

TOWARD A CRITICAL PRACTICE: TRACING THEORY THROUGH DESIGN

by

HILARY ANN NOONAN

B.A., Yale University, 1991

A THESIS

submitted in partial fulfillment of the requirements for the degree

MASTER OF LANDSCAPE ARCHITECTURE

Department of Landscape Architecture/Regional and Community Planning

College of Architecture

KANSAS STATE UNIVERSITY

Manhattan, Kansas

2008

Approved by:

Major Professor

Stephanie Rolley

Copyright

HIALRY ANN NOONAN

2008

Abstract

“Toward a Critical Practice: Tracing Theory Through Design” is an exploration of Elizabeth Meyer’s idea of critical inquiry as a mode and process for professional practice as a landscape architect. Critical practice involves the application of ideas embodied in critical theory as a creative endeavor that is both self-critical and self-renewing. Critical theory is essential in bringing a deeper level of understanding to the design of landscape architecture. Critical practice is the application of critical theory to the understanding of built work and the process of design.

Using Meyer’s stated intentions for this design process Noonan develops a personal framework for that process. As the framework develops it rapidly becomes multiple, overlapping, mutually supportive frameworks. Multiple perspectives are gained from using multiple viewpoints represented in theory. The frameworks serve to include the dynamics of change and provide access to a deeper understanding of the interrelatedness of forms and processes inherent to any site or project. Issues of representation become more clear and strategies are identified although this aspect of practice deserves much more attention in the future.

Theories, frameworks and sources of knowledge are identified and used to question assumptions and biases, challenge orthodoxies of practice, test ideas, develop written and formal vocabulary and inspire, motivate and guide design work. Ideas and theories used in the framework are related to the formal and textual work of other designers past and present. The framework is tested through application to a design project, which is used as the case study for this paper.

Table of Contents

List of Figures	ix
Acknowledgements.....	xi
Dedication	xii
CHAPTER 1 - Introduction	Error! Bookmark not defined. 1
CHAPTER 2 - Background- The Role of Theory in Design, Critical Practice, and the Framework.....	2
Theories in this Framework.....	6
Site Thinking- Three Premises.....	6
Site Thinking- Three Strands.....	9
Vocabulary.....	9
History.....	9
Manifestation and Derivation of Site-Related Practice.....	10
"RSVP" Cycles.....	10
Synchronous Readings of Histories.....	12
Vectors of Influence- Phenomenology, Aesthetic Experience, and Ecology.....	13
Ecology and Environmentalism as Ethos.....	14
Systems of Order- Organization of Space.....	14
Visual Perception, Phenomenology, and Semiotics- Three Levels of Meaning.....	15
New Ecology, Semiotics, Aesthetic Experience, and Environmental Psychology.....	16
Locus of Theories.....	17
Extrinsic to Intrinsic.....	17
Metaphor, Analogy, and Process- Morphogenesis.....	19

CHAPTER 3- Methodology.....	22
Applying the Framework.....	23
Geomorphology.....	24
History.....	24
Phenomenology.....	24
Ecology and Environmentalism as Ethos.....	25
Morphogenesis.....	25
Synchronic Reading of Histories.....	25
Aesthetic Experience.....	25
Extrinsic to Intrinsic.....	25
CHAPTER 4- Case Study- Central Corridor Project.....	26
Central Corridor Light Rail Transit- Project Description.....	27
Design Process.....	30
Instrumental Theory- Topics for Research.....	30
Site Analysis.....	30
Geomorphology.....	31
Regional Ecology and Natural Systems.....	31
City Infrastructure.....	31
Regional and Global Economy.....	31
Demographics.....	31
Schools and Libraries.....	31
Existing Transportation.....	31
Existing and Proposed Land Use.....	31
Parks and Open Space.....	31
Core Housing Needs.....	31

Hermeneutic Theory- Topics for Research.....	32
Histories of Resources.....	32
The Place of Art in Local Culture.....	32
Draft Environmental Impact Statement.....	32
Metro Council Regional Development Framework.....	32
St. Paul Comprehensive Plan and Future Visioning.....	32
St. Paul Central Corridor Development Strategy.....	32
Initial Site Analysis Findings.....	33
Geomorphology.....	33
Regional Ecology and Natural Systems.....	33
City Infrastructure.....	34
Demographics.....	36
Schools and Libraries.....	36
Existing and Proposed Land Use.....	36
Transportation.....	36
Parks and Open Space.....	37
Core Housing Needs.....	37
History of Resources.....	37
The Place of Art in Local Culture.....	37
Draft Environmental Impact Statement.....	38
Metro Council Regional development Framework.....	38
St. Paul Comprehensive Plan and Future Visioning.....	38
St. Paul Central Corridor Development Strategy.....	38
 "RSVP Cycles"	 38

Resources.....	38
Score.....	39
Valuation.....	39
Performance.....	39
Initial Determination of Site and Red Armature.....	40
Further Site Analysis.....	41
Geomorphology.....	41
Schools and Libraries.....	41
Demographics.....	41
Parks and Open Space.....	42
Existing and Proposed land use.....	42
Site Thinking.....	43
Vocabulary.....	43
History.....	43
Manifestation and Derivation of Site-Related Practice.....	43
Further Site Analysis.....	47
Core Housing.....	47
Ecology and Environmentalism as Ethos.....	47
Green Armature and Definition of Site.....	47
Synchronous Reading of Histories-	
Geomorphology, Resources, and City Infrastructure.....	49
Moving the Green Armature- Alignment with City Infrastructure.....	50
Building Community from the Inside-Out.....	51
Vectors of Influence.....	52
Phenomenology, Aesthetic Experience, and Ecology.....	52

Systems of Order-The Organization of Space.....	52
Mapping- Circulation and Land use.....	53
Visual Perception, Phenomenology, and Semiotics- Three Levels of Meaning.....	57
New ecology, Semiotics, Aesthetic Experience, and Environmental Psychology.....	57
Locus of Theories- Town Centered.....	61
The Alternative- From Denatured to Fully Natured.....	61
Extrinsic to Intrinsic.....	62
Metaphorical Constructs.....	67
Morphogenesis- Shaping the Park.....	67
CHAPTER 5 - Findings.....	70
Analogies.....	71
Difficulties.....	71
Assumptions.....	71
Findings.....	71
Conclusions.....	74
References.....	76

List of Figures

Figure 2.1 Three categories of theory.....	4
Figure 2.2 Site thinking.....	7
Figure 2.3 Three geographic areas.....	8
Figure 2.4 Spatially and temporally expansive surround.....	9
Figure 2.5 Relational construct.....	9
Figure 2.6 Relational understandings.....	10
Figure 2.7 History matrix.....	13
Figure 2.8 Object in perception of others.....	14
Figure 2.9 Perceived unity of whole.....	14
Figure 2.10 Vectors of influence I.....	18
Figure 2.11 Vectors of influence II.....	18
Figure 3.1 Weaving as metaphor.....	24
Figure 3.2 Relationship of theories in weaving.....	24
Figure 3.3 Theories in framework.....	25
Figure 4.1 Map of Central Corridor LRT.....	28
Figure 4.2 Process Diagram I.....	30
Figure 4.3 Contours and protected area.....	33
Figure 4.4 Energy District, St. Paul.....	34
Figure 4.5 Energy District power plant.....	34
Figure 4.6 Process Diagram	39
Figure 4.7 Identification of LRT as armature and links to transportation.....	40
Figure 4.8 Links to business.....	41

Figure 4.9 Links to social needs.....	42
Figure 4.10 Three geographic areas.....	44
Figure 4.11 Domain of design concern I.....	44
Figure 4.12 Domain of design concern II.....	45
Figure 4.13 Domain of design concern III.....	46
Figure 4.14 Spatially and temporally expansive surround.....	46
Figure 4.15 Process Diagram III.....	47
Figure 4.16 Initial identification of green armature.....	48
Figure 4.17 Aligning the green armature with city infrastructure.....	49
Figure 4.18 Process Diagram IV.....	50
Figure 4.19 Process Diagram V.....	51
Figure 4.20 Process Diagram VI.....	54
Figure 4.21 Existing conditions and strategies.....	56
Figure 4.22 Process Diagram VII.....	58
Figure 4.23 Ordering Systems.....	59-60
Figure 4.24 Process Diagram VIII.....	62
Figure 4.25 Conceptual Plan.....	65-66
Figure 4.26 Process Diagram IX.....	69

Acknowledgements

An enormous thank you to my thesis committee: Stephanie Rolley, who never ran out of patience and wit, Laurence Clement, Jr. who got me started in the theory of landscape architecture and Elizabeth Dodd, a writer whose work I'm looking forward to reading now that I can crawl out from under this rock called my thesis. A special thank you to Blake Belanger who was always willing to work out questions in theory, guide my reading, and help with computer programs. I have been very fortunate in my studio mates and couldn't have gotten through without their friendship. This paper and my degree would not have been possible without great teachers, great frustration and a lot of school loans.

Dedication

For Tara, Susan, Lawson and Madeleine for being so patient while I worked on this. I love you more than I can tell you.

Introduction

Cities happen to be problems in organized complexity... The variables are many, but they are not helter-skelter; they are 'interrelated into an organic whole. (Jacobs 1961, 433)

Practice in landscape architecture is a constant balancing of needs and interests. As a graduate student, I have worked hard to be competent and more in the technologies of the practice and to have as thorough an understanding in the theoretical background of the profession as I can. In speaking with my teachers, practicing professionals and through my internship I know that I will always be dealing with time constraints. I will soon be supporting myself and my family. To that end, I need to be an asset to my employer and my clients. From my personal experience of simply being in the world, I have a concern for the experiences of different people in any community I am a part of or designing for. I will always be concerned with how my designs affect the people who will interact with it. Finally, as an environmentalist, I am concerned that any ideas I am promoting are not contributing to the further degradation of the physical environment. When I stand at my drafting table I am balancing a lot of different concerns.

Elizabeth Meyer, in her essay "Landscape Architecture and Critical Inquiry", suggested the idea of a critical practice. Meyer promoted the idea of critical inquiry through practice rather than an hermetic written form distanced from the practice of landscape architecture. Critical inquiry-as-practice would help to codify a common vocabulary of design, promote new perspectives in thinking about and evaluating landscape architecture and could, finally, agitate for change by questioning orthodoxies in practice. (Meyer Fall 1991) The idea inspired me to imagine what that would look like and how it would work. Critical practice as a way of bringing the body of theory to bear on analysis and subsequent design appeals to me because I can imagine it as a conceptual framework that would provide greater perspective and help to remove biases that I bring to the design.

Thesis Intent

This thesis paper represents an experiment in the conscious and deliberately use of theory in a specific design. A conceptual framework was developed to facilitate the design and the analysis, synthesis and design decisions were recorded.

The intention is to develop a framework that will manage the considerable volume of information that begins the design process, to gain perspective from a deeper understanding of what I see, to question both my assumptions and biases and those present in the data that is gathered, to facilitate the analysis and synthesis that leads to design decisions and, finally, to find ways of representing the relationships that are essential in the design, the systems and processes that will be the new narrative in the continuing history of the site.

background

Background n. that which underscores not only our identity and presence, but also our history -J.B. Jackson

The Role of Theory in Design, Critical Practice, and the Framework

When I first started down this road I realized I had a great deal of reading to do to catch up with the current state of theory in landscape architecture. I read as much as I could, as fast as I could. The essays and books I read often seemed to be about different levels or aspects of design and I frequently felt like I was comparing apples to oranges. In his introduction to the book, *Theory in Landscape Architecture*, Simon Swaffield classifies theory into three categories, instrumental, critical and interpretive. (Swaffield 2002, 1) I found this framework to be quite helpful in organizing and thinking about theory and how it influences design. Almost as soon as I was comfortable with these terms, I realized that the area between these bodies of theory could be quite rich. The relationships between specific theories work to define those theories and how they operate. The relationships are not unidirectional, both are changed. The area between critical and instrumental theories would include how we inform ourselves and our design, but also how design informs us. The area between instrumental and interpretive would include how we define, describe and value landscape, but also how landscape defines us. When we add critical theory to this mix we enlarge our understanding of definitions, descriptions and value. The relationship of the theories is shown in Figure 2.1.

When we draw we find reference points to take a drawing from plan or elevation into a three dimensional drawing. The same can be done between theories or between theory and the built form. I will use reference points between theories to explicate the relationship between theories and between textual analysis and built form.

Swaffield uses the term interpretive theory, but I prefer the term hermeneutic used as the first order of art as opposed to the field of hermeneutics which in philosophical terms is a second order theory. In this first order form hermeneutic theory is an interpretive theory conceived of as methodological or didactic and carries the understanding of being formed by culture and therefore biased. (Ramberg and Gjesdal 2008) These

are often entrenched views and a fairly rigid material. They are the body of written material that describes landscape and the issues that surround it. Although it is generally accepted as representing an objective reality it is, in fact, culturally how we think and express ideas about landscape.

Instrumental theory is that body of theories that specify the routine procedures, the timing and the representations of the information captured in those procedures. They are the protocols that identify the information we need and how we get it and provide us with the basic set of design tools for developing the information into ideas for design. Instrumental theories as design principles “provide a steady framework for the discipline.” (Swaffield 2002, 1) However, conflating the competent use of tools with the act of design continues to be a problem in landscape architecture. Landscape architecture as a profession should not be synonymous with problem-solving; it is not equal to the art or science of arranging space for safe, efficient, pleasant use. (Meyer, *Landscape Architecture Design as Critical Practice*, 157) Catherine Howett did not mince words when she wrote “When landscape architects rely upon [the] conventional... to achieve... a pleasant... effect we are perpetuating a univalent, hackneyed design tradition.” (Howett 2002, 112) James Corner devastatingly used the term creative stillbirth to describe designs made without art, without motivation. (Corner, *A Discourse on Theory I: “Sounding the Depths”- Origins, Theory, and Representation Fall 1990*, 76) Too often I have heard practitioners boast that intuition and craft are the basis for their designs; intuition guides the design and craft is how it is represented.

In *Groundwork*, Robin Dripps wrote “Intuition, which is essentially a mysterious process interior to the mind, differs markedly from the externalization needed to rationalize actions.” (Dripps 2005, 86) Intuition relies on having some store of information, background information or patterns of relationships. Intuition is that act of realizing relationships between elements that aren't immediately apparent from a rational viewpoint.

Corner's argument is clear and for me irrefutable: "[to some] landscape architecture is primarily a craft... but there is a distinction between craft and motivation... Motivation establishes a vital alertness, a sensitive curiosity, and an insatiable sense of marvel... This relationship... is the forgotten role of theory." (Corner Fall 1990, 61-2)

Critical theory is that body of theory that can provide new perspectives for design by questioning accepted form, challenging assumptions, highlighting biases and resisting orthodoxies of practice. New perspective can produce new alignments, synthesis of ideas, symbioses, and hybridized form. This is criticism as a productive endeavor. (Meyer Fall 1991, 157) "[T]heory and practice are contingent endeavors they give form to and illuminate particulars of time and place." (Meyer, *Situating Modern Landscape Architecture* 2002, 21) Elizabeth Meyer argues that it is from the privileged position as insider to the practice that lends particular credence to the critical practitioner in her view rather than leaving theory solely to the academy. (Meyer Fall 1991, 156) The academy and academic writers are invaluable in both originating and disseminating ideas, but without the built form to study, the work of the academy becomes mere conjecture. The work of each enriches the other. The work of practitioners leads in developing codes and norms, embodied in theory, that make design measurable. (Meyer Fall 1991, 157) From built work a new vocabulary emerges, both formal from the work of practitioners and written through textual exegesis. Perhaps most importantly, the design process itself can be self-critical and self-renewing. (Meyer Fall 1991, 157)

In "Acting Out on Values," Elizabeth Meyer stated "[l]andscape architects contribute one essential thing to our culture- the beauty, commodity and fitness of the places we make." (Meyer, *Acting Out on Values* 2001) My training in the craft of landscape architecture has been enriched exponentially by the inclusion of theory. Jorge Silvetti addressed the difficulty of creating a program that brings science, technology and conceptual thought to the table, "to develop what is peculiar about an architect, which is the capacity to synthesize creatively, heterogeneous and often chaotic masses of information." (Silvetti 1995) Creative synthesis is the weaving together of "factual information, frameworks of knowledge and critical theory... [to]

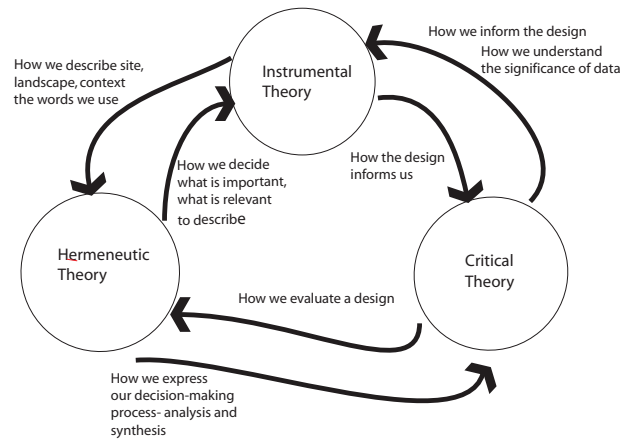


Figure 2.1 Three categories of theory

attain rich intellectual depth rather than primer-level pragmatics." (C. J. Burns 1995, 5) Figure 2.1

An important sector of critical theory is the field of hermeneutics as a second order theory. Philosophical in nature, it includes the theories of symbolic communication. (Ramberg and Gjesdal 2008) For example, Obrist's List is a simple, but long listing of different types of gardens one could make. Marc Treib commented that the list "could be taken as word play alone... [but] the thinking runs more deeply." Making the list or simply reading and thinking about the list as a mental exercise can enrich conceptual notions about designing form. (Treib, *One Garden May Reveal Another: Obrist's List* 2002, 24) In the same issue of *Landscape Journal* he has a full article on "The Limits of Formalism." He describes the problem of univalent thinking:

[S]ocial accommodation without consideration of place may lead to uncomfortable landscapes. Surrender... to restrictions of climate may lead to uncomfortable landscapes. Visual beauty alone risks the danger of being sterile and removed from life. Engaging the full trio of concerns both to create and evaluate landscape architecture offers far greater potential. (Treib, *The Content of Landscape Form [The Limits of Formalism]* 2002, 122)

Treib is describing not just design and form as the response to multiple factors and frameworks of knowledge, but the resultant phenomenology of the form, the comfort of people in the designed form. This is a

constructed experience both as a physical construction and, more importantly, a cultural construction. Culture is an endogenously creative process. Hermeneutics creates opportunities to explore culture as form and form as culture. Whether using a Marxist reading or hermeneutics, landscape can be identified as a cultural product. (Cosgrove 2002, 165-6) Understanding landscape as a cultural product rejects landscape as Zeligism, a simple reflection or mimicry of culture and context. Landscape is not a passive product but a strategic, active agent of culture. (Corner, Introduction: Recovering Landscape as a Critical Practice, I 1999)

In "Situating Modern Landscape Architecture" Elizabeth Meyer explains how theoretical texts codify landscape architecture and how that architecture works as an active cultural product. Texts that concern the theoretical constructs that inform the design and the relationships between the elements of the design, the site and the constituents of the site reinforce the work of the critical practitioner and design as a cultural product. (Meyer 2002, 24) The critical practitioner becomes an insider in the design process through the dialogical exchange between designer and site. (Burns and Kahn 2005, xv) She can read the exchange between constituents of the site and the site itself through information gathered during site analysis. This is a situated knowledge located not simply because the designer is in practice, but because through the insight critical theory brings, her knowledge base becomes emic knowledge rather than etic knowledge. (Conan 2000, 20) The view of the critical practitioner is located somewhere between the information gleaned through site analysis as detached observation representing objective reality and the subjective reality of the site and its constituents. (Burns and Kahn 2005, xxiii) Meyer uses three terms to explain the role theoretical texts assume as bridging, mediating and reconciling. (Meyer 2002, 22-4) These terms are relevant to both the textual exploration of the built form and the process of design. Meyer defines their role in theoretical texts. These terms will provide reference points in the theory of site thinking.

Bridging is the process that provides access to understanding the built form. By providing a descriptive vocabulary and criteria for evaluation we can identify elements in the landscape that highlight the design's relationship to its physical and cultural context. The

bridge is our access to the principles at work in the design and the particular form it takes in that design. (Meyer 2002, 22)

Mediating refers to the relationship between the social and the formal, between the social and political forms constituent to the site and the art of the design. Texts that explain the relationships between communities, economies and histories as contextual influences and the built form are mediating texts. (Meyer 2002, 24)

Reconciling is the process by which cultural constructions of nature, ecology, urban and rural and the built form are aligned. The form the designer chooses, the elements that are revealed or concealed, the systems and processes that are brought into play in the built form are discussed as they relate to traditionally accepted ideas of nature, ecology, urban and rural in the cultural context of the site. (Meyer 2002, 27)

The practice of landscape architecture should set as its first task in any design as problem-setting not problem-solving. (Corner, A Discourse on Theory II: The Tyrannies of Contemporary Theory and the Alternative of Hermeneutics 1991) Problem-setting would involve the process of defining the decisions to be made, the ends to be achieved, and the means that may be chosen

While we are students we learn to gather volumes of information pertinent to the overall environment we are designing for. Material we gather as site analysis covers a lot of territory, from zoning to soils, program elements to watersheds. There is likely to be a formidable volume of information to analyze and synthesize as we begin drawing. My personal framework is a way for me to organize that information and think about the relationships inherent to the site and its context. When I start to draw it is my intuitive response that I count on. The background information that fuels the intuitive is a combination of life experience, the things I have read, the places I have been and the emotional response I have felt and observed in others. All of these things are a part of the palette I have to draw on for design. Again the framework is a way of organizing, but also highlighting, questioning and reminding me of issues that need to be addressed, my own personal kibitzer. The framework uses Swaffield's categories to organize information, process and representation. I am not suggesting the framework would somehow mechanically replace or duplicate intuition; rather it

facilitates intuition by helping to supply that background for design. To do that, the first function of the framework is cognition as a way of accessing built forms, thereby expanding my palette.

When I look at the designs of others I can identify strands of thought that relate to theory and so I have a better understanding of why design decisions were made. Lawrence Halprin made it easy by writing about his process in "RSVP Cycles." (Halprin 2002, 45) The strands as Halprin identified them are:

- Resources- both human and physical, along with the aims and motivations of the people involved.
- Scores- the anticipated actions that will take place in the site, the way people and dogs, wildlife, wind and light will move through the site.
- Valuation- the process through which the design came to serve and express so well the needs and desires of the residents
- Performance- how, over time, the design has not only served the basic physical needs of the residents, but how extrinsic forms can eventually hold intrinsic value.
- Looking at Halprin's work at Sea Ranch, California I can link what I see in that design with the theoretical work of others, as well:
- Landscape- as temporal medium
- Phenomenology- the physical experience of place
- Space- as qualitative fluid presence
- Environmental Legibility- through materials and processes of nature over time (Meyer, Post-Earth Day Conundrum: Translating Environmental values 2000, 202)

In 1998 Dumbarton Oaks held a colloquium on the expression and effect of environmentalism in landscape architecture. The papers that were published from the colloquium are informative in a number of ways. Relative to this paper, the first item of import is "a pattern of recurrent issues in landscape architecture, and the impact of social and cultural changes upon the course of design trends." (Conan 2000, 2) In fact, if Michele Conan is right, identifying "[T]he impact of environmentalism upon landscape architecture

[and so identify strands of environmental thought and design] is not to be found in discourse, but rather in design processes and aesthetics." (Conan 2000, 7) Thus, being able to identify the elements of a design as they relate to theory or the process by which they were developed becomes essential to understanding the design as a whole.

The framework also serves to organize that volume of information that has been gathered through the protocols of site analysis. The tools of the discipline, as James Corner might describe them, deliver these bits of information regarded as objective reality, but it isn't until we question that information or look at it through the constituent narratives of the site, that we start to understand the significance of that bit of information and so how it relates to other such bits and what that means in terms of the design. Thus, the second function of the framework is to facilitate design through the application of theory.

Just as I can study a designed landscape and identify strands of theory in the built form, inversely I can choose strands of theory and see how they can change or direct landscape design during the design process. For instance, in their book *Site Matters*, Burns and Kahn present an approach that questions what we accept as the idea of site. (Burns and Kahn 2005, vii) They present the conceptual construct they term site thinking in which the idea of site is a relational construct which acquires meaning, and therefore value, through both intellectual and experiential apprehension. (Burns and Kahn 2005, xv) Further, they suggest that it is through questioning the assumptions embedded in the "known" or perceived objective reality that we can arrive at a synthesis that determines the conceptual and material aspects of the site. (Burns and Kahn 2005, xv) The final question in this theory is how do we represent this relational construct as a whole? So, the strand of theory is site thinking and the threads within that theory that I can use in the framework are as follows:

Vocabulary- many of the accepted terms carry connotations and increase assumptions that are not conducive to determining relational constructs. New terms can help to express the relational construct.

History- "cultural thickness and conceptual intricacy" are inherent qualities of site. Site is, in fact, a hybrid of the narratives at play in and around the site.

Manifestation and Derivation of Site-Related Practice- the relationship between the strategic approach to design, method of study and techniques of representation. (Burns and Kahn 2005, xix)

Site thinking is one of the theories used in the case study that follows. I will show the effect in the design of starting with these three relational threads before identifying the site.

The framework helps to create a hierarchy, what will be revealed, what will be concealed, what systems will be accessed or affected directly, what histories or narratives will be evident in the design.

The reason for the framework then is to manage the considerable volume of information that begins the design process, to gain perspective from a deeper understanding of what I see, to question both my assumptions and biases and those present in the data that's gathered, to facilitate the analysis and synthesis that leads to design decisions and, finally, to find ways of representing the relationships that are essential in the design, the systems and processes that will be a new narrative in the continuing history of the site.

Theories in this Framework

The theories that shape this framework were chosen as a reflection of my personal values and ideas I think are valuable to landscape architecture in general and ideas that might be valuable to this design in particular. The synthesis of theories offered here includes:

- *site thinking*
- *RSVP cycles*
- *synchronous reading of histories*
- *ecology and environmentalism as ethos*
- *systems of order*
- *visual perception*
- *phenomenology*
- *semiotics*
- *new ecology*
- *aesthetic experience*
- *environmental psychology*
- *morphogenesis*

Although they are not specific theories in themselves, the ideas of extrinsic and intrinsic values and metaphor as an influence on design are also addressed. Some theories represented are also names of books or essays. To avoid confusion names of books will be capitalized, names of essays will be in quotations and the titles for theories will be in italics.

Site Thinking -Three premises

First, site knowledge, even if unspoken, exerts a powerful force in design that theoretical inquiry should acknowledge and critically assess. Second, historiography has sanctioned particular ways of engaging with site matters, and the deleterious effects of these sanctions should be recognized and countered. Third, modes of representation construe sites, and their formative role in the production of site knowledge should be revealed and expressed. (Burns and Kahn 2005) Figure 2.2

In their introduction to the essays in *Site Matters* Burns and Kahn state “theorizing in general [is] both an abstraction from, and an enrichment of, concrete experience.” (Burns and Kahn 2005, ix) In thinking about a site as a grounded physical condition and site thinking as a conceptual construct new definitions are created that can illuminate issues inherent in the identification and definition of site. (Burns and Kahn 2005, ix) This idea is diagrammed in Figure 2.2.

“[S]ite is defined by those holding the power to do so.” (Burns and Kahn 2005, x) Private property is a social construct and contract. Ownership of site is generally construed in its economic sense as the entity that holds

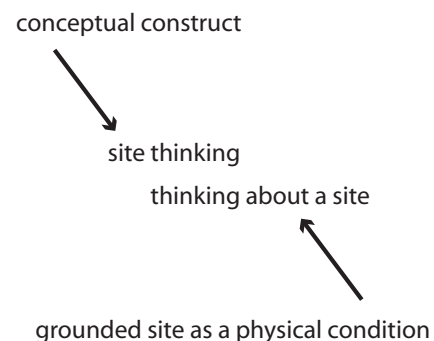


Figure 2.2 Site thinking

the deed to a piece of land. This is a limited idea of ownership. In fact, the holder of the deed does have the legal right to make decisions regarding what will or will not happen on that land as a property, but those decisions will be affected by other entities constituent to the site. Political and social forms and processes will affect the decision in terms of rules and regulations and the idea of the greater good of the community impacted. Planning and zoning regulations and permitting processes must be adhered to. Environmental impact studies and community organizations may, and generally should, become a part of the political decision-making. "Individual property rights yield to the collective definition of public interest." (Jacobs 2005, 27) Density becomes a major player in the argument. Density brings more quality of life issues as problems become more obvious and affect more constituents in the context of the site.

The kind of economy that supports the political and social organization changes the basis for decision-making. Where land is the source of production, as in farming or mining, value is assigned based on direct production. Decisions are based on how development of a site affects that direct production. If land holds more value as the source of production than for anything built on that land, land as mode of production retains its value in the economy of that political form.

When the economy of the political form changes to a non-land related affluence, land becomes a commodity. In this social and political form land value is based on what it can hold, what can be built on it, and what it can be traded for. Quality of life issues also become a commodity; how one can live, where one can live and what one can restrict either add to or constrain land values. (Jacobs 2005, 31) With this understanding, ownership and value are dependent on the community and constituents of the site.

Dennis Cosgrove combined Marxist and hermeneutic approaches to define how landscape becomes a cultural product. In western culture the idea and artistic expression of landscape ideologically promote the acceptance of property while maintaining a romantic view of an unalienated relationship to land. In a natural economy the relationship of people to land is an insider relationship, unalienated, based on the interrelated use and value of land and interpreted analogically. In a

capitalist economy the relationship between people and land becomes that of owner and commodity. This is an alienated relationship where people are distanced from land as a mode of production value is interpreted causally as supply and demand; it has value because of what it can be used for. A degree of control is ceded to the power of the owner who may have no other specific connection to a place. As Cosgrove points out this alienation to land is reinforced by culture through a number of mediums. Linear perspective in art, formal structure in pastoral poetry, the conventional language of landscape appreciation all serve to enforce the culture of distance. Religion tends to enforce the paradigm of distance as well; heaven and hell exist in a place that is not here. In a religion where heaven and hell exist here, on earth, around us and in the same timeframe, immediacy holds greater attraction and valence in culture. (Cosgrove 2002, 165-6)

The understanding of site and context is expanded and thickened by reading the constructs at work "each built project creates new forces within its own area and also modifies and influences systems that both reach beyond the site and operate within it." Burns and Kahn define a "domain of design concern." First, they define the grounded physical condition as having three distinct geographic areas: 1. the area of control, which is the most limited spatially and temporally, 2. forces that act on the site without being confined by it, and 3. the area of effect, the domains that are impacted by the built project. Figure 2.3 diagrams the idea.

- 3 geographic areas:
 1. area of control
 2. forces that act on the site without being confined
 3. area of effect

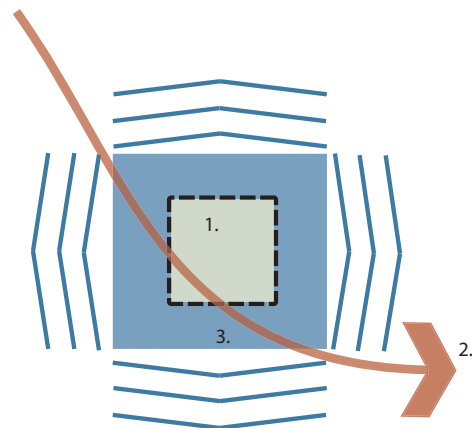


Figure 2.3 Three geographic areas

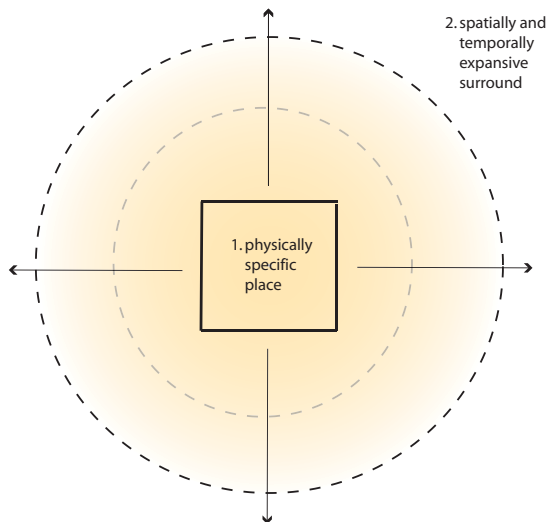


Figure 2.4 Spatially and temporally expansive surround

Secondly, they define the conceptual construct of the site as two divergent spatial ideas: 1. a physically specific place and 2. a spatially and temporally expansive surround. Figure 2.4 shows the idea in diagram. These geographic and spatial ideas are all affected by the fourth dimension of time, they exist and can be conceived of in past, present and future timeframes. (Burns and Kahn 2005, x-xii)

There is a need to understand how language we use to speak or write about site does or doesn't reflect the complexity inherent in this thicker understanding of site. "Place, property, ground, setting, context, situation, landscape...[t]hrough often used interchangeably, none of them are exactly equivalent. ..each term invokes an identifiable region...[w]ith temporal, cultural, ideological, perceptual, scalar, and ontological dimensions, this is a culturally rich construct." (Burns and Kahn 2005, xiii)

In the traditional understanding of site we know that it is physically explicit in terms of boundaries and ownership. We understand generalities about physical context, in terms of urban, residential, etc. We know that it is impacted by and creates a new ecology and environment and, in terms of the way planners address site, to some extent that sites are socially produced. How do we make other aspects of site more explicit? If we accept the traditions of site knowledge, historiography and modes of representation without recognizing, acknowledging and assessing the biases, assumptions and constructions inherent in the canon what is the

effect and how do we move forward as a profession? (Burns and Kahn 2005, xv)

Landscape architecture and the designed site represent a relational construct. The dialogue between the designer and the site, the constituents and the site, and hopefully, the designer and constituents is a situational interaction and therefore a relational construct informed by those interactions. The relational construct acquires meaning and so, value, through apprehension both intellectually and experientially. (Burns and Kahn 2005, xv) The diagram of this relationship can be seen in Figure 2.5.

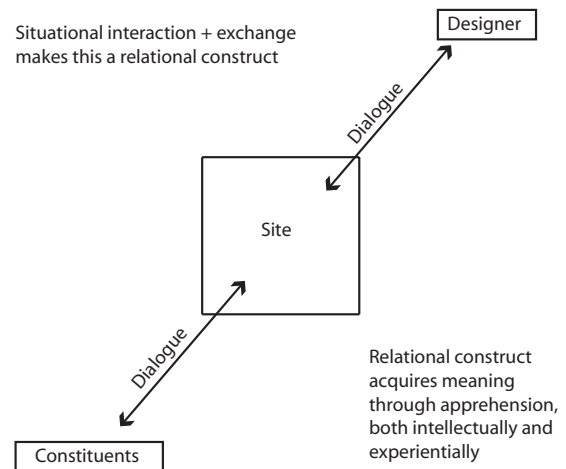


Figure 2.5 Relational construct

This is where I imagine my framework as a physical entity. I can thread the framework in one direction with information from instrumental and hermeneutic theories- Burns and Kahn used the examples of itemizing material conditions, surveying topography, and characterizing experiential qualities. I can weave across those threads additional threads of critical theory that question "assumptions embedded in the known." Through this process I can analyze and synthesize the information determining the conceptual and material dimensions of the site, the physical area of concern and the contexts within which actions are considered relevant. The process is diagrammed in Figure 6. The weaving of these threads creates a multivalent design capable of dialogue between the real and the

representational, containing both the extrinsic and the intrinsic, the explicit ideas of the designer and the implicit experience of the constituent. These are relational understandings. Lastly, in this weaving, the hidden factors I choose to represent, beyond the standards of architectural representation, support the relational understandings created in the design. (Burns and Kahn 2005, xv-iii) This is how I make my case for my design. If I choose to stick with the standards of representation, I know those relational understandings may get lost. My design may become a menu where one item from column a, one item from column b may be chosen and the systems, alignments and contiguities carefully built into the design may be lost.

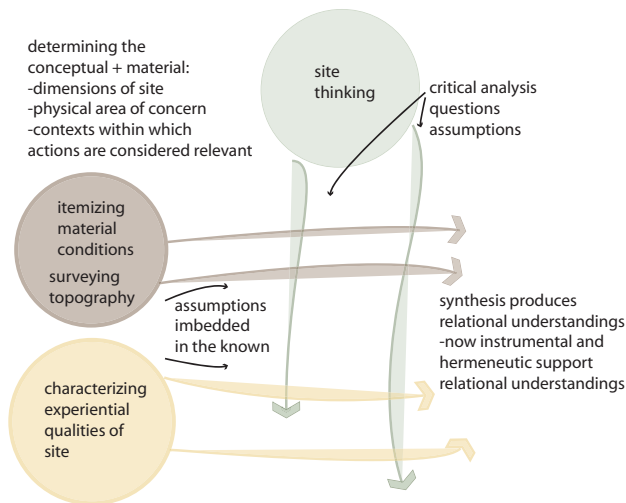


Figure 2.6 Relational understandings

Site Thinking- Three Strands

Vocabulary-

Vocabulary is an essential component of site thinking. Terms like property, landscape and context function as “potent and distinct frames of reference influencing design practices.” The connotations these words carry are variable, but should be understood as culturally construed with associations that may hinder the design process. New vocabulary that seeks to explicate more fully the ideas and forms the designer uses can help to explain the role of those forms. Burns and Kahn offer new terms- “area of concern,” “site reach,” and “urban constellation” - “challenge the very possibility of a site

fully under design control. Qualifiers (“stealthy” versus “opportunistic” site strategies; site as “framework,” “armature,” “figure,” or “fragment”) add precision to accounts of specific design projects, site reading, and design practices.” (Burns and Kahn 2005, xix-x) “Stem and cluster” as opposed to “cellular aggregate” is used by Stan Allen to track the change in thinking that led to modern sprawl. (Allen 2001) New vocabulary like haecceity (Meyer, Site Citations 2005, 111) can work both as an analytical tool and as a “conceptual tool to structure design processes.” (Burns and Kahn 2005, xxv)

History-

“Modernist design history, and in particular that of modern architecture, is remarkable for its sustained disregard of site-related issues.” (Burns and Kahn 2005, xx) Histories are, as we know from aphorism, written by the victors. The victors of modernist design are those whose work stands autonomous, distinct from time and surroundings. The problem is obvious. If the same people who value the autonomy of modernist architecture write the history of landscape architecture, the only victorious landscape would be a landscape completely separate from the processes inherent to landscape. I can just imagine, a cemetery perhaps, a mausoleum turned inside out (although one can imagine even in a sealed vault some processes must continue), green marble to represent lawn.

In fairness, issues that are central to postmodern practice- fieldlike properties, systems aesthetic, ecological flow and flux are difficult for art critics to adequately critique and histories of architecture are often written from the viewpoint or with terminologies and values from art criticism. (Meyer 2000, 199) Modernism as a theory that rejected the picturesque was an important break from the values of design previous to the modernist movement. However, through the convergence of modernist design aesthetic, as autonomous from the context of time and place, and the growing affluence of post-war mid-twentieth century, modernist design became a style of the affluent, a mark of the cognoscenti. Modernism as a style was sleek mules: environmentalism was rubber boots. Fortunately we have some writers cognizant of and sensitive to the forms and issues of landscape architecture. We can look forward to reading more histories and critiques from these writers.

Manifestation and Derivation of Site-Related Practice-

The last area of general theory Burns and Kahn cover in their introduction to *Site Matters* relates sources of knowledge to objective and subjective views and the importance of understanding the differences inherent to those sources and views. As they point out, since the enlightenment we have sought as a culture to define universal attributes of human nature. The weight of the western canon describes historical and geographical diversity in these terms and is supported by scientific and mathematical theorizing. In this mode of thought a distanced, detached view is valued as being objective. Philosophers, psychologists and social scientists value information based on this idea of a decentered, universally applicable, objective knowledge base. Critics of the idea of a universal human nature argue that the individuality of communities change the outward manifestations of human nature. Tracking backward from outward manifestations, social theories question whether or not we can accept ideas of a universal human nature. The dialectic is between a decentered universalism represented as objective reality and a centered particularism valued through identity and action as subjective perception. This isn't necessarily a dichotomy. (Burns and Kahn 2005, xxii-iii)

I think the 80's aphorism "think globally, act locally," is one attempt to relate the two viewpoints. The aphorism was meant to exhort people to think how the particulars of their actions affected the larger world. For designers perhaps the phrase is more apt if we think globally, but remember we are acting locally. Meanings and associations are always highly dependent on local issues, histories and economies. Meyer wrote about situated knowledge in terms of practice and the academy; being in practice and applying theory in the built form is a situated knowledge from within the body of theory-in-practice, a hopeless term, much better represented by critical practice. (Meyer Fall 1991) Burns and Kahn state "the student of the site must rely upon forms of analysis that lie between the centered and decentered view." (Burns and Kahn 2005, xxiii) Through analysis and synthesis, these bodies of knowledge become situated knowledge in the design process and the resultant design can itself work, in Meyer's terms, as bridging, mediating and reconciling. (Meyer 2002, 22-4) Foregrounding site highlights material,

conceptual and methodological concerns in design. (Burns and Kahn 2005, xxviii) I thought about changing the three categories in my framework to these three areas, but I realized these are the areas in between, these are issues raised when questioning the orthodoxies of instrumental and hermeneutic theories.

I will backtrack for a moment here to comment on the use of "RSVP Cycles." One of the first things I was told in undergraduate art classes was that the idea of "the original" in art was absurd and a waste of time. Ideas in art generally come from putting new order to old form, in other words it is the way in which an artist chooses to put standard forms, objects or materials together that makes art. Spending one's life trying to make a new original form was restricting creativity, not embracing creativity and developing one's art. Most, if not all, of the theories I use and write about in this thesis continued from or clarified a viewpoint or analysis from another, earlier writer. Coming from a different viewpoint or giving value to something that had previously been undervalued is not original art; it is a continuation, a next step in the history of landscape architecture that is itself an on-going process. This is how ideas from other disciplines and studies enter the discussion in landscape architecture. This is not to say that we do not need landscape architecture-specific definitions, but that if an idea borrowed from another framework of knowledge holds validity in terms of the profession, this is the process by which it becomes a part of our field. It is ultimately important that the term is either removed from connotations it carries with it in its previous context or that those connotations are recognized, acknowledged and quite deliberately included in the meaning of the term as it relates to landscape architecture. Many of the ideas or theories I am working with in this paper can be tracked backward (upstream?) to previous writers.

"RSVP Cycles"

"*RSVP Cycles*" enters this thesis because it represents a process through which information from social forms and material is analyzed and synthesized and so it represents a mediated knowledge. Like critical practice or site thinking, it has strands of theory that cross the boundaries suggested by the categories I started with and is itself a process that delivers a synthetic analysis

for design decision-making. Halprin defined his cycles as follows: (Halprin 2002, 45)

R Resources which are what you have to work with. These include human and physical resources and their motivation and aims.

S Scores which describe the process leading to the performance.

V Valuation which analyzes the results of action and possible selectivity and decisions. The term “valuation” is one coined to suggest the action-oriented as well as the decision-oriented aspects of V in the cycle.

P Performance which is the resultant of scores and is the “style” of the process.

In the definition of terms and categories I started with, the “*Cycles*” are a problem in terms of where they fit. Resources could be the enumeration of material elements during site analysis and would fit in the Instrumental category except that Halprin includes motivation and aims. The traditional idea of context starts to cover the idea of motivation and aims, but falls short. Motivation and aims have much more to do with the idea of narratives, an idea that really is not covered in the protocols of instrumental theory. As Burns and Kahn set out in *Site Thinking*, one strategy in the tradition of instrumental theory is an itemizing of material conditions. (Burns and Kahn 2005, xvi) A snapshot, if you will, a moment in time in which a specific material condition exists. The first problem with this tradition is that there are assumptions at work that value specific pieces of information, further that value sets a hierarchy. The hierarchy may not be an accurate representation of all sites. The hierarchy may not be an accurate representation of this site at a future or past time. Those timeframes may be important to design decisions. Secondly, separating out one condition from another says nothing about the interrelatedness of those conditions. I will go into this idea further in the background for synchronous reading of histories. The most important distinction between Halprin’s Resources and the material found through a traditional mode of site analysis is that Halprin’s scores are based on the idea of process. “Scores are symbolizations of processes which extend over time.” (Halprin 2002, 43) Rather than a snapshot of conditions, frozen in time, process exists in multiple timeframes and hierarchies

are subject to change in the process as they are related to other processes that continue as well.

Scores relate directly to the idea of narratives that exist in the site in multiple forms. Scores existed prior to the beginning of the design process even if they hadn’t been formally scored by a designer. Scores continue during the design process and as the built form is brought into being. Finally, scores are at work in the built form as that becomes a part of the narrative of the constituents using or moving through the site.

Places don’t start being places at the point of interest of a landscape architect. Places or sites exist before we are involved. Even if we are brought into a site after it has been cleared and scraped, something and/or someone was there before. Any place exists as layers of narrative. (Beauregard 2005, 39) It was easiest to for me to relate to this idea through the experience of a friend. My friend is an artist. When she was a child her father, a professor of history, would take the family to historic sites and describe for them the events that had taken place there. As a painter Christina would represent the events happening in the landscape both past and present as all existing in the discourse or narrative of the site. As if, if one could be sufficiently open to see beyond the confines of the present, all of the events are there to be seen at once. These representations could be the continuity of the site as a landscape that continues as it has over time despite the smaller events of humans or the emergence of vastly different narratives juxtaposed within the site, affecting the function and continuity of the landscape as human events overwhelmed the site.

If we only read the narrative or context of the site as an economic entity site becomes denatured, formalized and colonized. The meaning of the “site is made compatible with its relation to production, state imperatives and implied order” - a cultural product colonized by giving privilege to its value in economic terms. (Beauregard 2005, 40) This is what Burns and Kahn refer to when they write about ownership of the site and the baggage that goes with that limited reading. (Burns and Kahn 2005, x)

Beauregard defines place as different from his definition of site. “[S]ite is a social construct, a representation of space...conceived apart from the complexity of human relations.” Place in his definition “is a repre-

sentational space...its complex symbolism grounded in lived experience...[which] emanates from...human encounters in dwellings, churches, sidewalks, plazas, markets and workplaces...” (Beauregard 2005, 40) Recognizing the narratives constituent to the site is situated knowledge as Burns and Kahn define it. (Burns and Kahn 2005, xxiii) If we think then of bridging, mediating and reconciling as the design decisions based on this situated knowledge (Meyer 2002, 22-4) we can arrive at what Burns and Kahn call a “narrative-like synthesis.” (Burns and Kahn 2005, xxiii)

The documents that have been generated as visioning plans by Metro Council and the City of St Paul represent a situated knowledge located between objective reality and subjective perception, mediated and synthesized.

Synchronous Reading of Histories

The idea of a synchronous reading of histories (Meyer 2000, 229) can be traced upstream as well. Halprin’s “Cycles” bring human and physical resources together; including their histories could be seen as reading the process as being extant in the site. McHarg and his layers of maps can be considered a synchronous reading of material conditions. The major difference is using these maps not as analysis, but as interpretation. If we extend the ideas of analysis to interpretation and pull those threads of history together we have the idea of a synchronous reading of history. Relationships beyond

physical proximity, but connected to the social forms that influenced their making. When I first thought about this idea I diagrammed it and arrived at a matrix. The history of a site would include how we write, think and express our perception of the histories of people, landform, and resources. I tried not to limit myself with assumptions, things I “know” about cities. By staying to general topics the matrix becomes more inclusive.

History

- A. History of people in terms of:
 1. Economic systems
 2. Social systems
 3. Political systems
- B. History of landform:
 1. Relationship to economics
 2. Relationship to social
 3. Relationship to political
- C. History of resources:
 1. Relationship to economics
 2. Relationship to social
 3. Relationship to political
- D. Relationships of histories to each other

The relationships are diagrammed in Figure 2.7

History does not end at the present moment; it too is an on-going process. The timeframe is always moving; past, present and future become fluid. When I relate the Synchronous Reading of Histories to Site Thinking I tie the histories of landform, people and resources to existing land use, city infrastructure, transportation, parks and open space.

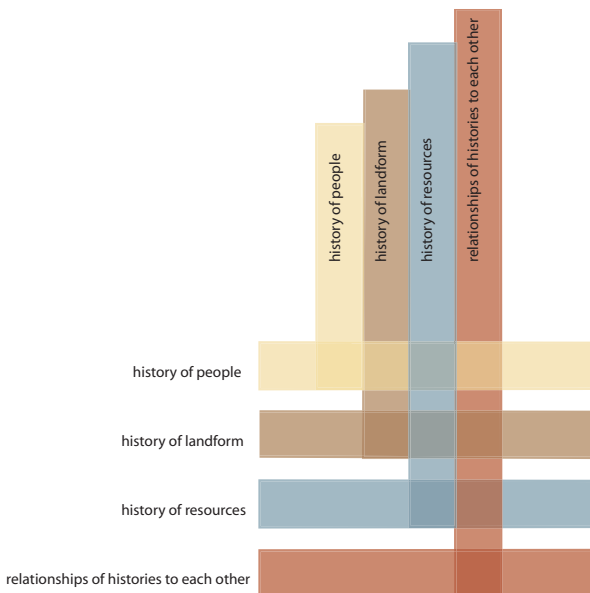


Figure 2.7 History matrix

Building Community from the Inside-Out
(Relph, Place Reclamation 2002, 103)

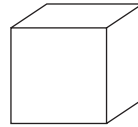
**Vectors of Influence: Phenomenology,
Aesthetic Experience and Ecology**

The ideas of synchronous reading of histories, phenomenology, and aesthetic experience are closely related and concern our ways of “knowing.” Phenomenology is a theory which “emphasizes the importance of analysing the structure of conscious subjective experience.” It is beyond causal. It is theories and methods that “seek to rise above both idealism and materialism by discovering a philosophical third way, by making intuition the true source of knowledge.” (Oxford English Dictionary Online DRAFT REVISION June 2007) The phenomenal “exists in our perceiving (experiencing) the nature of the world about us and our being in it.” (Meyer 2000, 198) Form and, through the dynamics of change, events, are defined not by an objective reality but in terms of knowledge; not a thing, but a perceived whole. Each local event dynamically knows the others. Form as a being of nature both exists in space and is dispersed in several places, distributed in local events. (Flynn Fall 2008 Edition)

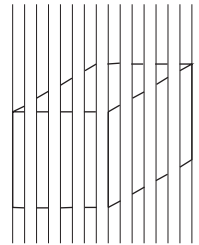
Corner cites Ernst Cassirer:

In truth... what we call the world of our perception is not simple, not given and self-evident from the outset, but ‘is’ only insofar as it has gone through certain basic theoretical acts by which it is apprehended and specified. This universal relationship is perhaps most evident in the intuitive form of our perceptual world, in its spatial form. The relations of ‘together,’ ‘separate,’ ‘side-by-side,’ are not just ‘given’ along with our ‘simple’ sensations, the sensuous matter that is order in space; they are a highly complex, thoroughly mediated product of empirical thought. When we attribute a certain size, position, and distance to things in space, we are not thereby expressing a simple datum of sensation but are situating the sensory data in a relationship and system, which proves ultimately to be nothing other than a relationship of pure judgment. (Corner, Agency of Mapping 1999)

The idea is diagrammed in Figure 2.8.



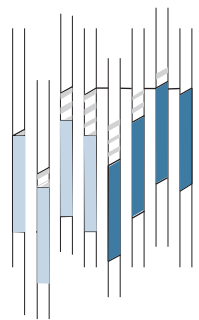
the object exists in space
the object also exists in the
perception of others



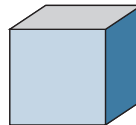
narratives are layers in the site
representing both singular, that is temporally
limited things and continuous things, whether
they are people events, processes, anything
that may be in the site

the object also exists in the perception of others
who experience that object in some way.
layers of narratives exist in the site perceiving
the object therefore, the object is disbursed
across space as the narratives are disbursed
across space.

Figure 2.8 Object in perception of others



the site is not temporally limited. many things,
particularly events and processes are not
temporally limited, therefore perception of the
object is disbursed across time and space



this is the perceived unity of the whole

Figure 2.9 Perceived unity of whole

Synchronous reading of histories then is based in this idea of events being in the same place during a particular time, and so “knowing” each other, an alignment of events. If we were to walk through an area being consciously aware of all the dynamics at work around us our perceptive faculties would be so overloaded we would cease to function. Our intuition draws the relationships between separate perceptions of these events into a whole. “What happens in several places is brought together and resumed. This is the unity of the perceived object.” (Flynn Fall 2008 Edition) It is also the basis for a unity of perceived events or histories. Figure 2.9 furthers the idea.

Aesthetic experience is also based in phenomenology and the dynamics of change. It is a constructed experience- deliberately and conceptually linked to our experience of and perception of change in the world. As a constructed experience it would include both material and phenomenological concerns. (Meyer 2000) In designing such an experience we would include cultural and place markers- local values and materials - and address physical and psychological comfort as well as climate response. (Treib 2002, 122)

Aesthetic experience is a strategy for re-linking people to land and the processes of nature, design for the body and mind. "Aspiration and a sense of continuity are a necessity." (Lynch 1972, 113) Arnold Berleant's participatory model of aesthetic experience rejects the "disinterestedness" of modernist aesthetic, the historyless contextualism of some post-modernists, (Meyer 2000) and the material aspects (motif) of the cinematic narrative that often propels popular design. (Rogers 2001, 458) Landscape design that uses form and symbol to lift the spirit encourages aspiration; continuity can be felt in seasons. Unending change, unmitigated by rest, release or joy, overwhelms. "[S]table symbolic focuses- a church, a rock, an ancient tree- can help hold a shifting scene." (Lynch 1972, 110)

Balancing these modes and concerns calls for design that "by creating places of wonder and beauty, landscapes of strong textural or scale juxtaposition and ecological spaces of ever changing mood and character, landscape architects provide occasions for humans to revel in the moment and feel connected to place." (Meyer 2000, 203)

Ecology and Environmentalism as Ethos

Ecology and environmentalism are approached as an ethos rather than an ethic. (Conan 2000, 12) The first reason is that ecology is a science. If we try to base science in the moral values that are the basis of an ethic we approach moral relativism as Einstein warned. Science uses theory to postulate truths that are then proved or disproved. Theories are meant to be tested and overturned, they have a limited lifetime. (Conan 2000, 12) Ethics need a more stable base. If morals have to adjust to changes in theory they become relative. Secondly, because ethics are based in moral value and they retain a hierarchical form. The least changed form of nature is the highest form in the hierarchy; the

most changed landscape is least valued. This hierarchy accepts the metaphor of nature as wilderness, unchanged by humans. The metaphor as form stifles critical, theoretical and conceptual reasoning. If the least changed form is the most valued then urban sites are construed as denatured. The processes of nature do not stop at the boundary of the city, rather they are encouraged or interrupted, allowed to function, opened to observation or buried, thought of as problems to be solved through intervention. If we reject the metaphorical bubble of nature as wilderness we can make positive design decisions that work with natural processes, make them open to observation and give them value in an urban context. Nature as a narrative, as an ongoing historic process, aligned with social and political forms, can be woven into the fabric of the city.

Environmentalism as an ethos is the spirit of ecology based in science. The spirit of this design is Urban Nature and being based in the science of ecology should be approached through theory. The tradition of site analysis works too often as a top-down approach separating processes and systems into separate elements- soils, plant communities, and climatic conditions. We cannot simply add up the elements again and arrive back at the level of processes and systems if we have lost the interrelatedness of those elements within the processes and systems in which they belong.

Systems of Order- Organization of space

Just as there is a problem in parsing ecological systems and processes into separate entities we should not assume that we can reduce the ordering of space to "simple geometric figures to be manipulated from high above." (Corner 1999) Physical aspects of site, whether topographical or relating to other built forms are not a problem to be solved. We should not approach them as "simply circumstances to be accommodated or mitigated...physical and sensual properties are sources for design expression." (Meyer 2005) When Burns and Kahn write about the manifestation and derivation of site-related practice their argument highlights material, conceptual, and methodological issues that become more obvious when we foreground site. (Burns and Kahn 2005, xxviii) Rather than trying to fit program elements into a site, we can use the particulars of the site as inspiration for form and function. Meyer uses two examples to illustrate the point. She describes the

design of Dumbarton Oaks as one part geometrical terrace responding to the architecture of the house and one part textured surface informed by the Piedmont terrace in which it is sited. The other is a city plan in which forested ravines form a city park framework within and around which town streets and blocks were arranged. In the first there are two systems of order, two frameworks or armatures, one is the geometry of the house the other is the geography of the site. In the second there is an existing glacial landform read as armature or framework. As the daughter of an engineer I would say that an armature is a part of a framework facilitating the ordering of space and program. Meyer identifies geomorphological figures, ecosystems or geological fragments, temporal phenomena, haecceity and subjective experience as possible armatures or frameworks in which site can be interpreted and space can be ordered. (Meyer 2005, 103-12)

When I first learned the term systems aesthetic it was related to natural systems and processes. With the base Meyer outlines, both systems and the forms they create are used for establishing an aesthetic that informs design. (Meyer 2005) I can apply this thinking to systems beyond natural systems to include other narratives of the site.

Corner suggests mapping as a methodological aspect underused by landscape architects generally because of a lack of understanding both of what they are and what they represent. He states that mapping is “more than physical attributes of terrain but includes also the various hidden forces that underlie the workings of a given place.” Maps are both an analogue of and abstraction from the place they represent. Maps are both analogous to actual ground conditions, but inherently abstract as they relate information about the hidden workings of a place that may not be visible to someone in that place. Maps are cultural constructions through the devices of mapping- frame, scale, orientation, projection, indexing, and naming and the process of mapping, the selection, omission, isolation, distance and codification of what is shown. What we choose to show analogously can either reinforce biases and assumptions or support relational understandings. As cultural constructions “maps are highly artificial and fallible constructions, virtual abstractions that possess great force in terms of how people see and act” including the designer. This is the difference between what

maps represent and what they do. Corner focused on what maps do “the worlds they describe and project derive from those aspects of reality that are susceptible to these techniques.” How does one capture all the narratives of site in a map? What narratives are privileged in a map? Does showing where something takes place capture why it takes place? Can the analogue capture the phenomenological aspects of being in a place? If the methodological and representational traditions of maps and plans are the “very basis upon which projects are imagined and realized [then decision-making in the design process] derives precisely from how maps are made.” If we limit site analysis to what can be represented on a map or if our representation of ground conditions is limited to the traditions of mapmaking the design process is also limited. We know that what we choose to show on a map and accompanying drawings influences both the design and the acceptance of the design. How do we show both physical and sensual properties of site? How do we highlight relational understandings essential to the design? (Corner 1999, Corner, *The Agency of Mapping: Speculation, Critique and Invention* 1999)

Meyer sums up the issue thus: “repositioned site concerns challenge the modern divide between rational site analysis and intuitive, creative conceptual design: design as site interpretation, and site as program, not surface for program.” (Meyer 2005, 93)

Visual Perception, Phenomenology and Semiotics-Three Levels of Meaning-

Robert Thayer proposed three levels of meaning in perceiving landscape. (Thayer 2002) Thayer was writing about visual perception, but I would add the phenomenological definition of perception both to clarify perception and our response to the visual. I am also adding semiology as a way of understanding how symbols work in our perception of place. Through these bodies of theory I am relating our perception and experience of form, exploring the symbol as language and the implication for landscape architects of form as symbol.

Semiology explicates the relationship between signification and materiality. Semiotics is the process by which culture produces signs and/or attributes meaning to signs. It is how meaning is created through processes of interpretation. That meaning is culturally

constructed as it is grounded in community, history, and materiality. In *Place and Placelessness*, Edward Relph states that “visual features provide tangible evidence of some concentration of human activities... [often] reflecting human values and intentions.” (Relph, *Place and Placelessness* 1976)

Thayer’s essay “Three Dimensions of Meaning,” is a sort of bundling of aspects of phenomenology. The first level of meaning is perceptual. Through perceivability and conspicuousness we understand that what we are looking at or experiencing is different from its surroundings, an anomaly. The second level is functional and more specific than the first, defining what the anomaly is by what it does. The third level is what it means, the symbolic implication of what it means in the temporal, physical and cultural context in which it is experienced. (Thayer 2002, 104-5) Whether “it” is territory, signified by tennis shoes thrown over power cables (a symbol worthy of an essay on its own), or community, signified by banners made by local school children to publicize an event, or affluence, signified by expensive hardscape and trendy shops, all are cultural signifiers. Symbols are powerful communicators of what something is and what it means.

The title of Howett’s essay “Systems, Signs and Sensibilities” is a direct reference to the book *Signs, Symbols and Architecture*. (Broadbent, Bunt and Jencks 1980) In the essay she outlines the way in which the editors illustrated the application of semiotics to the built form. “[A]rchitecture can communicate visual and conceptual messages” in the same way language makes meaning- “through syntax and grammar.” Geomorphological form can act as a framework and as a symbol- the physical presence of the process that formed it. Howett calls for more forms that express a multivalent symbolism, forms accessible from multiple perspectives. Like culture itself, form as symbol is self-renewing and reinforcing; using form as symbol reinforces the importance of the systems symbolized in form. Howett uses Richard Haag’s Gas Works Park as an example of multivalent symbology. The Gas Works functions as a symbol in a number of ways, including the fact that it is a physical reminder or symbol of both the history of pollution it represents as well as the reclamation and rebirth of this site. (Howett 2002) Relph states that it was a radical response to placelessness that led to the realization of the existential importance of

place to people and the environment. That a heightened sense of place affected through signification and materiality is an essential aspect of any attempt to redress the enormous injustices and dangers to survival that threaten us all. (Relph, *Place Reclamation* 2002)

We are surrounded and informed by symbols every day. “Branding” is the use of symbol that through perceivability and conspicuousness leads us to inquire after or recognize the function of the product symbolized through branding. Much of what we experience as symbol comes from car culture, symbols that are designed to be read at the speed of passersby in cars. We have symbols of social identity and class through style. We have symbols that connote safety and community. Relph argues that places are made from the inside out. (Relph 2002) Reading and understanding the signs and signifiers of the site we are designing for is a way of situating knowledge. This is what Burns and Kahn might refer to as a “form of analysis that lie[s] between the centered and decentered view.” (Burns and Kahn 2005, xxiii)

If we proceed in design from this understanding we know that by identifying important processes and issues constituent to the site we can move toward finding forms that express a multivalent symbolism and so become a part of the culture, building from the inside out.

New Ecology, Semiotics, Aesthetic Experience and Environmental Psychology-

In “Systems, Signs and Sensibilities” Catherine Howett argues that “every landscape we design ought to be... an icon of the natural world as we have come to understand it- an ecological sign, or cluster of signs.” She uses new ecology, semiotics and environmental psychology as “an interrelated triad of descriptive concern that has in it the seeds of a new cosmology.” (Howett 2002) These theories support and expand the understanding of site thinking, phenomenology, aesthetic experience, and systems of order. Vectors of Influence I Figure 2.10 is a diagram for the idea.

New Ecology rejects the picturesque canon and calls for design based on processes over time and following natural growth patterns. (Howett 2002, 110) As a theory it addresses material concerns, an issue in site thinking, and provides a system of order. As a system

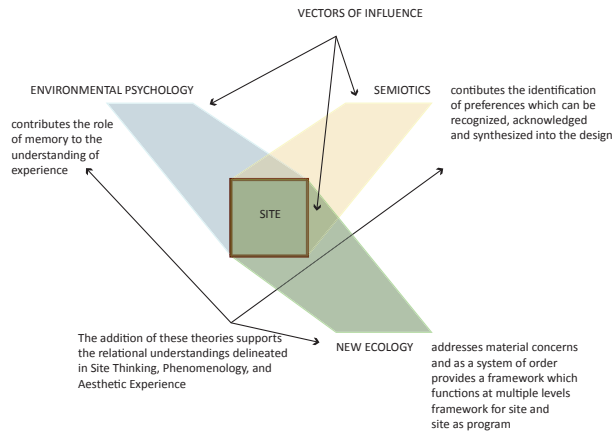


Figure 2.10 Vectors of influence I

of order new ecology provides a framework at multiple levels- a framework for site and site as program.

Semiotics uses language to read pre-existing cultural conditions and to explore the cultural basis and bias of aesthetics and preference. Aesthetic preference can be recognized, acknowledged and synthesized into the design. This is a situated knowledge, part of the manifestation and derivation of a site-related practice.

Environmental psychology calls for landscape design that is meant to evoke a particular response for the context in which the design is intended. (Howett 2002, 108) The important addition that cognitive psychology makes is the role of memory. The experience of place over time builds memory markers. Phenomenology concerns the perception of the dynamics of change. Cognitive psychology traces the function of the brain in recording memories that can involve change. Environmental psychology maps, in Corner's sense of the word, the use of memory in aesthetic experience. Figure 2.11 Vectors of Influence II diagrams the relationships.

Locus of Theories-

Locus is defined as a figure formed by all points satisfying a particular condition. (OED, 2008) A locus of theories would, in this framework, represent a figure in which all vectors of influence in the site are in evidence. Temporally this is a continuation of the past moving into the future. A place where all narratives constituent to the site, past present and future are satisfying "not just the present value, but a set of histori-

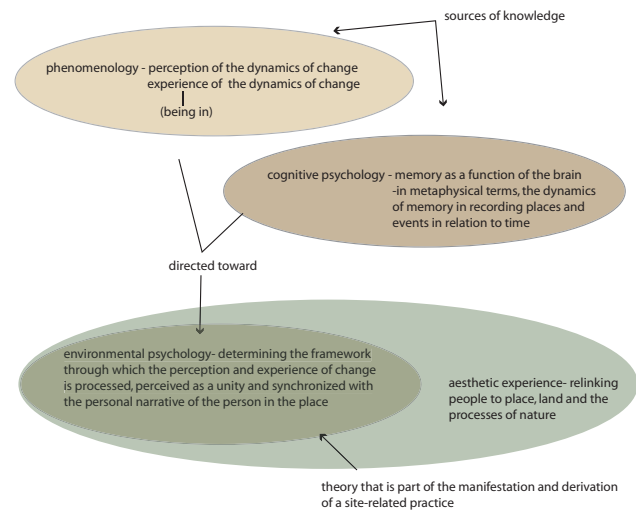


Figure 2.11 Vectors of influence II

cally situated and enacted values that construct the city and preserve the environment.” (Meyer 2000, 229)

A boundary is not that at which something stops but, as the Greeks recognized, the boundary is that from which something begins its presencing. (Heidegger 1971, 154)

In “Narrative Complexity,” Bearegard defines the cultural narrative implicit in site as being “denatured, formalized, colonized... meanings made compatible with relations of production, state imperatives and implied order.” The definition Bearegard offers in *contretemps* is place as “complex symbolism grounded in lived experience... [which] emanates from human encounters in dwellings, churches, sidewalks, plazas, markets and workplaces.” (Bearegard 2005, 40) Formally this requires site planning not as meta-narrative imposed on the site, but interpretative design recognizing and acknowledging narratives, bridging, mediating and reconciling forms and processes.

Extrinsic to Intrinsic-

Extrinsic elements are those elements that are deliberately placed in the design to address aesthetic or physical needs. Everything from traffic calming devices and paving patterns to benches and walls can be considered extrinsic elements. Intrinsic elements may be physical or psychological attributes that are inherent to the site. Intrinsic elements may be attributes that are pre-existing in the site that may be preserved or taken advantage of. Intrinsic elements may be haccaeities, aspects or objects in a site that are particular to that place and

so mark it as being very specifically that place. I know from my reading that I need to design for more than extrinsic value. Intellectually, I understand, but from the moment I pick up my pencil I know it needs to be more than acknowledgement on my part. The Oxford English Dictionary Online defines intrinsic as “belonging to the basic nature of something,” (Concise Oxford English Dictionary Online 2008) and I looked up implicit to see if that would help me think. Implicit is defined as “implied though not directly expressed, always to be found in something.” (Concise Oxford English Dictionary Online 2008) My interpretation for use in landscape architecture then would include not only specific objects or furnishings I can design into a space but, more likely experiences I can foment, events or processes I can catalyze, form evocative of something in the culture where the design will be built. I think that when an element, some “thing” that is a part of the design, becomes a part of the life of the people or community it becomes intrinsic- a part of the site and identified with it. In that way the intrinsic is closely related to the phenomenal- what we know about a place from being in it. The intrinsic has value beyond its physical properties.

As designers we are metaphysically outside the center of knowledge for most if not all designs we work on. We work to have an insider perspective, but what we do is design outside, physically and metaphysically. I think one reason it's easy for people to be content with learning the technical aspects of the discipline is that we do, in fact design walls and paving patterns and the physical furnishings of site.

Attempting to have that insider knowledge takes more than facts. It's hard enough to explain, harder to do. In his essay “Landscape as Cultural Product” Denis Cosgrove included the following quote: “the simultaneous presence of someone within the centre of knowledge...and his absence from it, in a position from which he observes but does not participate.” (Cosgrove 2002, 166) Unless we are a part of the distinct culture extant in the site we are outsiders. We may have a lot of facts concerning physical aspects or demographics, we may think about the context, but we are outsiders.

Character is one aspect we talk about that approaches designing the intrinsic and if we've put sufficient thought into the phenomenal and who we are design-

ing for we may get there. The green armature of this site would definitely be a part of what will be the character of the site. The green armature is the expression of environmental concerns in the design. Marc Treib referred to Olin when he wrote: “design decisions normally derive from a greater complexity of factors than those of ecology alone, among them social and cultural issues including aesthetics...” (Treib 2002, 91)

Programming is another approach to designing for the intrinsic, but again this is from the outsider perspective. Intrinsic value derives from the involvement of the user, the dialogic relationship between constituent and site. There has to be give and take- the design facilitates movement or introspection, or makes a place to play or entertain. If everything about the site is there, explicitly spelled out in front of you, unchanging, disinterested, that is the “creative stillbirth” Corner cited. (Corner Fall 1990, 76) I wonder if the plans for those designs hit the table with a thud when you put them down.

I think the ideas from phenomenology and aesthetic experience are a way of getting to the intrinsic. To find resonance, to find the chords which once struck live on and develop into being more than the way to work or the Sunday bike ride, but become a part of dwelling in the site it is possible to intentionally design the implicit. “[I]f the connections between form and intention are understood within the culture and evolve... slowly over time” (Treib 2002, 99) for the people in that space to understand the meaning- the significance- the implicit.

In terms of the theory of Site Thinking this means that if the narratives constituent to the site are recognized and acknowledged in the design, over time the site will obtain greater value to the constituents than the simple physical value and the site will become a part of the narratives within the site- together I think this is what Burns and Kahn term “a narrative-like synthesis.” (Burns and Kahn 2005, xxiii)

Meyer wrote, “if phenomenology of landscape architecture taps into the concrete experience of a place by its citizens and if these experiences intermingle cyclical natural processes in rhythms of collective social life, then this type of built work can redefine what it means to be part of the environment” and indeed part of the life of the city. (Meyer 2000, 243) If some element

of what I design becomes part of what people know about the place, part of what they think about when they think of the place, then I have succeeded.

Metaphor, Analogy and Process-

Morphogenesis

We think and express ideas about landscape with metaphor and those metaphors are culturally constructed. How we talk about landscape, how we write about it, how we think about it are all culturally based and become a cultural shorthand, symbols or icons for ideas about landscape. We use metaphor and analogy to clarify what we are describing or experiencing by using partial similarities or attributes to relate the whole. It is difficult to describe things we work with without using metaphor and analogy, they are very useful.

So much of our culture is located in language as the outward manifestation of the culture. Language is not just a reflection of culture, but like culture itself, is endogenously creative, continuously self-reinforcing. As a culture we have so many metaphors concerning nature, landscape, ground and we use metaphor in so many ways as the shorthand for deeper meanings. Nature as pristine wilderness, landscape as background for the events of life, ground as the credible base for news reporting that the denotation of the words becomes lost.

Metaphor and analogy are very much a part of how we describe and define and we need to be aware of how they influence our thinking. If we accept that metaphor influences our thinking and thinking directs our actions, then we can understand that metaphor as a thought process can direct our actions. We use metaphor deliberately to explain experience, but that means that we have transferred experience to language. Because it is a cognitive process that is not different from a rational process metaphor is part of the fuel for intuition just as is any other source of knowledge. Metaphor is an unconscious or pre-conscious way of comprehending abstract meaning. (Turner 1997) When we relate that understanding it is often through the metaphor that made the abstract thought clear to us. Metaphor comes to us, as intuition does, as a somewhat mystical process. The poet and the artist are visited (or not) by the muse, a metaphor for inspiration. We connect the idea of metaphor with imagination and inspiration.

Intuition, as I stated earlier, is the act of realizing relationships between elements that are not immediately apparent from a rational viewpoint. Intuition makes inferences, draws analogies, and makes connections between things. We rely heavily on intuition for design which pre-conditions us to be influenced by metaphor, to be susceptible to the muse. Inversely, experience is not entirely susceptible to rational explanation. We can describe the temperature outside as being 50 degrees, but we know that 50 degrees if you're riding a bike and 50 degrees if you're sitting still are two different experiences. We can explain it rationally, but does that capture the experience of an incredible fall morning, sitting at a picnic table, hearing breakfast sizzle in a pan, looking forward to a bike ride? We need imagination and intuition to allow us to feel that exhilaration. It is through the transference of experience to language that we can comprehend for ourselves and relate to others the abstract meaning symbolized in the metaphor. Metaphor allows imagination and facilitates the explanation of what we know intuitively. Experiential phenomena which can be defined relationally or functionally require metaphorical description and explanation.

In design we use conceptual order as analogous to material order. That is, we have an idea which we translate into material form. If we are drawing on metaphor to fuel the intuitive, consciously or not, we have to think about what that metaphor means. Metaphor as a formal pattern or conceptual order is limited by the connotative meaning implied by the metaphor. Metaphor works as a symbol and is therefore limited by the signified. Metaphor as a formal pattern can stifle creative thought. On the other hand, the concept of metaphor as a process can stimulate. (Conan 2000, 14)

Analogies are affinities of thought. (Jung 1956) There is an alignment of thoughts through similarities. It is why our minds make the leap from one thought to another in intuitive thinking. It is how analogies and metaphors come into being. Halprin wrote about "The Shape of Erosion" to describe the form created by the process of erosion. (Halprin 1962) Generally when we talk about erosion there is a negative connotation; erosion is a problem, it is something to be prevented. Erosion, in terms of affinities of thought, represents loss, ruin, and despoliation. It is a linear thought process, a causal relationship; one thing leads to another

through cause, thereby getting better or worse. If we step back from that understanding of erosion and see it as a process of nature we get a more dynamic view. If we think about erosion as a process wherein soil is moved from one place to another, we can understand erosion as a creative process. Forms are created through additive and subtractive properties of the process, rather like color theory. This is how the formal meaning of the metaphor is left behind and the metaphor from the form to the process. Morphogenesis in landscape architecture is metaphor as process.

Morphogenesis is theory that involves the generation of form through process. Morphology is the branch of biology concerned with the forms and structures of living organisms. Geomorphology is the study of the physical features of the surface of the earth and their relation to its geological structures. Genesis is the process of creation. Put them all together and you can see the relationship to landscape architecture. Landform built from natural processes represents morphogenesis. As Meyer and others have pointed out we can use extant landform in a number of ways. Landform as analysis can tell us what happened in that place that made the particular forms. We can use landform as interpretation, informing the design and ordering space, allowing natural processes to continue as a healthy part of the ecosystem. We can use landform as inspiration, rock outcroppings that order space can also be a place to sit, to take in the surroundings, to feel the warmth of the sun, to experience a form of nature. (Meyer 2005, 102-13) Landform as inspiration could show up as grassy drumlins in a courtyard or vignettes in a small city park. Landform as interpretation could allow flooding along a river or bring a massive rock wall into Manhattan.

methodology

Applying the Framework

The idea of critical practice depends on the intentional use of theory to inform and direct the design process. The conceptual framework is intended to facilitate that combination of theory and design. To test my framework and my idea of critical practice, I enrolled in an independent study with Professors Belanger and Forsyth that ran concurrently with another design class they were teaching. I received the same design problem the class received, but worked independently to give me the flexibility in terms of time to include further reading and reflection. I had desk critiques with Professors Belanger and Forsyth and met separately with Professors Rolley and Clement to critique the framework and how theory was informing the design. Professor Belanger was willing to help direct my readings in theory, although we discussed theory separately from the specific design project.

This essay is not meant to be an encyclopedia of theory in landscape architecture. Theories identified in this paper are ones that I feel are important to design in general and important to my personal goals. My reading has been directed by my professors and my curiosity; my motivation is my desire to become the best designer I can be. The idea of the study began with theory I was aware of at the time. As my familiarity with theory in landscape architecture increased, my framework grew to include theories I was reading or ideas theory inspired. I am both a graphic person and an analytical person. I want and need to know intellectually why things are, why they work and what they look like. The way particular theories are used in this model is not the only way these theories can be used, but rather how they were used specifically in this project. I am sure that as I read more in theory and as more ideas are added my framework will change again when needed.

There were difficulties from the beginning and it took some intellectual calisthenics at times to work it out, but it was still the best arrangement I could imagine. The framework has to be able to facilitate a synthesis of ideas. One problem is that some theories seem to fit in more than one category. Geomorphology, the history of the processes that formed the landscape, might be counted as an instrumental theory because the information that forms that history is gathered through

the protocols of site analysis. If it were received as a body in a written historical form it would be part of hermeneutic theory. Metaphor, as a way of describing or making clear, would be considered hermeneutic theory because it fills that qualification, culturally how we think and express our ideas about landscape. Metaphor is important in our culture; it creates the shorthand for pop culture, the icon to be clicked by the mouse. "Metaphors are mental schema guiding the designer's actions..." (Conan 2000, 8) but metaphor in design is tricky. Metaphor as a formal pattern can stifle design by creating false dichotomies and setting false boundaries which can lead to unintended consequences by ignoring the processes at work. By questioning the meaning behind the metaphor we can change metaphor from a first order hermeneutic term to a second order critical term in which metaphor can serve as process rather than form. If we use metaphor as a process rather than a pattern and align that process in our minds with geomorphology the relationship between the two is the idea of morphogenesis, a dynamic theory of form. Morphogenesis as a critical theory and can become an intrinsic element when used in design provides a good example of how practice can be critical inquiry.

I tried to imagine what form a representation of this process of design-as-inquiry might take. It seemed that it would be important to show alignments and an interweaving of theories. The theories described above are a small example of what the framework was intended to manage, but the framework would have to manage far more. I tried to imagine a physical model, a physical operation, through which theory becomes design. I wanted a graphic form that I could refer to when thinking about or developing a design. There have been times when working on a design that I am unsatisfied with what I am drawing. It is that intuitive feeling that something is missing or some new piece of information enters the mix that highlights a problem in the design. I want to be able to look at my representation of the framework as a way of stepping back and looking at the drawing from a new perspective.

My first thought was of tectonic structures, but the metaphor was too course. I tried frames and cellophane, but had a problem with structural integrity.



Figure 3.1 Weaving as metaphor

Next was my favorite kite with marvelous colors that amused me, but my professors were not amused. Then I looked down at my scarf. I had picked up the scarf when in San Francisco at the American Society of Landscape Architecture conference. The way colors in the scarf aligned and were woven together seemed the perfect example of how the interplay of theories could weave together to make a whole. The scarf is pictured in Figure 3.1 It seemed that I needed an architectonic form, but the model I developed in Sketchup had all the charm of an hydraulic tube in a bank drive-through. In this paper the model will be represented in diagram form to help clarify the process. Instrumental and hermeneutic theory are aligned with time in the model.

Time is a linear construct in this model because that is how we experience it. Thus, hermeneutic theory is aligned with instrumental theory and time in the model because history and protocol represent a linear thought pattern. That is, because history, even when seen as being on a continuum that is continuing through the present, is considered to be sequential. (Lynch 1972) We have a timeline for the design and expectations of documents that are essential to further development of the design. The protocols followed and the deliverables that are the product of the design are certainly on a timeline. Hermeneutic theories are often involved with time. History or historical context is a tool we use heavily, both in the practice of landscape architecture and in our daily lives.

Critical theory, in contrast, is the thread that weaves between or over the other theories. For weavers, time is the loom, instrumental and hermeneutic theories the warp and critical theory the weft. For the rest of us a diagram as seen in Figure 3.2.

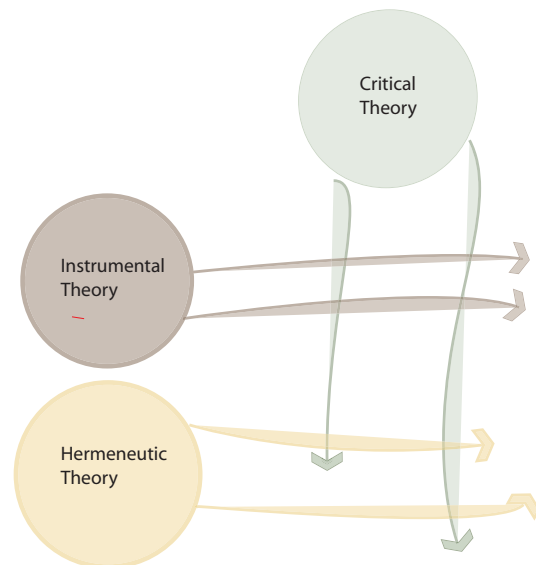


Figure 3.2 Relationship of theories in weaving

I can identify particular ideas and threads of theory that are important to me as a reflection of my personal values.

Geomorphology- how the topography of the area was formed

History- how we write, think and express our perception of the people, landform and resources

Metaphor- how do the constituents think about the place

Phenomenology- what is the constructed experience of place, what are the cultural markers that bring familiarity, what local materials work as place markers, what are issues around physical comfort, what are issues around psychological comfort, how does climate response address these issues

Ecology and Environmentalism as Ethos- what is present currently that describes the form of nature, what are the processes at work in the systems in the area

Morphogenesis- what processes were operating that created predevelopment form, what processes are still at work, what processes can be catalyzed

Synchronic Reading of Histories- history of what has happened in a place over time which includes:

- History of people in terms of:
 1. economic systems
 2. social systems
 3. government systems
- History of landform in terms of:
 1. relationship to economics
 2. relationship to social systems
 3. relationship to governmental systems
- History of resources in terms of:
 1. relationship to economics
 2. relationship to social systems
 3. relationship to governmental systems
- History of the relationships of each of the categories above to each other

Aesthetic Experience- what forms and processes can be designed that serve both aesthetic and phenomenological considerations in an effort to evoke an emotional or psychological response

Extrinsic to intrinsic- variance, memory cues, what can be included in the design that fosters ownership, what becomes intrinsic over time

The arrangement of the threads is dictated by the category of theory that it represents. So the threads I identified would look like Figure 3.3.

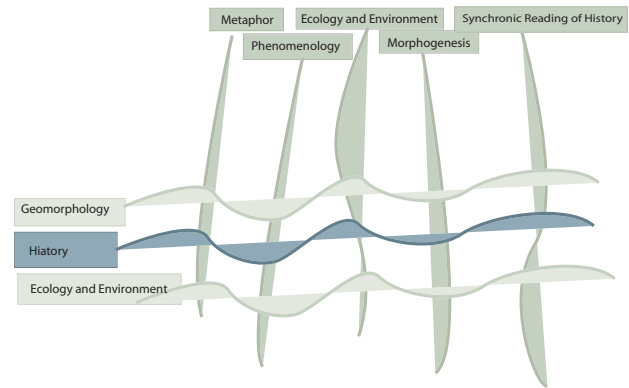
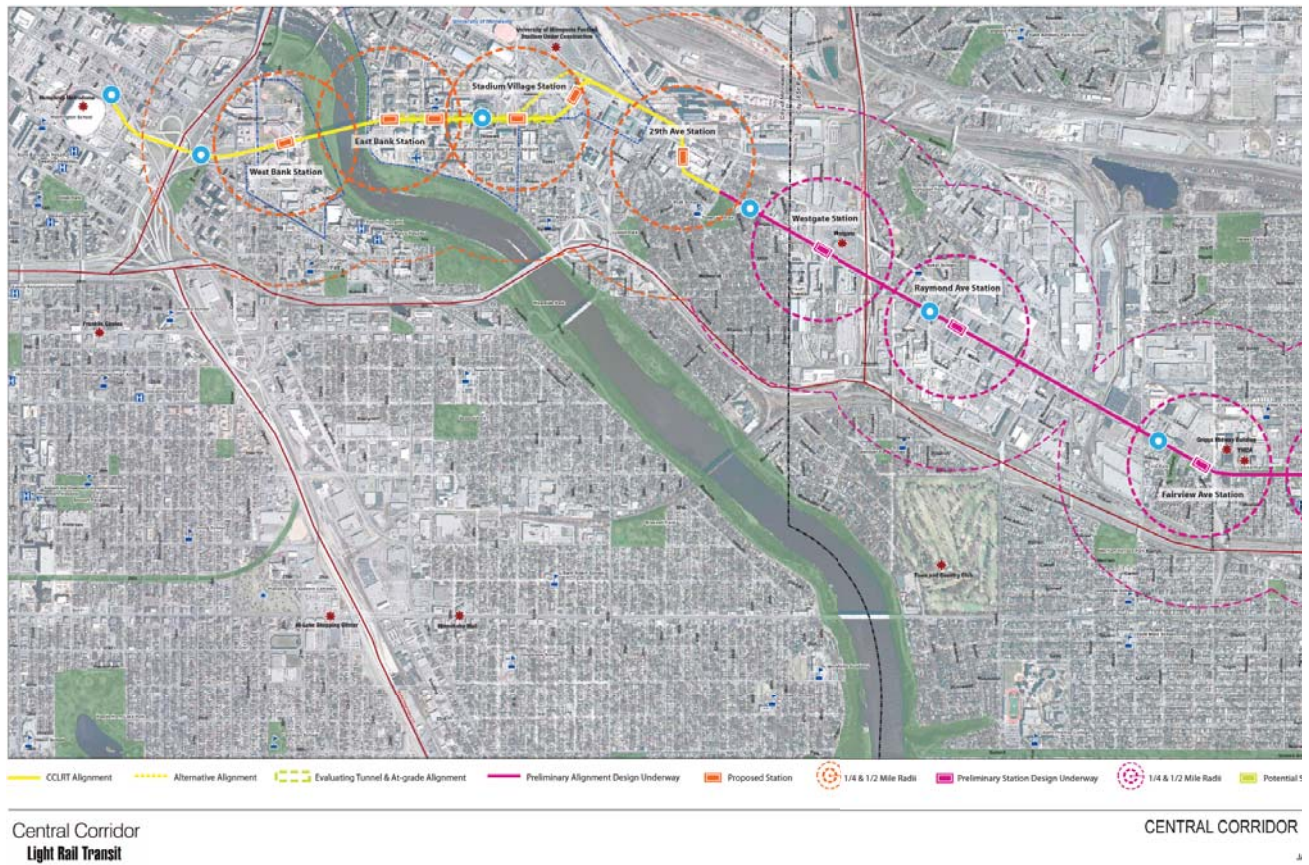


Figure 3.3 Theories in framework

The model at this point represents the anticipated issues and personal values and assumptions I bring to the design. The case study as presented in the following chapter is documented as a design diary. The facts and influences are listed and the ways in which they influence the design are noted. These project notations are interjected with reflections on the theory that influenced decision making. Gray boxes in the case study are offered as a reference for finding an in depth discussion of that particular theory in the Background section of this paper.

case study



Central Corridor Project Case Study

The project is The Central Corridor LRT Proposal in Minneapolis/St Paul, Minnesota. The project proposes to integrate an LRT line into the established roadway infrastructure, connecting five activity centers: downtown Minneapolis, the University of Minnesota, the Midway area, the state Capitol complex, and downtown St. Paul as illustrated in Figure 4.1. Much of the LRT alignment for Central Corridor follows University Avenue.

The project assignment was somewhat loosely defined allowing students to determine the area they would design. The difference between transit oriented and transit supported design was discussed. I was free to

determine site and scope, an opportunity I'm not likely to be afforded in practice, but invaluable to me as a student.

Gray boxes in the case study will highlight theories or important influences at that time in the design.

Personal goals for the project are to:

- design this project with strong emphasis on the health of the city as a whole.
- encourage economic development that benefits current residents as well as drawing new residents to the area.
- design systems into development that will make a healthier urban ecosystem based on a synthesis

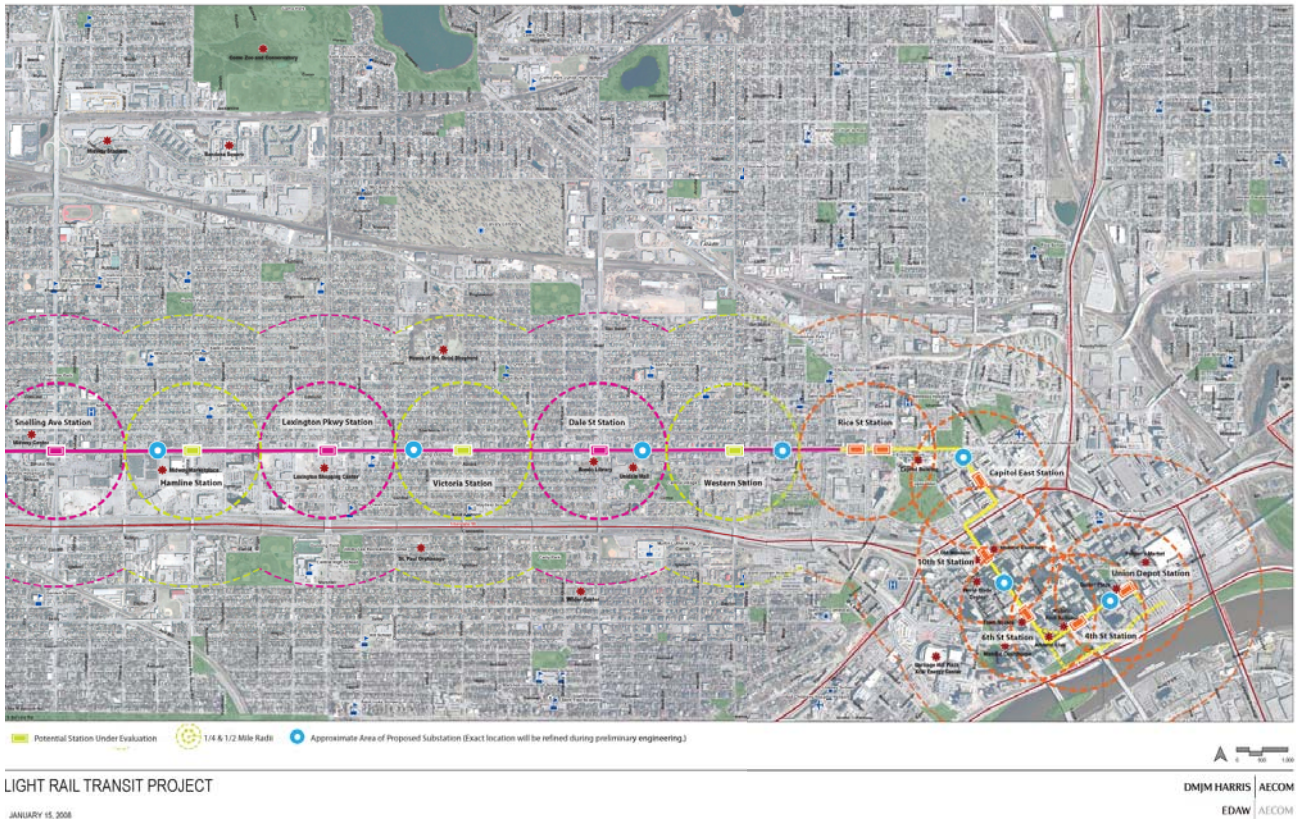


Figure 4.1 Map of Central Corridor LRT

of current conditions, healthier models of urban conditions and predevelopment ecosystems.

- provide a matrix for current and future development that is dynamic, flexible, multivalent and regenerative for the community.

These personal values will influence my research during site analysis.

Perhaps one of the foremost ideas in mind as I start the design process is Anne Whiston Spirn's statement:

Uncoordinated attempts to solve narrowly defined problems are wasteful in the most costly and hazardous sense. (Spirn 1984, 231)

That being said, I have to start processing this information into some manageable whole. Where are the problems that need to be addressed? I have to address what

has been expressed by the constituents in the project as important, but I cannot deal with them as separate entities. Aesthetic experience cannot be separated from business goals, housing can't be separated from history, and infrastructure cannot be separated from recreation. Designing for one part should not be seen as being an autonomous action separated from the life and history of the city.

Central Corridor Light Rail Transit (LRT)

Project Description

The Central Corridor: The Central Corridor links five major activities centers in the Twin Cities region- downtown Minneapolis, the University of Minnesota, the Midway area, the State Capitol complex and downtown St Paul- that contain almost 280,000 jobs. By 2030, this number is expected to grow to 345,000 jobs.

Length: 11 miles of exclusive right of way between downtown St Paul and downtown Minneapolis. It will connect with the existing Hiawatha line at the Metrodome station in Minneapolis and terminate at the new St Paul multimodal station that will also serve the new Northstar commuter rail line.

Trains: 31 new light rail transit vehicles, each with 66 seats and comfortable standing room for an additional 70 people.

Stations: 15 new stations, plus 5 shared with the Hiawatha line in downtown Minneapolis.

Service: Trains operate every 7 1/2 minutes during peak travel periods, with a travel time of 35 minutes between downtown St Paul and downtown Minneapolis.

Projected Weekday Ridership: 38,000 by 2020 and 44,000 by 2030.

Cost: \$909 million

Timeline: Following final design, the line will be built in 2010-2013 and open in 2014.

Project Partners: The Metropolitan Council will be responsible for design and construction of the line, working closely with the Minnesota Department of Transportation, Ramsey County, Hennepin County, St Paul, Minneapolis and the University of Minnesota.

Oversight: A 13 member Central Corridor Management Committee (CCMC) will provide advice to the lead agencies on issues relating to the scope, budget and schedule of the project during design and construction phases of the line. It will consider efforts to mitigate adverse impacts during construction.

Public Involvement: The Community Advisory Committee provides input on a full range of issues, including station design and access, traffic, parking, safety and community impacts during construction. The committee includes representatives of community, business, ethnic and other groups in the corridor. The

Business Advisory Committee provides feedback on project design and construction mitigation issues.

Further information was presented by Steve Wollinsky from the Denver office of EDAW. During the presentation Wollinsky highlighted the following information:

General Background: A Major Investment Study has been completed, design charrettes with residents along the corridor have been held, comprehensive planning documents have been generated.

Town centers: Each community, but not each station, along the LRT should have a town center that would include retail, office and residential space.

Demographics: 75% of the people living along the corridor are transit needy. Strong neighborhood organizations that are ethnically oriented are Hmong, African-American and Polish.

Specifics of LRT configuration: 28' to 30' widths needed for LRT. 22' from ground surface is catenary wire for LRT. This is a double rail system with trains running in either direction simultaneously. There will be 3 tracks through stadium Village station for major events. Platforms should be 270' long and 14" from surrounding ground surface. Ramps must be 25' long to make them ADA accessible with 5' landings if needed. During peak periods trains may be 3 cars long. From Rice St east the tracks begin to go below street level. There will be a station as a link between modes of transportation. Stormwater is an issue around LRT tracks even in "first flush" events. Ballast rock is planned around tracks to mitigate.

Neighborhood Concerns: People have expressed strong concern that the LRT line might further isolate neighborhoods that are still feeling the negative effects from the development of the interstate which bisected or otherwise cutoff neighborhoods from each other and from commercial areas, services, green space and schools. The bridges that were a part of that development are inadequate for pedestrians and bike riders. New development should ameliorate problems not create more.

Design Process
Instrumental Theory
Topics for Research:
Site Analysis

After receiving the design problem, site analysis is the first step as a protocol for design and requires research. Although we think of research as being objective or even scientific, in reality both the sources we use and our own personal biases will influence this stage. Site analysis begins as a listing of conditions present on the site, as described in the problem statement. As a protocol, site analysis is an Instrumental Theory which helps determine what information is needed and how we get it. Instrumental Theory is often a set or subset of protocols that are followed in a sequential order

and so are aligned with time in the diagram as a linear construct. Most likely more research will be needed as the design process continues.

The following theories and issues identified for use in this design project were chosen as representing issues I felt were important for this project in combination with issues raised by the professors. Although I focused at first on the twin cities and surrounds as a region, I quickly decided that the City of St. Paul would probably be where I chose my site because my gut feeling was St. Paul was something of a little sister to Minneapolis, a relationship I easily identify with. Process diagram I Figure 4.2 shows Instrumental and Hermeneutic Theories in the framework as the design process begins.

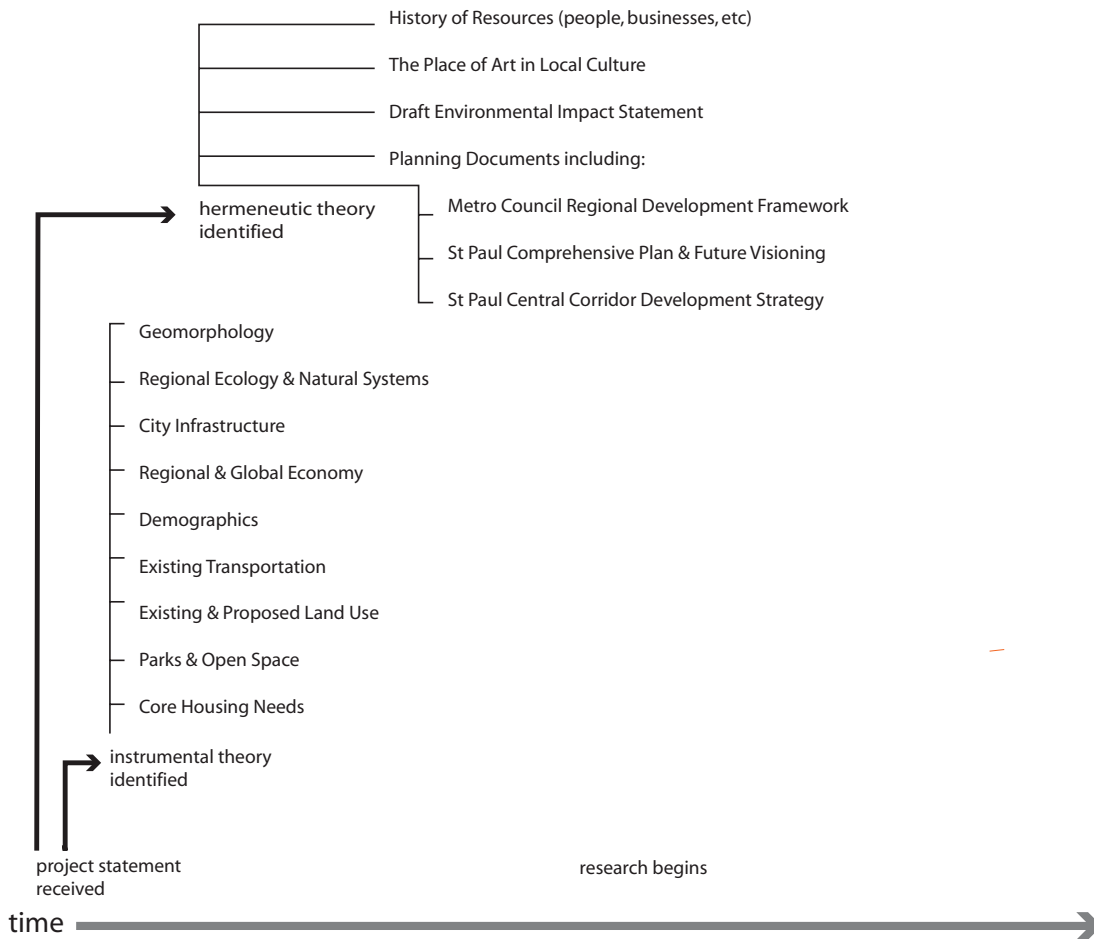


Figure 4.2 Process diagram I

Instrumental Theories

specify the routine procedures, the timing, and the representations of the information captured in those procedures

background pg 2

Geomorphology

What are the current characteristics of the site in terms of topology, hydrology and soils? All of these have been changed to greater or lesser degree by the development of the city. How were these characteristics formed before development and what remains in the current site? Is there inspiration for design elements? What characteristics could serve future development? What characteristics are important to the current and future health of ecosystems?

Regional Ecology and Natural Systems

What are key aspects of the regional ecology and natural systems- annual precipitation, temperatures, winds, vegetation, Mississippi River? This is an urban setting. What are the species of plant and animal life in the site? What systems are present? What is the current health of the systems and components present? Could natural systems and processes serve future development and could they be preserved, restored, encouraged or otherwise implemented in the design? What does the Central Corridor Draft Environmental Impact Statement have to say about the project as proposed?

City Infrastructure

What infrastructure beyond transportation is present? Are power systems such as electric, natural gas, telephone, and cable, present? Are they all traditional systems i.e.: from a centralized, regional system? Are there elements of the infrastructure that replace natural systems or otherwise impact the site? How is stormwater managed? Is groundwater impacted or recharged? What does the Central Corridor Draft Environmental

Impact Statement have to say about the project as proposed and how does that impact city infrastructure?

Regional and Global Economy

How is the site affected by issues in the local, regional, national and global economy? Because the LRT is conceived of as facilitating resolution of larger issues of continuing development of the city as a whole, issues of housing, employment and other issues driven by economic conditions become a major part of designing for the site. What is the economic base? What are the primary industries? Are there jobs available and where are they? Where are the employment centers?

Demographics

Who lives in the metropolitan region in terms of age, education, income, household size, etc? Who lives along the Central Corridor? Are there issues of public health within the current or proposed population that could be addressed in the design? I know that the metro area is home to one of the largest concentrations of Native Americans in the U.S.. Is there a significant Native American population that would be affected by the LRT?

Schools and Libraries

What educational opportunities are available to residents and how are they served by the proposal? What needs are underserved and how can they be planned for in the proposed development? Will the proposed LRT line serve as a connection with available libraries for current residents and increased residential and commuter populations?

Existing transportation

What transportation and infrastructure exists currently such as roads, highways, bike routes, bus routes, rail lines and stations, and airport? How will the LRT integrate into the existing systems?

Existing and Proposed Land Use

What are the current uses and zoning? How will the LRT serve current and proposed uses and where should stations be located?

Parks and Open Space

Where are parks currently located and how do they relate to the LRT? Will the LRT take over open space or serve to tie parks together? Do transit stations along the LRT change in form based on ridership (bikes)?

Core Housing Needs

Will the LRT serve future housing goals? Assuming a shortage of adequate housing for people at the lower end of the economic spectrum, the LRT could facilitate life issues for that population such as transportation to employment, education, daycare, and health care. Are there, in fact, core housing needs that are not being addressed? Balance of development leveraged by the advent of the LRT could help or constrain opportunities to address the issue.

Hermeneutic Theory as the written history or current conditions as perceived through cultural bias is aligned with *Instrumental Theory* and time in the diagram because history and protocol represent a linear thought pattern. That is, because history, even when seen as being on a continuum that is continuing through the present, is considered to be sequential. (Lynch 1972) Present conditions are considered to be a result or continuation of past conditions. The way we write, talk and therefore think of the present is based in this idea of time being this progression of moments. The word progression is itself a good example, if we assume that one moment follows the previous, then the progress of moments is linear. Hermeneutic Theory will overlap with Instrumental Theory primarily because it is the history of many of the topics in Instrumental Theory and has been received, generally, as written sources for research in Instrumental Theory.

Hermeneutic theory:

Topics for research

Histories of Resources

Who are the people that have been in this area and how did they get here? What natural resources are here? What businesses have been fostered here?

The Place of Art in Local Culture

The Twin Cities are well known for an attitude that fosters the arts. How is that reflected in cultural opportunities in the area? Is public art considered important? Where and how is art disseminated?

The following documents are entered into findings as hermeneutic theory:

Draft Environmental Impact Statement

What has been deemed important/endangered? How does the Impact Statement affect design parameters for the LRT?

Metro Council Regional Development Framework

St. Paul Comprehensive Plan and Future Visioning

St. Paul Central Corridor Development Strategy

Hermeneutic Theories

culturally how we think and express ideas about landscape

background pg 3

Planning Documents

that have been generated by the Metro Council and the City of St Paul represent a situated knowledge located between objective reality and subjective perception, mediated and synthesized

background pg 11-12

Initial Site Analysis Findings

Geomorphology

The Twin Cities are located on a high relatively flat plain bisected by the Mississippi River. Bluffs line the river with few gentle slopes approaching the riverbank. Soils are highly erodible most falling in the silt loam categories with slabs of sandstone and soft limestone beneath. Slopes along the LRT are very gradual with a highpoint near Hamline station. The land was shaped over millennia by a series of glaciers that moved through the area creating unique landforms that are not, for the most part, visible in the city. Moraines, kettle lakes, drumlins, eskers and kames are all a part of the regional topography. The Mississippi River was formed when ice dams on a receding glacier broke and

the subsequent force of the flooding scoured river beds into the Karst topography. A thin shelf of limestone tops soft sandstone which is highly erodible as evidenced by the falls on the river just north of downtown Minneapolis. As mills were built on the river in the 1800s the limestone eroded so quickly that with two dams built the falls moved upriver at a rate of 26 feet per year.

Regional Ecology and Natural Systems

There are approximately twenty-two possible brown-field sites along the proposed LRT route on or near University Avenue.

Few natural hydrological systems are still present, with the Mississippi River being the very large exception to that statement. There are also falls cascading down to



Contours



Mississippi National River
and Recreation Area



Water body

Figure 4.3 Contours and protected area

the river from the area south of the golf course. National Resources Inventory and Assessment has designated areas lining the river as the Mississippi National River and Recreation Area and the falls are part of that area. Minnesota Department of Natural Resources has declared the river and urban area that affects it as a Mississippi Critical Area. Along the west bank of the river south of Minneapolis are palustrine waters important to the lifecycles of a number of species. Contours and the protected area can be seen in Figure 4.3.

The Twin Cities can count on very windy conditions in general. Expected precipitation is over 29 inches per year, however most of that precipitation is in the form of snow rather than rain. The area is considered a USDA planting zone 3. Native plant species were available from Minnesota DNR. The following description is from their report:

“The St. Paul Baldwin Plains and Moraines, the subsection on the east edge of the study area, consists of Superior Lobe end moraine with loamy soils on the north edge and a series of outwash plains with sandy soils to the south. Presettlement vegetation was variable, ranging from forests, oak savannas and prairies on uplands to a variety of wetland types in basins and floodplains.”

City Infrastructure

Utilities are standard centralized systems for most of the city requiring power grids and piping. Electric, phone and cable are transmitted on poles. Natural gas is piped. However, the city has made significant progress on greening the city through innovative programs

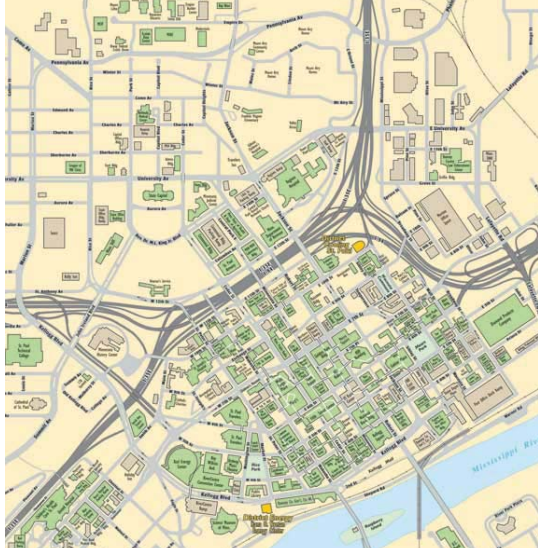


Figure 4.4 Energy District, St. Paul

sponsored by both the city and commercial entities. The city and region have been introduced to the ethos of sustainability as a way of preserving the environment through The Science Museum of Minnesota.

“The Science House is located in a 1.2-acre Science Park on the Mississippi Riverfront in downtown Saint Paul. The zero-energy-consumption Science House contains:

- A solar-powered classroom
- An 8.4 kW photovoltaic laminate on standing-seam steel roof
- Passive solar design
- Geothermal heat pump
- High-efficiency south-facing windows

EarthScapes and WaterScapes, in the back yard of the Science House introduces the public to landscape processes, river dynamics, ground water, biodiversity, ecosystem productivity, horticulture, renewable energy, and energy efficiency.” (City of St Paul n.d.)

The City of St. Paul has an innovative heating and cooling system for a large section of the downtown area including about 300 homes that is publicly owned and includes a power plant and bio-mass system. The district is illustrated in Figure 4.4 and the power plant in Figure 4.5.

“District Energy owns and operates the largest hot water district heating system in North America. It has produced energy from renewable sources at a low cost for commercial and residential customers in Saint Paul since 1983. The service covers 80%



Figure 4.5 Energy District power plant

of buildings in downtown Saint Paul and adjacent areas, including the State Capitol Complex, all downtown city offices and 300 single-family homes... The hot water district heating system is twice as efficient as the previous steam heating system in downtown Saint Paul, heating twice the square footage of building space with the same amount of fuel.

District Cooling began providing cooling service in 1993, and today serves about 60% of the buildings in downtown Saint Paul, while continuing to expand its service area. System reliability exceeds 99.99%. The closed-loop distribution system eliminated the use of groundwater and chlorofluorocarbon (CFC) refrigerants in heating and cooling. Two chilled water storage tanks store water produced at night, using off-peak electricity, for daytime distribution to district cooling customers. Chilled water storage increases system efficiency and reliability, improves regional air quality, and reduces regional peak electric demands.

A combined heat and power (CHP) plant located adjacent to the facility is fueled by clean wood waste - a form of biomass, a sustainable, renewable energy derived from plants and other organic matter.

Saint Paul's CHP Plant is the largest plant of its kind serving a district energy system in the US. The plant simultaneously produces heat and 25 megawatts of electricity making it more than twice as efficient as conventional electric power plants. The plant reduces District Energy's reliance on coal 80%, reduces particulate emissions by 50%, and reduces greenhouse gas emissions by more than 280,000 tons. Air emissions have been significantly reduced. In fact, 150 smokestacks, 50 cooling towers, and 300 chimneys have been eliminated in Saint Paul. Under a management agreement with the City of Saint Paul, Environmental Wood Supply operates the City of Saint Paul's Pigs Eye Wood Recycling Center - each year, 300,000 tons of wood waste from the recycling center is converted into biomass fuel for the Saint Paul co-generation facility."

Further steps in research have been taken in Energy Park. Although the research park is not located on the LRT, a strategy similar to the research or the downtown district could be employed for new development.

Hydropower is produced at an hydroelectric plant built by the U.S. Army Corps of Engineers and owned by the Ford Motor Company's Twin Cities Assembly Plant. It is located in the Highland Park

neighborhood of Saint Paul, along the lower banks of the Mississippi River. The power plant currently produces a maximum of 18 kilowatts of clean energy, of which the assembly plant uses about 13 kilowatts, enough to power 10,000 homes for a year. The rest of the clean energy is sold back to the grid, to Xcel Energy. The hydro plant provides \$4 million of direct benefit to the assembly plant each year. (City of St Paul n.d.)

Further steps taken by the city include:

- City-operated traffic signals use LEDs that save a substantial amount of energy
- In 2004, Public Works replaced 30-year-old Air Conditioner units at the traffic operations building with new energy-efficient units
- Public Works uses a computerized building management system that maintains proper heating and cooling temperatures
- All florescent lighting in the Public Works shop has been replaced with new, high-efficiency units which reduce power consumption
- The Division of Parks and Recreation reduces use of personal space heaters by encouraging staff to dress appropriately on cold days
- The old four-stage chilling system at Como Zoo's "Seal Island" was replaced with a new high-efficiency, variable-output chilling system" (City of St Paul n.d.)

Clearly there is both the interest and the political will to use sustainable systems and infrastructure in the City of St. Paul.

One area in which the city needs to expend some thought, energy and initiative is the combined sewer system. Stormwater is released without treatment to the river. When storm sewer systems are overburdened raw sewage is released with the stormwater. A lawsuit has been pressed against the city by a consortium of neighborhood and environmental groups. The Metro Council Watershed Coordinator Program was formed to look at and respond to stormwater issues on a regional basis to encourage management solutions across municipal boundaries.

Infrastructure specifically addressing transportation can be found below under that heading.

Regional and Global Economy

The economy of the Twin Cities was once primarily agriculture with the flour mills of the Crosby and Pillsbury Flour Companies. Railroads linking the cities to the east and to the great lakes shipping channels

were essential to the development of the cities. Eventually, the regional economy shifted to manufacturing and eventually corporate with management and services making up a large part of the economy. With fossil fuel costs rising rail roads may become a larger part of the economy again. Amtrak ridership through the twin cities has risen over the last two years. High tech and medical manufacturing will probably remain strong, if the workforce exists for employers. Education will be paramount to providing a workforce that can adjust with the needs of the employers. At present, employment opportunities in the twin cities include manufacturing, government, health care and social services, business and professional services, education and health services, high tech and information services, and construction. The light industrial area has seen a steady decline in the number of businesses located there. The stock yards located south of the river closed last spring. Major businesses headquartered in Saint Paul include Ford Motor Company, 3M Company, The Travelers Companies, Ecolab, Securian Financial Group Inc., Lawson Software, St. Jude Medical, Patterson Dental and Gander Mountain, a retailer of sporting goods.

Demographics

The Twin Cities have a 9.2 percent poverty rate, although the number on the St. Paul side of the river is nearly twice the rate on the Minneapolis side. Minneapolis has a generally higher average wage and a more reasonable cost of living than the rest of the US. Median household income in Minneapolis is \$47,111 compared to \$38,744 in St. Paul. St. Paul is below the US median income of \$46,071. Comparison here is based on figures for 2005 from the census.

Since 1980 the Asian population has increased from <3,000 to >35,000, many of them Hmong from Thailand. The number for African-Americans has increased from 13,000 to 34,000 although this number may include Somali immigrants. The Hispanic population has grown from < 8,000 to > 20,000. (pg 10, St. Paul City Plan) The census lists Native Americans as being about 1 percent of the population, but this group is traditionally undercounted for a variety of reasons including a new designation on census material. In the 2000 census respondents were able to choose “American Indian and Alaskan Native” or “American Indian and Alaskan native and another race.” When the numbers are put together, just under 5500 Native Americans

live in the City of St. Paul and over 33,000 live in the metro counties area. (<http://quickfacts.census.gov/qfd/states/27/2758000.html> and www.cdf-mn.org)

Schools and Libraries

When an area is chosen for the design information will be added to the mix to determine if there are ways that this plan for development can facilitate current and future education needs.

Existing and Proposed Land Use

Land use maps show fractionalized neighborhoods, under-used land and brownfields, and low-density areas of light industry immediately adjacent to housing.

Transportation

The city has commercial rail lines running generally east-west crossing University Avenue on an overpass between Raymond and Fairview stations. The Amtrak station for the twin cities is located just north of University in a light industrial area. The rail lines have a round house and repair center south of University and north of the interstate. A commuter rail line runs to northern suburbs from downtown St. Paul. Union Station in downtown St. Paul will be a multimodal center for bus, light rail, commuter rail and commercial rail lines. That center will become a gateway for the twin cities.

The main international airport is located southwest of downtown Minneapolis and is a terminal station for the Hiawatha LRT line. The Metrodome is the other terminal station for that line. There is another small airport just south of St. Paul.

Bus lines connect with the LRT at the Metrodome and Union Station multimodal centers as well as intersecting at various points and running contiguously with the LRT along University. Major connections between bus lines and LRT will be at the University Station and the Snelling station on University Avenue as well as the terminal stations.

Streets and roads are generally on a grid system except where interrupted by topography and the interstate system. I-94 runs generally parallel to University Avenue to the south. The interstate disrupted neighborhoods when it was built and continues to be a sore point for residents. Vehicular, bike and pedestrian traffic must be routed on a limited number of overpasses. Truck traffic from the light industrial area is mixed with connector traffic for access to the interstate and further serves to fractionalize neighborhoods. I-35

crosses the LRT route close to the university. I-35 is now infamous as the bridge that fell into the river during rush hour in August 2007.

Parks and Open Space

Biking, skateboarding and skiing are major recreational interests in the twin cities. Bikeways exist in St Paul, but are often unconnected, either with each other or with major recreational areas. Park and open spaces are dotted throughout St Paul and are generally unconnected to each other. Larger green spaces are separated from the area along the LRT east of Raymond Station by major highways and rail lines. There is an area 17 miles long on either side of the Mississippi River that has been designated as the Mississippi National River and Recreation Area that could have better connections to the LRT and its users and this has been expressed as an interest in the St Paul Visioning document. Bikeways can connect with the Grand Rounds bikeways of Minneapolis in the MNRRRA. The bikeway would then cross the Ford Bridge which has been updated to make bike and pedestrian use safer. Skateboarding is becoming more popular. As far as I can tell, there are no parks or other places in the city designed for skateboards. So, of course, kids use parking garages and other public places that may be considered a nuisance. Mountain bike trails are well-used in the metro area, but there aren't any in the LRT area. There are a number of documents that list better bike/bus connections as a desired enhancement of any transit plan.

Core Housing Needs

Core housing needs for St. Paul have been identified by the city. The U.S. Department of Housing and Urban Development defines housing as affordable only if it costs a household no more than 30 percent of its gross income. While the recent Census report demonstrates high rates of homeownership among Minnesotans and residents of the Twin Cities, the report also shows dramatic increases in the number of households that pay 30 percent or more of their income on housing. Thirty-three percent of owners with mortgages, 13 percent of owners without mortgages, and 47 percent of renters in the Twin Cities metro area spent 30 percent or more of household income on housing. The census reports 8.1 percent of renters are living in over-crowded conditions for their household. More young adults, about 9.5 percent have doubled-up to

afford housing. In households in which the head of the household is between 25 to 44 years old, more likely to be households with young families, 1 in 10 are in housing that "severely stretch their budget without meeting the size requirements of their families." (www.metrocouncil.org/planning/housing/HousingNeed.pdf)

History of Resources

As far as we know, the first people here were the Hopewell, ancestors of the Dakota. The Native American population extant in the area is primarily Dakota and Ojibwe. The Ojibwe, who were native to Maine, were moved steadily west as European settlers, eventually the U.S. Government, wanted the areas they were living in. French trappers and explorers followed the Mississippi north from the French holdings, the Louisiana Territories and from the east through the Great Lakes.

Lumber was the first major product from the area. Railroads brought more settlers including farmers. Flour made from the wheat raised by those farmers became the next major product of the area. Again the river supplied the power to the mills for producing the flour. Eventually the first hydroelectric dam was built on the river by the company that became the current major provider of electric power, X-Cel Energy.

The Place of Art in Local Culture

The arts in the Twin Cities have received major attention and financial support for some time. The Comprehensive Plan estimates the arts bring \$269,000,000.00 into the local economy each year. Public Art St Paul has commissioned, produced, and funded myriad projects in public spaces from the design of the space itself to the furnishings. The Hiawatha Line Stations reflect that interest. Stations on that line have been designed by local artists and that should continue on future station design. Programming includes a lecture series, artists in residence, school and community center programs, Western Sculpture Park and more. "The Language of Urbanism" is a 6 mile long work in progress by artist Wing Young Huie. "...this gallery of 360 photographs will reflect the complex cultural and socioeconomic diversity of neighborhoods along Saint Paul's future Central Light Rail corridor."

"St Paul is the Arts and Culture Capital of the Midwest, with over 52,000 theater seats, three

world class museums, and a vibrant grass roots arts community. Each year 7 million visitors come to see world renowned groups like the St Paul Chamber Orchestra, national treasures like Penumbra Theater Company, and a music scene ranging from Mint Condition to Tapes and Tapes. A cluster of warehouse renovations created the country's largest concentration of live/work space for studio artists. Saint Paul has a literary history as rich as any, with giants from Fitzgerald to Keillor."

(City of St Paul n.d.)

Draft Environmental Impact Statement

This document includes land use, zoning and social impacts for the neighborhoods along the LRT.

Metro Council Regional Development Framework

St. Paul Comprehensive Plan and Future Visioning

St. Paul Central Corridor Development Strategy

A quick and dirty summation of considerations from the above documents: The City of St. Paul considers under-used land and brownsites as a resource for development. Business development and clustering is a valued idea. Amhoist, Whirlpool and several large breweries left St. Paul in recent years. Travelers, Ecolab, Minnesota Life, and Lawson Software are still located downtown, but the large base of service businesses that were vibrant in the 80's is gone. Many businesses have located to other business centers in the metro area. (City of St Paul n.d., 9,30,31)

The Central Corridor Overlay District was established to facilitate implementation of the Central Corridor Development Strategy chapter of the Comprehensive Plan, and to promote the redevelopment of the area into a mixed use urban district along the planned Central Corridor light rail transit line. The new regulations replace the Central Corridor Interim Overlay District and were approved by the City Council on April 23, 2008.

All of the previous information is collected as a part of site analysis. This information, particularly the information from the planning documents will guide the design development. On the framework diagram this body of knowledge is represented by the area labeled findings.

RSVP Cycles

information from site analysis and the planning documents is synthesized through the theory of *RSVP Cycles*. The result is added to findings.

background pg 11-13

RSVP Cycles

The first analytical theory I will use for synthesizing information is Halprin's "RSVP Cycles". (Halprin 2002) I can use the theory in a number of ways. First, I want to look at the information I have compiled through what are really multiple threads in Halprin's idea. I know that at a later point in design development I will probably want to think at the site level about RSVP Cycles, but right now I want to look at a larger scale because I think that approaching the information this way will give me a better idea of the overall goals of the Metro Council as well as more specific goals of neighborhoods along the LRT. In the Process Diagram II labeled Figure 4.6 *RSVP Cycles* can be seen in relation to the design process at this point.

Resources

The physical inventory has been gathered through site analysis including History of Resources. Human resources include the constituents, including the advisory committee mentioned in the project description, in the Central Corridor and represent business owners, developers, residents, public and private institutions, government officials at multiple levels- federal, state and municipal- and their agencies. The project objectives and expectations have been gleaned from the planning documents, city and neighborhood websites and my personal goals. In this model, the information from this theory will be added to the findings as a body preceding *Site Thinking* and identifying the site. One aspect that immediately stands out in this analysis is that, although the St Paul Comprehensive Plan

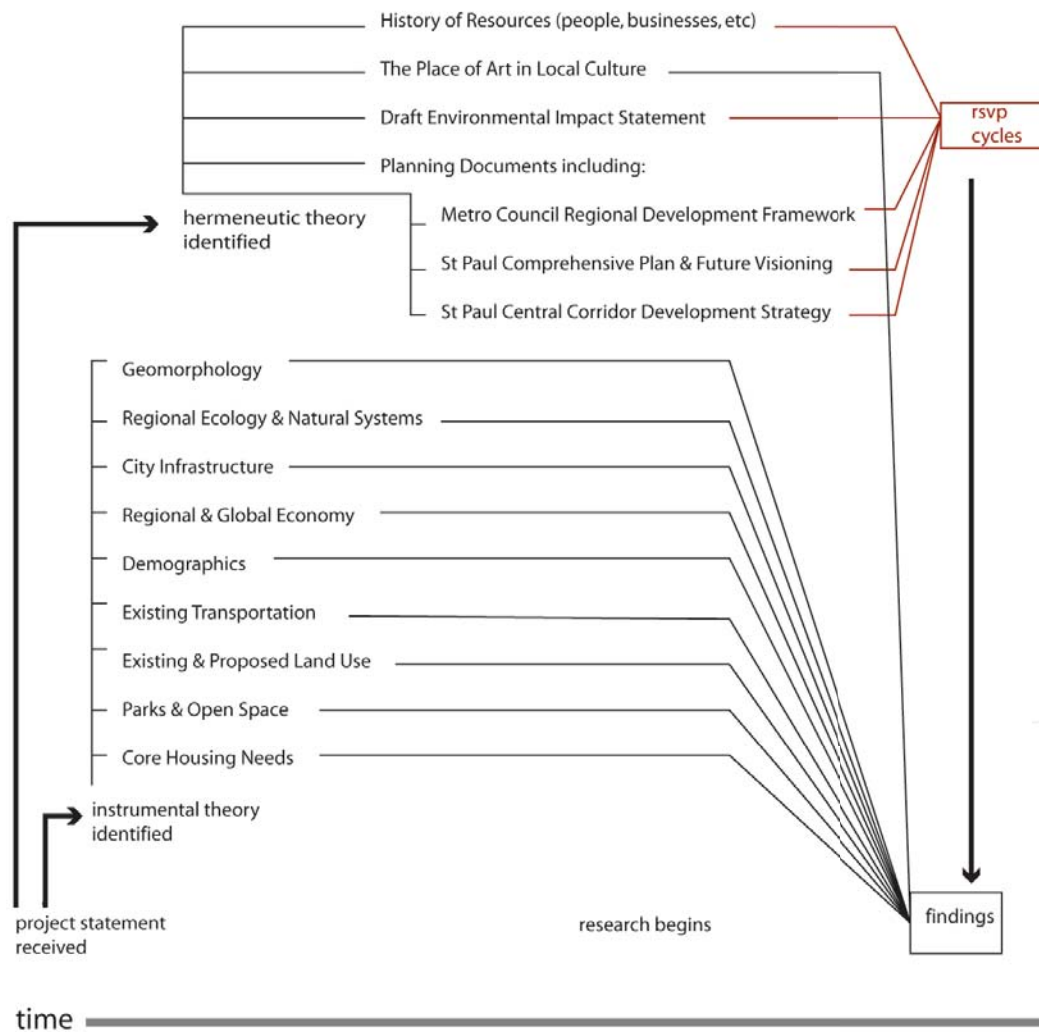


Figure 4.6 Process Diagram II

describes available water supply for the increased water demands of an assumed greater density, if you compare per capita use now with the volume needed for the same per capita consumption by residents if this plan succeeds, current supply levels will not be sufficient. Some people in city government realize this and there is interest in recharging groundwater now with the hope that the volume needed in the future city imagined in the Comprehensive Plan will be available.

Score

The Metro Council has orchestrated the participation, events and activities that visibly delineate generate and sustain the project. The Community Advisory Committee is one step the metro council initiated as a part of the decision-making process.

Valuation

The Planning documents have been produced through a variety of means to incorporate the people's feelings and belief systems, as well as community needs and desires as an integral part of the process. They will be integrated with a decision-making process that respects, acknowledges and incorporates these values.

Performance

In this design process the product is a design for a mixed use area directly contiguous to the LRT and (hopefully) the ongoing development of which includes the product and its evolution over time; this component of the Cycles anticipates an organic, non-static solution; an environment or result that is defined by those who use it, experience it, and appreciate it.

Initial Determination of Site and Red Armature

Based on the information gathered and my personal goals I have decided to identify the area around the Fairview Station as my site. I will design the Fairview Station as a mixed-use town center. In tune with the idea of designing for the whole, I will use the LRT as one armature of the design. The armature will be identified on drawings in red, and so referred to as the red armature. It will function to support transportation linking light rail, truck, bus, car and pedestrian circulation. It will serve business needs as the link between light industrial, small commercial, retail and office centers. It will serve social needs as the link between jobs, schools, libraries, health care, social services and

recreation. I have already chosen the area between Transfer Rd west of Fairview Station and Aldine St on the east as the area of the LRT development that I want to use as the focus for my design, in terms of site thinking this is my loosely defined domain of design concern. I will refine that area as I continue working. In the following illustrations the LRT is shown in the context of the linkages it represents. The first map, Figure 4.7, shows links to other transportation. The second, Figure 4.8, shows link to business interests. The third, Figure 4.9, illustrates links to social needs and structures.

Process Diagram IV in Figure 4.15 shows the design process through the identification of the LRT as the red armature.

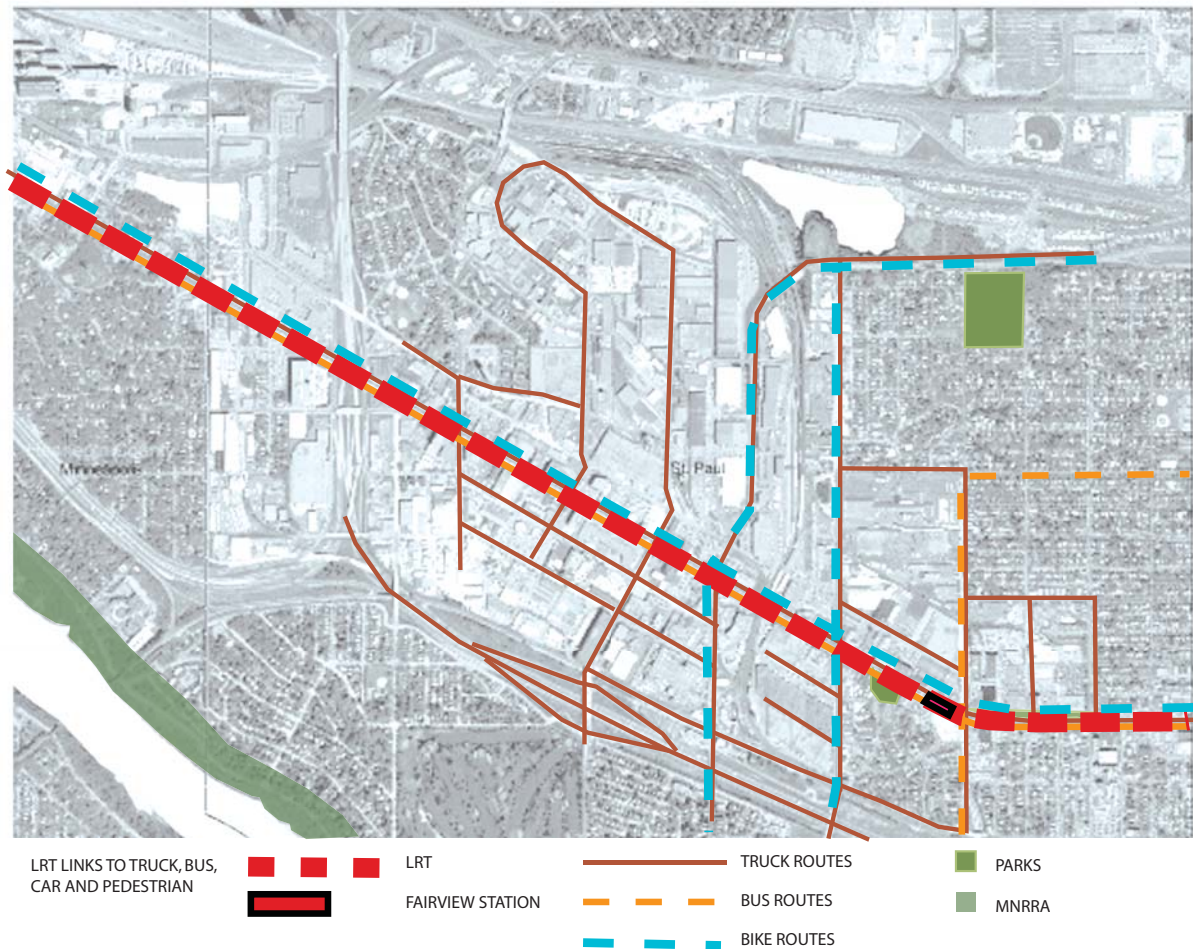


Figure 4.7 Identification of LRT as armature and links to transportation

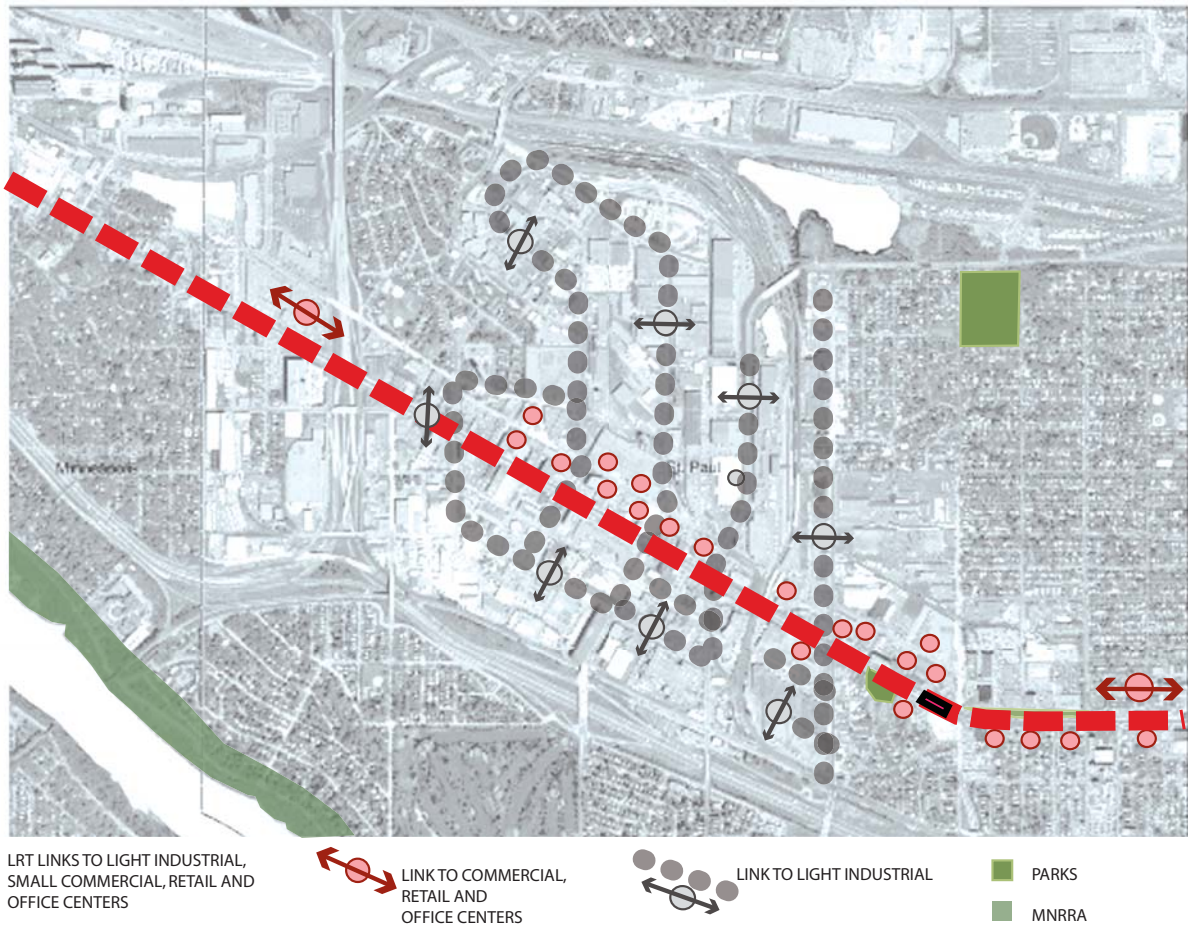


Figure 4.8 Links to businesses

Further Information added to findings that are pertinent to the domain of design concern.

Geomorphology

Topography slopes from the northeast to the southwest across the LRT in this area. The high point of the LRT is around the Hamline Station with a shallow slope west toward the Fairview Station. Looking at soils and contours I think there is a terminal moraine running north-south that crosses the LRT between Raymond and Fairview Stations where the railroad tracks cross University.

Schools and Libraries

The Merriam Park Branch of the library is located south of University and I-94 on Marshall at Fairview. There is a daycare and after school programming at

the YMCA on University just east of Fairview. There is an area of housing called Episcopal Homes on the southwest corner of Fairview and University. There is a high school for sobriety and the school of bartending on University toward Raymond. The St. Paul Schools Homeless program is located at University and Transfer. There is also an alternative high school just east of Fairview and just north of University in the light industrial area. Housing stock to the east and north of Fairview Station is in good condition.

Demographics

The Hamline-Midway neighborhood represents one-third of the tax base for the city. Most of the neighborhoods between the Raymond Station and downtown St. Paul are classified as mixed race or predominately

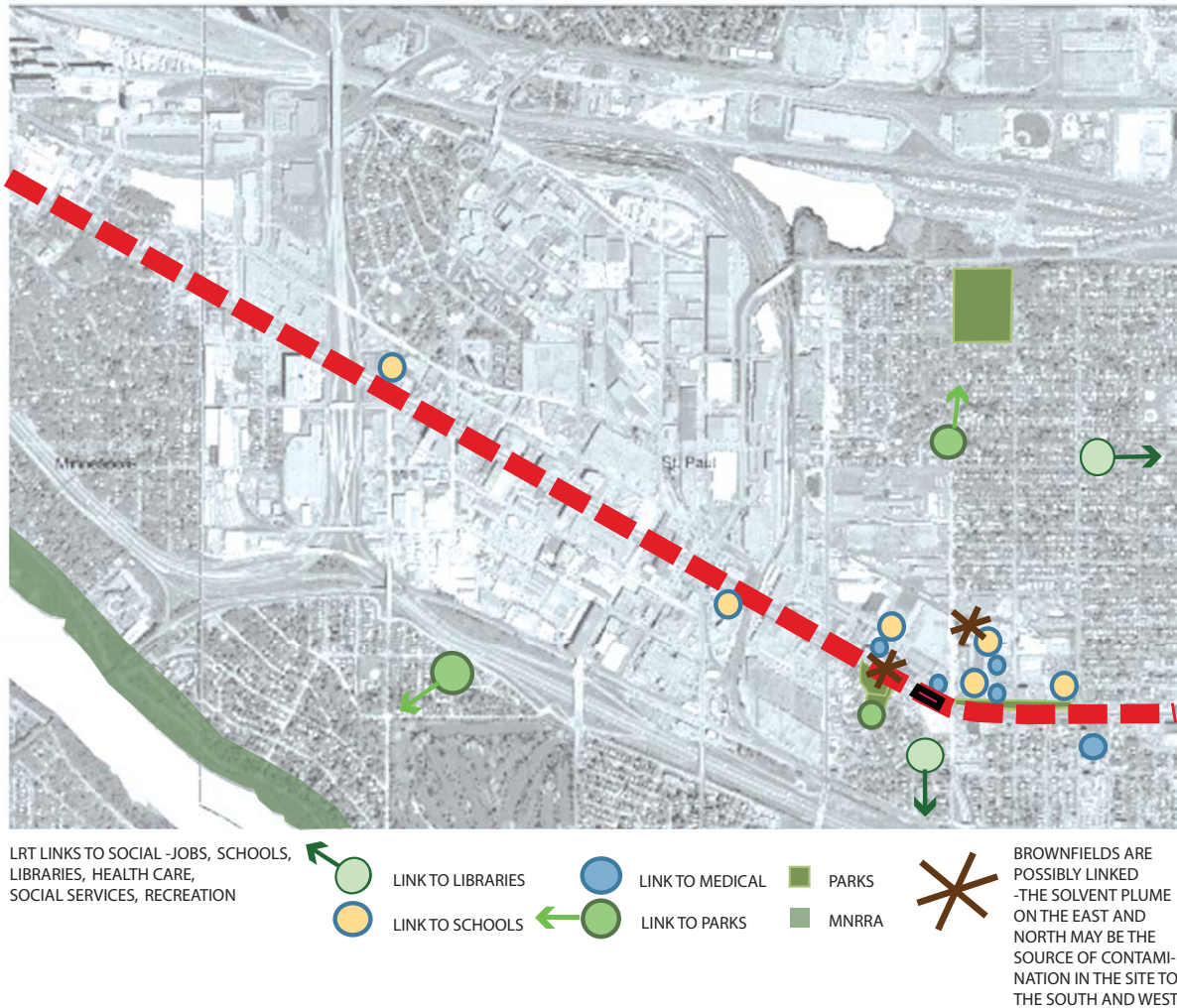


Figure 4.9 Links to social needs

minority neighborhoods and 75 percent of all households are designated transit needy. There are a number of health care facilities that the LRT will help people to access along University Ave.

Parks and Open Space

The Merriam Park Recreation Center is immediately adjacent to I-94 directly south of the railroad round house. There are additional parks and open space near the north west corner of the Hamline-Midway neighborhood, on the north side of University east of Fairview and on the south side of University at Fairview. In the Metro Council planning document University Avenue itself is imagined as a green corridor closer to the idea of a boulevard.

Existing and Proposed Land Use

The Midway district has a new development of big box stores, but is not pedestrian friendly and is based on an outmoded suburban-like design. The western end of the Midway-Hamline neighborhood has light industrial uses back to back and sometimes next door to housing. These are not generally neighborhood businesses, grocery, dry cleaning, etc, but the businesses there may serve small businesses and other light industry businesses in the area to the west of the train tracks. Retaining these businesses, but not necessarily where they are now, should be a priority. New buildings or proximity to transportation may serve them better than the current space.

Brownfields in the area include one medium priority and one high priority site. The building at 1919 University Avenue is the location of the medium site, designated for solvents found in soils and groundwater. The building at 584 N. Fairview is designated as a high priority site for a chlorinated solvent plume that may be the source for the brownfield at 1919 University Avenue.

Site Thinking

as a strand of theory has three threads:

--Vocabulary

--History

--Manifestation and Derivation of Site-Related Practice

background pg 10-11

Site Thinking

Site Thinking- as a strand of theory has three threads. (Burns and Kahn 2005)

Vocabulary

Site must be redefined in terms of the constructs that form the narrative of site.

History

The orthodoxy of describing site as simply the project itself, sometimes including the directly adjacent physical context, removes the site from the cultural “thickness” that surrounds it. There are innumerable narratives at work in the site that form this thickness and intricacy.

Manifestation and Derivation of Site-Related Practice

I have a lot of information on the Twin Cities. When I decide what station I want to work with I will need to do more research, not only a continuation of the research I have done, but research that gives me some idea of what a subjective experience in the area is like. The planning documents are very helpful in establishing community goals. I will look for more information on aesthetics, aspirations, the way people here want to live.

One of the ideas of site thinking is shown in diagram form in Figure 4.10 and analogically in Figures 4.11 and 4.12. That idea is expanded diagrammatically in Figure 4.13 and analogically in Figure 4.14.

Site Thinking

defines a site as a grounded physical condition having three distinct geographic areas:

1. area of control
2. forces that act on the site without being confined
3. area of effect

background pg 8

3 geographic areas:

1. area of control
2. forces that act on the site without being confined
3. area of effect

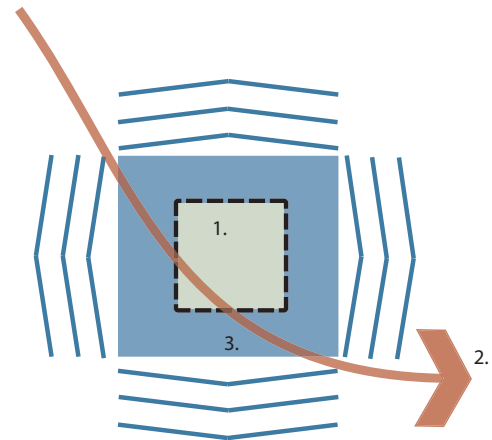
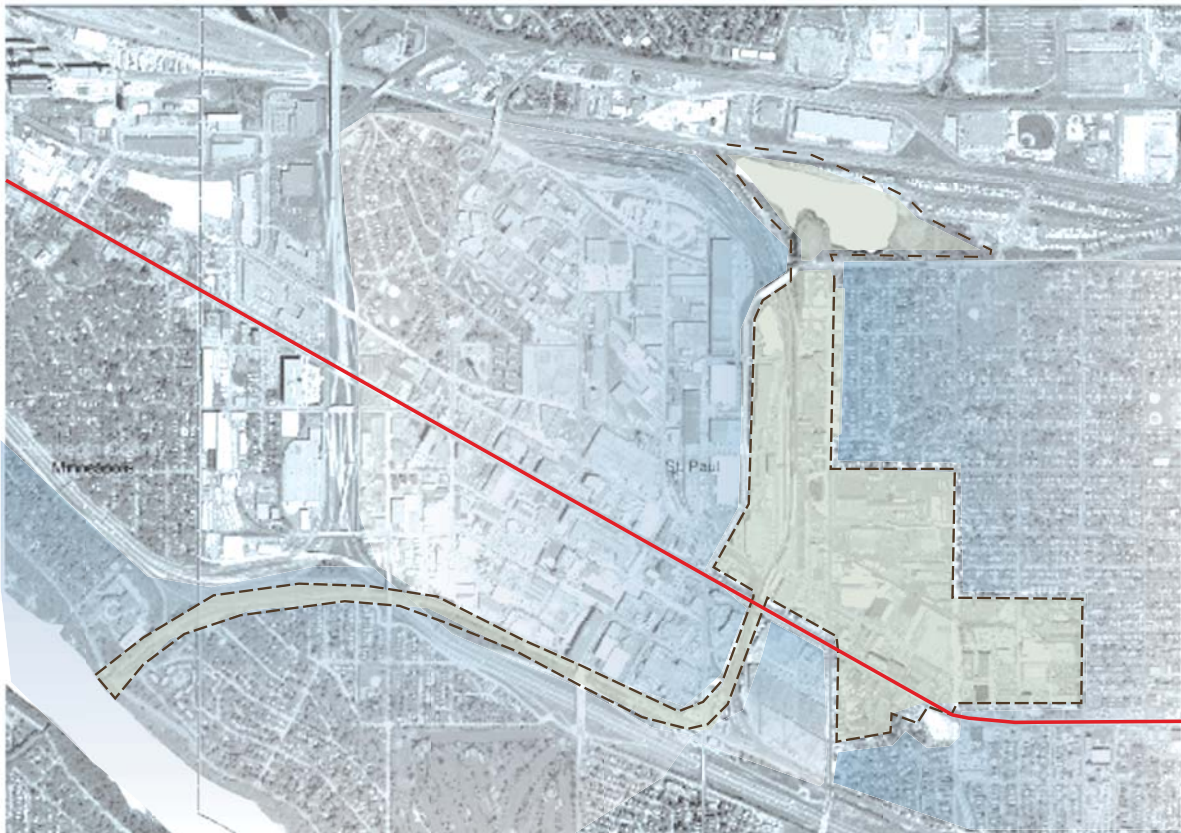


Figure 4.10 Three geographic areas



DOMAIN OF DESIGN CONCERN  AREA OF CONTROL  AREA OF EFFECT

Figure 4.11 Domain of design concern I

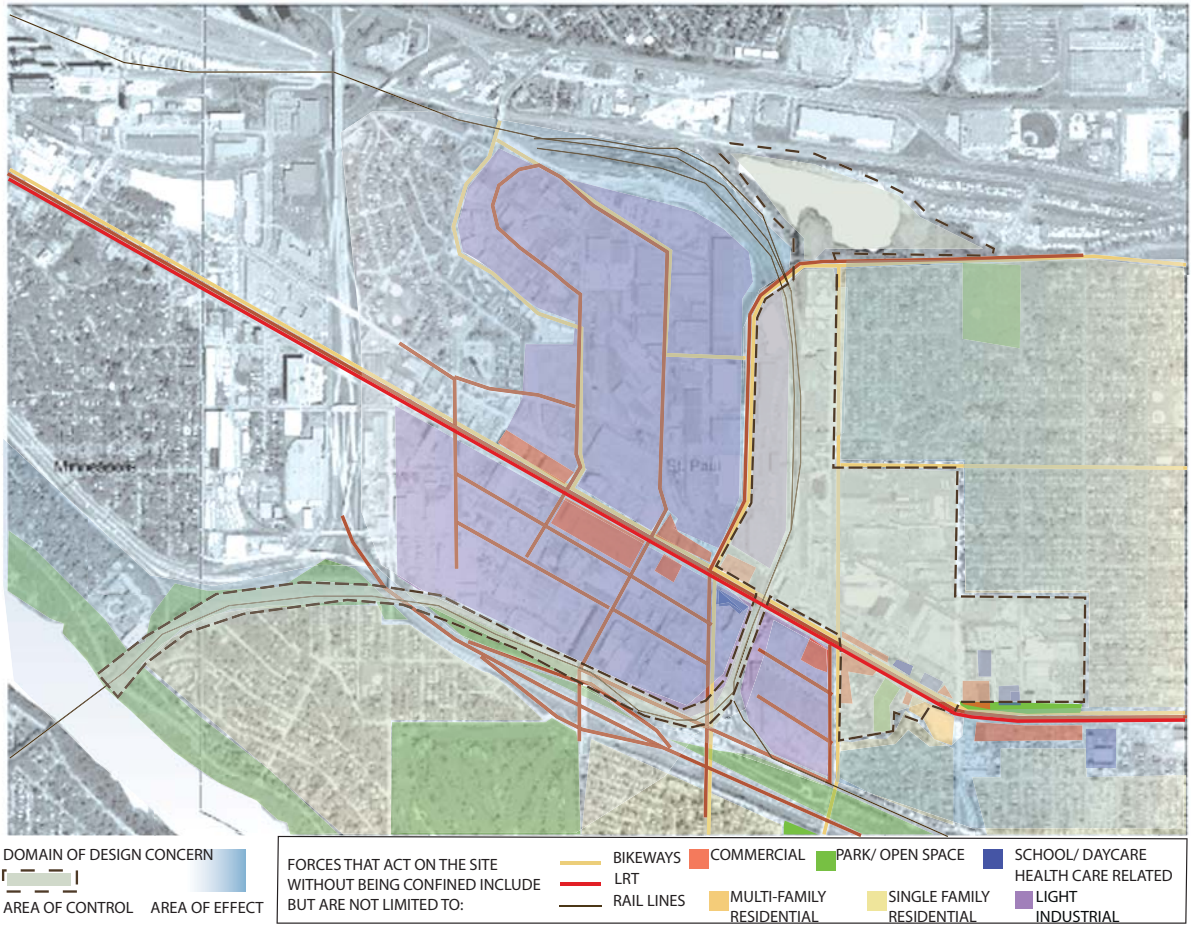


Figure 4.12 Domain of design concern II



Figure 4.13 Domain of design concern III

Site Thinking

the conceptual construct of the site contains two divergent spatial ideas:

1. a physically specific place
2. a spatially and temporally expansive surround

background pg 9

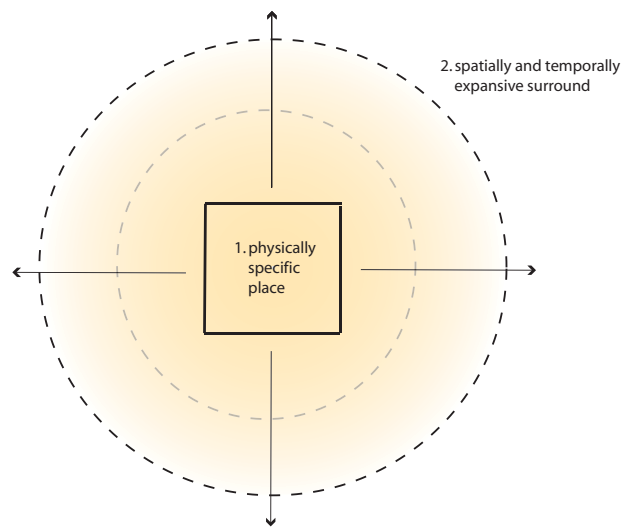


Figure 4.14 Spatially and temporally expansive surround

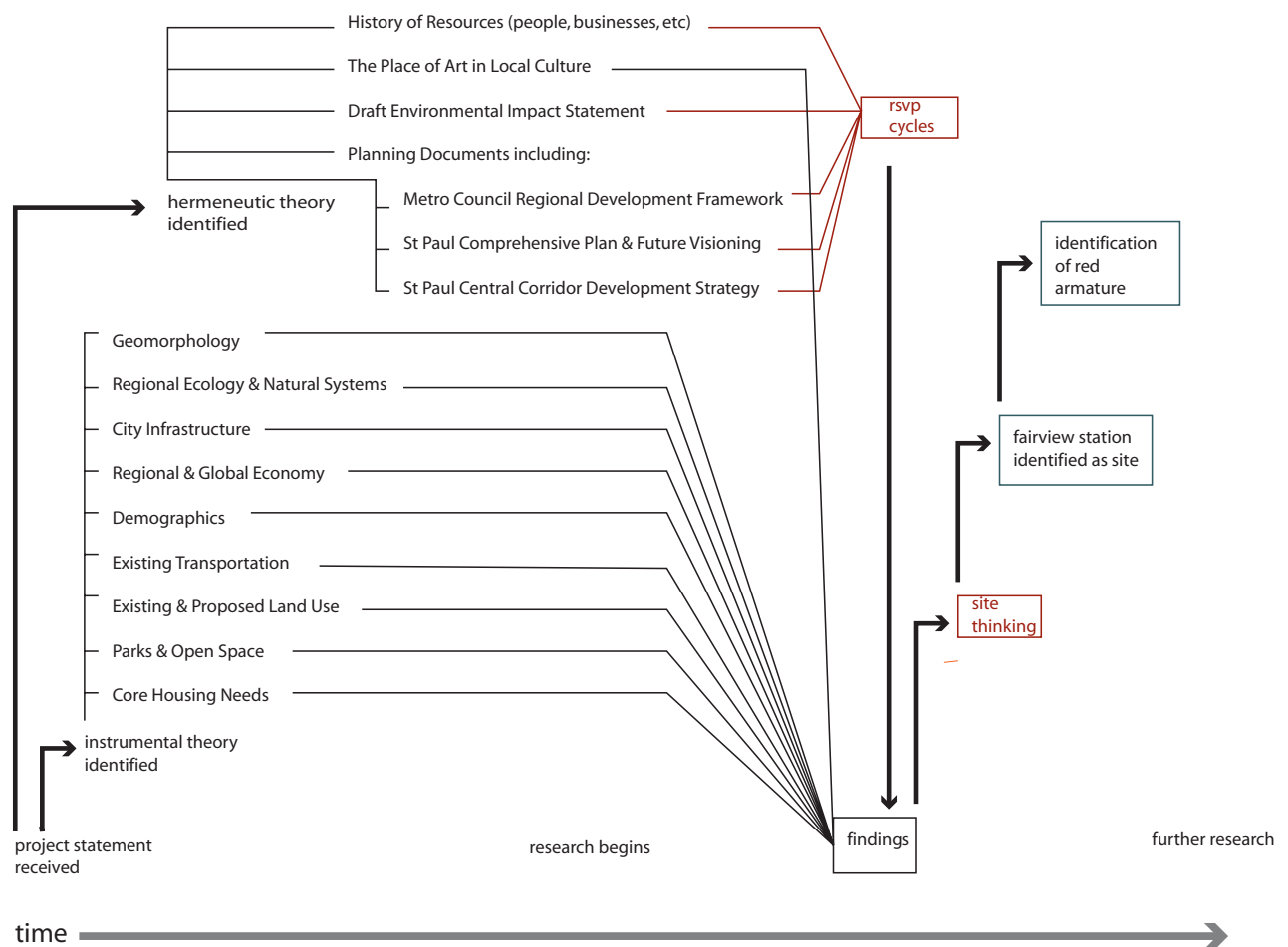


Figure 4.15 Process Diagram III

Core Housing

Areas east of the Raymond Station currently house a population that eight out of ten lower income families pay more than they can afford for housing.

Ecology and Environmentalism as Ethos

Green Armature and Definition of Site

I want to address the issue of recharging groundwater as part of necessary infrastructure improvements for the area. To that end, I am thinking about how I will deal with stormwater. I can clean stormwater and provide areas through the site for infiltration. The stormwater system should be a functioning part of the urban nature that is one narrative of the site. It should also be an amenity in the site. All stormwater moving through the site will be cleaned through riparian corridors before being released to the Mississippi River. The city has been sued for releasing untreated stormwater into

bodies of water including the Mississippi River. Relieving pressure from the stormwater system and converting that part of the system to a green strategy will help to alleviate the problem.

In looking at the contours I can see there is a general slope from the Hamline-Midway neighborhood southwest through the site toward the river. I cannot find piping information from the city that shows where stormwater from the area is routed, but I can assume it is toward the southwest.

There is a pond at the northwest corner of the Hamline-Midway neighborhood that is directly north of the Fairview Station. I will identify a green armature that will run north-south crossing the red armature of the LRT. The green armature will follow the ridge of the

moraine. The first function of the green armature is to manage stormwater as described above. This green armature can be the link between parks both north and south of University. This green link will also provide a better crossing over or under I-94. Identifying this green armature will help to design for the whole. I will continue to test the idea of the armature to assess further functions the armature can serve.

The first conceptual drawing, shown in Figure 4.16, brings the green armature south of I-94 to the park and school grounds immediately south of the highway and through the Merriam Park neighborhood to the falls above the river. It is difficult to find a good way to route any volume through this area without disturb-

Ecology and Environmentalism as Ethos

the spirit of ecology based in science. The spirit of this design is Urban Nature and being based in the science of ecology should be approached through theory. background pg 15

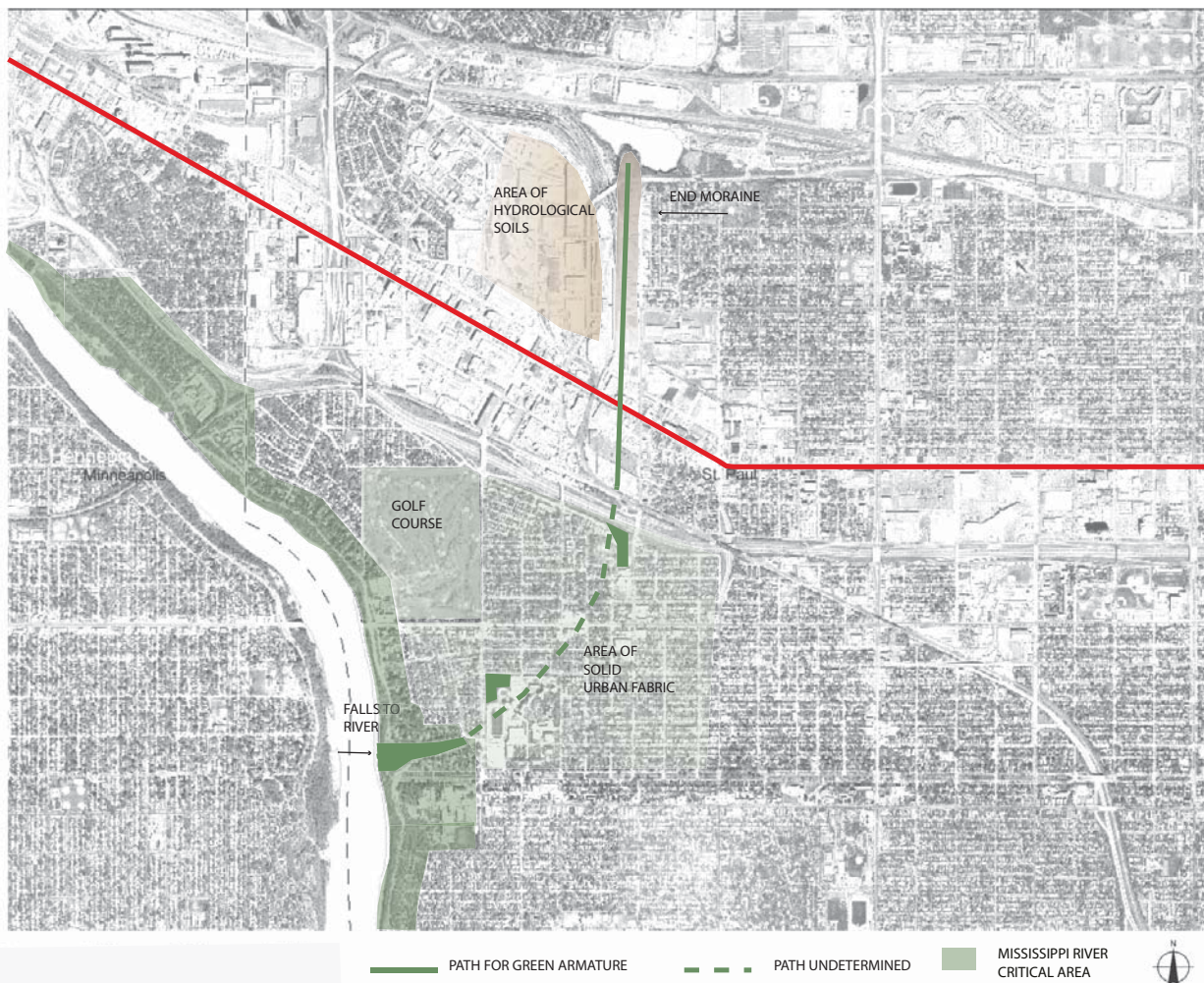


Figure 4.16 Initial identification of green armature

Synchronous Reading of Histories

relationships beyond physical proximity, but connected to the social forms that influenced their making.

background pg 13

ing solid housing stock and rending the urban fabric. I could pipe water, but I am also concerned that the amount of water I would be adding to the falls may be destructive to the falls themselves.

Synchronous Reading of Histories Geomorphology, Resources, and City Infrastructure

I reviewed the information in Geomorphology and Resources and I am staggered by the history of St. Anthony's Falls on the Mississippi. The area on either side of St. Anthony's Falls is where the twin cities began. Water power harnessed by a lumber mill on the river provided the link between the timber being cut and transportation on the river. When a second mill on the east side of the river increased the velocity of

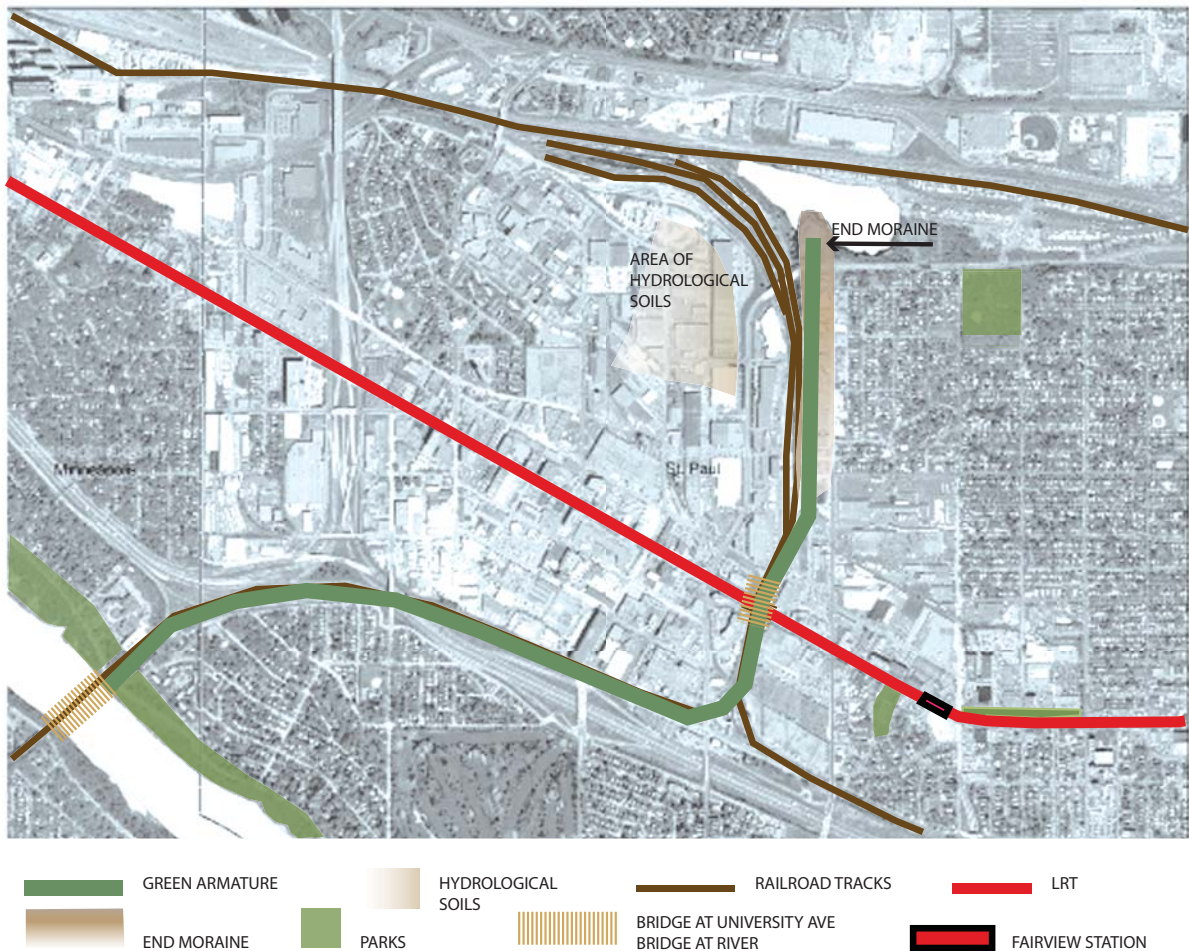


Figure 4.17 Aligning the green armature with city Infrastructure

the water moving over the falls the thin limestone shelf cracked exposing the soft sandstone underneath. In ten years the falls moved 26 feet upriver. The falls were reinforced and the second mill was removed. I am concerned that any increased volume of water to the falls in the Merriam Park neighborhood will have a similar effect on the falls there.

Moving the Green Armature- Alignment with City Infrastructure

I want to move the green armature from the Merriam Park neighborhood, but I have to find a new route, with room for a riparian course, to the river. When I review the maps and take a look at Google Earth I realize that the railroad tracks from the round house at I-94 take a western route paralleling I-94 before they rise

above ground level to cross the river. Below the tracks is open space and the MNRRRA. I check slope and I can see that I can route the water along the tracks, through the open space to the river. There is enough room for a riparian corridor and more. I can use the green armature to link parks, bikeways, pedestrian networks, habitat networks and provide an improved viewshed for the development that is a part of this design. The new route is shown in Figure 4.17.

The design process to this point is shown in Figure 4.18.

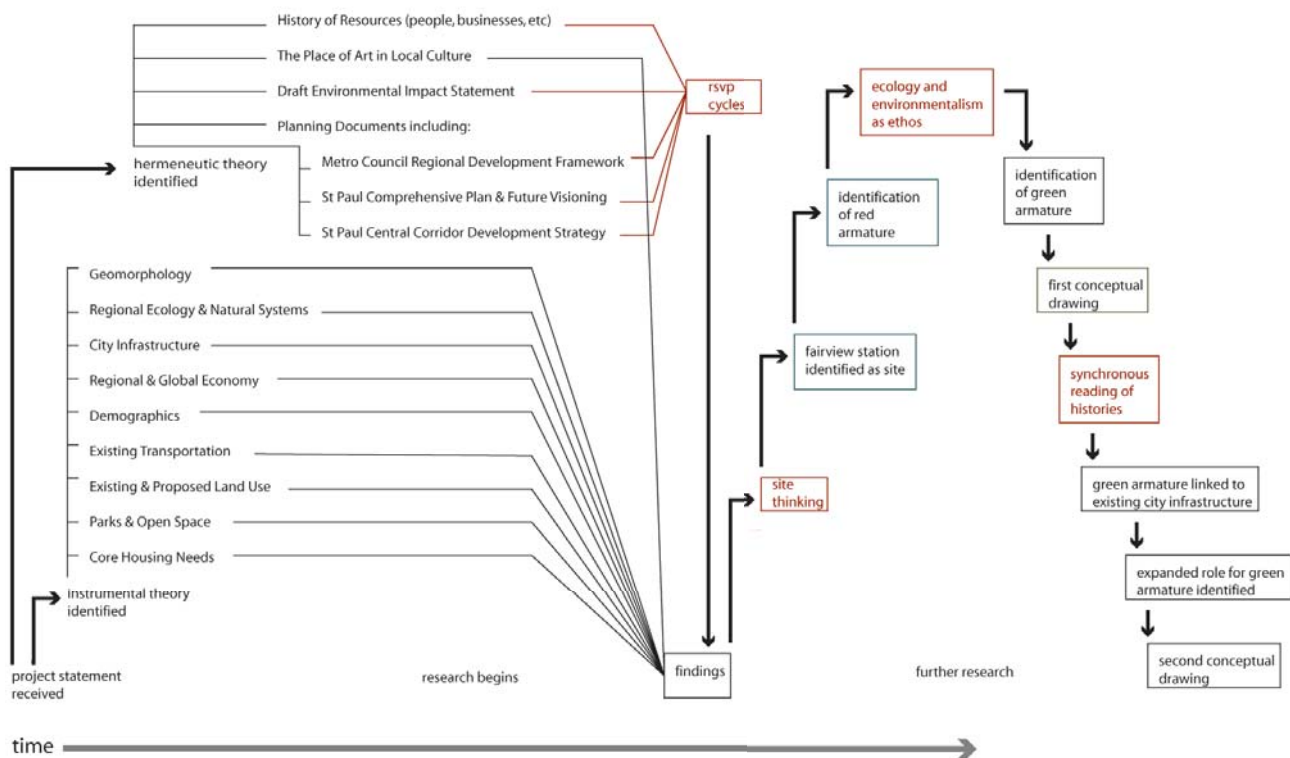


Figure 4.18 Process Diagram IV

Building Community from the Inside-Out (Relph 2002, 103)

Developers have to be able to make money from their investment. Businesses need sufficient street traffic to be viable. The city needs more affordable housing and Hamline-Midway neighborhood is an important segment of the city's tax base. Both the Metro Council and the St Paul Comprehensive Plan have identified a mixed-use town center as the best way to address those needs. To make that work the area has to be attractive to very diverse constituents. There are lots of examples of development that caters to a well-heeled crowd that can afford upper-end condos and will support the sort of daily businesses that serve their needs. At some point in the history of those developments there is an outcry from people being priced out of their neighborhoods. In some cases, there is reticence on the part of the targeted population to invest in a home in a neighborhood that seems risky, both personally and financially. To attract people that perceive themselves as

very different from each other and businesses that have specific targeted client bases that may also be quite different from each other and bundle these needs into a package that offers a positive experience takes faith and balance. This development needs to foster ownership of the place and a sense of community. What design elements provide a sense of safety? What public spaces foster community? What are the extrinsic components that can be incorporated into the design that can foster community and so will become a part of the intrinsic value of the place. I think there needs to be a blend of public, quasi-public and private spaces. There need to be public spaces that allow for programming of interest to a diverse public, as well as quasi-public spaces that afford safety- I am thinking small children, taking your dog out at midnight without necessarily being on the street, the elderly- and spaces for privacy- reading the morning paper in your nighties. Site Thinking and RSVP Cycles have helped me set these questions.

The strategies for design work are illustrated in Figure 4.21. The diagrams in Figure 4.23 illustrate the synthesis of ideas manifested in the design.

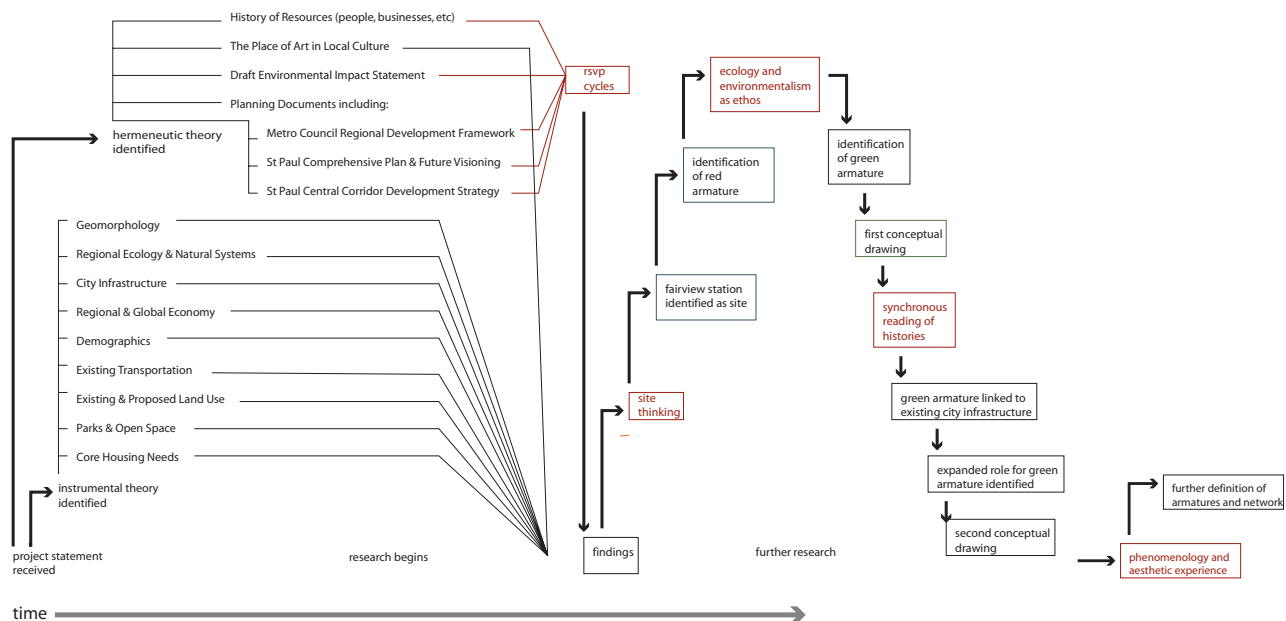


Figure 4.19 Process Diagram V

Phenomenology, Aesthetic Experience, and Ecology

metaphysical understanding
and creating the tie to the
natural world and processes.

background pg 14-15

Systems of Order

“...repositioned site concerns
challenge the modern divide
between rational site analysis
and intuitive, creative conceptual
design: design as site
interpretation, and site as program,
not surface for program.”

background pg 15-16

Vectors of Influence:

Phenomenology, Aesthetic Experience, and Ecology

I test this idea of the green armature against the expressed desires of the constituents. The armature serves the interest of linking parks, bikeways and pedestrian networks, all of which are identified as quality of life goals for the Central Corridor project which directly address the aesthetic experience of this domain. As a designer, my intended experience of this place is a dynamic urbanism, not separate from the idea of nature and not simply enhanced by small pieces of nature imported to the city, but instead a fully functioning urban nature that facilitates the needs, requirements and regulations of city life. In fact, I think I have a title now for this design, Urban Nature.

The armatures cross each other between the Fairview and Raymond Stations, but just as the red armature functions carry into the surrounding area serving business and other economic and social networks, the green armature functions also extend into the surrounding area. Functions of both armatures reach into the neighborhood tying them together and forming a network of the two. The interlacing of these armatures provides multiple opportunities to affect a positive experience for people who live, work or pass through the area. The ideas of phenomenology and aesthetic experience are introduced at this point in the narrative, but it should be understood that the theory will continue to affect decisions made in the design process. Process diagram VI Figure 4.19 illustrates the process to this point.

Systems of Order-

The Organization of Space (Meyer 2005)

Both arms are part of the overall network and serve to order space. Although functions of the two armatures aren't entirely separate, land use and circulation issues can be resolved if we think for now of the red arm as serving the spatial organization of transportation and commercial concerns. In the same way, we can think of the green arm as serving the spatial organization of housing, recreation and safety. The concerns of the two armatures might seem to be conflicting, but they all need to be a part of the urban fabric.

Mapping as Interpretation

maps are more than physical attributes of terrain, but include also the various hidden forces that underlie the workings of a given place.

background pg 16

Mapping- Circulation and Land Use

Overall circulation is ordered by the definition of land use. Traffic control is essential to making the new development conducive both to business and residential traffic. Heavy truck traffic is not appealing to families or small businesses that will rely on pedestrian traffic. Small businesses need some light truck access for delivery of materials, but limiting points of access and slowing traffic in general through the commercial, retail and office area can provide safety and so an atmosphere conducive to a feeling of community.

North of University- If light industry is moved to empty or underused areas west of the armature, infrastructure maintenance is reduced for the city in terms of road use and upkeep. Heavy trucks damage roads. Roads that serve heavy truck traffic need heavier construction methods and materials. Streets to the east of the green arm will not need the level of maintenance if they are not carrying heavy truck traffic. Pedestrian safety is simplified in the new mixed-use development by providing lighter traffic. Housing on Prior can be buffered from more industrial uses and new housing or open space can be added where heavier industrial uses have been. Proximity to open space enhances new development.

Although this is a mixed-use development, commercial, retail and office space should remain within a close walk to the LRT. Riders on the LRT should be able to stop off easily to access these businesses and board the LRT again. Building massing in the new development should serve the need for greater density

while still relating to the neighborhood to the east and north. The area of control is large enough that a number of different kinds of housing can be offered at different sizes, densities and prices to appeal to a mix of residents; again, building massing needs to respond to the surrounding neighborhood. The height of buildings, setbacks, streets and sidewalks should tie new and old together.

Existing streets in what is an area of light industrial use are somewhat haphazard and intended for rail to truck efficiency. As a mixed-use area the streets need to respond to the surrounding area, provide porosity for vehicle traffic and mitigate pedestrian- vehicle safety concerns. Ease of access to businesses and parking will help build trade and must be balanced with encouraging pedestrian traffic and public transit use. Streets to the east of the development and north of University are on a regular grid running east-west with alleys accessing backyards and garages. Streets to the north of the area of control are more winding although they join the area at the regular intervals of a grid.

South of University- Streets south of University in the Iris Park neighborhood are also winding. The Iris Park neighborhood includes the Episcopal Homes complex west to Prior. The intersection of University and Lynnhurst Ave will be redesigned both for safety of pedestrians and vehicle traffic at the Fairview Station. Presently there are nine driveways or entrances from University to commercial and residential units on the south side of University between Prior and Fairview. This number will be cut to six. Commercial and retail areas will be on University or Prior north of Oakley. Traffic interior to the Iris Park neighborhood will have five entrances from collector roads providing porosity for the neighborhood, but limiting access on University to ease traffic. Porky's, an icon for St Paul, will stay, but the driveway to Episcopal Homes will enter from Lynnhurst Ave. behind Porky's. Limiting the number of drives crossing the sidewalk along the south side of University will provide safer pedestrian access and will facilitate linking Dickerman Park, Iris Park and the greenway.

Light Industrial Zone- Although more than half of the jobs that were located in the industrial area are gone, there are still viable healthy businesses that should be encouraged and supported by the LRT development. Clustering those businesses into a more dense form

will allow improvement of infrastructure for those businesses at a reduced cost to the city. Traffic patterns can be realigned making access better for trucks and safer thoroughways for bikes and pedestrians. Truck traffic coming to the industrial park from the northeast can access the area from Transfer Rd and Fairview can be restricted to lighter loads making the intersection at University safer. Access to I-94 will be facilitated along Transfer Rd south of University joining the access for I-94. Trucks can also enter and exit the industrial area on Vandalia connecting directly with I-94. The industrial area will remain west of the railroad tracks north of University and west of Prior Ave south of University. A paved recreational bike path will connect with the bikeway on Pierce- Butler Rd routing the new bike trail along the riparian stream on the west edge of the greenway. The bike trail will cross over University with the railroad bridge between Fairview and Raymond. The trail will continue with the riparian stream south to the round house then west to the MNRRA. There are proposed river crossings on both the railroad bridge and the Ford Bridge. The bike trail could connect with either of these. The trail will complete the bike link of the Grand Rounds. The bike trail will be off street and

so provide a way to travel from the pond at the north end of the site all the way to the river without being in vehicular traffic, a plus aesthetically as well as an issue of safety. Opportunities to safely exit the trail to the east or west at University provide a link to the industrial park as well as the neighborhood and businesses there. A new pedestrian route from the west side of the railroad to the east means pedestrians won't have to go through the underpass directly next to traffic on University. The catenary wire on the LRT is at 22', the clearance of the underpass is 15', so I am assuming there will be either bridge or road work to accommodate the LRT- a great opportunity to make safer connections.

Summing the changes specified above, truck access to light industrial is tied to the interstate at one exit/entrance ramp and within the area of control is directed by allowing access to a limited number of streets making less maintenance for the city and safer bike and pedestrian areas. Ease of access to businesses and parking for cars will help build trade and must be balanced with encouraging pedestrian traffic and public transit use.

The design process through the use of the theory of mapping as interpretation is shown in Figure 4.20.

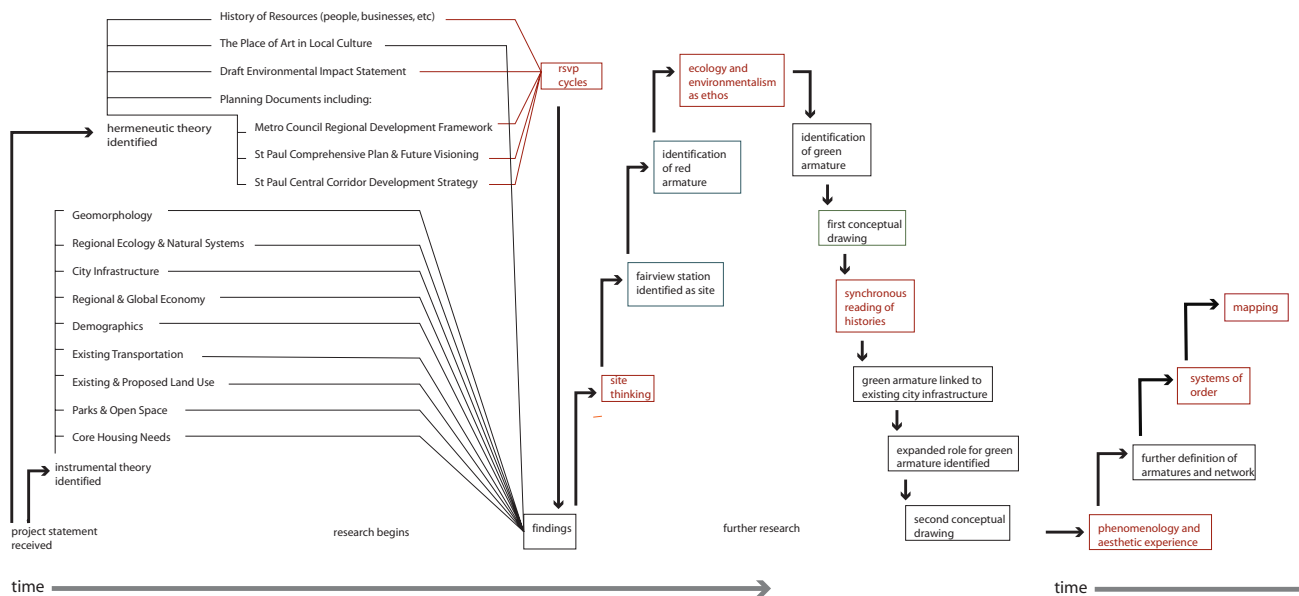


Figure 4.20 Process Diagram VI

ARMATURES

EXISTING CONDITIONS

(in the order in which they appear in site analysis)

Geomorphology- topography slopes from northeast to southwest across the site. The green armature north of University is located on the terminal moraine.

Ecology and natural systems- no trace of original hydrology is in evidence with the exception of the Mississippi River. Palustrine waters are extant down river from where the green armature ends.

City infrastructure- building systems, sewage and storm drain systems are standard and separated from each other.

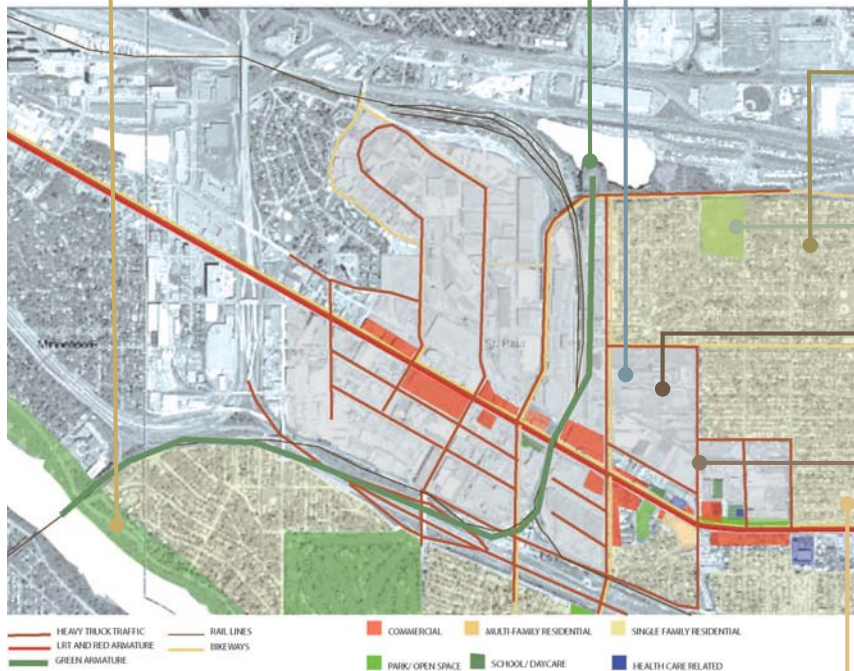
Demographics- The LRT study shows 75% of families in adjacent neighborhoods are transit needy. The Hamline-Midway neighborhood to the east represents 1/3 of the tax base for the city.

Parks and open space- are limited and generally separate from each other. Planning documents state linking these as a hope for new development.

Existing and proposed land use- Light industrial business area has lost density as companies have closed or moved away. Some of these businesses are directly adjacent to housing.

Transportation- Streets in the light industrial area east of the green armature are designed for rail to truck efficiency. Road use and traffic brings large trucks through residential areas at all times of the day and night. Heavy trucks cause damage to road surfaces much faster than cars. Bike routes share the road with every weight class of vehicle. Pedestrians must cross large and small intersections that carry every weight and type of vehicle. Pedestrians on University have to use an underpass immediately adjacent to traffic.

Core Housing- Demographic studies have shown that 8 out of 10 lower income families in the area spend more than they can afford for housing. Housing in the area is generally single family with detached garages on alleys. Lawns and street trees are the standard. Note: The Twin Cities outlawed the use of phosphorus feeding of lawns or gardens some time ago. The state has expanded that law as a water quality issue.



ORDER SPACE

STRATEGY FOR TOWN CENTER

Geomorphology- using the slopes from northeast to southwest across the site can facilitate the movement and infiltration of stormwater. Groundwater recharge can help avert future water quality and availability issues. The new green space is on the terminal moraine and higher in elevation than the railroad tracks to the west. The green space will act as a buffer between light industrial and residential areas.

Ecology and natural systems- stormwater can be treated through riparian areas before it enters the Mississippi River. An overall bio-mass system will be put in place to serve multiple functions.

City infrastructure- the two existing energy districts provide an exciting model. Infrastructure issues should be addressed before development begins. Systems that can be affected can become amenities and a more obvious part of daily life.

Demographics- Connections to bus, bike and pedestrian circulation will facilitate multiple transportation needs for current and future residents. The Hamline-Midway neighborhood is served by the new development, an important consideration in city spending.

Parks and open space- existing parks can be joined with the new green space creating green corridors for people and wildlife.

Existing and proposed land use- Making the light industrial area more dense by clustering those businesses can make operations for those businesses more efficient. Moving those businesses away from residential makes a safer, cleaner, quieter neighborhood for residents. New commercial areas close to the LRT can increase density that serves new and existing businesses.

Transportation- The street grid of the neighborhood to the east should continue into the site. Heavy trucks will have access to business without dealing with residential traffic. Moving heavy trucks from residential streets means less wear and tear on road surfaces and thus safer streets for pedestrians and bicyclists, and less road work for the city. Provision will be made for smaller trucks to access businesses close to University. Buses will make more stops than the LRT providing closer access for riders. Bike riders are safer on residential streets. A new bike route through green space gives riders a choice of riding off the street entirely. The Grand Rounds bike route can connect through off street riding that highlights unique topography and natural systems, connects with residential and business areas as well as buses and the LRT. Pedestrians are safer and have a new route on University away from traffic. People can walk the length of the new green space as well.

Core Housing- New housing will be developed at a number of price points with a higher density than the neighborhoods to the east and south and can include infill on the north end of Prior. Aesthetic consideration will be given to tying new housing to existing housing in terms of massing and setbacks. The use of street trees in bio-cells will continue that aesthetic as well. Using bio-cells for street trees can facilitate their growth while limiting chemical fertilizer use and providing an area that can clean residue from stormwater washing across lawns. Increased density of housing provides more business for commercial enterprise.

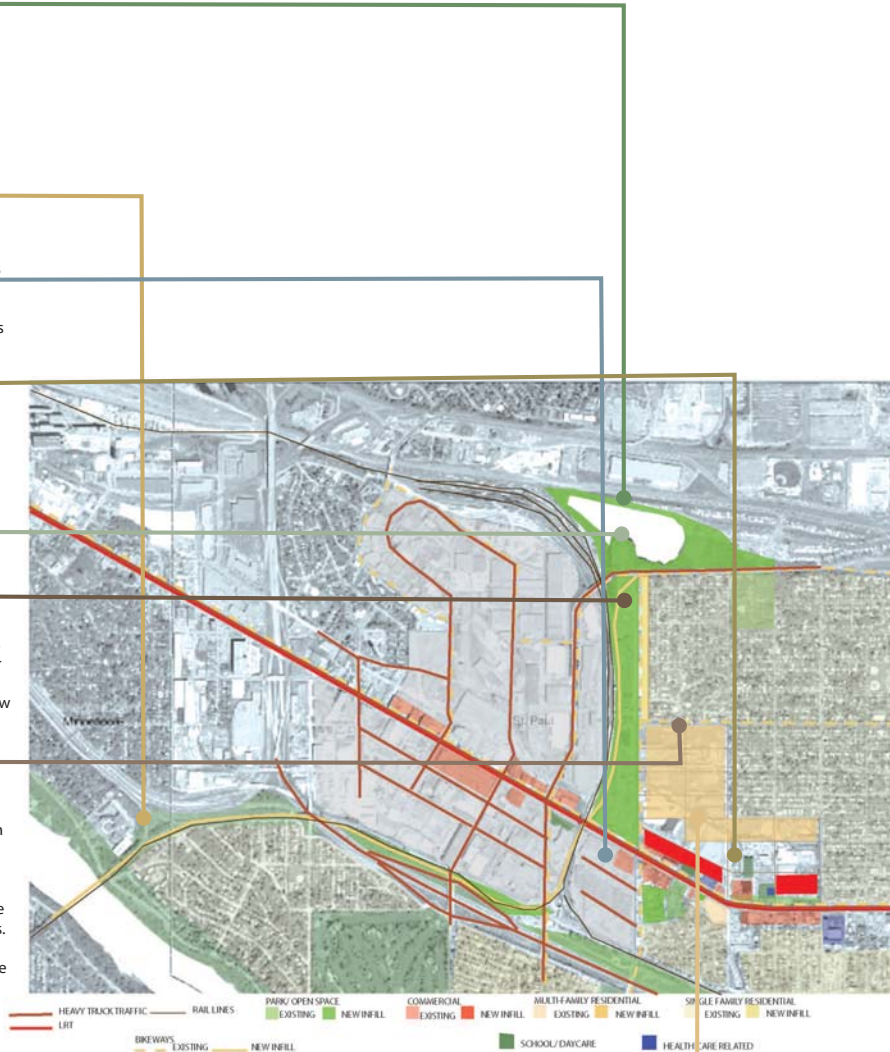


Figure 4.21 Existing conditions and strategies

*Visual Perception,
Phenomenology,
and Semiotics*

form interpreted through different ways of knowing, visual perception and sources of knowledge from experience and symbols as language
background pg 16-17

Visual Perception, Phenomenology, and Semiotics-

Three Levels of Meaning (Thayer 2002)

The Fairview Station is the entrance from the LRT into this neighborhood. The design at this station needs to indicate arrival, that this is a particular place. However, I am adding this to the idea of site as described previously and so the station is not an autonomous element, but relates to the domain. This theory supports the theory of site thinking and the design decisions made as a synthesis of that theory. Entrances often involve signature buildings and immediately I think of the Douglas Cardinal building in Washington, DC that houses the National Museum of the American Indian. The stone on the building is Mankato limestone that is mined in nearby Mankato, Minnesota. There is an Amtrak station in the industrial area west of the railroad. As an entrance to the twin cities it is a disaster. Perhaps the station could be in this signature building and closer to the Fairview Station. Phenomenology directs me to think about the experience of people coming into the town center I am creating. Certainly, a large building at the corner would be a visual clue on approach. The intersection at Fairview and University is a large, sort of wide-open space. The scale of the building I imagine to the street width is comfortable, but I don't want to create a wall that is prohibitive in feeling at street level. The Episcopal Homes complex on the southwest corner already feels like something of a fortress for pedestrians on University Avenue. I

review the intersection on Google Streets and it seems to me that a large signature building at the corner may not be the route to take. I may want to tuck the building into the hillside where the armatures cross. It could have a green roof and melt into the green armature. I reserve judgment on the building and return to the experience of the station as entrance. Note: I found out later that the station was being moved downtown, so the exploration concerning moving the station ended.

*New Ecology, Semiotics,
Aesthetic Experience,
and Environmental
Psychology*

“...every landscape we design should be...an icon of the natural world.” Catherine Howett
background pg 17-18

New Ecology, Semiotics, Aesthetic Experience, and Environmental Psychology

The existing ecology of the site is an urban system separate from any natural system at the immediate site, and so, relating in an unhealthy way to the extant systems in the Mississippi River or the MNRRA. In terms of semiotics and reading the syntax of pre-existing conditions I can see that cultural ideas of nature and city as a dichotomy have separated and hidden processes that could serve the health of the city as an environment. The city experiences heat island effect and the site as it exists now adds to that effect. Water quality is addressed by traditional treatment methods that do not address future supply needs. The cultural norms that form the basis for our aesthetic of

tree-lined streets and fescue lawn means that existing green space including parks and trees and lawns in the residential areas are not supported by any overall philosophy or system of biomass and so irrigation and chemical feeding are the norm.

The green armature can support systems that mitigate damage from stormwater to other systems extant in the river and MNRRA with minimal cost to the city compared to traditional treatment methods. The network of that armature extends into the development to support a new urban ecology. Tree canopy, native plantings, green roofs, infiltration and bio-cells can all be located as a part of that extension of the armature. The green armature also ties together existing and new. Future plans can extend the network into existing neighborhoods if desired. Aesthetic norms can be respected with careful planning to balance native plantings that support a healthy bio-mass with the traditions of the existing aesthetic. Resources for maintenance needs can be shifted. Bio-cells can increase the health of the trees lining the streets reducing the need for irrigation and chemical feeding. Tree replacement is

greatly reduced as the trees have cultural requirements met that are generally overlooked or ignored. Mechanical mowing and the resultant carbon production is reduced and bio-cells become carbon sinks rather than carbon increasers.

Aesthetic experience must be addressed in the design of this entrance and again as a network that extends into the neighborhoods. This new urban ecology is the frame for that entrance, not as a picturesque or modernist autonomous object-as-art, but as a living breathing framework that supports the other systems that exist in or move through the site.

This development of the Fairview Station is intended as a mixed-use development. We use the word site to mean a lot of different things. I have used an expanded definition of site in this design and that carries with it the cultural accretion of meaning that this particular site carries.

Process Diagram VII Figure 4.22 shows the progress of the design process to this point.

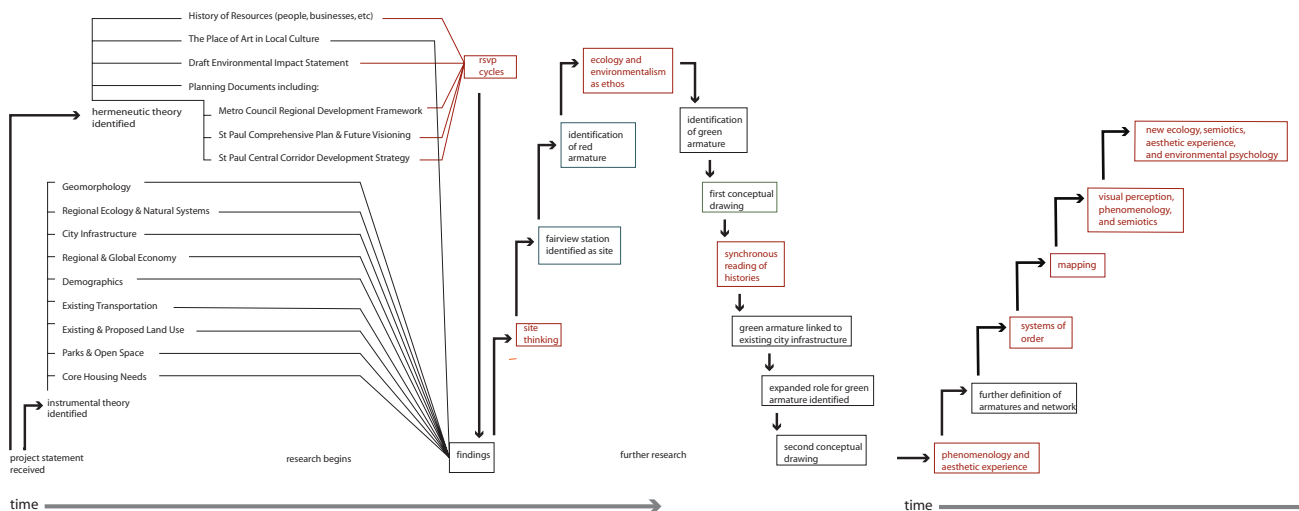
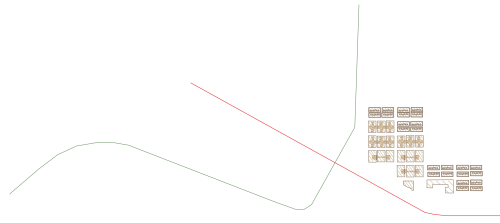
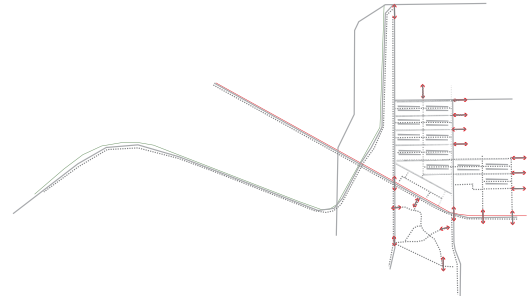


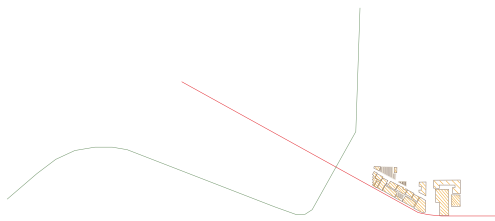
Figure 4.22 Process Diagram VII



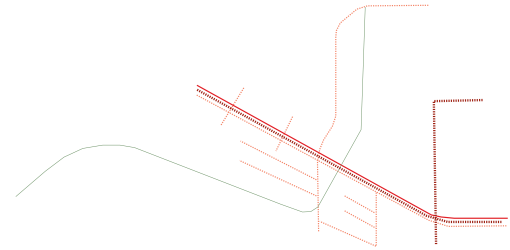
EXPANDED TAX BASE -NEW PROPERTY TAX COMMERCIAL
 SPACE TYPOLOGIES = PRIVATE + QUASI-PUBLIC



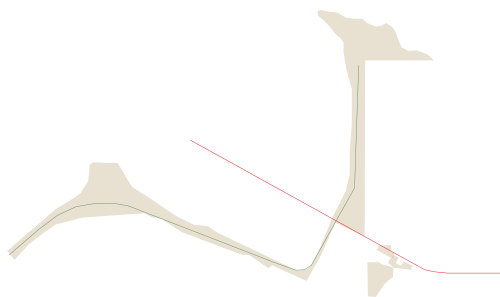
CIRCULATION — BIKE — PEDESTRIAN
 PARKING — ON STREET — ALLEY ACCESS
 NEIGHBORHOOD POROSITY — STREET ACCESS



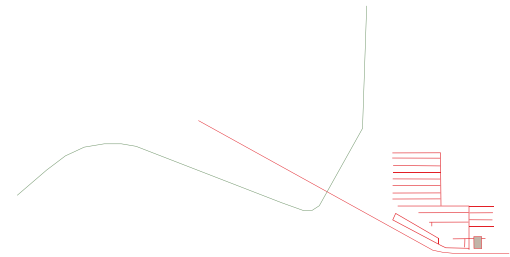
EXPANDED TAX BASE -NEW PROPERTY TAX COMMERCIAL
 SPACE TYPOLOGIES = PUBLIC



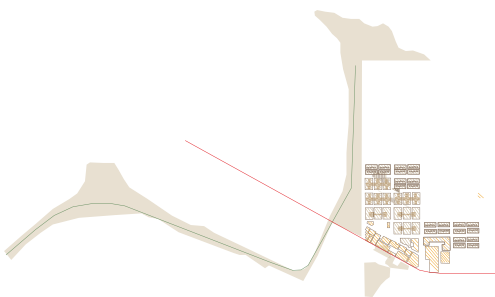
LARGE VEHICLES — LRT
 — BUS — TRUCK



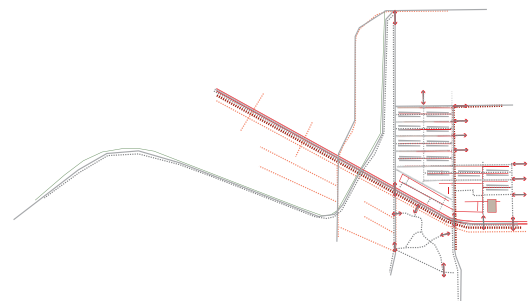
NON-TAXABLE OPEN GREEN SPACE
 SPACE TYPOLOGY = PUBLIC PARK



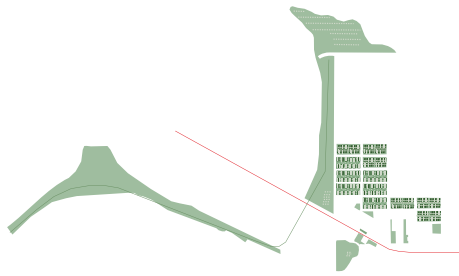
ENERGY DISTRICT — BIO-MASS GENERATOR
 HEAT AND AIR



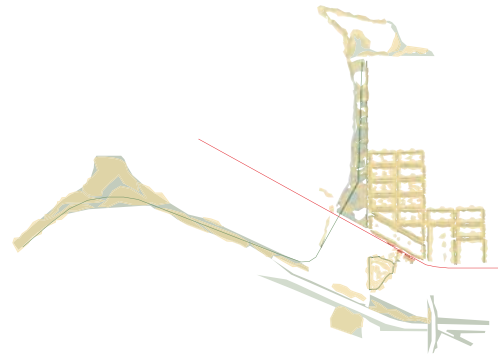
TAXABLE VS NON-TAXABLE



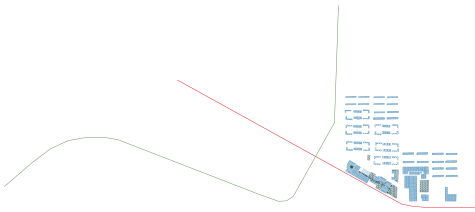
CONSTRUCTED INFRASTRUCTURE



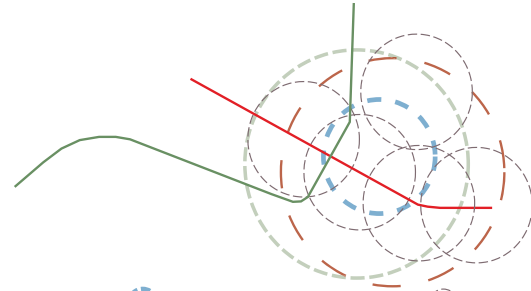
PERVIOUS SURFACES ■ PERVIOUS YARDS, COMMON SPACE AND PARK
 ALLEYS — INFILTRATION PONDS
 IMPERVIOUS SURFACES ■ RESIDENTIAL BUILDINGS



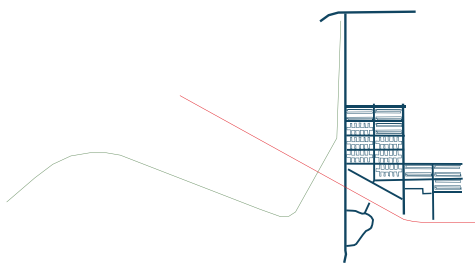
HEAT ISLAND MITIGATION AND
 BIO-MASS FOR CARBON SEQUESTRATION
 AND OXYGEN PRODUCTION ■ CANOPY
 — BIO-CELLS
 ■ NATIVE PLANTINGS



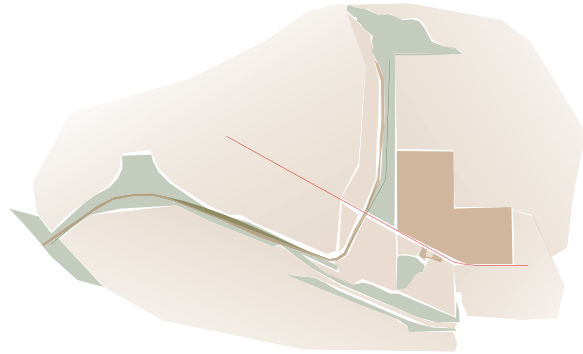
PERVIOUS SURFACES ■ GREEN ROOFS
 IMPERVIOUS SURFACES ■ GROUND-LEVEL GREEN SPACE- NOT BIO-CELLS
 ■ COMMERCIAL BUILDINGS ■ CATCHMENT SYSTEMS



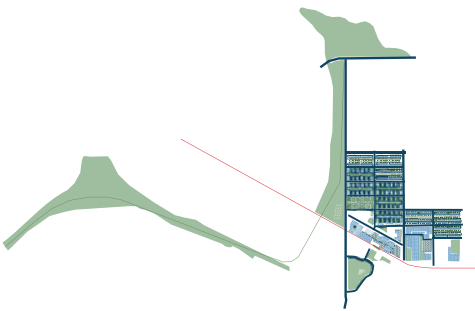
PROXIMITIES ■ 1/4 MI COMMUNITY SPACE ■ 1/4 MI BUS
 ■ 1/2 MI COMMERCIAL SPACE ■ 1/2 MI GREEN SPACE



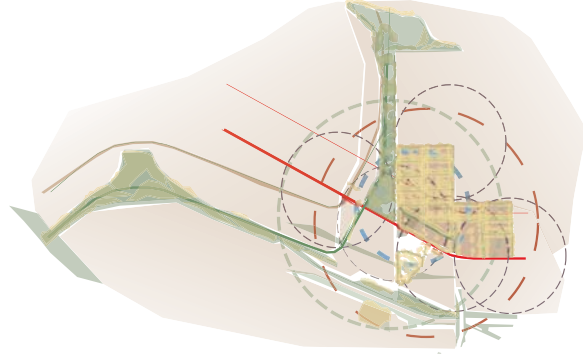
POLLUTION GENERATORS
 BIO-REMIEDIATORS



PROGRAMMED SPACE ■ NEW ■ EXISTING
 NON-PROGRAMMED SPACE ■



PERVIOUS TO IMPERVIOUS



PROXIMITIES, PROGRAM AND HEAT MITIGATION
 Figure 4.23 Ordering systems

Narrative Complexity

“...narrative implicit in the site [as a cultural product] denatured, formalized, colonized...meanings made compatible with relations of production, state imperatives and implied order.” Beaugard background pg 12-13

Locus of Theories- Town Centered

When I comb through my memory of town center intersections there are too many images that fit that description to a frightening degree. I think immediately of PPG Place in Pittsburgh. PPG World Headquarters was to be built, first in, then after great public outcry and activism, adjacent to, Market Square. The compromise placed the building complex into a context very much at odds with the building design. The result was a redesign of the square which had functioned for more than a hundred years as a locus of community in the heart of the city. The newly designed square is not particularly successful in preserving the experience of Market Square as it was before the addition of PPG Place, but seems more the physical expression of the word compromise.

The Alternative

“...places [is] complex symbolism grounded in lived experience... [which] emanates from human encounters in dwellings, churches, sidewalks, plazas, markets and workplaces.” Beaugard background pg 12-13

The Alternative- From Denatured to Fully Natured

This will be a mixed-use area. That means the area needs to facilitate daily activities for people with a lot of different interests and needs. Moms with kids, older adults, business people, teenagers, all the people who will live, conduct business or shop here. Public safety is complicated by the types of vehicles moving through the intersection. The railroad is above grade, but freight trains and aircraft are the only modes of transportation that do not move through the intersection at University and Fairview. Crossings with traffic lights should be located both to the east, the Fairview light, and west. An additional traffic light could be located at Lynnhurst Ave. The redesign of that intersection is important because it will be tied to the green network that extends from the green armature and ties to Dickerman Park on the east side of Fairview. At this point, the design on the northwest corner of University and Fairview will include elements that mark it as an entrance and will accommodate commercial, retail and possibly residential. Building massing should reflect the idea of entrance, but remain at a scale that doesn't overwhelm, probably two stories. I will do some drawings and look at images that seem more conducive to the aesthetic and experience I am building for the site. Building heights could increase on the north side of that block for density so there are stair steps of height. Storefronts and offices should have a fairly high ratio of glass to wall. Green elements can soften wall space and provide shade. Setbacks should be in scale with the buildings and pedestrian friendly. An intra-block passage can offer shortcuts to businesses on the north side of the block, a degree of shelter in cold weather and a place for people to relax and sit outside in warm weather.

In looking at buildings and thinking about where theory has directed my thoughts I realize that as the locus of theory and the locus of activity for the neighborhood, literally the jumping off place from the LRT, the area at the intersection of University and Fairview should be indicative of those ideas. I am not an architect and I am not entirely certain what the possibilities of form are for the buildings at that corner, but I think the words sinuosity and structure are what best describes my idea. The building as signifier and urban nature as signified. In drawings I will see if I can use

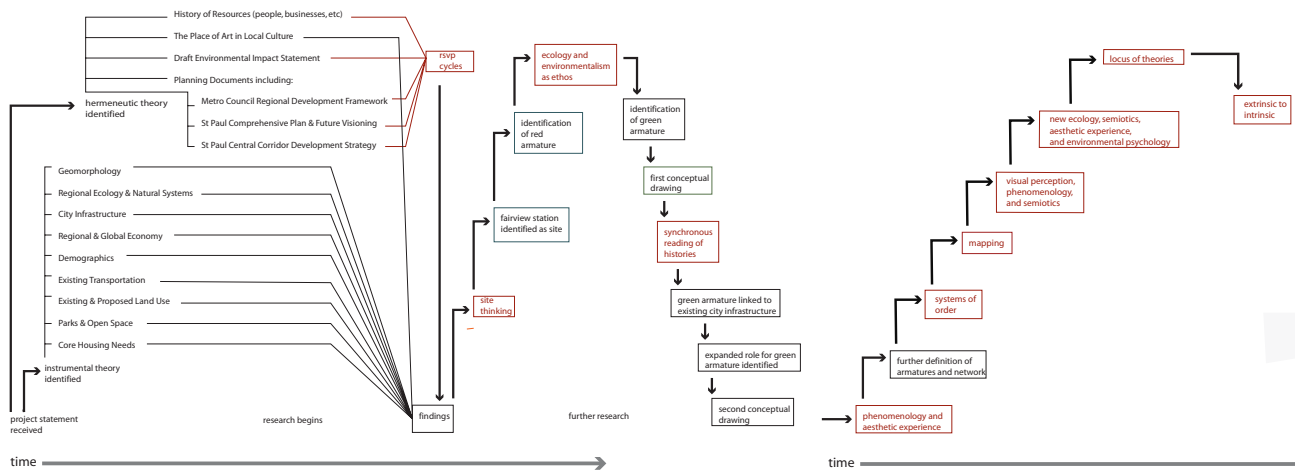


Figure 4.24 Process diagram VIII

Extrinsic to Intrinsic

Extrinsic elements are those elements that are deliberately placed in the design to address aesthetic or physical needs. Intrinsic elements may be physical or psychological attributes that are inherent to site. The intrinsic has value beyond its physical properties.
background pg 18-20

a more abstract representation for the building rather than specifying a form.

Extrinsic to Intrinsic

Everything from traffic calming devices and paving patterns to benches and walls can be considered extrinsic elements. Intrinsic elements may be attributes that are pre-existing in the site that may be preserved or taken advantage of. Intrinsic elements may be haccities, aspects or objects in a site that are particular to that place and so mark it as being very specifically that place. I do believe that extrinsic elements can become intrinsic in our perception of place over time. Burns and Kahn make the point that one leads to other relational understandings. When people use a space they build a memory of that space related to

the activity they were a part of. Over time, often with repeated experience, they read changes in the site. They may see the space in different seasons or under different circumstances. They may drive by or simply hear others referring to it. All of those experiences set markers and link the experience to the site. Memories being intensely private, these memories tie people to the site to some degree. If the experiences are good memories the tie is stronger. If the memories act at different levels, for instance, sensory memories that accompany an event memory the memory is intensified; good memories get better, bad memories get worse. Process Diagram VIII Figure 4.24 relates the process through the development of this idea.

I need to include a variety of spaces, both in terms of size and structure. Extrinsic elements will be both the space itself and the furnishings in those spaces. Building a sense of community means I have to provide spaces where regular and special events and celebrations can take place.

Community programming possibilities for public space:

Skating rink, farmer's market, movies, community garden, fireplace, outdoor eating-cafes & coffee shops

Seasons- spring- community garden, farmer's market
summer- community garden, farmer's market fall-
fireplace, community garden, farmer's market winter-
skating, fireplace

Ideas for Festivals- pow-wow (Wacipi in Ojibwe),
Hmong New Year, fire & ice, film festival, season walks

The intrablock courtyard will provide one of these spaces. People who work in the buildings will have a place to take a break outside. Cafes can have seating in the courtyard. Planting beds can soften the feeling of being interior to the buildings as well as providing color and shade. Buildings around the courtyard will have ample daylighting opportunities. This area is rife for using stormwater from surrounding roofs as an aesthetic experience as well.

The city has a farmer's market downtown with satellite markets in a number of areas. As a town center this would be a good choice for a satellite site. People who live in the area can go to the market with carts, dogs or kids in wagons without trying to get home with their purchases on public transit. The market area can be designed to be flexible and available for other events that do not conflict with the market time. Picnic tables could be near the fireplace. A chef could give a class on cooking with the fresh materials from the market.

Some of the housing units would have yards, but for all of those without a place for raising their own food or flowers a community garden would be a good community building element. Being close to the farmer's market would make selling a bumper crop of tomatoes, okra or zinnias a possibility. Plants used in common areas of the development and chosen for their hardiness as natives could be available from the community garden and sold at the market.

Winter can be long and snowy in St Paul. Winter sports or events can be both personally and privately

enjoyable as in the case of cross-country skiing or a community building, like skating. A seasonal (as opposed to permanent) skating rink could be another space. A fireplace near that skating could be used for warming up at the rink or enjoying an evening in the spring or fall when nights are chilly before it's cold enough for skating. A pancake breakfast for the last day of school could center around that fireplace. That same space might have street hockey in the summer or a yearly put-put event with different artists designing each hole.

The new open space/park to the west can handle larger gatherings like a pow-wow or seasonal walks with a guide to find may-apples in the spring, animal tracks in the snow, frogs in the summer and edibles in the fall. The park should not be over-programmed, but a mountain bike course might be of interest to lots of people in the surrounding neighborhoods.

Commercial space- Commercial links to the neighborhood that will be taken into account will include physical proximity, material, historical and economic concerns.

Concentrating commercial uses- retail, office and business services- in the area of one-quarter mile walk from the LRT can serve the best interest of those businesses and residents. Proximity to the LRT means employees and clients of those businesses can use public transportation. Retail is served by bringing residents through that area on their way home from other destinations. The bike trail comes within a one-quarter mile making it an easy place to stop for shopping, a meal or ice cream on a Sunday ride. Walkers can pick up a picnic lunch before taking it into the park. School kids can stop for a soda or head to the dentist on the way home. Truck traffic serving those businesses can be limited to an area on the edge of the town center rather than going through the center of the residential areas. Parking is available both on-street and in a couple of garages which have direct internal links to commercial and residential buildings.

Existing buildings that house commercial interests should be retained where that serves the development. The buildings east of Fairview, in particular, offer a lot of opportunities for reuse or expanded use. New buildings in the first block directly east of Fairview at the north end of the block allow for cleanup of the toxic plume that may be responsible for the toxic soils

near the building on University that is also marked for remediation. One of the parking garages planned for is tucked behind and contiguous to those buildings allowing direct access to businesses and residential as well as use for the existing businesses and schools that are located in that block.

Some buildings on University west of Fairview can also be retained. The multi-story building mid-block is marked for remediation, but more information is needed concerning the source and the level of remediation necessary. Because infiltration is an important part of the green network it is essential to know that toxic materials are not being infiltrated as well.

Retaining buildings where possible serves continuity and helps link new development to the history of the area. Porky's, a restaurant on the south side of University, is particularly important to preserve both for continuity and because it brings more people from a larger area into the neighborhood. Conversely, new development will help to support Porky's by making the area a destination for more patrons.

Building materials in the immediate area are very mixed. Of the buildings that could be retained, brick seems to predominate. Mankato limestone is mined nearby and would be another good choice. Heights of buildings are between one and three stories.

Economic benefits of new commercial development in the site includes expanded tax base for the city, employment opportunities for residents of the development as well as other city residents, additional neighborhood-based shopping alternatives for residents, ease of access for business to business services, and as a catalyst for further development or phasing possibilities.

The buildings in the area to the east of Fairview on the north side of University look like they have a very deep setback. In fact, this area was donated to the city for a new city park named Dickerson Park many years ago. The city has plans to make the area look like a park. Plans were found for the park online. A community meeting was held in which residents and interested others were shown images of green spaces. I have copies of the images that were most successful with the group. This information is invaluable for determining aesthetic preferences.

Two areas of the city have energy districts that are operating successfully. A bio-mass generator is included

in the block furthest east in the identified development area. Further information on the energy districts can be found in the findings from site analysis.

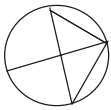
Public and quasi-public institutions extant in or near the development area are retained in this design. Some of those institutions, like the YMCA and the Alternative High School may be better housed in new buildings and that should be an alternative as development progresses. A new adventure playground aimed at older kids is planned for the area near the bio-mass generator. As the footprint for the generator building is determined, the plans for the playground can be made more definite.

Housing designed as a part of the development must be available at a variety of price points and in a variety of forms. Housing directly adjacent to existing housing can respond to the form of those neighborhoods while making a greater density possible. Building height, setbacks, garages, alleys and yards can be similar in form, but allowing that greater density.

Townhouses with porches and yards are designed for a number of blocks making quasi-public and private spaces. Density strategies include three story contiguous buildings with first floor one or two bedroom single story units below two story, two or three bedroom units. The third story is stepped back from the front of the unit providing living space without building mass overwhelming the street appearance. Garages are contiguous opening to the alley and backyards. Access to the alley is through the garage. Density in these blocks is twenty-two units per acre. The green network runs along the edge of the street in bio-cells that clean and direct stormwater. Alleys are pervious paving; water that doesn't infiltrate is directed to streets which have bio-cells. Where possible, bio-cells are located at block ends or in the middle of the block in the alley for aesthetic, buffering and environmental concerns. The presencing of the network and the idea of urban nature begins here.

Two designs for apartment units are the next level of housing in the development. Quadrangle units are set on a grid; each set of buildings has a courtyard interior to the units and connected mid-block. Parking is accessed from north-south streets and alleys. Each building in a set of quadrangle units has four units. Each quadrangle then has sixteen units. Each block has

CONCEPTUAL PLAN



DRAWING NOT TO SCALE



LRT



EXISTING RAILROAD



EXISTING COMMERCIAL
PROPOSED COMMERCIAL



EXISTING MULTI-FAMILY
PROPOSED MULTI-FAMILY



EXISTING SINGLE-FAMILY
PROPOSED SINGLE-FAMILY
OR DUPLEX



LIGHT
INDUSTRIAL USE



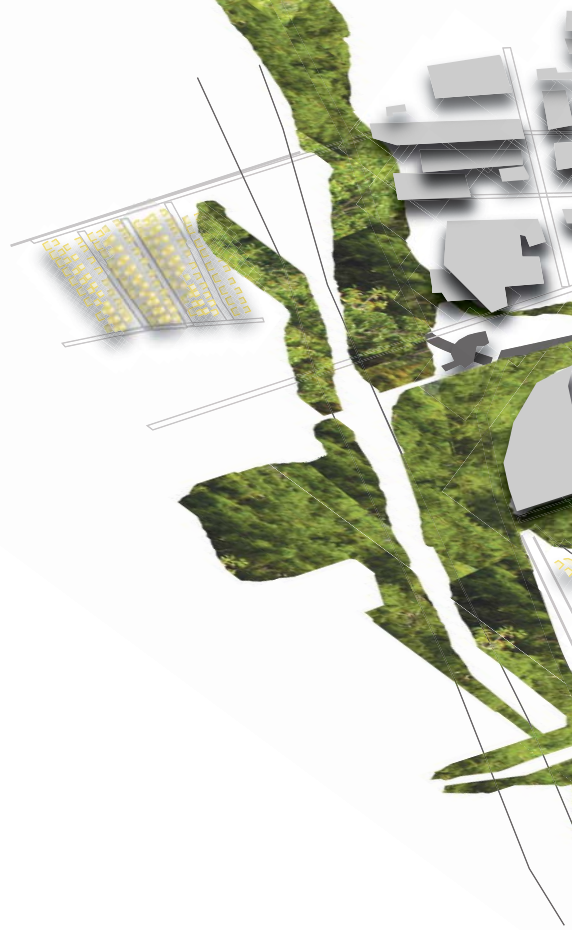
NEW BIOMASS
GENERATOR



EXISTING
YMCA



EXISTING SCHOOL



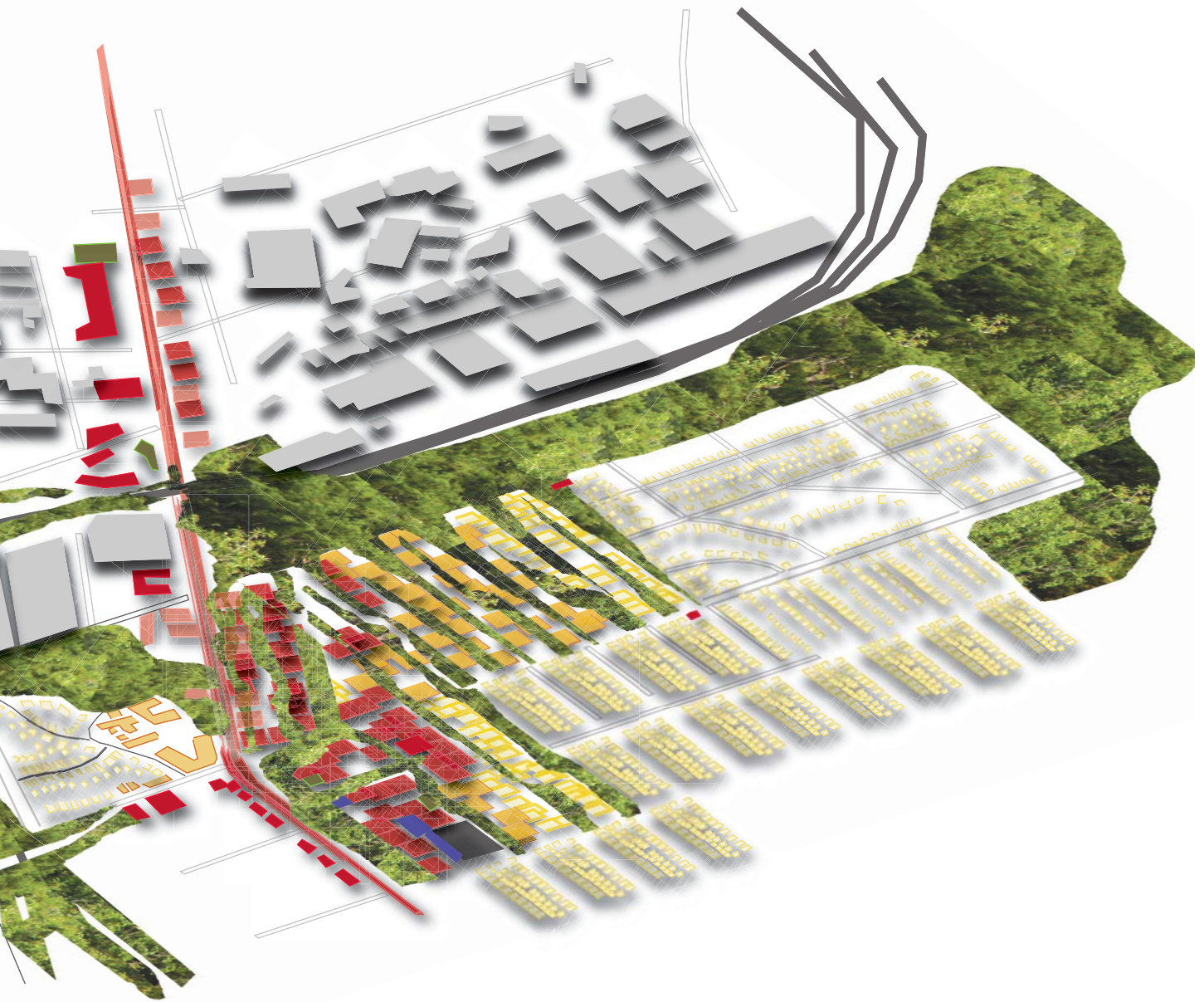


Figure 4.25 Conceptual Plan

six quadrangles. Overall, the quadrangle blocks have a density of twenty-four units per acre.

The other apartment blocks are designed as terraced apartments. The first two stories are stacked with the third story set in. First floor apartments have direct access to an interior block courtyard. Apartments above have two stories with rooftop terraces from the third story. Parking is accessed from north-south alleys. Some commercial uses are planned in blocks facing the community open space. These blocks have a density of approximately eighteen units per acre.

Live/work spaces are possible in the buildings in the block directly north of University and the north end of the block at the northwest corner of University and Fairview.

Businesses on both the east and west side of Fairview north of Minnehaha will be relocated making room for infill housing on the east side of the street. Limiting infill housing to the east side of Fairview allows the green armature, in the form of a park, to buffer sight and sound between the industrial park and railroad and residential areas.

I think I have been thorough in thinking about the intrinsic in the area close to University, but I am not happy with the residential blocks. I have arranged housing in blocks that do not work well. They are too separated. I need more integration of housing typologies. I can extend commercial into the blocks that face where I have commercial now. Living spaces above, commercial at street level or even half a story below, in fact I can probably increase some density here. The courtyards in the interior of blocks work well, I think, but is there a way to integrate duplexes into apartment units. Making sure there are still good walking areas. Pathways between housing units and between housing and commercial are important. The area east

Metaphorical Constructs

become a cultural shorthand, symbols or icons for ideas about landscape. We rely heavily on intuition...which pre-conditions us to be influenced by metaphor.

background pg 19

of Fairview is easier, in a way, to mix housing and commercial in the large buildings that are there. For some reason large new buildings seem to be styled either as a brutalist geometry or with a paucity of any style and look more like 60s public housing. Older buildings seem to take on interest as reclaimed space. I want to experiment with how density and variety can coexist in a humane way.

Metaphorical Constructs

I wasn't sure exactly why I identified the idea of metaphor as a body of theory I would always want to include as a part of the framework for my design process or how that would play out, but as I continue in the design it starts to become clear. I tend to think of the city as being denatured; that is, that the engineered systems of the city are separate from nature. That's a metaphorical construct that construes nature as wilderness unchanged by human intervention. But I know that the city/nature dichotomy is a false dichotomy. If my thinking remains caught in that metaphorical construct I will miss the chance to set in place the groundwork for new systems that use the processes of the natural world for my urban nature. If I can bring metaphor into the design as a process, if I can loose it from its hermeneutic boundaries that construe metaphor as a formal pattern, what will it tell me?

Morphogenesis- as the shaping of the park

In science morphogenesis is the [f]ormation of the structure of an organism or part; differentiation and

Morphogenesis

is the generation of form through process. Morphogenesis in landscape architecture is metaphor as process.

background pg 19-20

growth of tissues and organs during development. (The American Heritage® Dictionary of the English Language 2003) Morphogenesis in landscape architecture is metaphor as process. As a theory in landscape architecture, morphogenesis is about the formation of landform and involves the history of fluvial geomorphology and landform evolution as a source for design. The processes directly related to the historical generation of form particular to the region or site can serve as the inspiration for design decisions. In fact, if we provide the framework, the same processes can be used in the design to encourage new ecologies to form.

One problem with the “nature as wilderness” construct is that logic would tell me that if it’s better for a landscape to be “untouched” then I should simply spec some prairie wildflower/ grass seed and be happy. This site is in anything but an untouched state. This has been an urbanized site for decades, at least. There is slope here that probably bears some relation to that which was here pre-city, but if I constrain the design because I believe that disturbing the site is problematic, I am only enforcing the harm that has been done already. Inversely, if I can design a system that performs the same functions as natural systems, I can make this a much healthier landscape. I don’t want to simply mimic the systems I’ve studied in prairies and woods. The west side of Fairview from Pierce-Butler Rd to University Ave will be open green space. I want to use the geological and hydrological history of the region as the inspiration for shaping this space as a park. In designing this park I want to limit specifically designated programming areas and to think first of

programming as a way of setting the stage or providing a framework for new ecologies. Landform in this region relates to its glacial past. Moraines, eskers, kettles, drumlins and kames are some of the landforms created by the advance and retreat of glaciers. These forms can be considered haccaeities of the region that, while they may not be present in the site, can be used as built forms in the park. This framework for new ecologies can take advantage of high and low areas created by the built landforms. Being aware of the cultural requirements of native Minnesota ecologies-soils, moisture levels, tree cover, grasses, etc. gives me the parameters that guide further design decisions. In other words, I can jump-start these new ecologies as successional plantings appropriate to the conditions I have created with the framework.

This is the city and unless I keep all cars out and put people in tree houses I cannot use what I imagine to be the original hydrology. I know that it is better to hold rainwater where it falls. With houses, streets, sidewalks and buildings I have lots of impermeable surfaces. The highest surfaces to receive rain are rooftops and the northeast corner of the development.

Rain from rooftops on the duplexes can be sent to small cisterns, insulated by earth, for residents’ use. Areas along the alley will be designated for piling plowed snow. The soils in these areas can be sufficiently porous to allow faster infiltration. Apartment, condo and other large buildings can have a combination of cisterns and green roofs. A number of new buildings in the area are shown as having a combination of decks and planted areas. The intrablock courtyard will use rainwater from the roofs surrounding it to create experiences within the courtyard. Splashing from scuppers, trickling through rills, within reach of small fingers, available to paper boats, and finally, watering the planted beds in the courtyard will all be assignments for that water as entertainment.

Stormwater that washes to the street or from the street will enter curbside biocells both by washing across sidewalks and through curb cuts from the street. Most streets within the new town center are new street and slope will be managed with the biocells in mind. The same is true of alleys, water can be drained either to the center of the alley or to the areas designated for snow. Alleys can use permeable paving grids that will support garbage, fire, and emergency vehicles. Slopes

can be very shallow; water that is drained to the center of the alley can infiltrate or go to the street. Stormwater entering the street can be directed into the biocells on the street.

The new park that stretches from Pierce-Butler Rd to University can receive stormwater beyond the capacity of the biocells, stormwater from Transfer Road and, of course, the rain that falls in the park itself.

Three basic types of bio-remediation are designed for water in the park. First and most obvious is that almost all of the park space is permeable planted surface. Secondly, streambeds are built to move water at a shallow slope from the pond north of Pierce-Butler the length of the park ending in an infiltration marsh that simulates the natural prairie and sedge fens of Minnesota. Iris in the spring, sedges in the summer, marsh milkweed in the fall and ice formations in the winter will become seasonal icons. The third type of area designed to manage water as a resource and amenity are the low areas between kames. Aspen and bur oak are native trees for this region. Areas of tree and canopy density can help create varying light requirements for biological systems. Low areas can take water and infiltrate or move it further into the park. Low wet areas with tree canopy will be one of the ecosystems planned for. Soils in the area above and to the east of the railroad are considered urban and nothing more definite. All soils will have to be tested and amended when necessary to support the plants and wildlife planned for as well as facilitating infiltration.

Stormwater from the Iris Park neighborhood will be collected in Iris Park before entering the riparian

corridor contiguous to the railroad tracks west of the roundhouse. The new intersection and entrance for Episcopal homes at Lynnhurst can make more contiguous open space, meaning better park places for people, better street atmosphere and better stormwater management. Stormwater infiltration for Iris Park is receiving water from a much smaller area, although overflow for the park north of University will be routed here. Overflow from this pond will be routed to the area immediately southwest of the railroad roundhouse to follow the riparian stream to the river. The bikeway that enters the park from Pierce-Butler Rd will continue south on the west side of the park crossing University with the railroad bridge and continue with the railroad to the riparian area.

Together these are the green network, infiltrating the neighborhood, linking parks, becoming a part of the infrastructure of the city, forming a new urban nature. All of these ideas are represented in the Conceptual Plan Figure 4.25 and I will continue to develop drawings that show in greater detail the specifics of the plan.

Process Diagram IX, Figure 4.26, shows the design process through the majority of design decisions, although it should be remembered that most questions concerning representation have not been addressed. Because representation is a part of design, I cannot say this is a completed design project. I will continue to challenge myself to adequately represent this and other designs in practice.

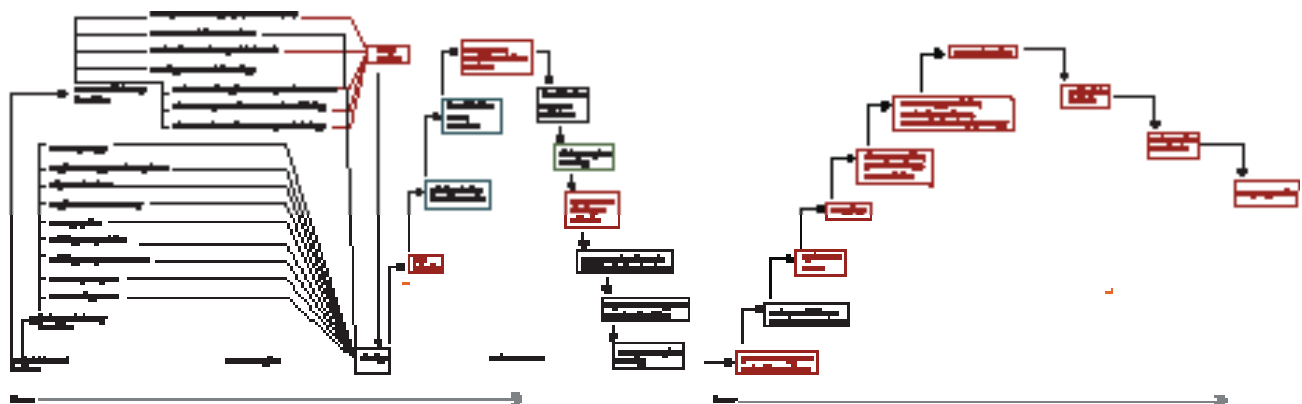
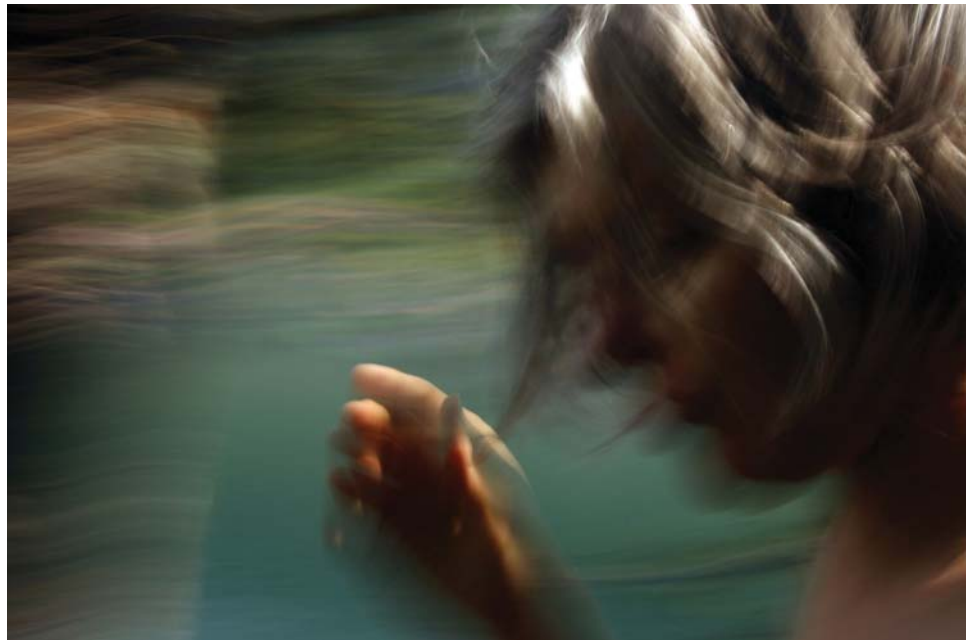


Figure 4.26 Process Diagram IX

findings and conclusions



Leighton Pierce

Agency of Time

Video, available to view as separate file, file name: LeightonPierce, running time: 10 min 30 seconds

Analogies

When I was an undergraduate I was told by the Undergraduate Dean that undergraduate work was designed to give breadth. Graduate work was to focus narrowly on one thing. My undergraduate work was learning in many fields, a concentration in a multi-disciplinary major. My graduate work is bringing my liberal arts education and the body of knowledge gained in simply being to bear on one thing, the art and profession of landscape architecture.

The very nature of what we do as landscape architects is drawing together disparate bodies of knowledge to create a design that often must meet disparate needs. In this way the practice of landscape architecture is analogous to my education, balancing analysis and intuition, bringing a large volume of ideas into a conceptual whole, then representing that concept both graphically and verbally. As practicing landscape architects we need different ways of knowing and to do that we need different ways of learning as a way of informing ourselves.

This nature of this essay is analogous to what we do as landscape architects. Theory provides differing ways of knowing, strands that are then caught up, interwoven and make a unity of both the process and product of design. As a process, a specific design was assigned as an independent study so that I might explore and test ideas of the framework, ideas represented in other theories and ideas that are a product of my intuition and reflect on all three.

Difficulties

I had difficulty before I started writing in explaining what I wanted to do and why. At one point the conceptual framework was going to be a physical model. While I was designing and working on the framework as a physical model I had a hard time explaining what I was doing and why I was doing it. Explaining and representing the interrelationships I had arrived at was difficult, although I still like the kite for the model. Parsing the decision-making into types of analysis, synthesis, and decision-making was possible, but I still had a hard time defending those decisions. Through the process of writing many things have become more clear to me. Reading, designing and writing became three parts of a single process. Just as there is a dia-

logical relationship between designer and site, there has been a dialogical relationship between these three facets of the thesis project. Reading theory while designing then re-reading the theory before writing has clarified issues both in the design and in terms of theory.

Assumptions

I started with any number of assumptions; the big ones were first, I would have one framework that would help me clarify ideas and gain perspective. Secondly, I assumed that site analysis as I had learned it would not change, that it would be through critical analysis that my understanding of the facts would change. Third, I assumed that the representations I used to present the design would change. There are drawings we do as a matter of course that did not always make sense to me, either because they were so incomplete in their representation that they allow preconceived notions about site, process and systems to remain unchallenged or because they did not seem to make any difference to the design and so I assumed they were a pedagogical exercise. Lastly, I assumed, although I tested the idea continually, that the categories I started with would remain as a core premise for the framework.

Findings

I assumed I would use one framework, but I found that what I used were a number of over-lapping frameworks that were mutually supportive. In general, I found these frameworks brought with them new ways of learning and knowing. Further, the frameworks helped to direct analysis in terms of where to look and what to focus on, a balance of intuition and analysis.

Critical practice (Meyer Fall 1991) as a framework was the least specific, but served well to direct my exploration and to provide a focus for using the other frameworks. Diagramming became invaluable in this framework as a way of understanding what I was reading, seeing, and trying to explain. If reading was my first step in bridging, an idea from *Critical practice*, then diagramming was my second. I have included many of the diagrams (in cleaned up form) by way of explication of what I have written. I have no doubt I will use diagramming for the rest of my life.

Site thinking also became a framework and clarified

how ideas would come together. I could see how many ideas in site thinking had grown from the previous writings of the authors and others. Site thinking as a framework worked very well as a way of testing ideas. I could test ideas I had in designing the project, as illustrated by the movement of the green armature in the case study. I could also think about theories I had read previously and valued, and test them against the ideas in Site thinking. What I found was that often the ideas supported or clarified each other, each helped define the other. (Burns and Kahn 2005)

Our first way of knowing is the perception of being, a metaphysical construction that addresses our way of knowing from experience and can be considered pre-conscious as well as conscious. Our second way of knowing is from definition; when we begin to define ourselves it is by defining what we are not. We continue from the Lacanian moment when we realize that we are in fact separate from the universe, to adolescence when we affirm vigorously that we are not our parents, to many other points when we feel the need to define ourselves. It seemed the logical thing to do then, to test theories against each other. When I found I lacked the vocabulary to pinpoint an idea I could take a back door by defining what that idea or something is by what it is not. If I do not understand how Corner's idea of mapping (Corner 1999) is different from McHarg's (McHarg 1969) I can test them against each other and against other theories until I can grasp the idea and make it my own.

Over-lapping frameworks help to include the dynamics of change. A design is not done when we hand it off to a contractor or client. A design is not done when it is built, it will continue in the narrative of the site. It will continue in the perception of all who use it, maintain it, see it, walk through it or own it. It may live in infamy or obscurity, but it continues even when taken apart.

My second big assumption was that site analysis would not change even if my understanding of the significance of the facts changed. I was wrong. I have always found research interesting and valuable, possibly because it can favor non-linear thinking. The facts found in research were not usually interesting to me in themselves. How they are used, the relationships that become more evident are often an aspect of intuiti-

ve thinking, my most successful way of negotiating the world. Analysis is construed as a linear thought pattern; intuition is accepted as non-linear. Culturally we give preference to analytical thinking as objective, but the true penetrative power of analytical thinking is only made possible by the provision of context afforded by the intuitive. If we do not have an intuitive sense of where to look we cannot focus on the right target. Critical thinking relies on a balance of these two kinds of thinking, critical practice (Meyer Fall 1991) does as well.

One of the frameworks I found after the semester and the design work ended was in the book, *A Thousand Years of Non-Linear History*. (De Landa 1997) DeLanda's book was my introduction to complexity theory. I have not included it in Background because I had not read it before or during design, but it has been difficult to avoid using language from this framework. Oh, that I had read that book earlier. A professor suggested it while I was working on the design, but I did not have a chance to read it until the summer; obviously he saw the connection with what I was trying. The first way complexity theory as an over-lapping framework will help in the future is with language and vocabulary. The mental calisthenics I referred to in Methodology can be averted by language from complexity theory. Explaining the reason instrumental theory, hermeneutic theory and time are aligned is simplified with the terms linear and non-linear. Likewise, the idea of the cultural production of landscape can be explained in terms of hierarchy. Hierarchy presupposes the existence of a value system. There is still a difference in a Marxist interpretation and I do not think the term hierarchy is sufficient as a symbol to capture all the implications of the idea of being a cultural product. (Cosgrove 2002) Again the theories are mutually supportive and add richness to both. I think it could be overwhelming to approach a client with a full-blown explanation of strange attractors and solitons, but if I understand the ideas as I work with them, then it is up to me to interpret both formally and representationally those ideas that bear on a design.

I can define a number of reference points between complexity theory and other theories. I immediately drew a parallel in my mind between various writers including Meyer, Burns, Kahn, Treib and Spirn who wrote about the importance of specific vocabulary.

Complexity theory has the capacity to add specificity to the vocabulary of landscape architecture.

I think I can find a link between all the theories I have written about in this paper and complexity theory. Non-linear dynamics and especially non-linear combinatorics as De Landa defines them are specifically defined with the intent of facilitating an understanding of ideas like hybridization of process or form providing another reference point between this framework and the others. DeLanda's exegesis is directed toward providing an analog between theories of physics and the functioning of other systems. (De Landa 1997) Not all theories are frameworks as I would define them. I am specifically referring to critical practice, site thinking, ecology/new ecology, and complexity theory. I think a framework has to be able to draw together unlike ideas and facilitate a synthesis of those ideas. I would consider phenomenology, hermeneutics and semiotics to be sources of knowledge and through semiotics to be interrelated.

I realized that in site analysis I was accepting the idea that the information I gathered from maps and other sources were a true representation of objective reality. Site thinking immediately questioned the grounds on which the idea of an objective reality is accepted. (Burns and Kahn 2005) Mapping clarified how the standards of mapping serve to enforce cultural biases inherent in our idea of objective reality. (Corner 1999) We are cultural constructions as much as landscape is. It is very difficult to see all the ways that our assumptions and biases prescribe what we do. I know I have assumptions and biases, but I found new ones during this process. I am pretty sure there are more. I do not think complacency will serve me well. I will undoubtedly continue to read theory when I am in practice. Complexity theory added to my understanding of the assumptions I was making in site analysis and reinforced the idea that I have to find ways of avoiding those assumptions in the future.

The third assumption I made at the beginning of this process was upheld by all of the theories I used in this paper. Issues of representation deserve their own thesis and investigation. This paper can only be considered to be raising the issue for myself and the exploration and definition of how those representations change will be an ongoing challenge. Complexity theory has helped

me identify things I will try to represent graphically in the future from site analysis through the final drawing. Site analysis as a tradition has been an approach in which we take apart various systems and catalog what we find. That form of analysis is biased by culture first, because it is a linear analytical thought pattern and secondly, because it supports the biases that underlie the value system of the culture. Site analysis as a linear hierarchical approach is a stratified structure and involves the simplest form of causal relations. Hierarchical forms enforce the value system inherent in culture. Again the idea of landscape as a cultural product is further defined by complexity theory and the reverse is true as well, enriching concepts of both. We think of that hierarchical value system as prescriptive, but perhaps more importantly it is proscriptive. "[H]istory and philosophy may interact in such a way as to make an objective assessment of reality impossible- when entrenched worldviews and routine procedures...constrain each other negatively..." perhaps the most important problem with a top-down approach is that it presupposes that as a simple causal relationship it can be reversed like any mathematical operation. If we can take an ecosystem apart we can put it back together and it is an ecosystem again. That thought process is missing the most important part of an ecosystem, the relationships between the elements of the system. Complexity theory focuses on those relationships as process. (De Landa 1997)

Complexity theory helps me determine how to approach relationships between social and physical forms as energy and mass. (De Landa 1997) We can think of redirecting resources, reminiscent of Halprin's RSVP Cycles (Halprin 2002) where aims and motivations are counted as resources, "society as material capable of undergoing changes" that we can track as density of settlement, amount of energy consumed or the intensity of interactions. Change can be approached as the organization of dynamical elements as energy flow. (De Landa 1997) When combined with Corner's idea of mapping as interpretation a very exciting hybrid emerges. (Corner 1999)

If I start with three premises from De Landa I can frame the hybridized problem-setting from the combination of complexity theory and mapping. First, expectations and preferences guide human decision-making. Secondly, goals of organizations can have

unintended collective consequences. Third, resource management tends to be reactive. If I understand that, just as I cannot take an ecosystem apart and simply add it up again, I cannot take social forms like a city apart into separate entities- housing, public space, and institutional space- and simply add them up again into the original social form that is city. Rebuilding piecemeal will miss the reason people prefer or expect specifics. (De Landa 1997)

As a hybrid between this idea and Corner's idea of mapping (Corner 1999) I would want to represent the unintended consequences of city settlement patterns. (De Landa 1997) In the example of the case study those would be fractionalized neighborhoods and intensity of degradation evidenced by pockets of economic hardship and a loss of resource quality in a number of ways.

Other representations change, too. Images function as analogs, symbols, or metaphors and it is important to be conscious of how they are used. Issues needing to be represented as a part of any presentation would include ways in which:

- existing topography and processes structure new form
- new forms serve existing context (in avoidance of an Emerald Necklace phenomenon, in which the necklace is perceived by those unaware of their biological intent as a set of interesting shapes dappled around the city unrelated to the process they were designed to facilitate)
- hybridized form responds to a synthesis of irreducible beliefs and preferences, in combinations that allow new form

Some of these may be addressed partially by the standards of architectural representation, but I think I will need strategies to adequately represent interrelationships. That, however, is a topic for another paper.

The last assumption I will address is that the categories Swaffield suggested were very helpful as a way of starting, but became less important as the design process progressed and my knowledge of theory expanded. They still work for the most part, and as an organizationally challenged person I will undoubtedly continue to use them to some degree to keep myself on track

with time constraints, but understanding and defining them as categories is less important. They are a tool, but they are one tool among many, now.

Perhaps one of the most important outcomes from this sort of study is, as Burns and Kahn state, "how to represent the hidden factors that will support relational understanding." (Burns and Kahn 2005)

Becoming familiar with these theories gave me the vocabulary to describe what I was doing in the design and why things are where they are. Not just that it looked good in a plan, but that the arrangement, taking the opportunities that presented themselves in the way of contiguities or alignments allows me to plan for processes that will make the design work as a system of processes. Future changes or planning can be guided by those same processes rather than taking them apart. While I would be loathe to place a stack of books in front of a client, one of my jobs as a landscape architect is to explain and represent those processes in a way that makes them clear to the client.

Conclusion

Theory is essential to design. Theory offers an exploration of possibilities and gives us access to a greater perspective. Greater perspective can include new sources of knowledge and provide new insights into the legacy of design we inherit. To fully educate ourselves we have to ask questions. Theory provides tools for critical analysis to provide focus for those questions.

Frameworks are shaped by theory. Frameworks provide structure for ideas embodied in theory. Frameworks can draw together heterogeneous masses of information and through the use of theory creatively synthesize forms and processes, traditions and new ideas. Through this synthesis richness, depth and beauty can be aligned with and become a part of dynamic systems and processes.

In my, admittedly limited, experience of landscape architects I have noticed a resistance to theory which extends to science, in general. Science lives through theory as a dynamic process of questioning, testing and developing new sources of knowledge and ideas; because of this dynamic process science is multivalent. It is essential that landscape architects are open to the processes and ideas theory can catalyze if they want to produce work that is fully dimensional. If designers

are absent from the source of knowledge how can their design work be anything but an expression of absence? If landscape architects turn away from the possibilities inherent in expanding their perspective, their designs cannot rise above “the primer level pragmatics” of univalent design. (Burns 1995) In his book entitled Landscape and Memory, Simon Schama uses the phrase “absence becomes presence.” Although Simon Schama wasn’t describing a lack of theory his phrasing is so evocative and poetic it is what I think of when I think of a design devoid of a deeper intellectual exploration. (Schama 1995)

To enter the profession landscape architects should be charged with the responsibility of first do no harm. My professors have worked hard to give me the base in science and aesthetics to begin my career. It is my responsibility to continue to educate myself in practice and to use my education to make a healthier, happier world for myself, my family and my community. I believe that is possible.

“[I]f the phenomenology of landscape architecture taps into the concrete experience of a place by its citizens and if those experiences intermingle cyclical natural processes in rhythms of collective social life, then this type of built work can redefine what it means to be part of the environment.” (Meyer 2000)

In my design work I want a deeper aesthetic that involves more than the visual sense of aesthetics. I want to create an aesthetic experience that can coexist with the ecosphere. I want to nurture an aesthetic response that inscribes the beauty of the natural world in the narrative of the site. I want to create design and form as a response to multiple factors and frameworks of knowledge. Theory makes that possible and critical practice will be my framework. (Meyer Fall 1991)

References

- Allen, Stan. 2001 "Mat Urbanism." In *Case: Le Corbusier's Venice Hospital*, ed. by Hashim Sarkis, Pablo Allard and Timothy Hyde., 118-27. New York: Prestel.
- Broadbent, Geoffrey, Richard Bunt, and Charles Jencks. 1980. *Signs, Symbols, and Architecture*. New York: Wiley.
- Burns, Carol J. 1995. Professional Education and Practice the Current Crisis: An Approach to Alignment. *GSD News*.
- Burns, Carol J, and Andrea Kahn. 2005. "Why Site Matters." In *Site Matters*, ed. by Carol J Burns and Andrea Kahn, viii-xxix. New York: Routledge.
- City of St Paul. *Arts Culture and Events*. <http://www.stpaul.gov/index.asp?NID=58>.
- . *District Energy St Paul*. <http://www.stpaul.gov/index.asp?NID=501>.
- . *Internal Energy Conservation Efforts*. <http://www.stpaul.gov/index.asp?NID=510>.
- . *Science House Experiment Center*. <http://www.stpaul.gov/index.asp?NID=505>.
- City of St Paul. "St Paul Comprehensive Plan and Future Visioning." St Paul.
- Conan, Michel. 2000. Introduction: Contested Claims and Creative Tensions. In *Environmentalism in Landscape Architecture*, ed. by Michel Conan, 1-22. Washington, DC: Dumbarton Oaks.
- Corner, James. 1990. A Discourse on Theory I: Sounding the Depths. *Landscape Journal* Vol. 9, no. 2: 61-78.
- Corner, James. 1991. A Discourse on Theory II: The Tyrannies of Contemporary Theory and the Alternative of Hermeneutics. *Landscape Journal* Vol. 10, no. 2: 115-33.
- Corner, James. 1999. "Introduction: Recovering Landscape as a Critical Practice, I." In *Recovering Landscape*, ed. by James Corner, 1-26. New York: Princeton Architectural Press.
- Corner, James. 1999. "The Agency of Mapping: Speculation, Critique and Invention." In *Mappings*, ed. by Dennis Cosgrove, 213-52. London: Reaktion Books Ltd.
- Cosgrove, Dennis. 2002. "Landscape as Cultural Product." In *Theory in Landscape Architecture: A Reader*, ed. by Simon Swaffield, 165-167. Philadelphia: University of Pennsylvania.
- De Landa, Manuel. 1997. *A Thousand Years of Nonlinear History*. New York: Zone Books.
- Dripps, Robin. 2005. "Groundwork." In *Site Matters*, ed. by Carol J Burns and Andrea Kahn, 59-92. New York: Routledge.
- Halprin, Lawrence. 2002. "The RSVP Cycles." In *Theory in Landscape Architecture: A Reader*, ed. by Simon Swaffield, 43-48. Philadelphia: University of Pennsylvania Press.

- Howett, Catherine. 2002. "Systems, Signs, and Sensibilities." In *Theory in Landscape Architecture : A Reader*, ed. by Simon Swaffield, 108-115. Philadelphia: University of Pennsylvania Press.
- Jacobs, Harvey M. 2005. "Claiming the Site." In *Site Matters*, ed. by Carol J Burns and Andrea Kahn. New York: Routledge, Imprint of Taylor and Francis Group.
- Jacobs, Jane. 1961. *The Death and Life of Great American Cities*. New York: Vintage.
- Lynch, Kevin. 1972. *What Time is This Place?* Cambridge: MIT Press.
- McHarg, Ian L. 1969. *Design with Nature*. Garden City: American Museum of Natural History [by] the Natural History Press.
- Meyer, Elizabeth. 2001. Dumbarton Oaks: Acting Out on Values. *Land Forum* no 9: 26-9.
- Meyer, Elizabeth. Fall 1999. Landscape Architecture and Critical Inquiry. *Landscape Journal* Vol. 10, no. 2 : 156-9.
- Meyer, Elizabeth. 2005. "Site Citations: The Grounds of Modern Landscape Architecture." In *Site Matters*, ed. by Carol J Burns and Andrea Kahn, 92-129. Philadelphia: University of Pennsylvania Press.
- Meyer, Elizabeth. 2002. "Situating Modern Landscape Architecture." In *Theory in Landscape Architecture: A Reader*, ed. by Simon Swaffield, 21-31. Philadelphia: University of Pennsylvania Press.
- Meyer, Elizabeth. 2000. "The Post--Earth Day Conundrum: Translating Environmental values into Landscape Design." In *Environmentalism in Landscape Architecture*, ed. by Michel Conan, 187-244. Washington D.C.: Dumbarton Oaks.
- Relph, Edward. 1976. *Place and Placelessness*. London: Pion.
- Relph, Edward. 2002. "Place Reclamation." In *Theory in Landscape Architecture: A Reader*, ed. by Simon Swaffield, 102-4. Philadelphia: University of Pennsylvania Press.
- Schama, Simon. 1995. *Landscape and Memory*. New York: Borzoi Book.
- Silvetti, Jorge. 1995. Design Curricula. *GSD News*.
- Spirn, Anne Whiston. 1984. *Granite Garden: Urban Nature and Human Design*. New York: Basic Books.
- Swaffield, Simon. 2002. "Introduction." In *Theory in Landscape Architecture : A Reader*, ed. by Simon Swaffield, 1-6. Philadelphia: University of Pennsylvania Press.
- Thayer, Robert. 2002. "Three Dimensions of Meaning." In *Theory in Landscape Architecture: A Reader*, ed. by Simon Swaffield, 104-8. Philadelphia: University of Pennsylvania Press.
- The American Heritage® Dictionary of the English Language. *morphogenesis*. Edited by Farlex. Vers. Fourth Edition. Houghton Mifflin Company. 2003. <http://www.thefreedictionary.com/morphogenesis> (accessed 2008).

Treib, Marc. 2002. Content of Landscape Form (Limits of Formalism). *Landscape Journal* Vol. 20, no. 2 : 119-140.

Treib, Marc. 2002 One Garden May Conceal Another: Obrist's List. *Landscape Journal* Vol. 21, no. 2: 19-25.