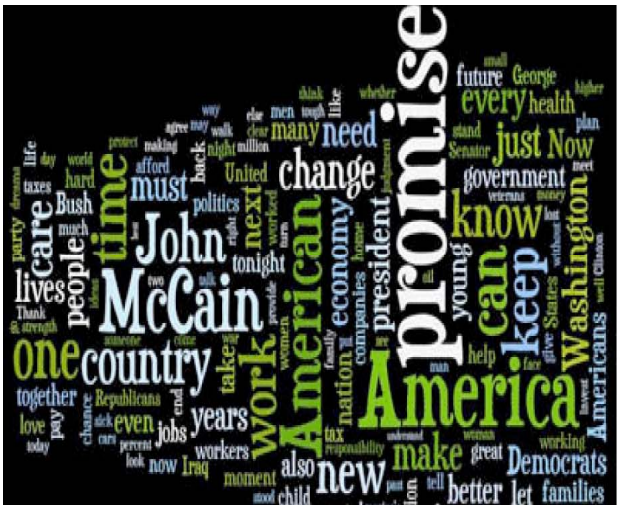


Figure 4.37: Wordle

Figure 4.38: Tag Cloud

Tag Clouds employ an algorithm that represents word frequency or importance in terms of font size. Worlde, a recent evolution of the Tag Cloud concept, uses additional algorithms to compose the words into a pleasing aesthetic arrangement of orthogonally aligned text. Research suggests that observers spend longer analyzing information depicted by Worlde because the aesthetic arrangement is more visually engaging and stimulates further inspection, assisting in the recall of memory and learning.

The landscape architecture firm West8 demonstrates how the thoughtful use of imagetext becomes a tool that transcends the mere literal meaning of the descriptive vocabulary used (see figure 4.39). The hierarchical, spatial and directional use of text on top of an image with designated boundaries clearly assists in communicating the size and boundaries of various regions within the landscape. Corner employs a similar strategy in his imagetext of Fresh Kills Park, New York (see figure 4.40). The hierarchical significance of areas within Staten Island is efficiently communicated along with the function they serve.

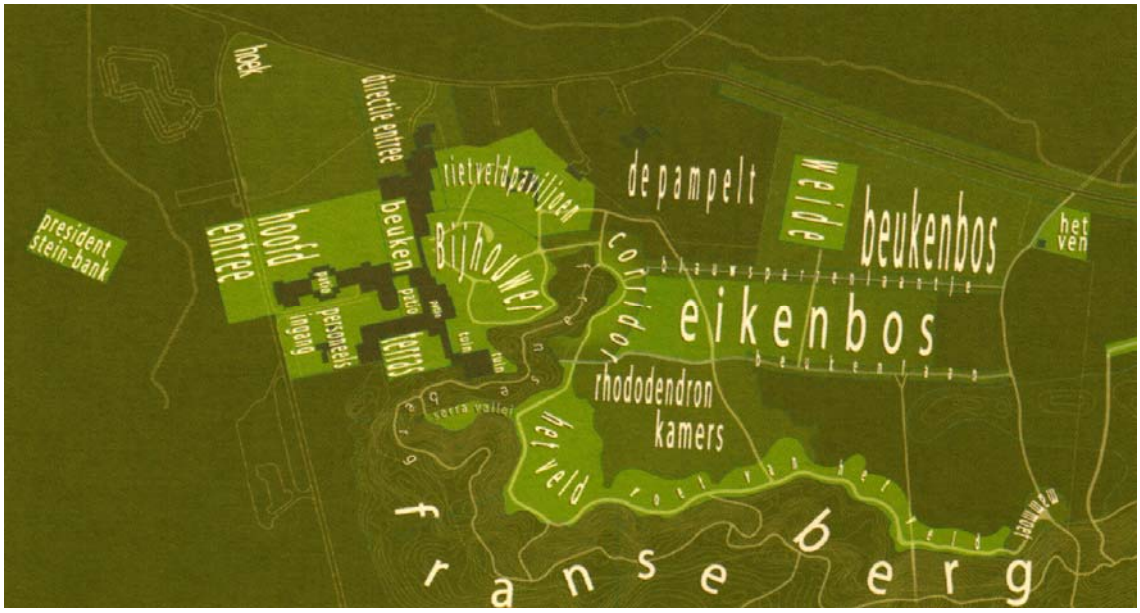


Figure 4.39: West8, Image Text of Kroller-Muller Museum Sculpture Garden
(West8 2008:119)

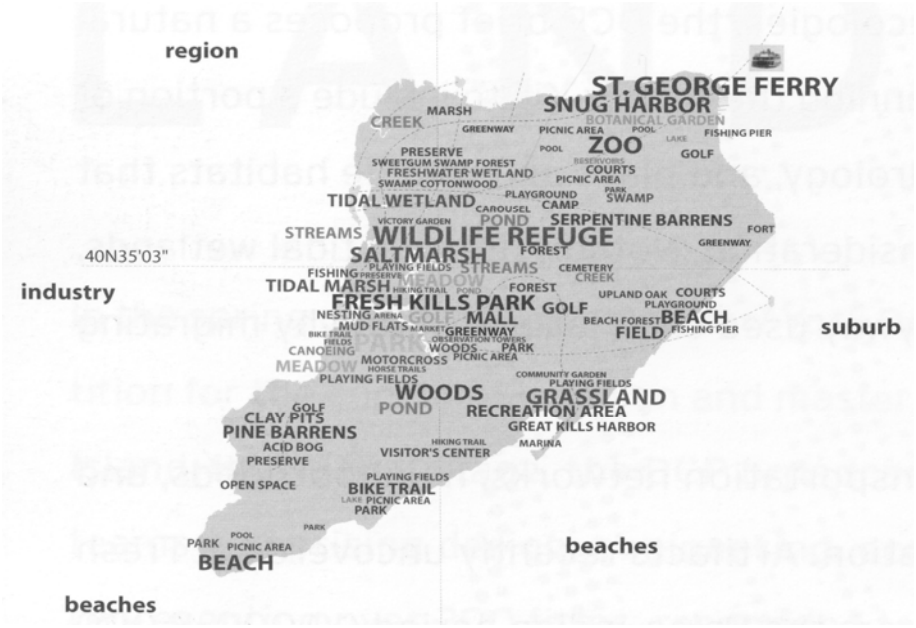


Figure 4.40: Field Operations, ImageText of Fresh Kills Reserve, Staten Island (Reeser and Schafer 2002:20)

Strategies that address Aural, Olfactory and Haptic stimuli will be combined under the common strategy of imagetext, but each will be given a designated title of '*aural imagetext'*, '*olfactory imagetext'*, and '*haptic imagetext'* and will be represented by three separate graphic thumbnails as shown by figure 4.41, figure 4.42, and figure 4.43 to ensure that such sensory phenomena are not conflated into a single monolithic interpretation. Suitable methods of depiction are Wordle and Tag Clouds.

Figure 4.41: Aural Imagetext, Graphic Thumbnail

Figure 4.42: Olfactory Imagetext, Graphic

Figure 4.43: Haptic Imagetext, Graphic Thumbnail

These strategies will be incorporated into stage one of the imaging tool box, '*image acquisition*'. 'Imagetext' can be used to record phenomena from an existing site or communicate aspects of a proposed design that are planned and anticipated.

(ii) Detail Capture: Haptic information can also be effectively conveyed by imprinting the details of a surface such as a tree bark, hardscape surface, or natural material through surface rubbing, known as frottage. The examples in figures 4.44 and 4.45 show the visceral quality that can be obtained by rubbing a malleable drawing implement such as chalk, charcoal, and pastel over a textured surface. The impression effectively conveys the tactile quality of the material and should be considered a useful tool for capturing the experiential sensory qualities of a landscape alongside textimage (Dee 2001).

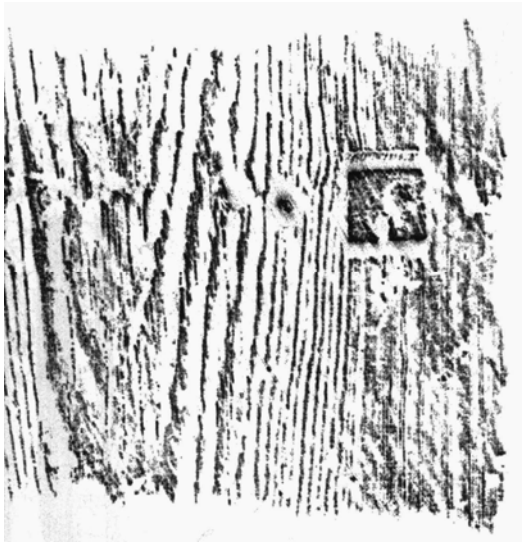


Figure 4.44: Catherine Dee, Pencil Rubbing of a Tree Bark (Dee 2003:193)

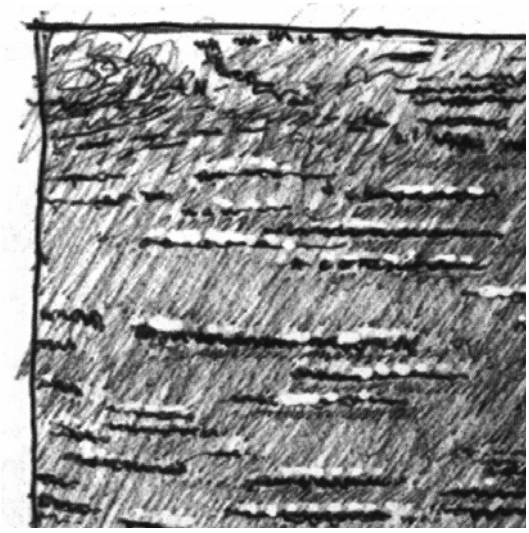


Figure 4.45: Catherine Dee, Pencil Rubbing of a Tree Bark (Dee 2003:193)

This strategy will be referred to as *'detail capture'* and will be represented by the graphic thumbnail shown in figure 4.46. Suitable methods of depiction are material collection and surface rubbing (frottage).

Figure 4.46: Detail Capture,
Graphic Thumbnail

The '*detail capture'* strategy will be incorporated into stage one of the imaging tool box, '*image acquisition'*, due to the requirement for an on-site embodied collection of raw information.

A summary of the strategies used to exploit the imaging opportunities created by the 'the privileging of vision over other forms of engagement' are shown in table 4.3.

Figure 4.3: Summary Table of Strategies Used to Exploit the Imaging Opportunities Created by the 'Privileging of Vision over Other Forms of Engagement

					Procedural Imaging Methodology		
	Detrimental Practice	Solution	Strategy	Method	1: Image Acquisition	2: Eidetic Image Synthesis	3: Image Collation
Visual Dominance	Mono-Sensory	Depict Aural info.	Aural ImageText	Wordle, Tag Cloud	✓		
		Depict Olfactory info.	Olfactory ImageText	Wordle, Tag Cloud	✓		
		Depict Haptic info.	Haptic ImageText	Wordle, Tag Cloud	✓		
			Capture Surface Detail	Material Collection, Surface Rubbing	✓		

4) Limited use of artistic conventions

The review of chapter two determined that pictorial developments have imposed strict conventions concerning the representational strategies used within the profession of landscape architecture to depict the landscape, and the type of information permissible within the picture plane. The idea that landscape should be represented using the eye-level, vantage point of a solo observer, according to the conventions of perspective, limits creativity and exploration of alternative imaging practices that may allow for a more complete disclosure of a landscape's phenomena. In addition, the variety of information contained within a perspective vignette is generally limited by historic painterly conventions determining that only form, color, shadow, composition and spatial accuracy are the necessary constituents for a full account of the landscape. The following sub categories have been identified as the primary practices that perpetrate the limited use of artistic conventions to depict the landscape, by denying exploration of alternative imaging strategies.

a) Single vantage point: Depicting the landscape under the hegemony of perspective limits the view shed to that of an observer's, eye-level vantage point, and therefore denies the associative possibilities that may accrue from more varied imaging techniques, for example the use of composite and simultaneous views.

b) Solo view point: The practice of depicting the landscape from the vantage of a 'solo' observer privileges that particular individual's reading of the landscape, and may result in a highly subjective account.

c) Painterly information: Limiting the representation of the landscape to conventions employed by painters, such as form, color, shadow, composition, excludes the benefits that could result from a more diversified integration of information such as empirical data.

a) Single Vantage Point

Common practice within landscape architecture is to arrange depictions of the landscape based on the standard graphic tools of plan, section and perspective as independent compositions in order to maintain clarity of communication. The following examples demonstrate the tangible benefits that can accrue from combining, collaging, and thoughtfully arranging simultaneous viewpoints into a single composition.

(i) Serial Vision: Gordon Cullen demonstrates the serial vision technique, where perspective vignettes are used to depict views along a route in combination with a plan view drawing of the journey (figure 4.47). The composition of the drawing, assisted by the use of construction lines, allows a visual dialogue that relates the detail-oriented, experiential qualities of the vignette to the formal features of the plan. The viewer is encouraged to engage in a mental synthesis between the features of both drawings, which can assist in producing a more holistic interpretation of the depicted environment (Dutoit 2007).

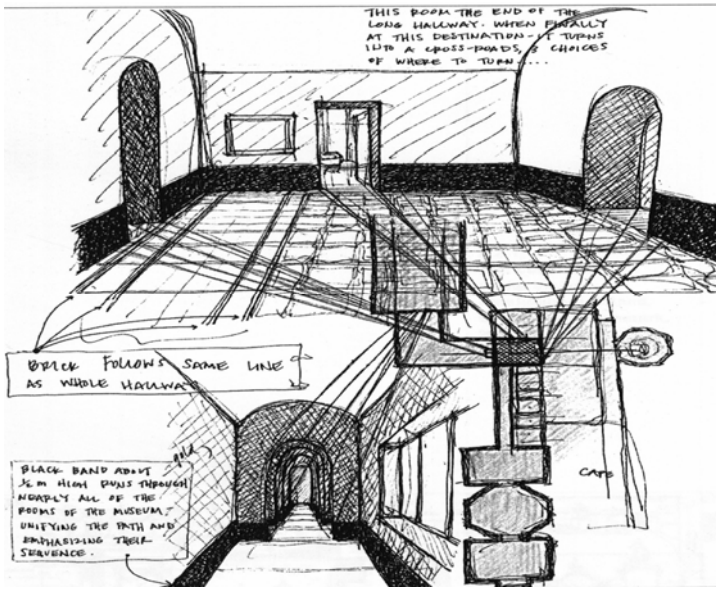


Figure 4.47: Erin Cubbison. Serial Vision, Faaborg Museum, Faaborg, Denmark, 2002 (Dutoit 2008:152)

This strategy will be referred to as *'serial vision'* and will be represented by the graphic thumbnail shown in figure 4.48. Suitable methods of depiction are pen and pencil sketches.

Figure 4.48: Serial Vision, Graphic Thumbnail

The '*serial vision*'strategy will be incorporated into stage one of the imaging box, '*image acquisition'*, because it involves the creation of images based on an existing or proposed site.

(ii) 360 Degree Orthogonal Panorama: James Corner represents the landscape as a Calendrical tool used by the Hopi civilization to determine seasonal progression and important events such as the Winter Solstice (see figure 4.51). Elevation views depicting the local terrain and solar and lunar activity are orthogonally projected around a central topographic plan that creates a three hundred and sixty degree panorama of the site. The deliberate composition assists the viewer in cognitively constructing a three-dimensional image of the site beyond the confines imposed by the two-dimensional format. The outcome enables the spectator to appreciate the relationship the Hopi civilization had between specific landforms within the region and the seasonal fluctuations of solar and lunar activity. The arrangement effectively depicts the landscape as a temporal entity engaged in dynamic interactions across space and time.

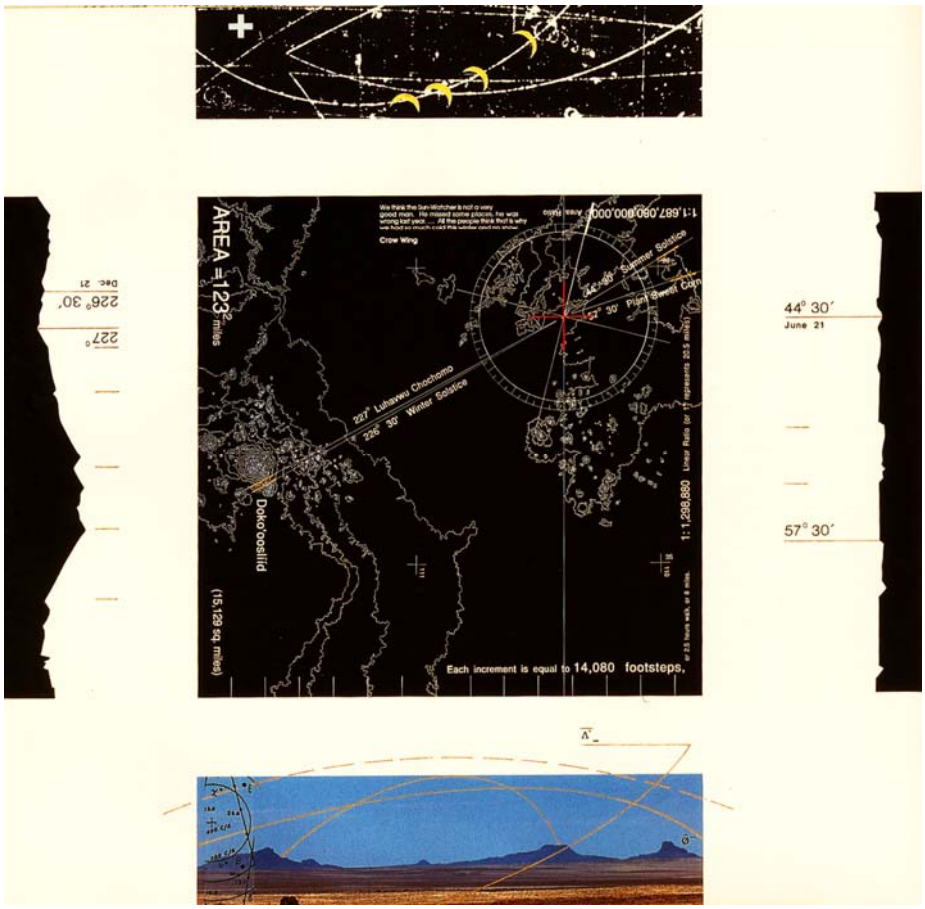


Figure 4.49: James Corner, Hopi Horizon Calendar, 14 x 20 (Corner 1996:6)

This strategy will be referred to as *'360 degree orthogonal panorama'* and will be represented by the graphic thumbnail shown in figure 4.50.

Figure 4.50: 360 degree Orthogonal Panorama, Graphic Thumbnail

This strategy will be incorporated into stage two of the forthcoming tool box, '*eidetic image synthesis*', because it represents post-processing of images.

(iii) Narrative Sequencing: Landscape Architect Frank James uses ideas of animated space and comic book sequencing to uniquely convey the landscape via variously sized vignettes, combined into a stimulating composition (see figure 4.51). The deliberate grouping and sizing of images enables a narrative sequence to be created that encourages curiosity, and provokes the viewer to explore and draw connections between the visual components in a manner that is more effective than if the images were composed separately (Sullivan 2008).

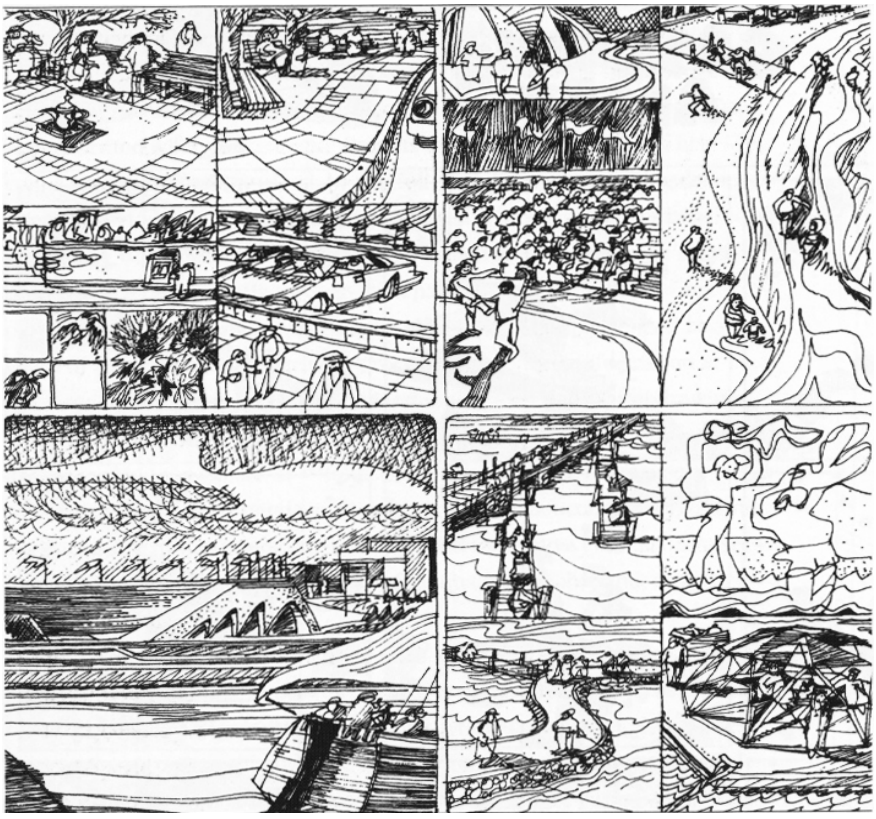


Figure 4.51: Frank James, Detail of Design Process Drawing (Sullivan 2008:68)

This strategy will be referred to as *'narrative sequencing'* and will be represented by the graphic thumbnail shown in figure 4.52. A suitable method of implementation is the considerate sequencing of images

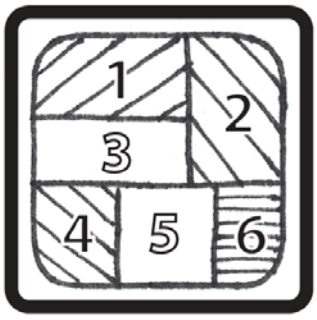


Figure 4.52: Narrative Sequencing, Graphic Thumbnail

The 'narrative *sequencing'* strategy will be incorporated into stage two of the forthcoming tool box, '*eidetic image synthesis'*, because it represents post-processing of images.

b) Solo view point

Imaging of the landscape wehter for analysis or design purposed is generally conducted from the perspective of a 'solo' spectator. The outcome may be a highly subjective design proposal or representation of a site, region or space that does not incorporate the viewpoint of the anticipated users or other design professionals. Critics of such an approach, point to the tangible benefits that can result from a co-authored joint encounter and exploration of the landscape, which often results in a more fruitful and democratic imaging of a site's context (Font 1993, Hester 2008).

(i) Alternate Imaging: A co-authored, joint encounter with the landscape can effectively occur though the use of *'alternate imaging'*, where two participants take turns to depict design suggestions or observed phenomena using the *image acquisition* strategies contained within this chapter. Each participant upon completing their chosen '*image acquisition'* strategy then passes the result over to

their collaborator to have them include their point of view alongside the original depiction. This process can continue as an open-ended strategy that promotes the associative unfolding of both individuals' viewpoints into a cohesive representation.

(ii) Simultaneous Group Imaging: Dutoit highlights the benefits' associated with co-authoring amongst more than two individuals, such as simultaneous group imaging. Several students were taken to Copenhagen's central station and set to work rendering the features of the building upon a large roll of paper that was unfurled on the ground (Dutoit 2007). Students were instructed to gather either side of the roll as shown in figure 4.53 and begin recording their perceptions of the space through sketch drawing, the outcome of which is shown in figure 4.54.

Figure 4.53: Various Students, Scroll Drawing, Copenhagen Central Station (Dutoit 2007:154)

Figure 4.54: Various Students, Scroll Drawing Panel, Copenhagen Central Station (Dutoit 2007:154)

Dutoit explains the noticeable benefits that resulted from the process:

> "By drawing separately and on top of one another they intertwine their experience, cultural perspective, and personal visions – drawings that transcend what the eye captures in a single view. The exercise is an attempt to lose what Juhani Pallasmaa refers to as the "visual frontality" of the architectural drawing. If one student's drawing runs into that of a neighbor, he or she must change position to continue the line. In the process, the students also change their point of view, shifting the station point so that they now see different objects and relationships relative to their prior position. If a student opted to continue on his or her own drawing, rather than changing place with a neighbor, two different drawing intentions will confront one another, forcing the student to consider what the neighbor saw" (Dutoit 2007:155).

The two participatory imaging strategies presented, '*simultaneous group imaging'*, and *'alternate imaging'*, will not form independent strategies for the imaging toolbox. Instead, they will be integrated as complementary additions to each of the '*image acquisition'* strategies, based on existing evidence that co-authoring is a valuable tool for enhancing the efficacy of imaging techniques during design and analysis activities.

c) Painterly information

The use of painterly conventions, such as form, color, shadow, and composition, enable landscape architects to create realistic depictions of the landscape. However, the type of information contained within a depicted scene need not be limited to such a discrete scholarly field.

(i) Quantitative Analysis: Corner in his eidetic representation of a windmill farm located within mountainous terrain, shown in figure 4.55, effectively incorporates empirical, engineering data into the composition. The enlarged details shown by figure 4.56, and figure 4.57, demonstrate how the prevailing wind is affected by the topographical lay of the land, and how changes in elevation correspond to variations in wind pressure and speed. The union of data within the depicted scene enables the spectator to understand the logic that determined the placement of each wind turbine within the landscape, and therefore enables a richer understanding of the processes and phenomena that exist on this particular site.

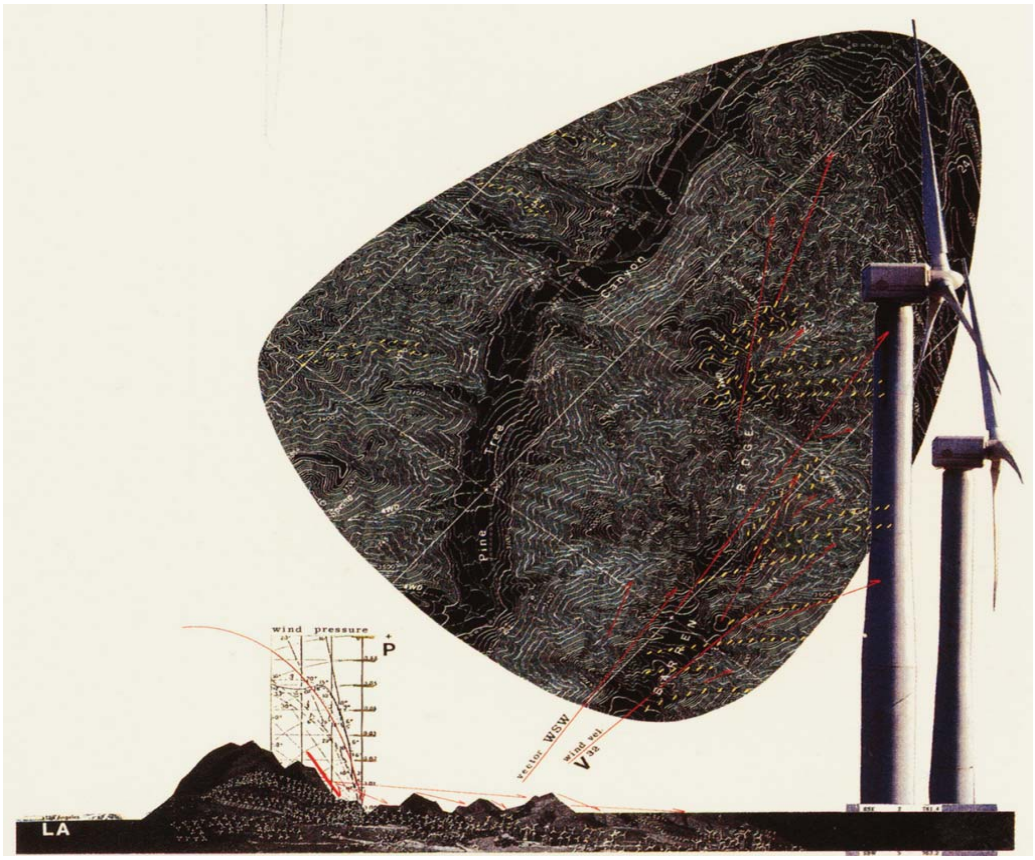


Figure 4.55: James Corner, Windmill Topography, 14 x 20 (Corner 1996:83)

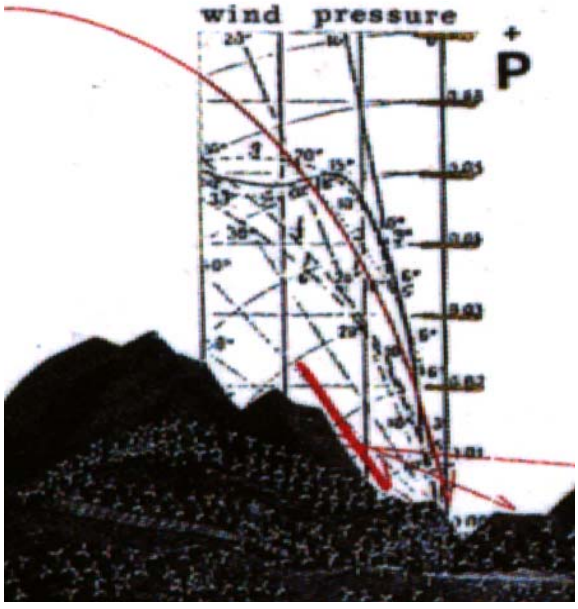


Figure 4.56: James Corner, Empirical Data, Windmill Topography (Corner 1996:83)

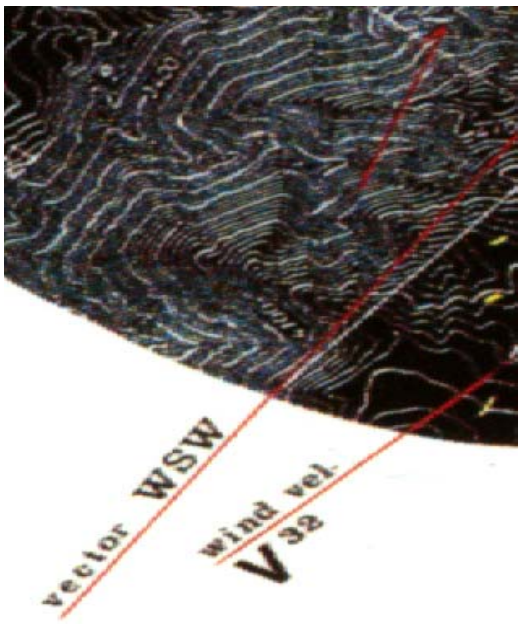


Figure 4.57: James Corner, Wind Velocity, Windmill Topography (Corner 1996:83)

Landscape architects can easily integrate this sort of data within their existing imaging strategies, through the use of inexpensive data acquisition equipment such as: anemometers, that measure wind speed; wind vanes, that measure prevailing wind direction; thermometers, that measure temperature; hygrometers, that measure humidity; solar pyranometers, that record solar irradiance; and GPS units, that record elevation and spatial coordinates. The inclusion of additional data alongside existing painterly information need not be limited to scientific fields, but the sensitive combination of these elements provides an intriguing juxtaposition of viewpoints that effectively elevates the depicted scene beyond mere scenery.

This strategy will be referred to as *'quantitative analysis'* and will be represented by the graphic thumbnail shown in figure 4.58. A suitable method of depiction is the graphical arrangement of acquired data.

Figure 4.58: Quantitative Analysis,
Graphic Thumbnail

This strategy will be incorporated into stage one of the forthcoming tool box, '*image acquisition'*, because it requires the embodied collection of raw information from a site.

A summary of strategies used to exploit the imaging opportunities created by the 'the limited use of artistic conventions' is shown in table 4.4.

Figure 4.4: Summary Table of Strategies Used to Exploit the Imaging Opportunities Created by the Limited Use of Artistic Conventions

					Procedural Imaging Methodology		
	Detrimental Practice	Solution	Strategy	Method	1: Image Acquisition	2: Eidetic Image Synthesis	3: Image Collation
Convention	Single Vantage Point	Multiple Vantage Points	Serial Vision	Sketching	✓		
			360 Orthogonal Panorama	Orthogonal Projection of Views		✓	
			Narrative Sequencing	Image Sequencing		✓	
	Individual Point of View	Participatory Imaging/ Co-Authoring	Simultaneous Group Imaging	Sketching	✓		
			Alternate Imaging	Sketching	✓		
	Painterly Information: Limited to Color, Form, Shadow	Include info from other disciplines	Quantitative Analysis: Engineering	Data Acquisition: Wind Speed, Wind Direction, Temperature, Humidity, Solar Irradiance, GPS, Spot Elevations	✓		

5) Concealment of construction and labor under a stylistic artifice

The prevailing popularity of the pastoral aesthetic continues to confuse perception among the public between what constitutes a natural or designed landscape. The following strategies demonstrate how the artifice of construction can be revealed by respecting the historical context of a site while effectively highlighting interventions that may become hidden following implementation of a design.

(i) Transect Analysis: Transects provide an effective illustrative tool for depicting proposed or already implemented changes to environmental systems and topography that occur when a landscape alteration takes place. Transects were originally devised as an ecological concept that represents a cut or path through part of the environment showing a range of different habitats (CATS website). They have recently been adopted by the 'New Urbanists' as a way of illustrating the progression of urban zones.

Van Valkenburgh, in figure 4.59, and figure 4.60 with associated detail in figure 4.61, demonstrates the efficacy of the transect strategy in unveiling changes that have occurred to the landscape that would otherwise remain concealed once a stylistic artifice had been applied to the site.

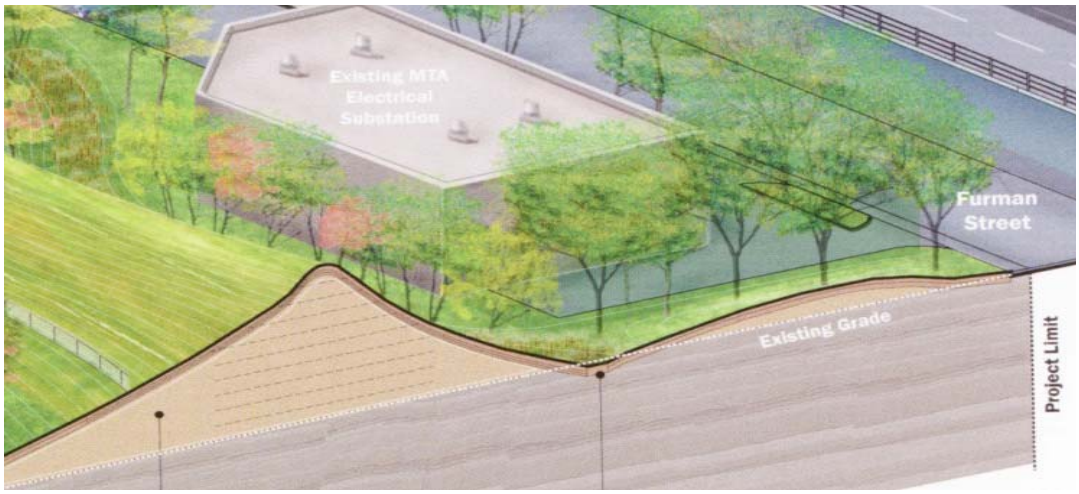


Figure 4.59: Van Valkenburgh, Transect Showing Existing and Proposed Changes (Berrizbeitia 2008:243)

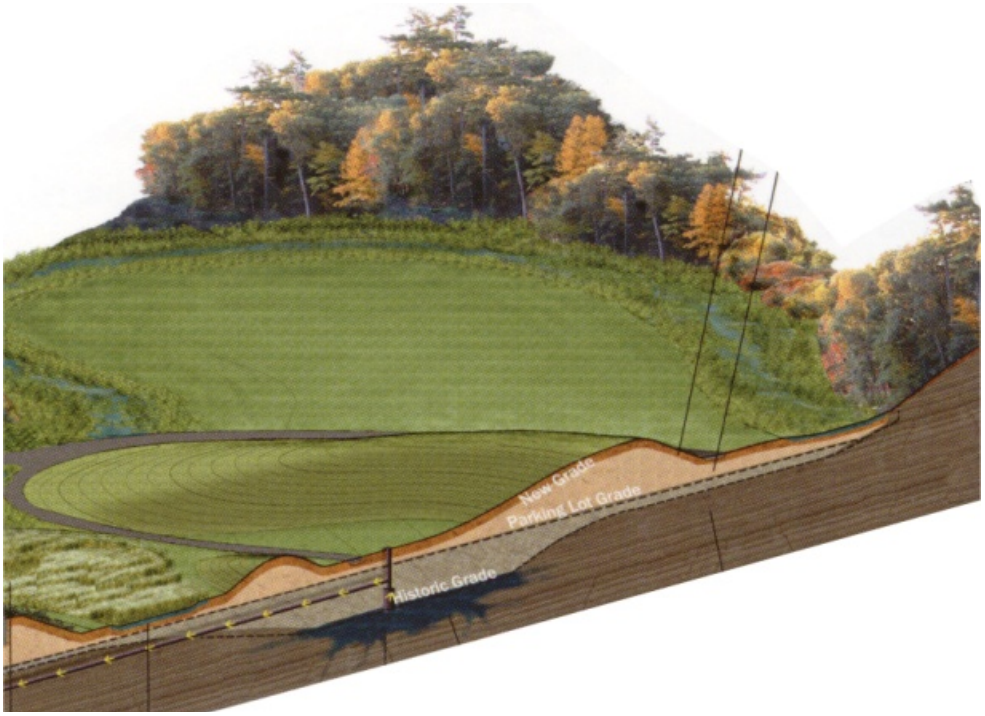


Figure 4.60: Van Valkenburgh, Transect Brownfield Remediation (Berrizbeitia 2008:152)

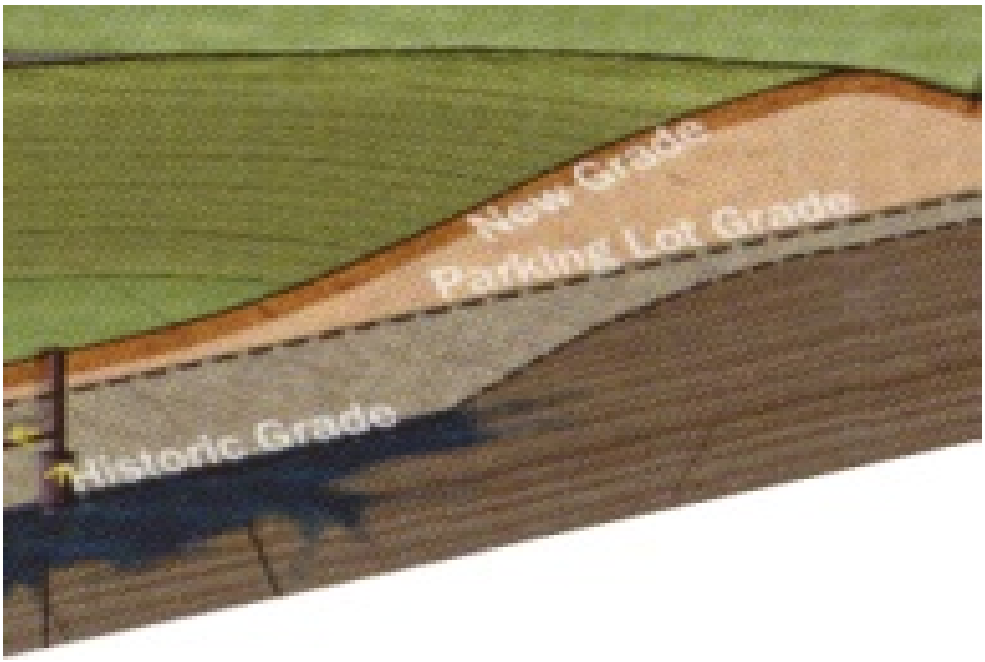


Figure 4.61: Van Valkenburgh, Detail of Transect Brownfield Remediation (Berrizbeitia 2008:152)

The enlarged detail of figure 4.61 is particularly revealing as it highlights the relationship between the historic grade and the parking lot grade alongside the effect of the proposed landscape alteration. Transects can be illustrated through the composite imaging of pictorial sources that depict the stylistic artifice of a proposed design in concord with a technical drawing that shows the subterranean changes.

This strategy will be referred to as *'transect analysis'* and will be represented by the graphic thumbnail shown in figure 4.62. Suitable methods of depiction are pictorial and technical images.

Figure 4.62: Transect Analysis,
Graphic Thumbnail

This strategy will be incorporated into stage two of the forthcoming toolbox, '*eidetic image synthesis'*, because it requires post-processing of images.

(ii) Construction Impact Analysis: Humphrey Repton developed an innovative technique during the late eighteenth-century to communicate the effect of his proposed landscape alterations using before- and after-views (Daniels 2008). The strategy has since been adopted by modern landscape architecture practitioners and adapted to incorporate the use of modern materials and imaging techniques to demonstrate the impact of a proposed design. Van Valkenburgh has evolved the method to replace the opaque overlay system employed by Repton, by using a transparent acetate overlay (see figure 4.63). The proposed changes to Wellesley College in Massachusetts are clearly visible in addition

to the existing site context; the transparent overlay can be lifted to view the existing site with greater clarity.

Figure 4.63: Van Valkenburgh, Aerial View of Proposed Plan of Wellesley College, Massachusetts (Berrizbeitia 2008:146)

The construction impact analysis strategy can be implemented using two techniques referred to as *'opaque image overlay'* and *'transparent image overlay'* and will be represented by the graphic thumbnails shown in figure 4.64, and figure 4.65. In some cases, it may be beneficial to use an opaque overlay instead of a transparent one in order to maintain a greater clarity of communication. Overlaying acquired images provides a suitable method of depiction.

Figure 4.64: Impact Analysis Transparent Overlay, Graphic Thumbnail

Figure 4.65: Impact Analysis Opaque Overlay, Graphic Thumbnail

This strategy will be incorporated into stage two of the forthcoming toolbox, '*eidetic image synthesis'*, because it requires post-processing of images.

(iii) Layered Artifice Analysis: The axonometric graphic technique introduced by the modernists, and also used in the middle ages and ancient Egypt, can be used to show an exploded view of components in the dynamic moment of assembly (Imbert 2008, Treib 1999). The technique demonstrated by the layered views of figure 4.66 and figure 4.67 accurately communicates the various components of construction that comprise a designed landscape. This represents a useful tool for distinguishing between natural and man-made elements of the landscape, exposing the layers of artifice that otherwise may remain unnoticed.

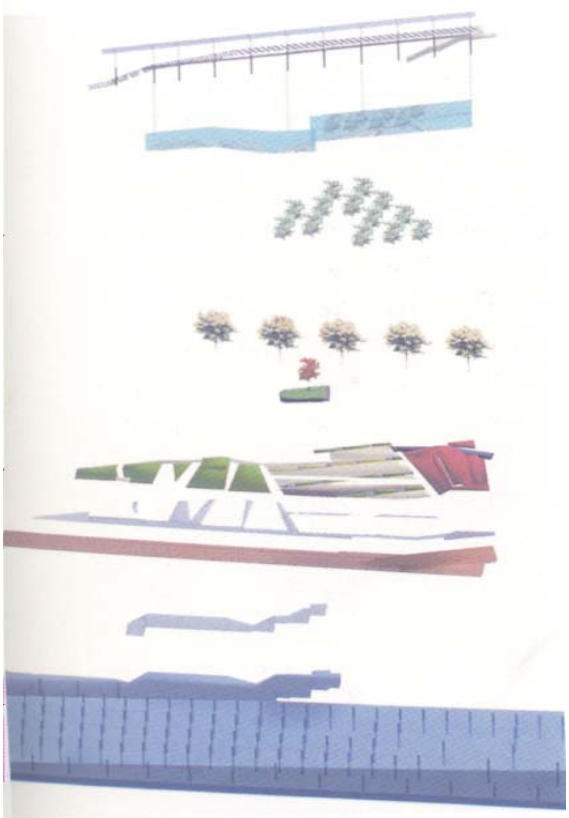


Figure 4.66: Petrosino Park, Exploded Landscape Axon, New York (Keeney 2000:9)

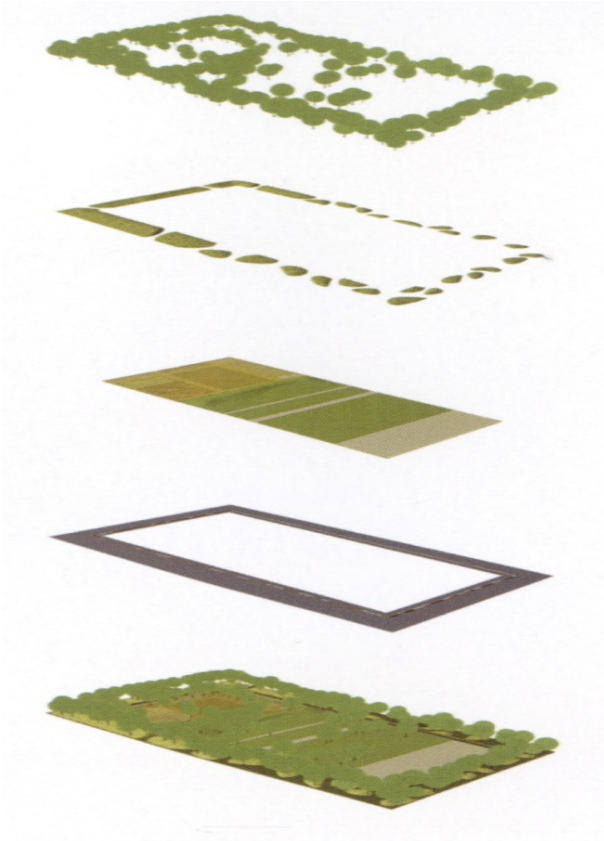


Figure 4.67: Freundorfer Plaza, Exploded Landscape Axon, Munich (Bahamon 2006:173)

This strategy will be referred to as *'layered artifice analysis'* and will be represented by the graphic thumbnail shown in figure 4.68. A suitable method of depiction is the exploded axonometric.

Figure 4.68: Layered Artifice Analysis,
Graphic Thumbnail

This strategy will be incorporated into stage two of the forthcoming toolbox, '*eidetic image synthesis'*, because it requires post-processing of images. A summary of the strategies used to exploit the imaging opportunities created by the 'concealment of construction and labor under a stylistic artifice' is shown in table 4.5.

Chapter five will rearrange the strategies according to the three-part procedural imaging methodology defined in chapter three, to produce a quick reference guide suitable for landscape architects to use in the field and office.

Table 4.5: Summary Table of Strategies Used to Exploit the Imaging Opportunities Created by the Concealment of construction and labor under a stylistic artifice

					Procedural Imaging Methodology		
	Detrimental Practice	Solution	Strategy	Method	1: Image Acquisition	2: Eidetic Image Synthesis	3: Image Collation
Concealment	Concealment of Labour + Construction Under Stylistic Artifice	Expose Artifice	Transect Analysis	Composite Imaging: Technical + Pictorial		✓	
			Construction Impact Analysis	Opaque Image Overlay		✓	
				Transparent Image Overlay		✓	
			Layered Artifice Analysis	Exploded Axon		✓	

This concludes the results of the literature review aimed at identifying appropriate strategies that diversify and compliment existing graphic practices. As already stated, the compendium of strategies is by no means complete or definitive; instead, the desire is to promote awareness of the need to challenge the hegemony of existing pictorial practices and encourage further exploration and development of additional strategies.

Many of the strategies have been presented in terms of how they relate to the recording and depiction of the features, phenomena, and stimuli of an existing site. Therefore, they are applicable to capturing and presenting information for a site analysis or charette, where, understanding the context of a place is paramount. However, many of these strategies can also be effectively applied to presenting a proposed design to a client. For instance, the use of *frame breachment* and *edge modulation* to collage images does not have to be limited to photographs or sketches of an existing site. Digital images obtained from three-dimensional modeling programs and sketches depicting a proposed design can be manipulated and presented using the same techniques. In addition, strategies such as *temporal sequencing, spatio-temporal analysis, systems mapping,* and the use of 'textimage' to represent sensory stimuli can be used to represent a proposed design based on the site program that the designer has intended. Other strategies such as *qualitative analysis* of plant and animal morphology, and *quantitative analysis* require the collection of data raw data from an existing context, and therefore are not applicable to depicting a proposed design. Therefore, the strategies presented are effective in representing the landscape during the site analysis and design communication phases of a project.

CHAPTER 5

COMPOSING THE IMAGING TOOLBOX

The goal of this chapter is to produce an imaging toolbox using the strategies identified in chapter four. The strategies are currently categorized according to the five imaging opportunities and shortcomings identified in chapter two and will need to be arranged according to the defined three-part imaging methodology shown in figure 5.1.

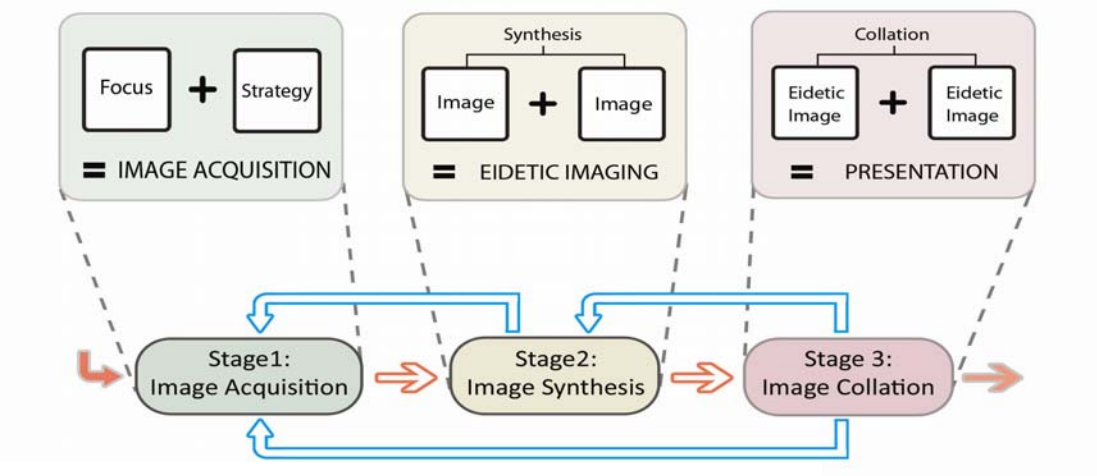


Figure 5.1: Expanded Procedural Imaging Methodology Flowchart

Before the toolbox can be composed it is necessary to identify specific areas of the landscape that should direct the focus of analysis or design consideration for stage one, '*image acquisition'*. Catherine Dee, in her publication *Form and Fabric in Landscape Architecture*, divides the fabric of the landscape into a series of morphological components that assist in directing landscape-based investigations towards areas where the most visible and active phenomena are likely to exist (2001)

The areas this thesis will use to construct the focus component of the '*image acquisition'* stage are: *e*dges, foci, paths, spaces, and thresholds. The summation of the five focus areas, combine to form the overall landscape fabric. Each focus area will be defined in turn, according to the distinctions used by Dee with graphic examples where appropriate.

Edges

Edges indicate zones of transition typically caused by changes in vegetation and material, referred to by ecologists as ecotones. Ecotones are defined as: "a zone of transition between adjacent ecological systems, having a set of characteristics uniquely defined by space and time scales and by the strength of the interactions between these systems" (Holland 1988).

Ecotones typically occur between transitional features of the landscape such as: the river and bank, the sea and shoreline, the forest canopy and clearing, or the city and countryside. These are zones where conflicting and complementary forces collide to create a unique set of social and environmental conditions that often display highly ephemeral characteristics (Dee 2001). The following sketches by Dee in figure 5.2, and figure 5.3 demonstrate the use of sketch drawing to depict the edge and highlight the ecotone.

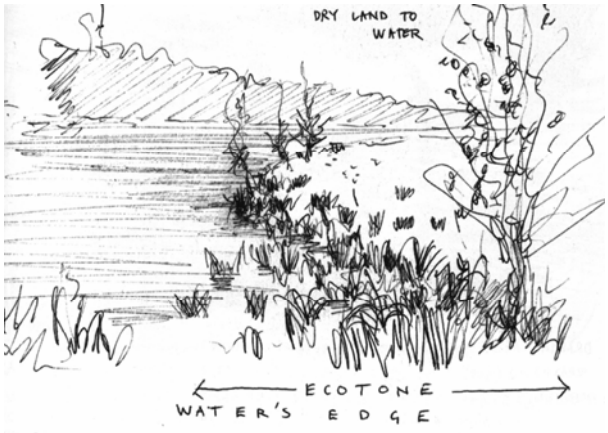


Figure 5.2: Catherine Dee, Ecotone between Water and Bank (Dee 2003:121)

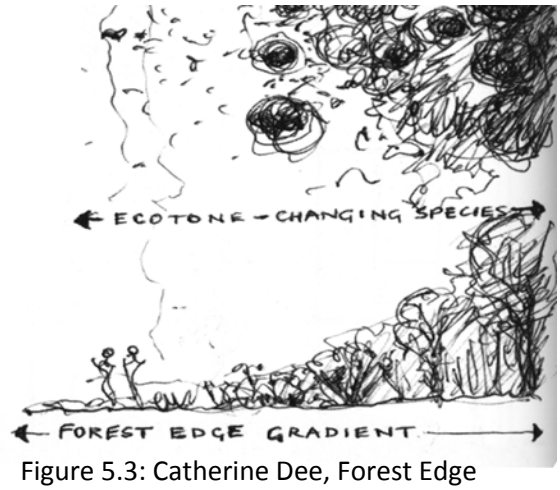


Figure 5.3: Catherine Dee, Forest Edge Ecotone Transition (Dee 2003:134)

Foci

Foci indicate zones of attraction where repeated animal, human, and plant based activities often congregate around a specific resource. The analysis of specific foci can assist in the discovery of hidden relationships and interactions that may exist between elements of the landscape that previously appeared disparate. Foci will be encountered in numerous forms, for instance visual stimuli such as landmarks, or communal sites such as watering holes that attract people and animals for bathing, hydration, and socializing (Dee 2001).

Paths

Paths indicate zones of momentum; they create a concentration of ephemeral activity such as the spreading of organic material via the locomotion of animals or humans who pick up seeds and disperse them, and indicate external areas of interest linked by the path's route through the landscape. The impact of a path on the landscape may be visible through an increased incidence of erosion on a worn tract or the creation of desire lines shown in figure 5.4 (Dee 2001).

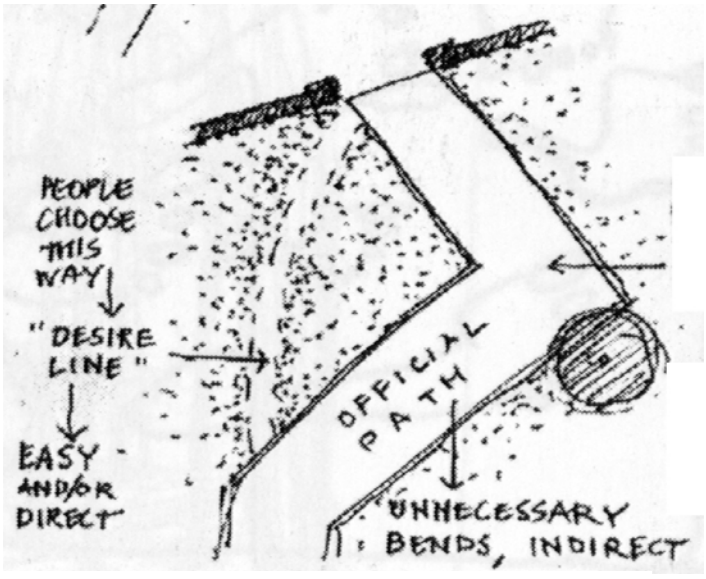


Figure 5.4: Catherine Dee, Official Path and Desire Line (Dee 2001:84)

Spaces

Spaces indicate zones of socialization highlighting areas where a high degree of passive and active recreational and social activity is likely to occur. The co-mingling of natural and human processes that are incidental to these areas will often accentuate or retard the rate at which natural phenomena evolve and therefore rapid changes may be evident. The popularity of a space may suggest the presence of foci that are indicative of active relationships and processes (Dee 2001).

Thresholds

Thresholds indicate zones of transformation; they modulate a site's experiential qualities allowing for transition between dramatic and often conflicting features and processes of a site. They may take the form of an intermediary space between a dense forest canopy and open shrubland as shown in plan in figure 5.5; or they may transition the experience between a path and a street view as shown in figure 5.6. They are generally man-made and therefore deliberate in purpose. Examining their intent may provide clues to the historical and cultural activities that have occurred within a particular landscape (Dee 2001).

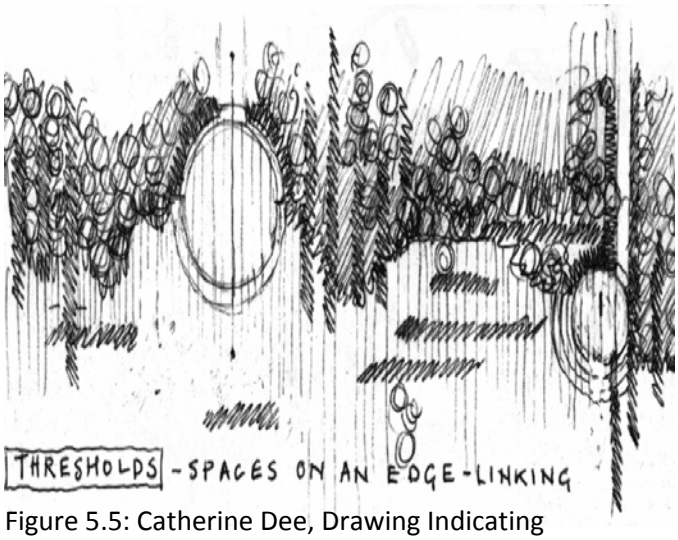


Figure 5.5: Catherine Dee, Drawing Indicating Thresholds (Dee 2003:174)

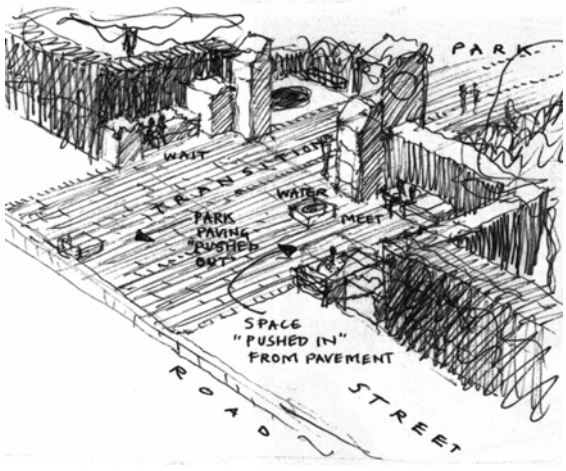


Figure 5.6: Catherine Dee, Drawing, Indicating Thresholds (Dee 2003:183)

The composite synthesis of the five morphological components of the landscape represents the overall landscape fabric and can be represented in terms of a reference chart, as shown in figure 5.7.

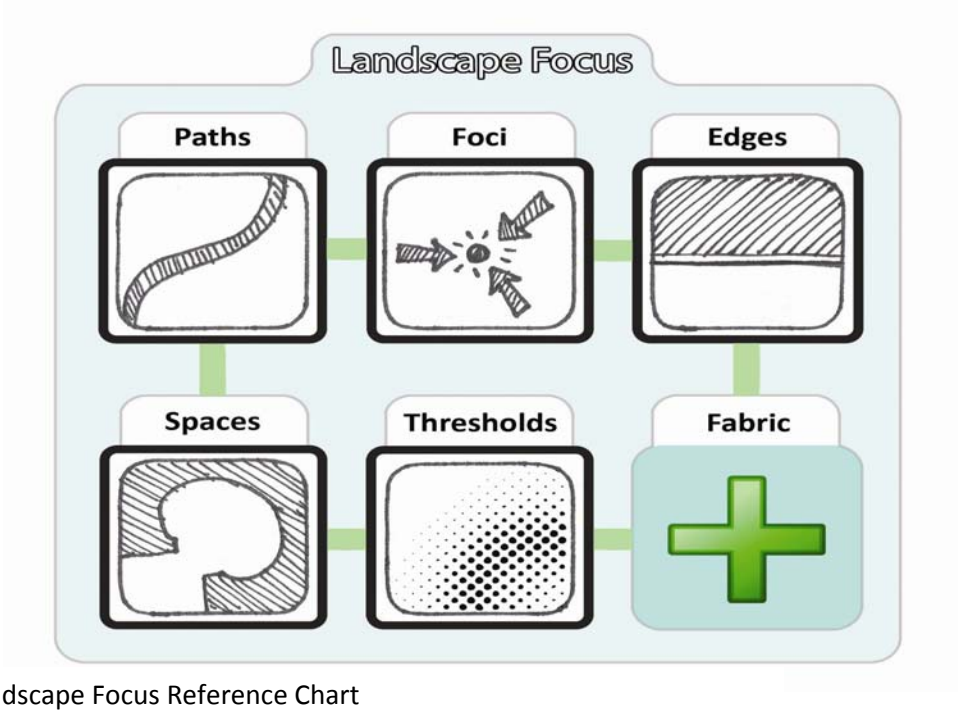


Figure 5.7: Landscape Focus Reference Chart

Having defined the morphological components of the landscape, the imaging toolboxes can now be constructed according to the three-part procedural imaging methodology of figure 5.1. Imaging strategies identified in chapter four were rearranged according to their respective stage in the methodology. Two visual reference charts were produced. The first, shown overleaf in figure 5.8, relates identified strategies to stage one, '*image acquisition'*. The second reference chart, is shown in figure 5.9, and includes strategies that relate to stage two, '*eidetic image synthesis',* and stage three, '*image collation'* for presentation purposes.

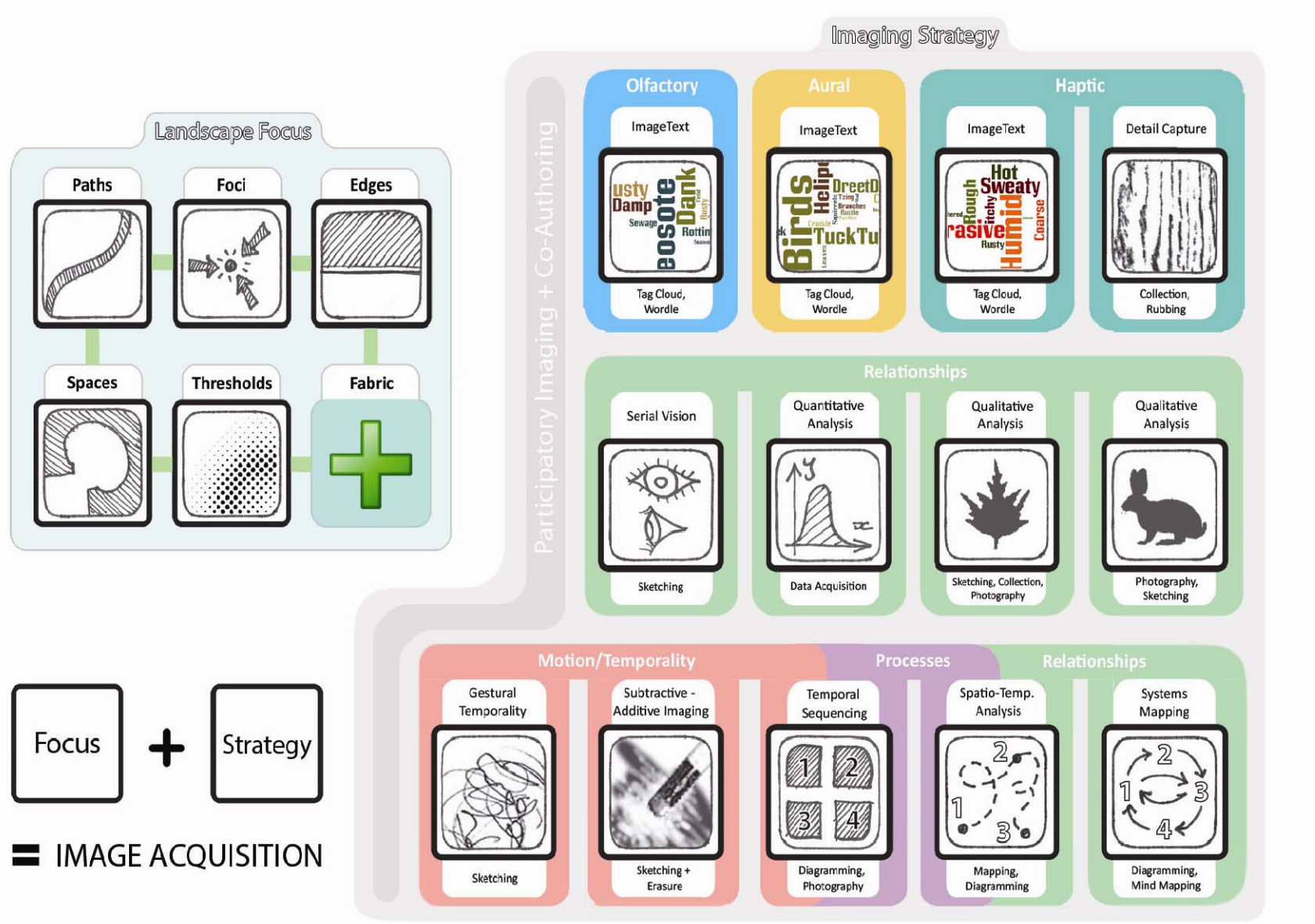


Figure 5.8: Toolbox for Stage 1: Image Acquisition

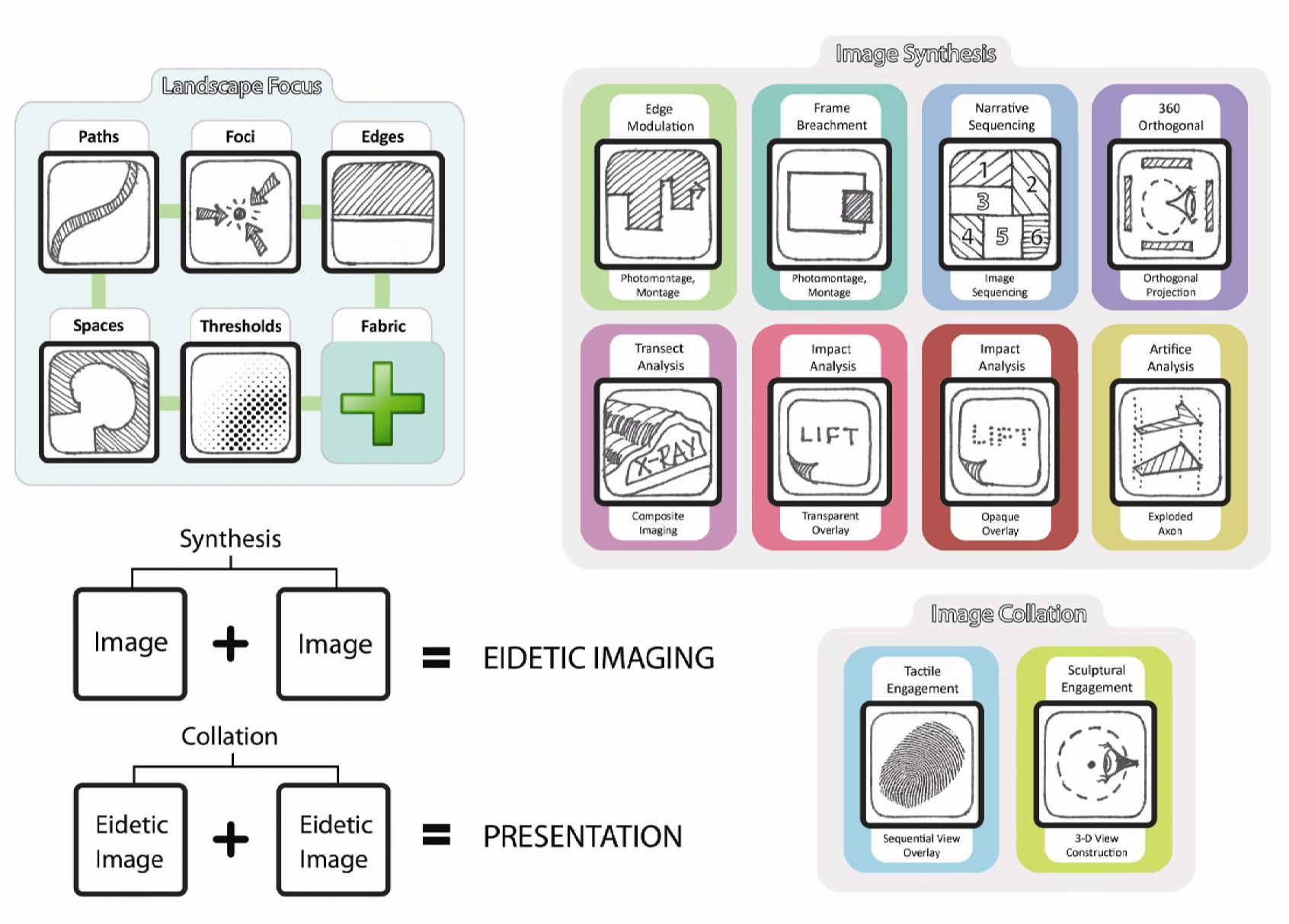


Figure 5.9: Toolbox for Stage 2 and 3: Eidetic Image Synthesis and Image Collation

The toolboxes are intended to provide landscape architects with suggestions for diversifying imaging techniques when in the field and in an office environment. The intention is that the toolbox and methodology can be used for site analysis or design communication activities. Specifically, stage one, '*image acquisition'* assists in the collection of raw, first-hand information concerning the landscape or the representation of a design proposal through sketches or digital imagery. Stage two, '*eidetic image synthesis',* and stage three, '*image collation'* direct the post processing of images acquired from stage one. The format of the toolboxes has been condensed into a visual reference guide that summarizes the strategies in relation to phenomena and methods of depiction. The intention is to make the designer keenly aware of the full spectrum of phenomena, processes, relationships and stimuli that exist in the landscape and encourage them to seek out and depict them with clarity when analyzing a site or anticipate their presence based on a design program.

The toolbox, along with the three-stage imaging methodology, creates a flexible framework of strategies that stimulate the user's awareness towards areas of the landscape that may have previously been ignored. By provoking curiosity and exploration within a customizable format, the constraints on creativity that result from an overly prescriptive process can be avoided. This is achieved by allowing the user the freedom to choose how each strategy should be used, based on individual preferences and the specific context of the site. In addition, the strategies from each stage can be combined and used together. This creates a host of associative possibilities, as varied combinations yield different insights, and emancipates the user by establishing an open-ended approach, where then have the authority to manipulate the toolbox as they deem appropriate.

CHAPTER 6

IMAGING METHODOLOGY APPLICATION

The purpose of this chapter is to validate the imaging methodology and toolbox by presenting an application that demonstrates its efficacy in diversifying and improving current graphic practices. The desired outcome is a depiction of the landscape that highlights temporal processes, engaged in reciprocal relationships, in a multi-sensory environment. Stage one, '*image acquisition,* stage two, '*eidetic image synthesis',* and stage three, '*image collation'* for presentation purposes will be presented.

The site chosen for the application is part of the greenway in Athens, GA, and consists of a diverse mix of man-made and natural features. It is regularly used by humans for recreation and circulation purposes and is populated by a diverse range of animals, such as birds, squirrels, chipmunks, raccoons and fish. Features specific to the site, are a metal bridge over a small creek that provides access between downtown Athens and the adjacent residential and commercial areas, and a large wooden railway trestle. To illustrate the site context and its relationship to Athens, figure 6.1 shows an aerial overview of the downtown area and a magnified detail of the site.

The site was investigated on June the twenty fifth, a Friday weekday, between the hours of ten o'clock in the morning till two o'clock in the afternoon. The conditions were hot and humid with a clear blue sky, typical for the state of Georgia during this time of the year. Future investigations could be expanded to observe the site during the early morning, late afternoon and evening periods. In addition the variation between activity during a weekday and weekend would be worth exploring.

Figure 6.1: Aerial Overview and detail of Site and Downtown Athens

Two elevated perspectives taken from different angles demonstrate the unique characteristics of this landscape by highlighting the pedestrian bridge, the elevated trestle and creek (see figure 6.2 and figure 6.3).

Figure 6.2: Elevated Perspective of Site

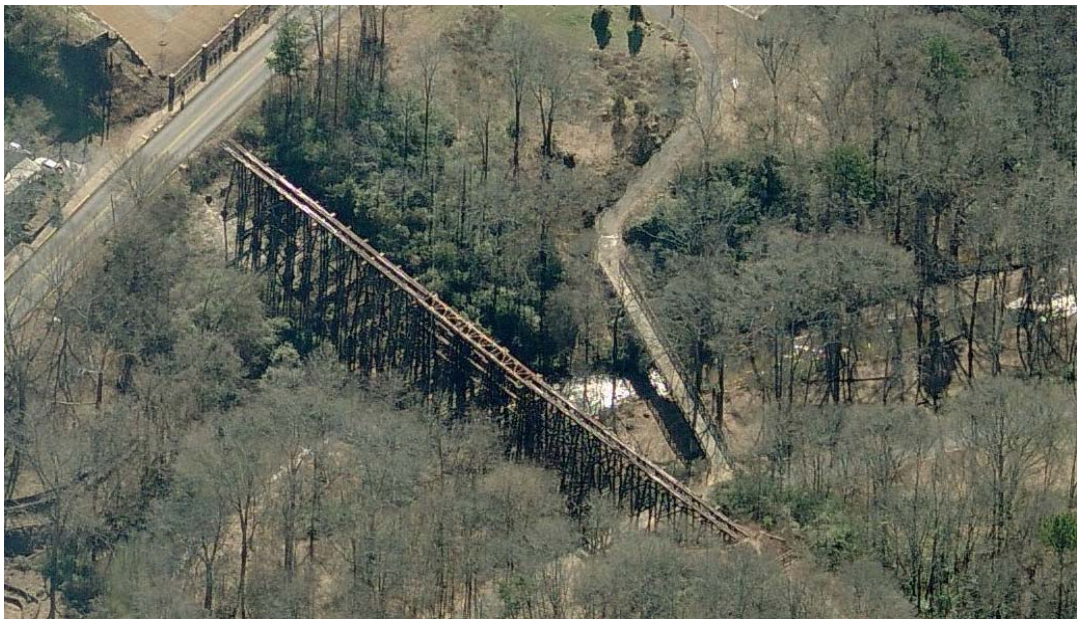


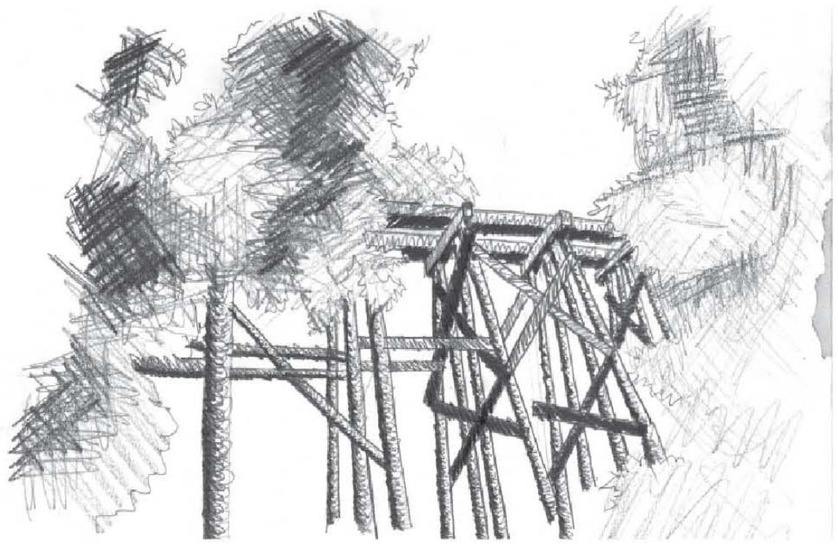
Figure 6.3: Elevated Perspective of Site

The application is presented as an analysis of the greenway site. The methodology and toolbox are suitable for representing an existing context or communicating a proposed design. Given the scope of this thesis and the time constraints it was not possible to define a design program or develop a design that could demonstrate the methodology according to such an application. Given the differences in approach that a design would require, compared to a site analysis, certain strategies such as phenomenological qualitative analysis would not be suitable. However, many of the strategies relate to the display, manipulation and composition of visual information, which is congruent to both activities.

Stage one, '*image acquisition'*, will be presented in terms of the raw data collected from the site, presented as full page spreads, and denoted by a figure. Stage one will cover figure 6.4 to figure 6.20., and will include sketches, photos, and diagrams. The specific landscape focus and strategies used will be indicated by their graphic thumbnails. The first four figures: 6.4 to 6.7 do not utilize any strategies, instead their purpose is to record the overall fabric of the site, oriented according to the following four orthogonal directions: south-west, south-east, north-east, north-west.

Stage two, '*eidetic image synthesis',* will synthesize the visual information from stage one, demonstrating the outcome of using the various strategies and will conclude with two final composite image. This will be presented from figure 6.21 to figure 6.29.

Stage three,*'image collation'* for presentation purposes will utilize a selection of images from stage one and stage two to provide examples demonstrating how a client presentation might look. These will be presented in figure 6.30 to figure 6.32.



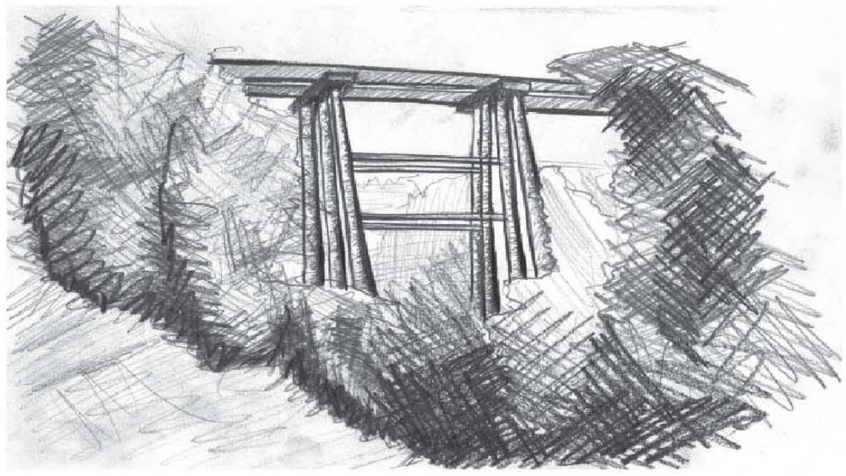


Figure 6.4: Investigations commenced with a visual analysis of the site context. This was conducted using photography and sketching, oriented towards the north-east. No particular focus was used; instead the overall landscape fabric was recorded.







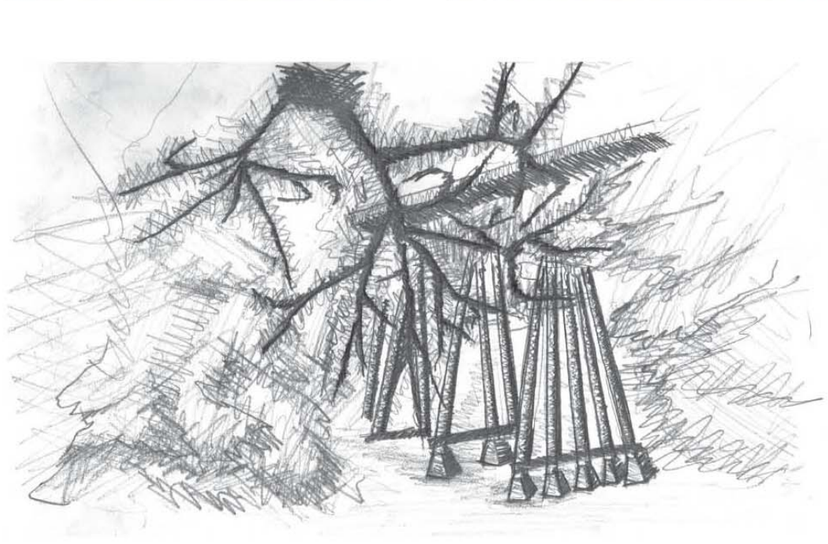
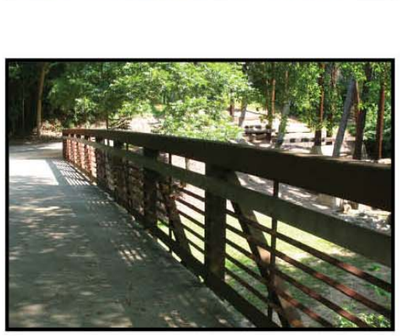
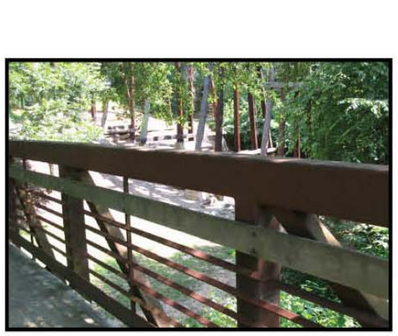





Figure 6.5: Visual features of the site, oriented towards the north-west were recorded using photography and sketching. The overall landscape fabric was recorded without a specific focus.

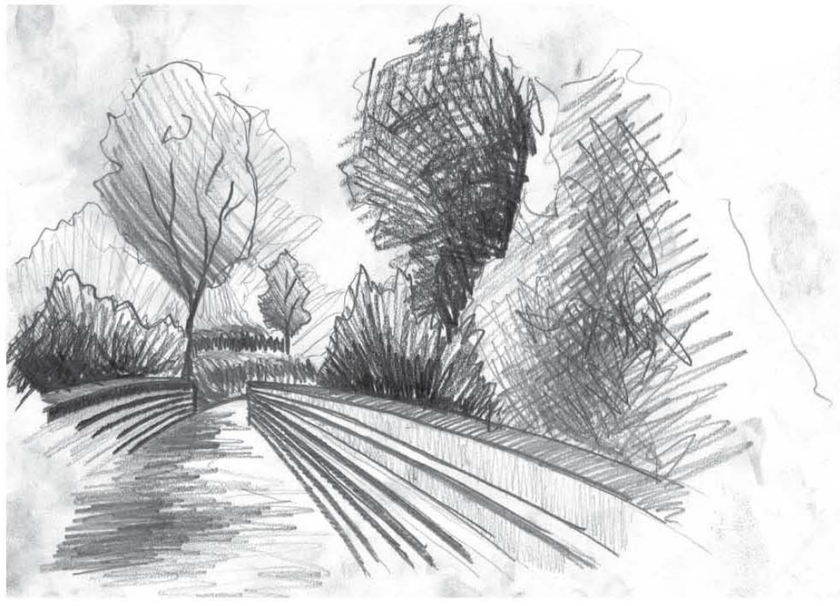
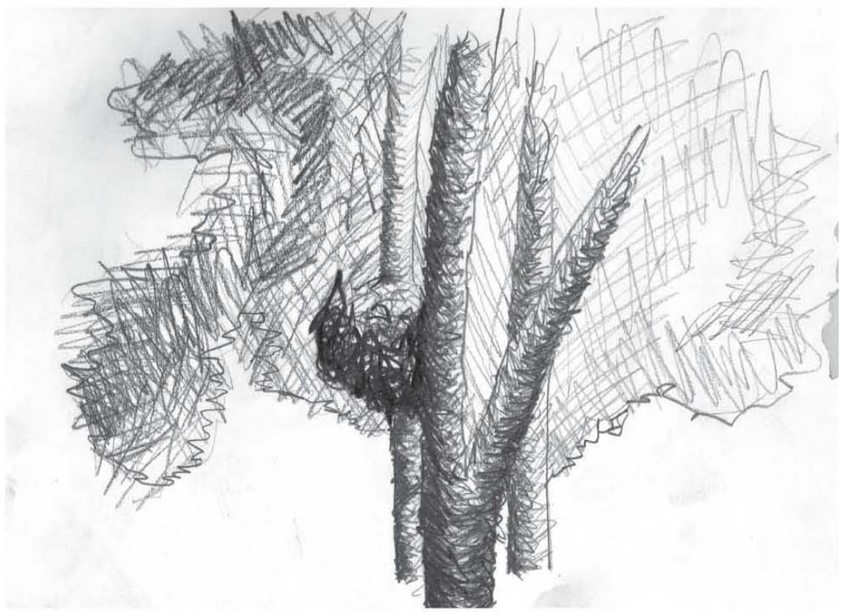


Figure 6.6: An overview of the site's features, oriented towards the south-east were captured using photography and sketching. The overall fabric was recorded without the use of a specific focus.



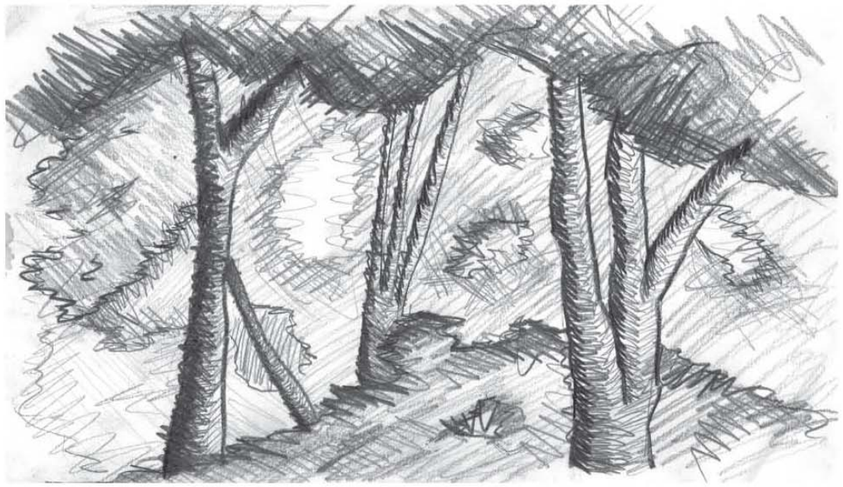


Figure: 6.7: Site feature's oriented towards the south-west were captured through photography and sketching. An overview of the landscape fabric was sought rather than a specific focus.

On Bridge

On Bridge:

- Sweet 10
- Syrupy 5
- Rich 4
- Musty 1
- Grape 9
- Rusty 6
- Cloying 8
- Muddy 4
- Damp 2
- Dank 3

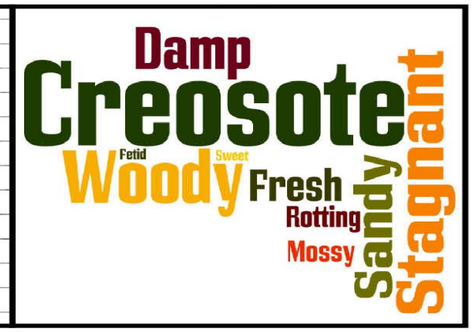
Wordle

NE from Bridge

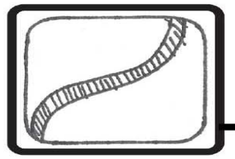
Water by Trestle:

- Creosote 10
- Woody 9
- Fresh 5
- Mossy 3
- Sweet 2
- Sandy 6
- Stagnant 8
- Rotting 4
- Damp 7
- Fetid 1

Wordle

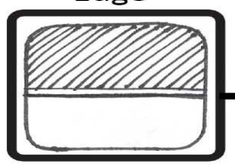


Path



Olfactory

Edge



Olfactory

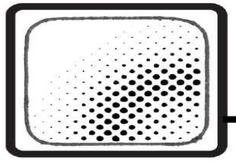
Below Bridge

Below Bridge:

- Rusty 4
- Creosote 10
- Dank 9
- Musty 8
- Rotting 6
- Fetid 1
- Sewage 5
- Beach 2
- Seaweed 3
- Damp 7

Wordle

Threshold



Olfactory

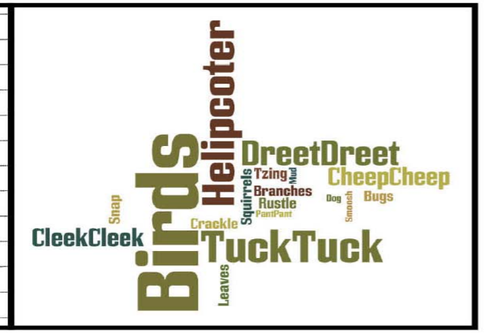
Figure 6.8: Sensory olfactory information was captured through written descriptions, recorded at various areas of site, based on the focus indicated. The descriptions were qualitatively ranked against each other and represented hierarchically using Wordle.

SW from Bridge

Away from Tressle

- Dog - Pant Pant 1
- Bugs - Tzing 6
- Helicopter - Tuck Tuck 10
- Birds - Cheep Cheep 7
- Birds - Dreet Dreet 8
- Squirrels - Rustle Rustle 4
- Birds - Cleek Cleek 9
- Branches - Snap 5
- Leaves - Crackle 3
- Mud - Smoosh 2

Wordle

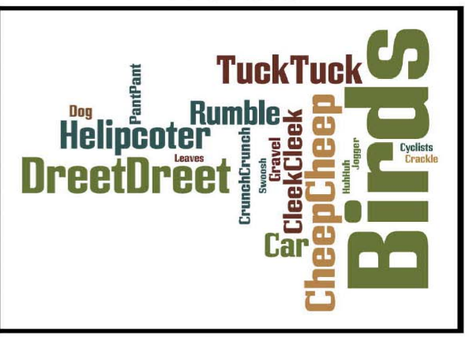


NW from Bridge

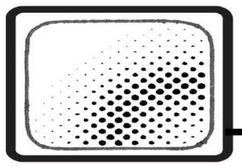
Away from Mama's Boy:

- Car - Rumble 7
- Jogger - Huh Huh 2
- Dog - Pant Pant 4
- Helicopter - Tuck Tuck 8
- Birds - Dreet Dreet 10
- Birds - Cleek Cleek 6
- Gravel - Crunch 5
- Leaves - Crackle 3
- Cyclists - Swoosh 1
- Bird - Cheep Cheep 9

Wordle



Threshold



Aural

Space

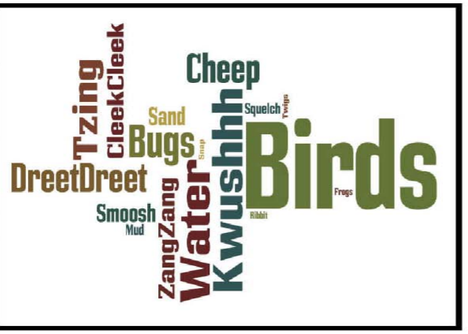
Aural

NE from Bridge

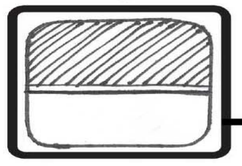
Water by Treesle:

- Birds - Zang Zang 7
- Birds - Cheep Cheep 4
- Birds - Dreet Dreet 8
- Birds - Cleek Cleek 6
- Mud - squelch 3
- water - Kwushh 10
- Bugs - Tzing 9
- Sand - Smoosh 5
- Twigs - Snap 1
- Frogs - Ribbit 2

Wordle



Edge



Aural

Figure 6.9: Experiential aural stimuli were recorded through written descriptions directed towards a specific landscape focus. Each descriptor was ranked qualitatively and converted into a hierarchical graphic format using Wordle.

SW from Bridge

Along Creek Edge

Sandy	9
Musty	10
Seaweed	4
Algae	7
Beach	3
Rotting	8
Damp	5
Sewage	2
Sweat	6
Excrement	1

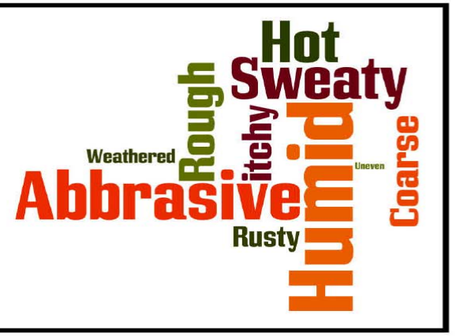
Wordle

On Bridge

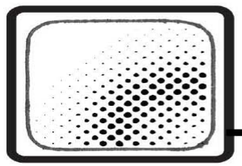
On Bridge:

Rusty	3
Coarse	4
Rough	6
Abrasive	9
Weathered	2
Uneven	1
Humid	10
Hot	7
Itchy	5
Sweaty	8

Wordle

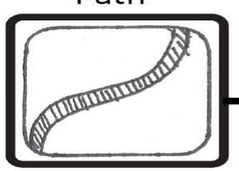


Threshold



Olfactory

Path



Haptic

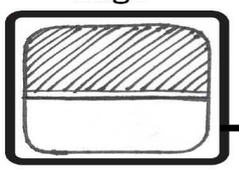
NE from Bridge

Water by Tressle:

Humid	10
Hot	5
Breezy	2
Itchy	9
Sweaty	6
Sinking	1
Irritated	8
Sandy	3
Wet	4
Soggy	7

Wordle

Edge



Haptic

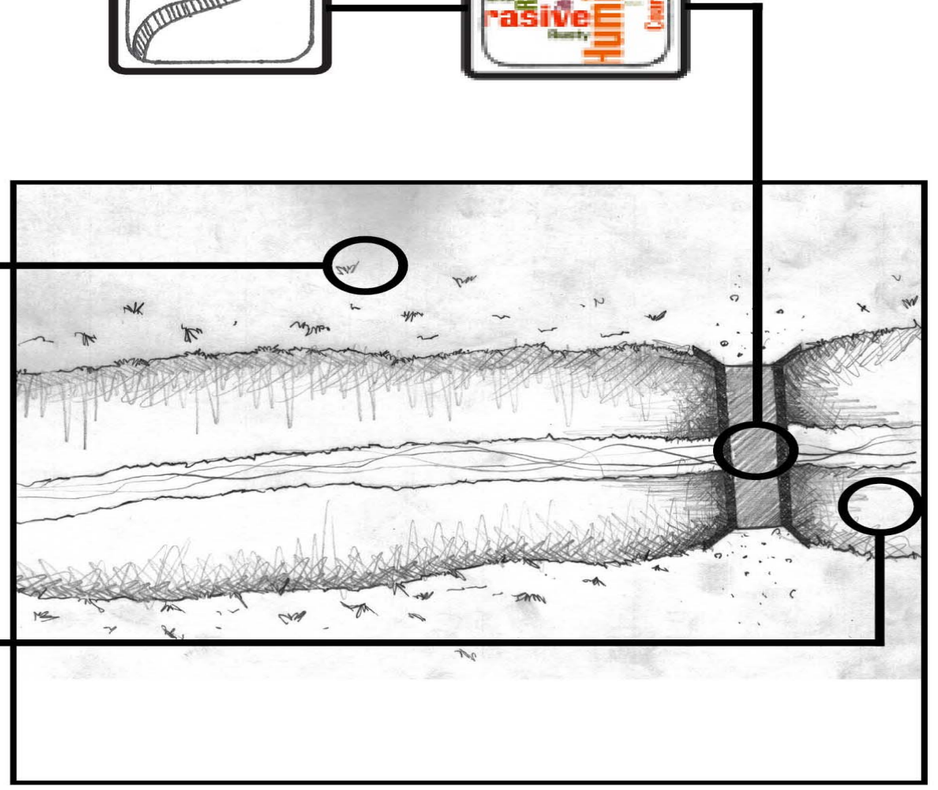


Figure 6.10: Olfactory and haptic sensory stimuli were converted into textual descriptions and ranked qualitatively. Wordle was used to convert the information into a visually engaging, hierarchical format.

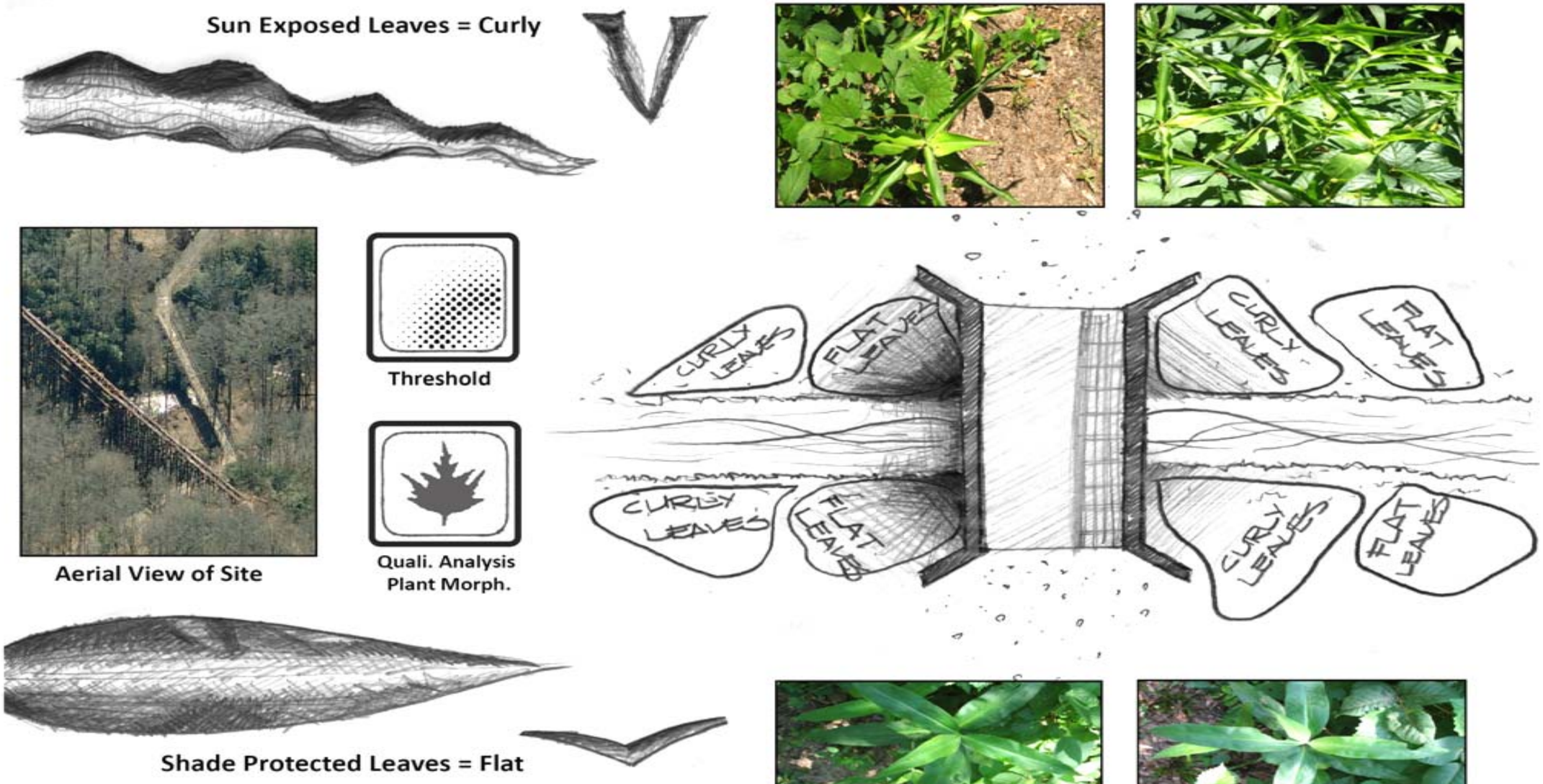
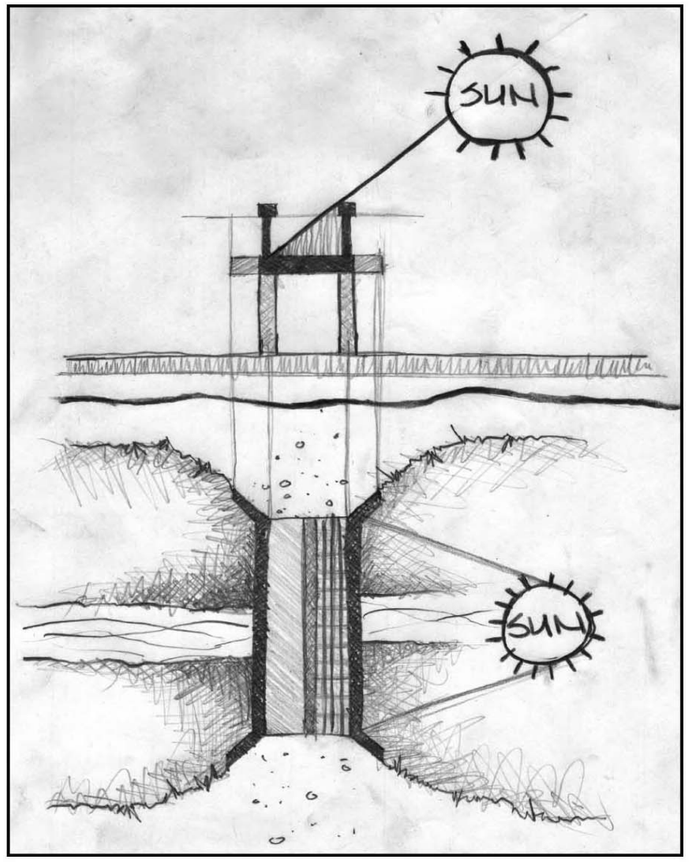


Figure 6.11: Exploration of the site along the threshold between the creek and bank revealed significant variations in plant morphology. Leaves exposed to the sun were curly and closed, while those in the shade were flat. This insight enabled the incidence of sunlight over the course of a day to be mapped and understood without having to observe changes over an extended period.

SW Facing Railing

Minimal Moss + Lichen

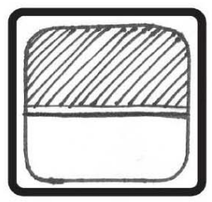


Serial Vison: Railing in Shadow

NE Facing Railing

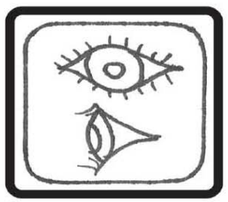
Abundant Moss + Lichen

Figure 6.12: Examination of the bridge edge highlighted variations in the quantity of moss on each side. By depicting the orientation of the bridge in relation to the path of the sun, serial vision allows the relationship between moss and lichen growth, and solar incidence to be visualized.



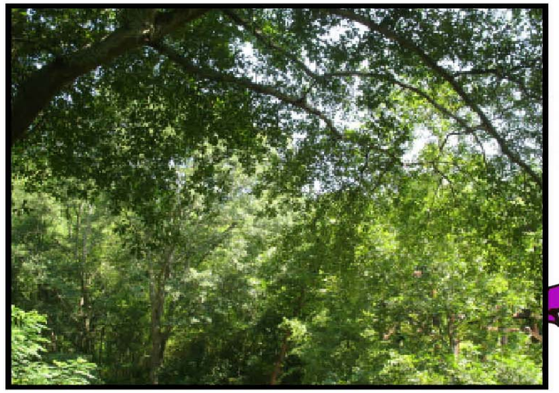
Edge

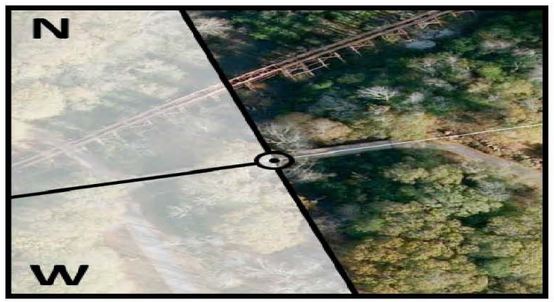
Quali. Analysis Plant Morph.

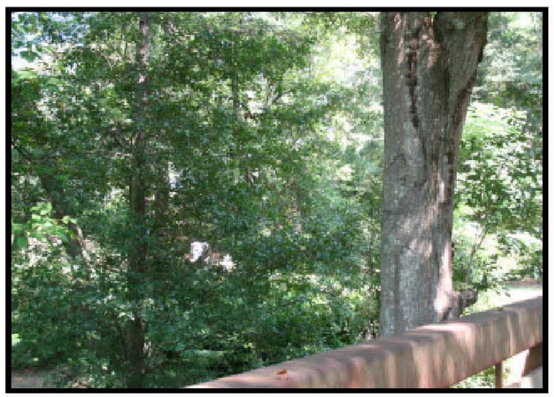


Serial Vision

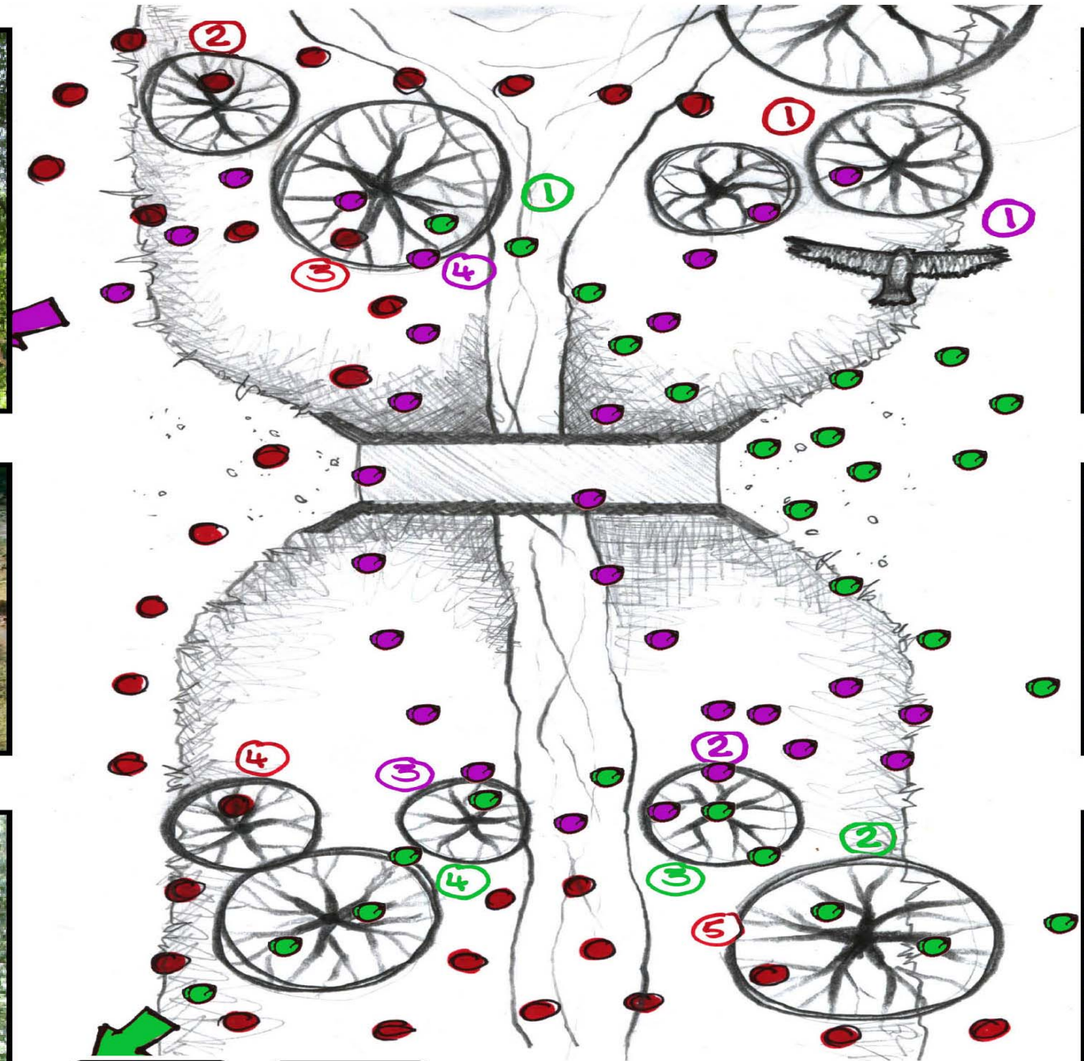
North Facing







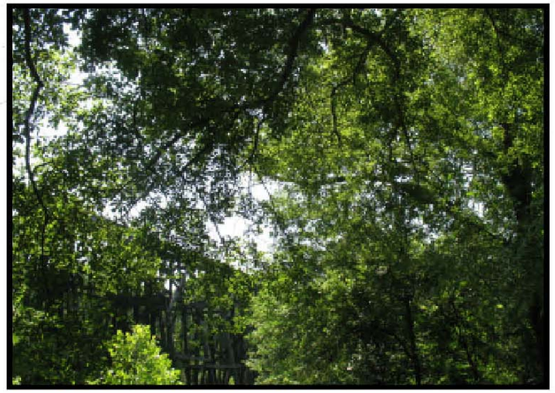
West Facing

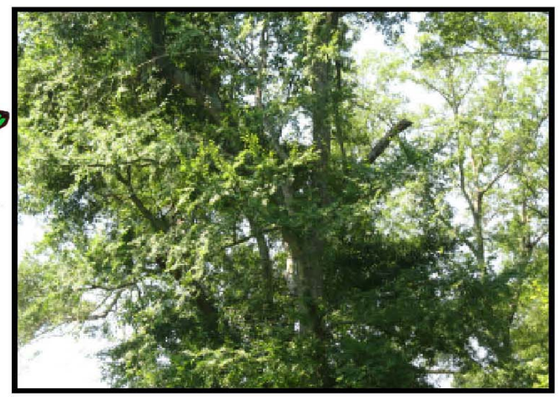


Spaces

Spatio-Temp Analysis

East Facing





South Facing

Figure 6.13: By focusing on the space around the site, bird movement was mapped spatio-temporally. This provided an appreciation for the diversity of species and the complexity of avian culture.

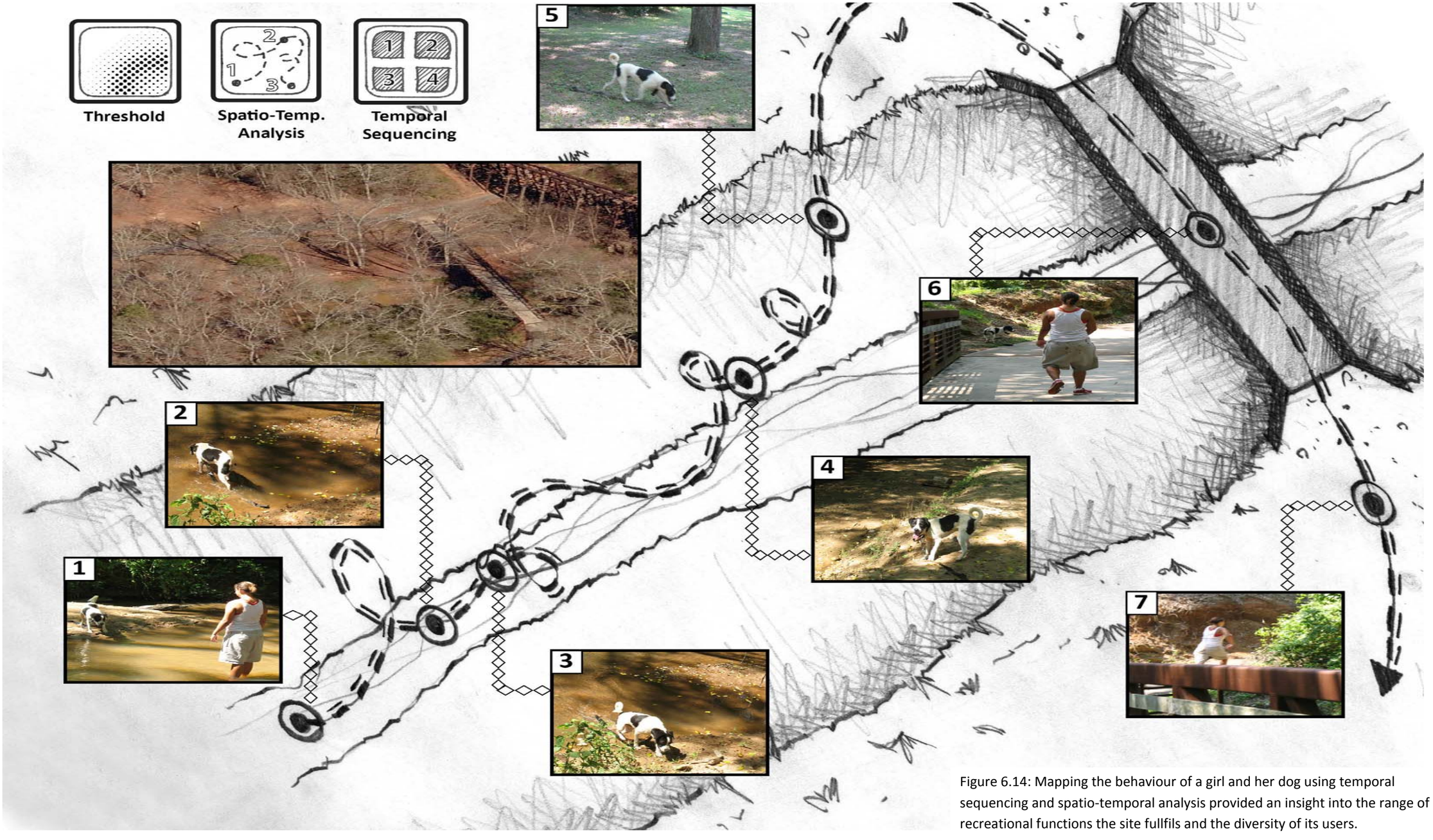
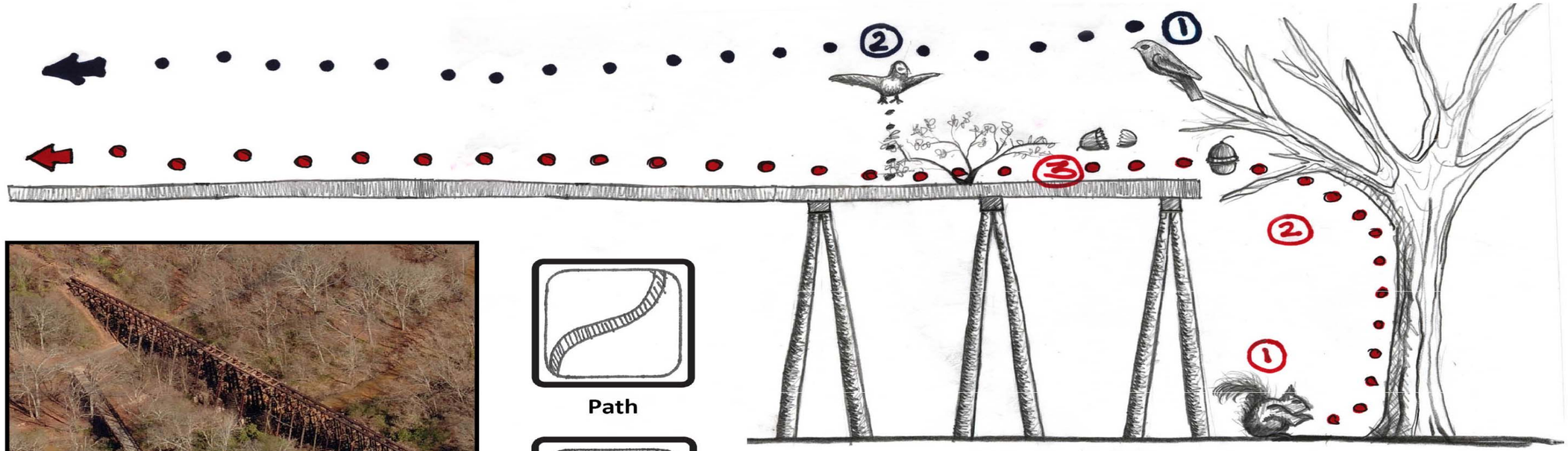
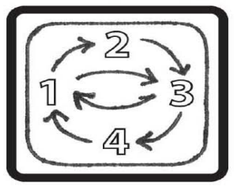


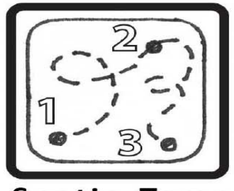
Figure 6.14: Mapping the behaviour of a girl and her dog using temporal sequencing and spatio-temporal analysis provided an insight into the range of recreational functions the site fullfils and the diversity of its users.



Path



Systems Mapping



Spatio-Temp Analysis

Figure 6.15: Observation of the trestle revealed that it was a viable ecological corridor used by birds, squirrels, and other wildlife to circulate the site. The random shrub, growing on the top of the trestle confirms the process of seed distribution through fauna.

Trestle = Wildlife Corridor

Shrub/Mistltoe Growing on Trestle

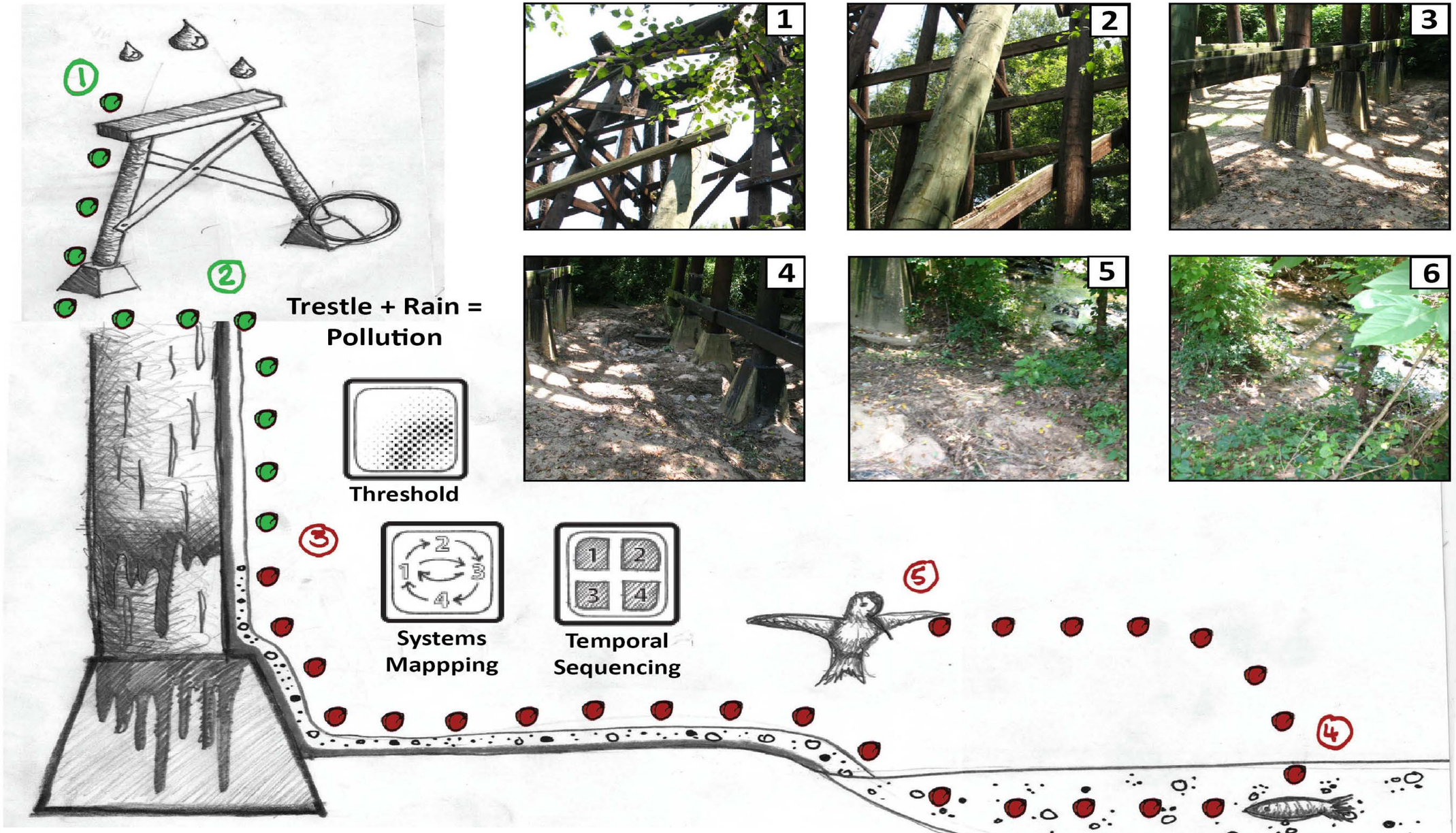


Figure 6.16: The visible evidence of creosote dripping down the trestle columns, and the eroded sand bank, suggest that large quantities of water are entraining pollutants into the creek to be absorbed by aquatic life and their predators.

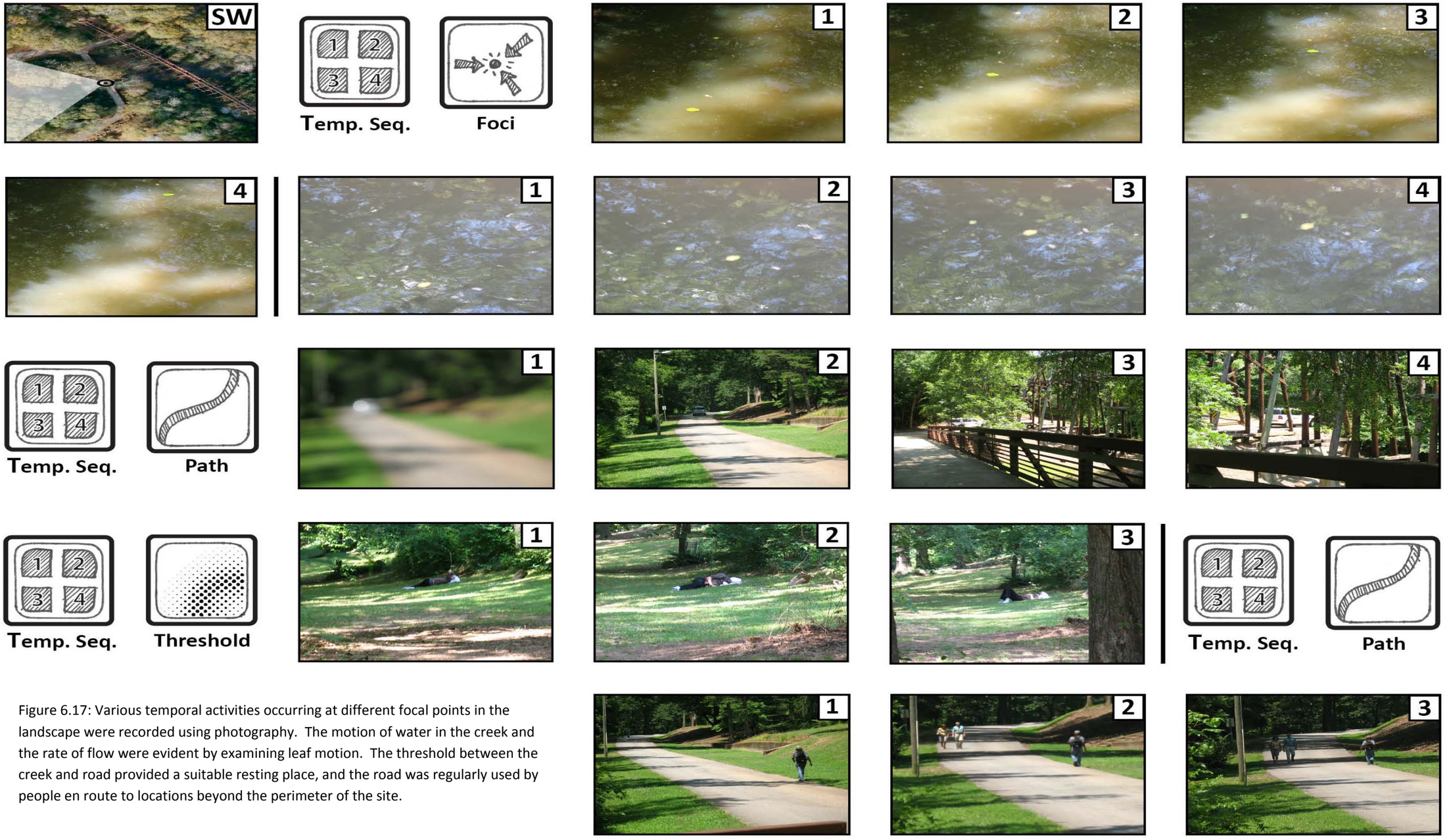


Figure 6.17: Various temporal activities occurring at different focal points in the landscape were recorded using photography. The motion of water in the creek and the rate of flow were evident by examining leaf motion. The threshold between the creek and road provided a suitable resting place, and the road was regularly used by people en route to locations beyond the perimeter of the site.

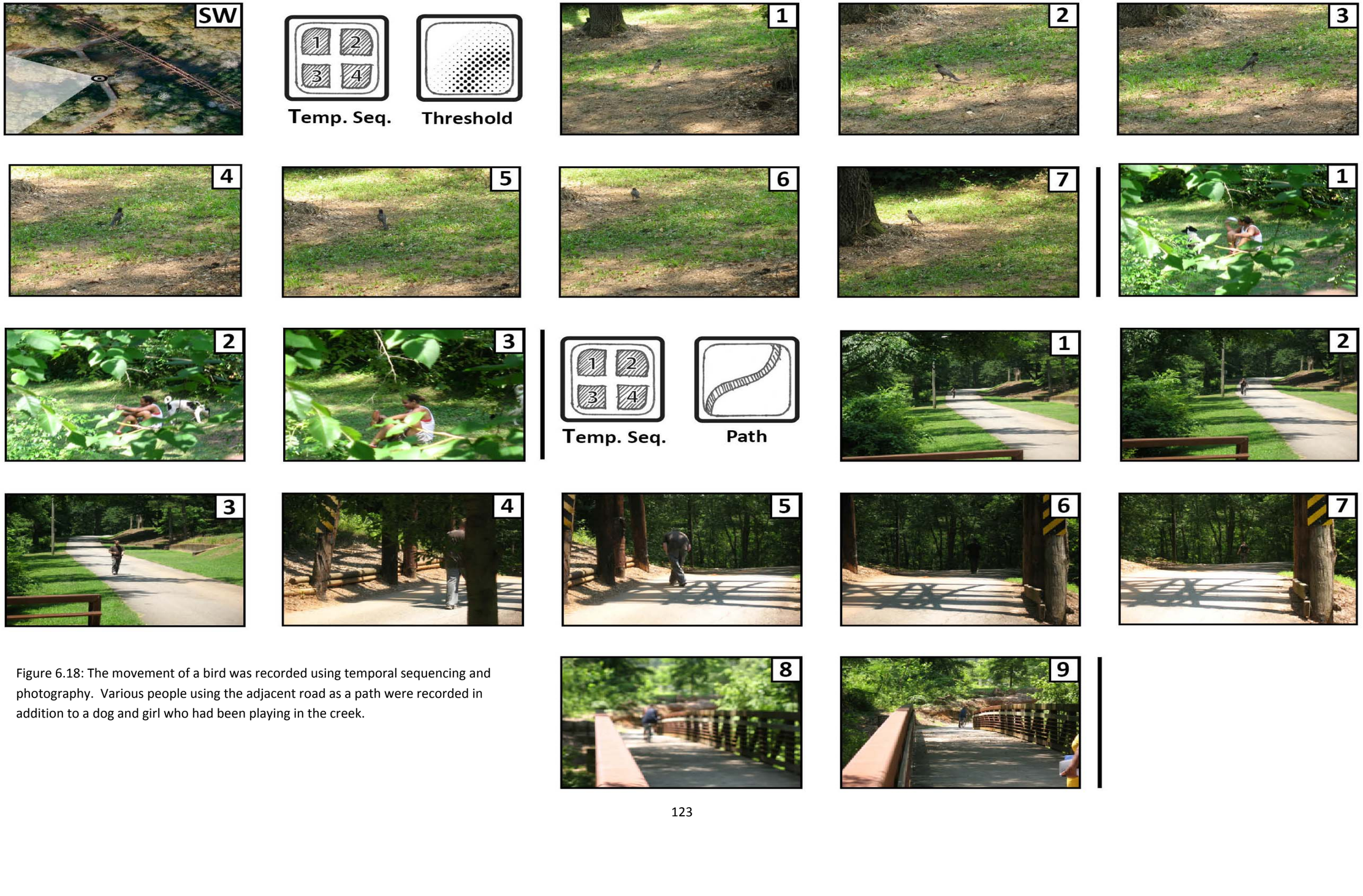


Figure 6.18: The movement of a bird was recorded using temporal sequencing and photography. Various people using the adjacent road as a path were recorded in addition to a dog and girl who had been playing in the creek.

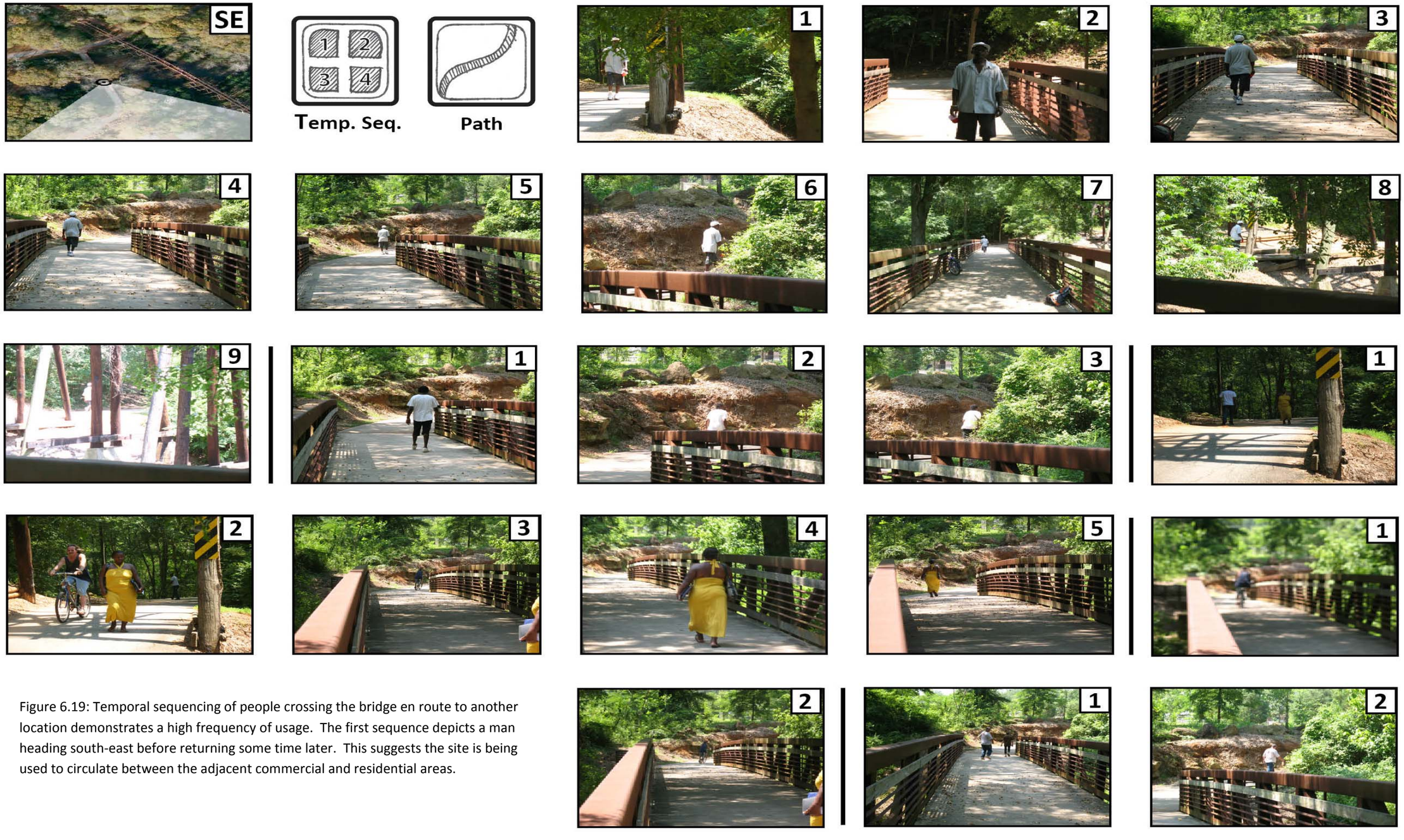
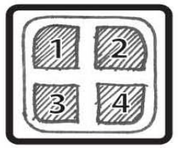
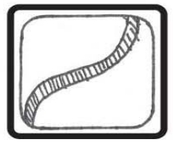


Figure 6.19: Temporal sequencing of people crossing the bridge en route to another location demonstrates a high frequency of usage. The first sequence depicts a man heading south-east before returning some time later. This suggests the site is being used to circulate between the adjacent commercial and residential areas.



Temp. Seq.



Path

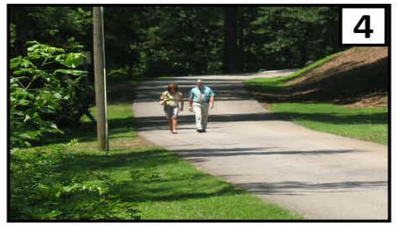


Figure: 6.20: A man was recorded using photographic temporal sequencing, heading away from the site in a north-westerly direction. He later returned heading south-west, and was seen two more times accompanied by a woman, who showed an interest in observing the trestle. The frequency of observation suggests that the site fulfils a broad range of requirements such as circulation, leisure and relaxation

Stage Two: Eidetic Image Synthesis

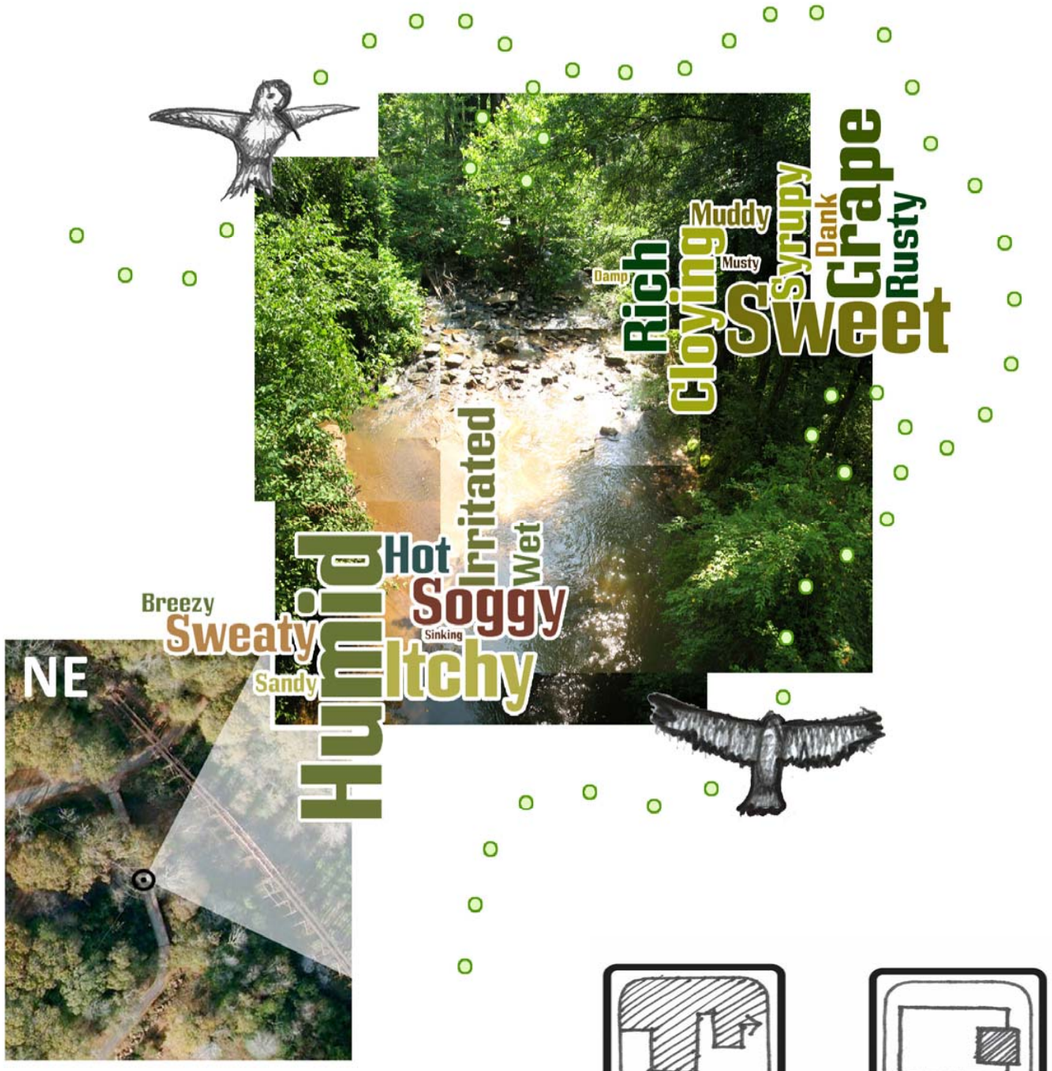
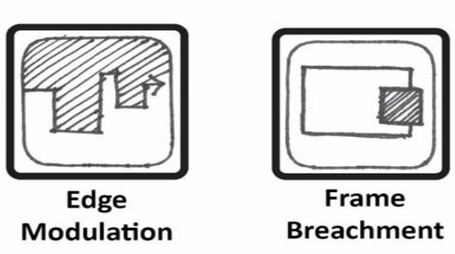
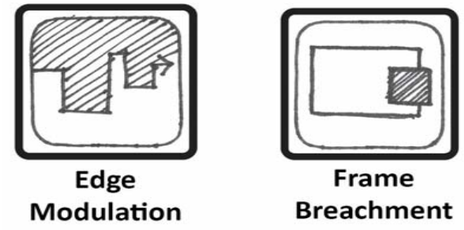


Figure 6.21: Edge modulation was used to montage the photographs of the churning water below the trestle. Haptic and olfactory information are integrated and breach the frame.





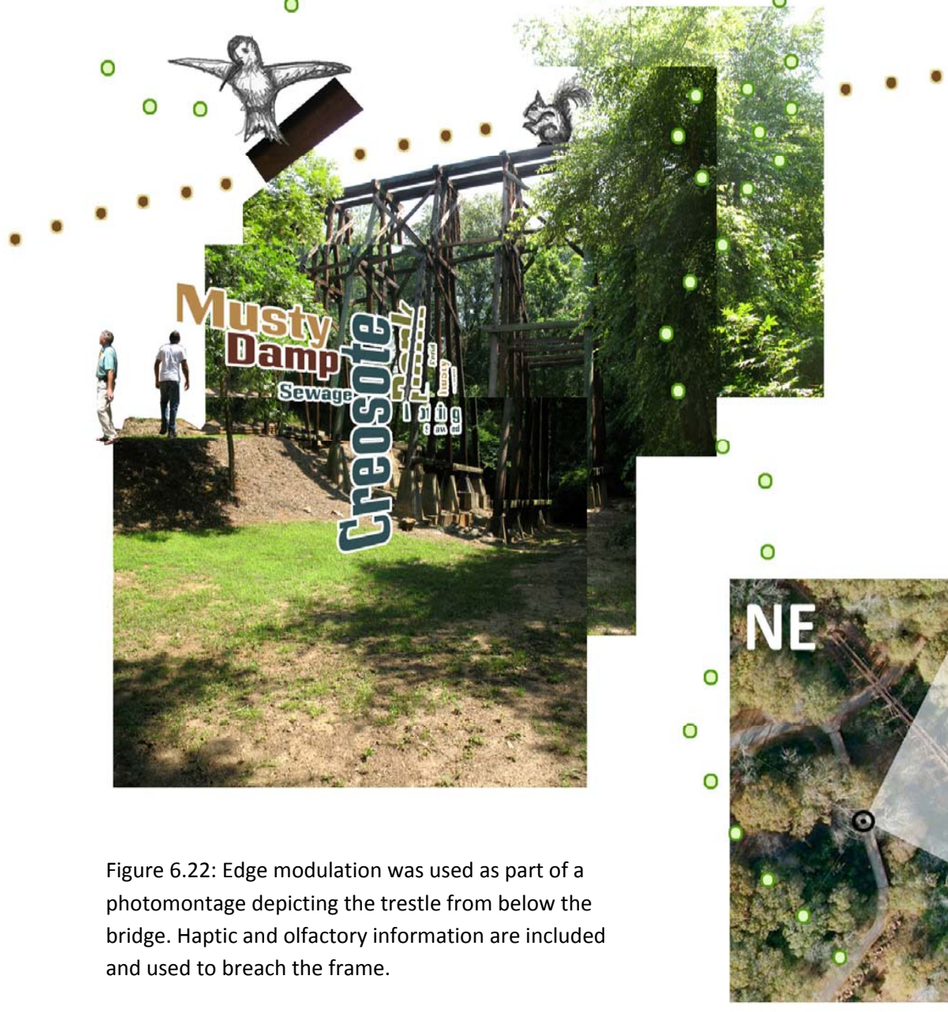


Figure 6.22: Edge modulation was used as part of a photomontage depicting the trestle from below the bridge. Haptic and olfactory information are included and used to breach the frame.

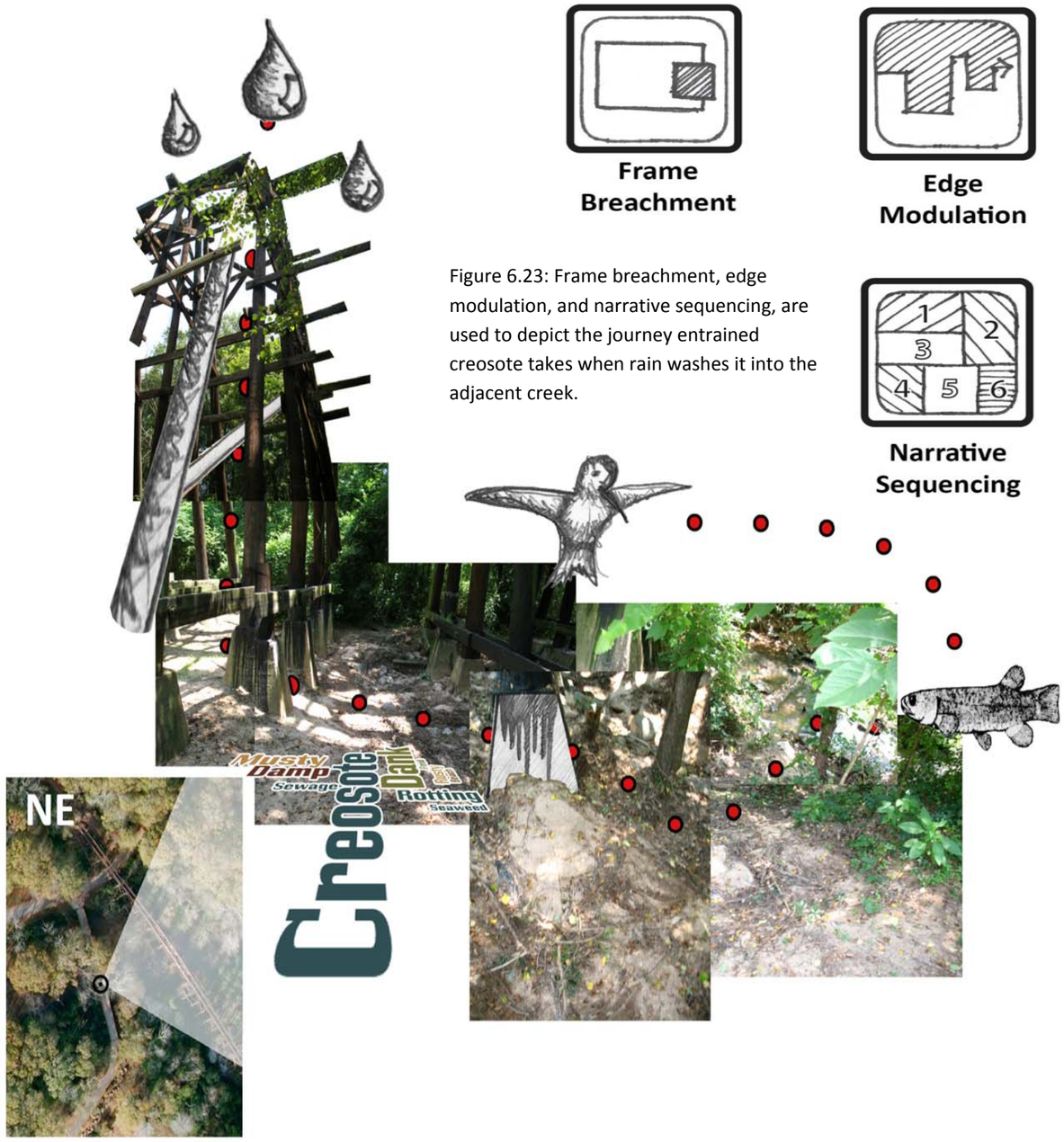


Figure 6.23: Frame breachment, edge modulation, and narrative sequencing, are used to depict the journey entrained creosote takes when rain washes it into the adjacent creek.

Figure 6.24: Edge modulation and frame breachment are used to create a photomontage highlighting the presence of the trestle and road below it.

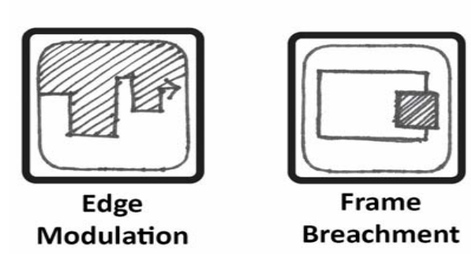


Figure 6.25: A photomontage, oriented north-west, depicts aural, olfactory, and temporal information. The location of the trestle is highlighted through the use of a sketch.

Figure 6.26: A photomontage depicting human circulation, aural and olfactory information. Edge modulation and frame breachment are used to draw attention to features such as trees and the structure of the bridge.

Figure 6.27: Narrative sequencing is used to photomontage a 180 degree panoramic view of the trestle facing in a north-easterly direction. The movement of people is depicted along with olfactory and aural information. Edge modulation and frame breachment are used to draw attention to pathways and vegetation. A sketch of the trestle is included to distinguish it from the rest of the scene.

Narrative Sequencing

Figure 6.28: Narrative sequence of various montaged images oriented northeast towards the trestle. The sequence shows the diverse range of activities that occur around the bridge and trestle.

Figure 6.29: Composite panoramic orthogonal arrangement of images depicting views over a 270-degree sweep from the vantage point of the bridge

Stage Three: Image Collation

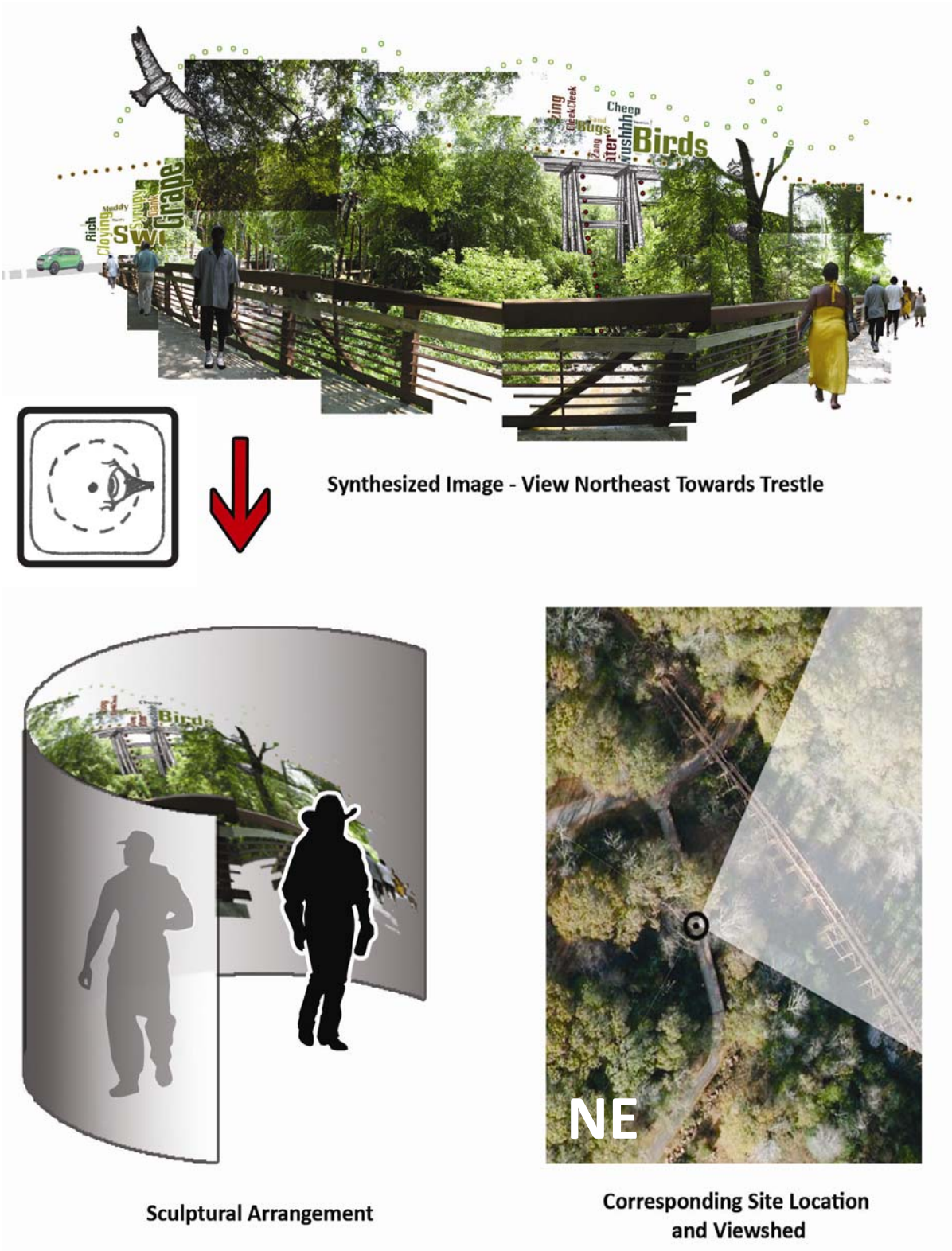


Figure 6.30: Example of how the panoramic view towards the trestle can be adapted and displayed as a sculptural arrangement.

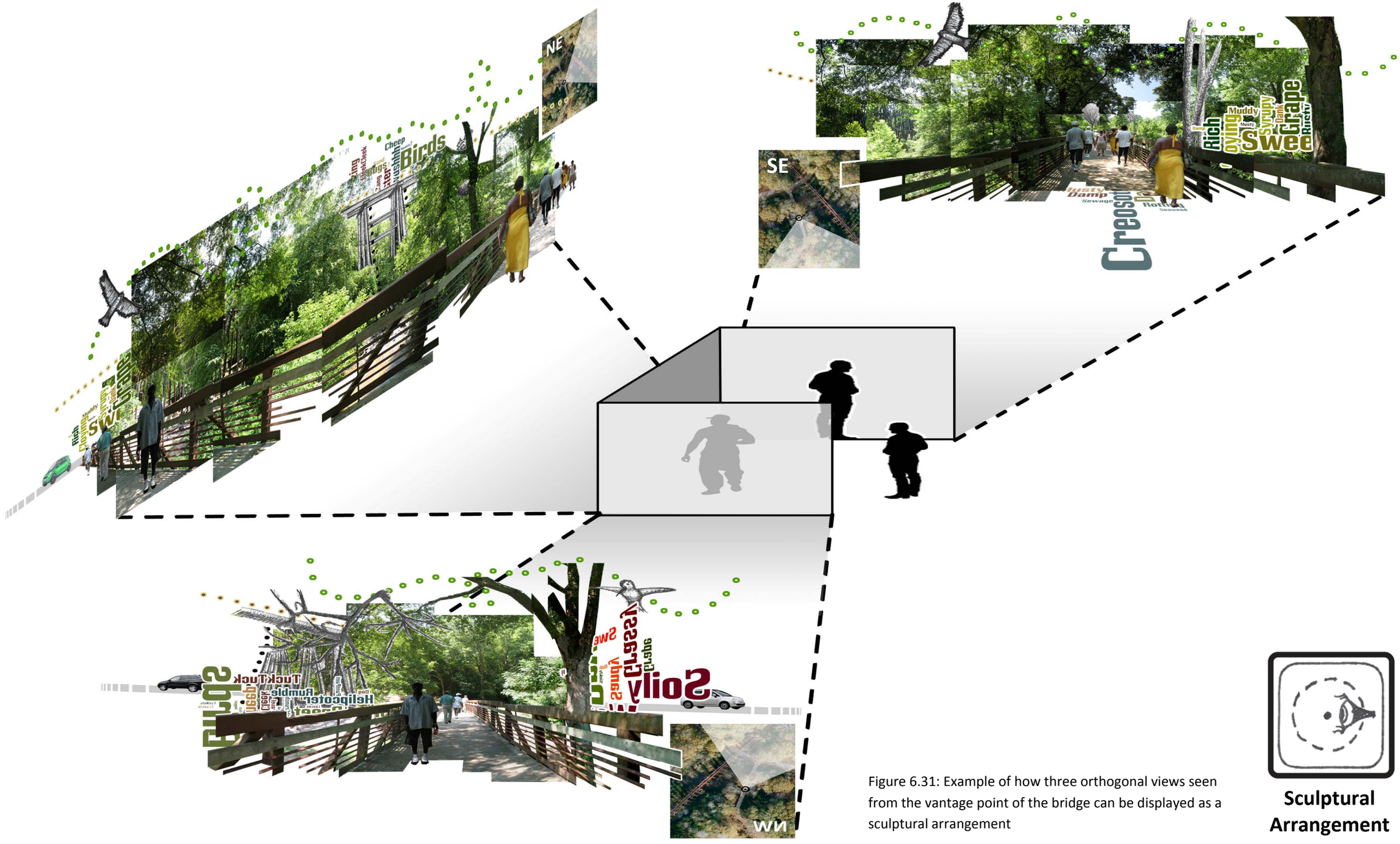
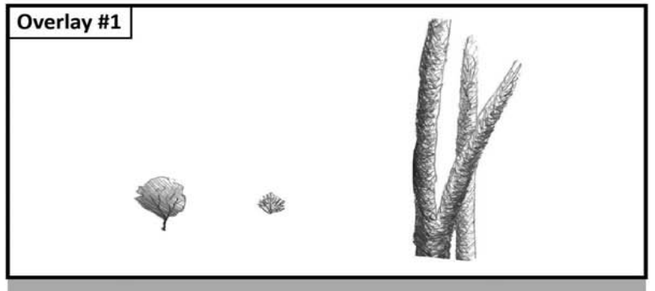


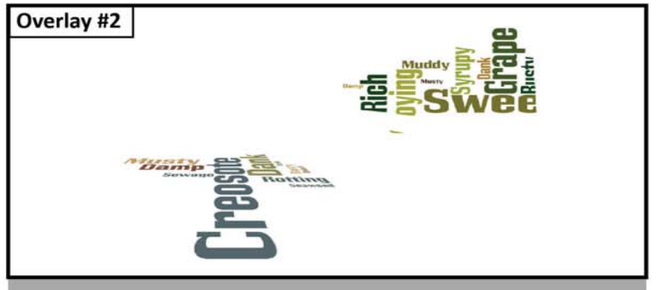
Figure 6.31: Example of how three orthogonal views seen from the vantage point of the bridge can be displayed as a sculptural arrangement

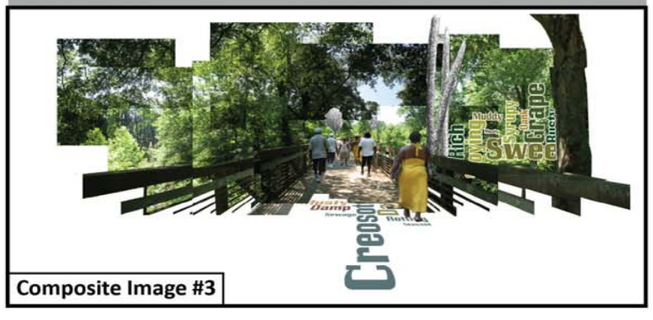
Sculptural Arrangement

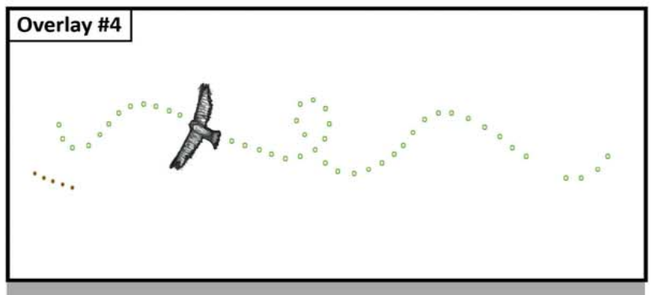
Paths

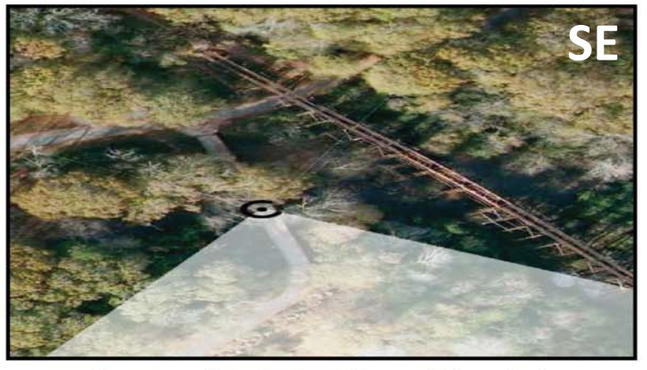
Tactile Engagement











Corresponding Site Location and Viewshed

Figure 6.32: An example of how graphic elements used to compose an image of a view southeast from the bridge can be separated into individual overlays. By layering the individual overlays an increasingly complex and detailed image can be created that allows the visual components to be viewed in isolation or as a composite whole.

The presented application evolved from the recording of stimuli and phenomena directed towards areas of interest within the chosen site, located on the greenway in Athens. As the process developed from stage one to stage two certain insights were discarded and not incorporated in the final synthesized images. The decision to include or omit specific insights was not a conscious one. It occurred through an organic process of association and trial and error. As the visual information was manipulated and combined, patterns began to emerge which informed the direction of the process. As a result, certain insights were more successful in forming strong associations than others. For instance, the haptic, olfactory, and aural data were prolifically used because they communicated non-visual information in a format that could be manipulated to indicate the location of the stimuli and oriented to suggest spatial properties. As a result the Wordle images were used to reinforce and draw attention to less obvious features.

The use of temporal sequencing to depict motion also fostered a host of associative possibilities. The final images demonstrate that certain routes within the site were more popular than others, represented by a higher incidence of pedestrian traffic. In addition, there were also numerous return trips by the same the individuals, suggesting that the site is in close proximity to popular amenities.

The significance of the discarded insights should not be discounted. If the imaging process were to be repeated on the same site, further investigations could capitalize on the heuristic nature of the methodology. Interest could be focused towards obtaining additional insights that enables the unused information to be brought into a productive relationship.

Crucially, this process became highly subjective because it represented the point of view of a single individual. Sufficient time did not exist to included additional participants, but as discussed in chapter three the inclusion of other peoples' perspective may have resulted in a more fruitful outcome

and democratic process concerning the data collected and the choices taken in its representation and synthesis. Real world projects involve a client and site program, therefore the process would benefit from the participation of all stakeholders to ensure all programmatic elements are given sufficient attention and included within the final representation. Choices concerning the format of the final collated presentation images would benefit from a clients input and emphasize the iterative and heuristic nature of the methodology.

CHAPTER 7

CONCLUSION

This thesis evolved from a desire to challenge conventional graphic practices. From the historical review, shortcomings associated with existing imaging techniques used by the profession of landscape architecture were identified. Specifically, issues concerning the difficulty in engaging the viewer and depicting processes, relationships, and sensory data within the landscape drove the research. The stated of goal of this thesis was to establish how visual media could assist in fostering a meaningful and intimate connection between humans and the landscape by highlighting temporal processes, reciprocal relationships, and sensory experiences. This was achieved by researching imaging strategies that could improve, diversify, and complement existing graphic techniques. Therefore, this thesis will be judged according to the success of the application in fulfilling the criteria of the goal.

Human, animal, and environmental systems were effectively depicted and their relation to each other established. The insights obtained from the application demonstrated how landscapes evolve to fulfill the needs of different users through varied means. For instance, the current layout of the site creates a three-tiered circulation system consisting of the river and shoreline, the bridge, and the railway trestle. Each of these provide a distinctive service to the different user groups. For example, aquatic and amphibious species utilize the creek and shoreline, humans use the bridge, and the disused railway trestle provides a vital ecological corridor for tree-born animals. The proposed rails-to-trails conversion of the trestle, which would integrate separate user groups, suggests that its ecological function may have been overlooked.

Information acquired using certain strategies from stage one, such as *'qualitative analysis of plant morphology*, '*quantitative analysis',* and '*gestural temporality*' proved challenging to integrate into the synthesized images of stage two and the presentation examples of stage three. This resulted from the difficulty in forming associations between these elements and the other information. Given that the presented application was only the first time that the toolbox and methodology were used, opportunities for integrating the omitted strategies may improve from increased usage and familiarity with the tools. The intention is not to insist that all strategies be used in all circumstances, rather, that the decision remains a subjective one on behalf of the user, based on the circumstances of the site or the program of a proposed design. To improve the integration of these strategies and reduce the subjectivity of an individual's point of view, the process would benefit from using multiple people over multiple visits during different days of the week and times of the day. This approach would capitalize on the heuristic and iterative nature of the process as insights guide future site investigations or design developments.

The creation of a procedural methodology was necessary in order to structure the identified strategies within a framework that could guide the designer. Without it the strategies would have little association to each other, and confusion rather than exploration might result. Stage one, *image acquisition*, enabled a focused approach to analyzing and depicting the human, animal, and environmental systems that existed within the site. In isolation, these insights represented a partial disclosure of the landscape's overall complexity and diversity. The possibility that the toolbox might constrain creativity via the implied limitations and boundaries of the methodology were allayed by the success of stage two, *eidetic image synthesis.* The associative properties of *eidetic imaging* enabled the disparate elements from stage one to be brought into concord to create a representation of the landscape that was greater than the sum of its parts.

On reflection, the toolbox did impose a degree of discipline during stage one, as the strategies were used explicitly. During stage two, however, the synthesis process became increasingly open-ended as the visual information was manipulated and reworked in response to the patterns and relationships that materialized, resulting in a genuinely spontaneous endeavor. The manipulation of a photo, for instance, by cropping it to allow a specific feature to breach the frame, would suddenly prompt the need to alter another visual feature to strengthen the associations that were surfacing. This iterative cycle continued, with each alteration reinforcing the previous changes and informing the next. Through the connections that developed during stage two, a desire to revisit the site and capture information from specific areas that had been neglected during stage one emerged. Therefore, it became apparent that despite the directed focus the toolbox provided during stage one, the true nature of the task was not obvious until stage two. Consequently, any concerns about the rigidity of the methodology and the toolbox are unfounded due to the emancipating effect associated with the eidetic approach of thoughtfully combining, layering, and collaging during stage two. Rather than being prompted by the toolbox, the user is inspired by the emergent qualities of the landscape under scrutiny.

The outcome of the methodology demonstrated the benefit of taking the time to explore a site through a first person encounter. Designers should not limit the scope of their investigation to remote imaging and analysis techniques such as GIS and satellite imaging; rather, these tools should be considered complementary to an embodied encounter such as the one proposed by the methodology described in this thesis. In promoting awareness of the range of imaging techniques that exist, the desire is to encourage people to seek out additional strategies and synthesize them in advantageous ways. By representing the landscape as a more complex, multi-valent entity than current graphic practices allow, the profession of landscape architecture can increase awareness among the public

about the role of the profession and the significance of the landscape in supporting valuable social, environmental and cultural systems.

The additional time and expense associated with the methodology can be justified in terms of its ability to identify crucial parameters of the landscape, such as ecosystem services which assist in removing pollutants and in purifying the air and water. If elements such as expensive infrastructure become damaged, depleted or destroyed, additional sewage and water purification plants may be needed in their place. Therefore, the initial cost involved in identifying and protecting natural systems can be recovered through reduced investment over the life-cycle of the project. The challenge lies in relaying the benefits to the client, who may not have a stake in protecting the environment and therefore may consider any additional expense prohibitive. The outcome of this thesis is a small step towards communicating the importance of natural systems by providing an effective visual format to reveal them.

The potential scope of the toolbox and methodology should not be limited to analyzing an existing site context but can be applied to communicating a proposed design solution. Differences do exist between the graphics and procedures involved in analyzing a landscape versus the approach and visual products that result from the development of a design. A site analysis involves an existing context that can be understood through careful observation and graphic presentation of its properties. Generally, a site analysis is conducted to inform future decision making that may guide a design process or management strategy.

A design process differs in purpose to a site analysis. Landscape architects design landscapes according to a program developed in collaboration with a client. The outcome is intended to fulfill a broad range of social, environmental, and aesthetics objectives. The methodology and toolbox

contained within this thesis do not represent a design process. Instead, it allows images such as sketches and digital modeling stills that represent a proposed solution to be manipulated, combined, and presented in a manner that is more engaging to a client while providing a fuller account of the design's features. The toolbox strategies demonstrate how to depict olfactory, aural, and haptic stimuli alongside processes, relationships, and motion and could assist in prompting a designer to consider these attributes during the design process. In addition, the six components that make up the landscape focus could direct a designer to consider the importance and interaction of these elements when producing a design. The hope is that the toolbox and methodology encourage designers to develop temporal landscapes that respond to a broad set of environmental and human concerns that more closely resemble and integrate the actual systems of a landscape. Therefore, the imaging methodology and toolbox strategies should be considered complementary to existing design procedures. Future work should investigate the efficacy of these claims by using the toolbox to communicate a design proposal.

The representational strategies contained within this thesis could be further improved and diversified through the use of innovative technology. Audio-visual media could assist in depicting motion in real-time and replaying sound from an existing landscape or enhance the presentation of a proposed design by making it multi-sensory. Projected images could be incorporated into the sculptural arrangements of stage three to depict temporality and demonstrate a fly-through of an existing landscape or proposed design using three-dimensional modeling programs such as SketchUP and 3D-Max. The tactile engagement strategy that is presented as a physical flip book could be evolved to incorporate digital tablet technology used by products such as the iPad to take advantages of interactive digital technology that is absent from two-dimensional paper based formats.

Important analysis tools such as the McHargian overlay technique should be considered complimentary to the use of the toolbox and methodology for analysis purposes. McHarg's overlay

technique represents a site in terms of objectified, empirical data. The application presented in this thesis used a pictorial format to depict processes, relationships, and sensory stimuli within the site located on the greenway. Therefore, the use of both techniques in tandem would create a more holistic representation of the landscape.

Although some of the strategies associated with this methodology and toolbox will be familiar to many, it is anticipated that as a complete package, it could benefit most of those who choose to use it by broadening their skill set and knowledge base. The challenge is that exploration and learning do not cease once users have become familiar with the toolbox and proficient in its use. The quest for continuous personal development becomes more a question of each individual's approach to his/her own edification and cannot necessarily be addressed through the use of tools such as the methodology and toolbox. Therefore, in the spirit of continuous self-development that this thesis hopes to promote, it is suggested that the toolbox should not be viewed as a static artifact but developed as an active entity. New skills and insights can be fostered through additional research and collaboration with other professions that work in visual media, encouraging benefits that can accrue from the associative transfer of knowledge and ideas.

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