

A Community in the Desert



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A COMMUNITY IN THE DESERT

by

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A thesis submitted in partial fulfillment
of the requirements for the degree

of

Master of Architecture

in

Architecture

MONTANA STATE UNIVERSITY

Bozeman, Montana

April 2008

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Sean Brady Winchester

April 2008

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ABSTRACT

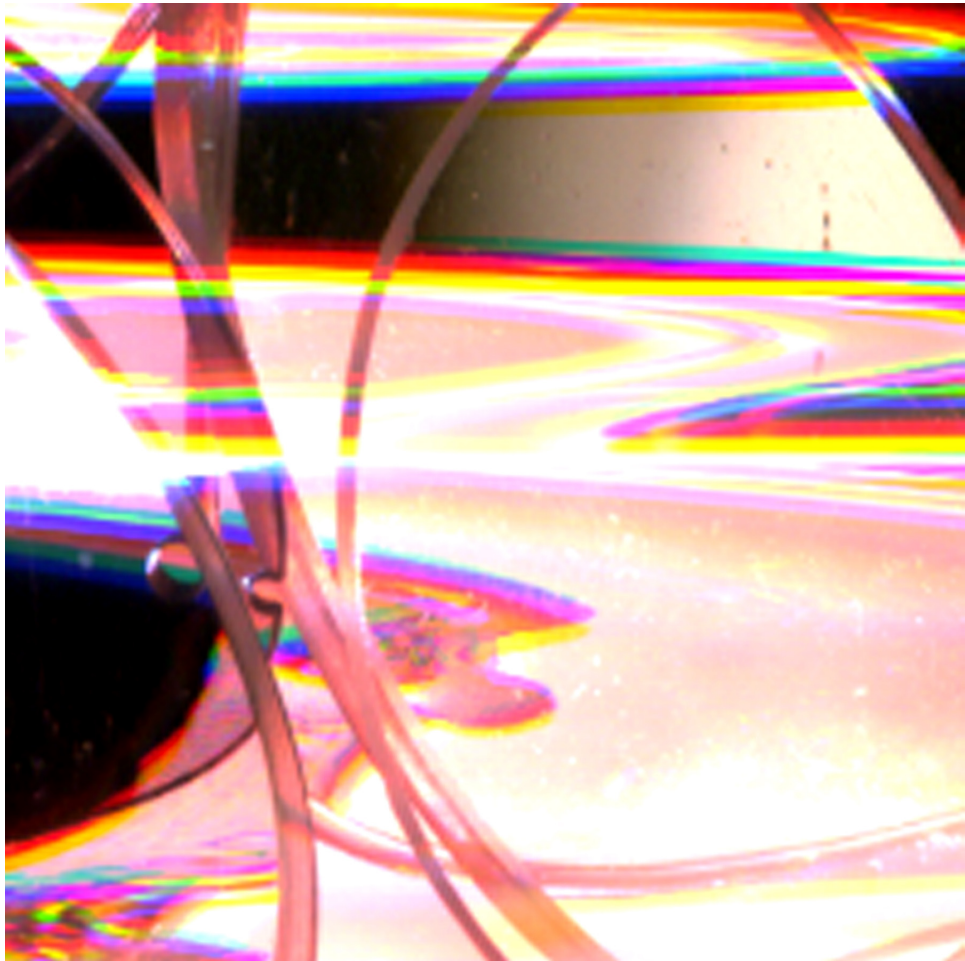
Changing paradigms in society's general understanding of reality have revealed general deficiencies in contemporary architecture, the primary evidence of the unique human relationship with reality. This thesis seeks to understand the nature of perceived architectural poverty and works toward a general approach for a more human, more timely, more appropriate architecture in synch with new, lost, ignored and rejected ideas.

Architecture is qualified not as merely buildings, but as a system of relationships between objective and uniquely human subjective aspects of reality. Architecture is further refined to a definition as the relationships between the physical world, subjective experience, abstract knowledge and truth. The relationships inherent in this definition are used to analyze significant spheres of architectural context in order to determine which are most deterministic to architecture as the relationships defined.

In order to test the application of the ideas put forth, a project is proposed as a testing grounds. ΔCity is a proposed community project sited in Nevada, 15 miles east of Reno, centered around a large new manufacturing, warehousing and distribution development: Tahoe-Reno Industrial Center. ΔCity is conceived as a systems-analysis-become-architecture based on the previous theoretical work. It is programed primarily in response to the determined need for new, repaired or improved relationships between the contextual spheres considered. The result is a 3-dimensional architectural system of relationships uniquely applied to the particular site and specific context spatially, ecologically and socioculturally through the "medium" of strategically programmed infrastructure.

Thesis Semester 1
Spring 2007

The Theory



Impaired Reality

Inquiry springs from a deep-seated, gnawing opacity, a dissatisfaction with an oblique condition. It could be a general feeling of unease. There is no defined problem, only a suspicion that the condition could be better. A void may exist between what is and what could be, or what should be; wasted potential, perceived inadequacy.

There is resignation. Where we go is not where we want to be, but it is better than here. The path is before us; it has been cut. There is nowhere else. Everyone is waiting on the next level.

Is there nowhere else? Which is better: letting sleeping dogs lie or flogging dead horses? Who cut these paths before us? Why do we follow them? Who placed these crumbs? Why do we eat them?

This is an inquiry, or a segment of a journey. It is made not in the pursuit of solutions, but in the exploration of approaches to situations. It is not an end game, but a diversion. It is testing the handle on a door in a crooked hall just to determine if it's locked. Like any diversion, it is as much in hopes to delay the destination as it is idle curiosity that forces one to try the door. Everyone knows what lies down the hall: a turnstile, then, the next level, another winding corridor. Everyone is

waiting there. A queue of pac-mans, like a bevy of scrambling quail shoots the gauntlet to the immanent turnstile, gobbling the figurative bread-crumb dots. The counter whirs as it registers each admission with the crank of the well-worn arms. The food is good, and the next level more challenging... but the lever turns, the door swings in. Dim light spills out with aromas of exotic cuisines. Unseen people are talking and laughing. Music is playing.

The turnstile can wait.



Photo: Stefano Corso.
[flickr.com/photos/pensiero](https://www.flickr.com/photos/pensiero)

Assumptions:

1. I exist autonomously, self-aware, self-conscious, conscious of my consciousness.
2. I exist in a reality separate from, differentiated from my self, not constructed by my consciousness: the "other."
3. You, and other self-conscious beings, exist in the same differentiated reality as I, autonomously, independent of my consciousness.

The development of an ontology specific to architecture must be specific to the reality of the human being from which architecture springs. Humanity is unique in its reality as it is unique in its architecture, its relationship with reality. To talk about architecture without talking about reality is to talk about something other than architecture; for, what else is architecture? It is not the intention of this inquiry to rebuild reality, but to establish its relationship to humanity architecturally. Through the exploration of reality, its intention is to discover architecture.

To this end, perhaps it is best to start with a working definition of architecture through the construct of the exploration of reality.

Architecture is the *relationship* between human individuals and their perception of reality.

Emphasis is placed in this definition on the characterization of architecture as a relationship. All we have to work with are perceptions and assumptions based upon perceptions. So far, we have reality as everything perceived objectively outside ourselves. We have ourselves, the admission we exist within the perceived reality subjectively as self-conscious individuals and that each individual is, in itself, a self-conscious, aware and autonomous unique being. I am able to prove myself, and selfness in and to my own consciousness. I am reasonably sure you, and others I perceive similar to you, are not a product of my consciousness, but are unique, separate individuals apart from me. I am reasonably sure that the reality in which I exist has properties existing from sources beyond my, your, or their construct and perception; meaning we are not entirely responsible for the given reality within which we exist. It is something other than consciousness, something we come to being within.

Thus far we have a set of unavoidable, but reasonable assumptions: me, you, them, collectively us, and it. Our objective model is simply a collection of subjective

individuals within an objective reality. Compared to perception, this model seems inadequate, inert and static, a collection of various pebbles scattered in a flat pan. Experience suggests a more dynamic model.

In order to set this model in motion, one more construct may be established: the relationship. The image of pebbles in a pan illustrates this first primary relationship — that of pebbles to pan. They are in. Likewise it is not just me, and you, some others, and an outside reality all scattered about. There is a basic involvement of these elements, a connection. I am *in* reality. You are *in* reality. I perceive you and them in the reality wherein I exist. I have a basic association with reality characterized by the relationship of “in”. Based on what I have observed, I assume you have a similar relationship with that same reality which is outside both of us. As well, the same assumption may be made of all individuals of similar subjective characteristics. They are all related to a reality outside themselves by being in it. There is a commonality among people defined by the individual relationship of “in” each maintains to a common physical reality outside themselves. Necessarily, this common trait suggests further that people, by association through a common reality have fortuitously, but unintentionally entered an inescapable relationship to one another: a relationship of “with” or “among”.

The model now consists of subjective individuals related to one another individually and collectively by their common basic relationship with a mutual, differentiated reality. Individuals among one another in that which is other than them. The model now consists of all the components contained in the working definition of architecture besides architecture itself. It is a model of the most basic intrinsic construct of objectivity and subjectivity—the human reality in its most primordial state. Self-aware entities consciously relating to one another and their environment consciously differentiated, individual, autonomous, conscious of their consciousness, conscious of their relationships. This fundamental model of human reality—subject, object, relationship—serves in its basic illustration, but it is still not the dynamic

picture experience suggests. It is still just a picture of pebbles in a pan, this time with circles drawn around the pebbles and lines indicating their relationship to the pan. Of course, the problem is that we are building a model of people in the world, but staring at a pan full of pebbles in expectation of human allegorical wisdom. Such is the problem with metaphor in models. It breaks down before any meaning emerges. People are not pebbles. Reality is not a pan. Relationships are not lines drawn between things. The metaphor means nothing more than tea leaves in a cup, cards on a table. No more talk of pebbles when we mean people, lines when we mean relations, atoms when we mean solar systems, organisms when we mean communities, computers when we mean brains. Pebbles will only tell us about pebbles.

No longer staring into a pan, we still have our fundamental model of subject, object, relationship, the problem of its static appearance and the question: where does architecture fit in? What is missing? The answer is nothing. Everything springs from this basic construct. All we must do is see reality for reality and people for people. The dynamic is a property built in to the model. Neither people, nor their environmental reality exhibit properties of stasis, or even equilibrium. Place people in a meadow. The image is not the static picture of pebbles in a pan abstractly related merely through correlation, association, proximity. People enter relationships with other people as a basic property of people. People enter relationships with the meadow based on the basic properties of both people and the meadow. The people are mobile in the meadow among other people, amidst the brush, near the stream, between the trees, beneath the mountains. One might say the people, as well as the brush, the stream, the grass are of the meadow. All these prepositions between the various elements indicate their relationships to one another. It is the purpose of going through all the trouble of describing it to make this proposition: the relationship between people and all else that surrounds them, individually and collectively, is the primary essence of architecture. The fundamental property of architecture is that of the relationship between the human and that human's reality.

Architecture is the relationship between human individuals and their perception of reality.

The inquiry starts here on this fine first principle of architecture. The intensity of the definition should not be neglected, or underrated. It states simply and clearly that humans are intrinsically related to the physical reality strictly through this cardinal relationship proposed as architecture. Is architecture really this significant in the primary role binding humans to the world, like the force of gravity holding them earthbound? Is it conceivable that architecture is large enough to fill that capacity? Is architecture this genuinely relevant?

It could be said this definition of architecture is self-serving and grandiose. We have considered architecture too early in the ontology. Architecture requires something else to base itself upon. The basic relationship is something other than architecture. Architecture comes later in the construct. These statements may be empirically true. Architecture may not fill this primordial role relating humans to reality. Architecture may not be that indispensable, that crucial.

Shouldn't it be?

3+1

One can not talk about architecture without talking about reality or people. If the definition of architecture is accepted, physical reality and people are the only things preceding architecture. They constitute, permit and require one another. You don't get one without the others. They are a package deal, at least if you happen to be human.

If one wishes to discover architecture, it follows one must also take a close look at the people and the realities to which it relates. If there is a question, or discomfort concerning architecture, likely it is a problem concerning people and their perceptions of reality. One doesn't commonly blame the relationship of marriage itself for its failure, or praise it for its success. Credits go to the people involved for its performance. If one seeks to discover the nature of a marriage, or the source of its problems and successes, one looks not to the abstract relationship, the children, the rings, the pastor or the boat in the driveway but to the people at the source. Such is the situation with architecture. A magnificent body of architecture does not spring from an entirely worthless culture. Neither do we often see a people within a deficient reality producing worthy architectural relationships to it. *Where we encounter architectural relationships found wanting, we find incomplete people in an impaired reality.* For the architect and the aspiring architect what does this mean? How is the situation remedied? Given what we have, there are four choices: people must change, reality must change, perceptions must change and/or the basic definition of architecture

must change. For the sake of argument, assume the definition was not designed in vain, but toward an end. That leaves people, perception and reality.

Humans are unique in the world of living things. Among animals, humans have properties and abilities far in excess of other known species, especially concerning abilities involved with the perception and manipulation of reality. In the initial set of assumptions, a reality independent of consciousness was proposed. This is only partially true. When we look more closely at how humans relate to the world, we will find that a great deal of *human* reality is heavily dependent on the human property of self-consciousness and human perception of reality. Emphasis is placed on the qualification of “human” in describing reality because the following position makes the point that the reality of the human being is unique among species... and effectively unique among human individuals.

Philosopher Sir Karl Popper (1902-1994) proposes a construct of human reality in which our “universe” consists of three “different but interacting sub-universes” This is the *Three Worlds* model of human reality.

World 1 is the world of physical bodies. It consists of all the physical surroundings and objects of the universe. Electrons, rocks, stars and galaxies belong to world 1, as well as plants, animals and physical phenomena such as energy, gravity and electromagnetism.¹ World 1 is the world we share with all other things outside ourselves. It is the reality mentioned in assumption 2, the objective reality not originating in my, your or their consciousness. As will be seen, world 1 may be subdivided in scores of different ways into multitudes of divisions depending on the observer’s particular perception. For example, the zoologist divides the world into the living and non-living, then proceeds to further divide the living into structures, physiologies, developments and classifications. The physicist tends to divide the world into its most basic perceivable elementary constituents of matter, energy space

and time.

World 2 is the mental or psychological world. It is the domain of subjective experience and thought. World 2 is immensely important from the point of view of the human. It is the world of our feelings, decisions, observations and perceptions; the source of our morals, joy and suffering.² In many ways it is what defines us as humans. We derive our subjectivity from world 2, each experiencing the world of thought uniquely and individually. As with world 1, world 2 may also be divided in many ways, such as conscious, un-conscious, and sub-conscious, etc.

World 3, Popper's particular innovation, consists of the products of the human mind "such as languages; tales and stories and religious myths; scientific conjectures or theories, and mathematical constructions; songs and symphonies; paintings and sculptures, but also aeroplanes and airports and other feats of engineering."³ Like the previous worlds, world 3 is divisible in many ways; the commonality is the source—the minds of humans.

The three worlds of this construct of human reality should not be seen as rigid delineations, but softly bordered, richly related, interacting spheres. For example, take a work of literature. There is a physical world 1 component which may take the form of a book, a pamphlet, even an electronic file or web page. In the case of a book, the physical object of "book" is commonly referred to as a *copy* of the title, suggesting somewhere there is an *original*. In fact all the physical objects of the title refer back to, are copies of the original. Popper's insistence is that the original does not indicate, say, the manuscript in physical form, but the essence, the content, the idea... the abstract object originating from the author's mind. Specifically, Shakespeare's *Hamlet* is a world 3 abstract object. My copy on my bookshelf is its world 1 manifestation. The same goes for Einstein's *Theory of General Relativity*, *The American Constitution*, *The Bible*, Stephen Reich's *Pendulum Music*.

In the relationship between these spheres of world 1 physical embodiments and concrete objects of abstract world 3 objects, world 2 can often be seen as the

intermediary human interface, the subjective experience. World 2 is the inspiration and thought, emotion and image subjectively experienced by the human of the world 1 performance of the world 1 score of the world 3 object Beethoven's *Symphony 9 in D Minor*. As well, World 2 is the sphere of the thoughts of the composer, the interpretation of the conductor, the individual mental processes of the musicians.

Through their world 2 interface, world 3 abstractions exhibit causality on the concrete physical world. It is the role of world 2 to *subjectively grasp* world 3 thought content, via world 2 thought processes. This is an important point to note: it is the primary mechanism by which the aggregate of human thought causes the physical world to change. This is how our ideas change the world, and how one person's ideas, through another, perhaps centuries later continue to affect reality. Of critical importance is the phrase "subjectively grasp." An idea is doomed to die with its originator if no means is made to communicate it... if it languishes in world 2, never to enter world 3. Likewise, a world 3 object is impotent if it can not be grasped, or can be understood by only a few with the specialized knowledge required. This point is made most poignant by Kenneth Boulding concerning science, but equally applicable to architecture:

The crisis of science today arises because of the increasing difficulty of such profitable talk among scientists as a whole. Specialization has outrun trade, communication between the disciplines becomes increasingly difficult, and the Republic of Learning is breaking up into isolated subcultures with only tenuous lines of communication between them—a situation which threatens intellectual civil war... One wonders sometimes if science will not grind to a stop in an assemblage of walled-in hermits, each mumbling to himself words in a private language that only he can understand. In these days the arts may have beaten the sciences to this desert of mutual unintelligibility, but that may be merely because the swift intuitions of art reach the future faster than the plodding leg work of the scientist.⁴

The significance and power of human threefold realism is its ability to pass on the property of potential, of the possible. To render this property clearly, it is important

to recognize the difference between the types of knowledge specific to world 2 and world 3. World 2 knowledge:

...in the subjective sense consists of concrete *mental dispositions*, especially of expectations; it consists of concrete world 2 thought processes, with their correlated world 1 brain processes. It may be described as our *subjective world of expectations*. Knowledge in the objective sense [world 3] consists not of thought *processes* but of *thought contents*. It consists of the content of our linguistically formulated theories; of that content which can be, at least approximately, translated from one language to another. The objective thought content is that which remains invariant in a reasonably good translation.⁵

Seen this way, knowledge can be traced through the worlds by following its various manifestations. For example, world 3 thought contents are grasped, applied, manipulated, experienced, etc. as world 2 subjective thought processes. This process could be the result of the experience of a world 1 copy, such as reading a book or hearing a lecture. Or, it could be in the aim of making a world 1 change such as applying a mathematical formula to a physical problem. Further the subjective experience of a world 1 object relating world 3 thought content, through its human interface can tap the subjectivity of that human to create and affect the contents of all three worlds. In plainer English, think again to Einstein's *Theory of General Relativity*. The actual thought content (world 3) exists in copies of the texts (world 1) in various translations all over the globe. Though the author of the content is gone, and the content of the theories is essentially fixed, the dynamic of its continual comprehension (world 2) by successive readers exploits the consequences of *the possible* within the theory. Though the content of the theory is all that it really is; as it combines with the "subjective world of human expectations" its meanings, applications and consequences become potentially infinite. This fact brings home the intensity of the power of thought in its various forms—and the dynamic by which it travels worlds—to affect all levels of reality.

The Bible. The Koran. Igor Stravinsky, Le Sacre du printemps. Charles Darwin,

On the Origin of Species. Lord Kelvin, *The Second Law of Thermodynamics*. Vitruvius, *The Ten Books on Architecture*. Piet Mondrian, *Composition with Yellow, Blue and Red*. Adolf Hitler, *Mein Kampf*. Friedrich Nietzsche, *Ecce Homo*. Robert Venturi, *Learning from Las Vegas*. James Watson and Francis Crick, *Molecular Structure of Nucleic Acids*. Niccolò Machiavelli, *The Prince*. Isaac Newton, *Principia Mathematica*. Harriet Beecher Stowe, *Uncle Tom's Cabin*. Kurt Cobain, *Smells Like Teen Spirit*. Pablo Picasso, *Guerinca*. Salvador Dali, *Crucifixion (Corpus Hypercubus)*. Marcel Duchamp, *Fountain*. René Magritte, *The Treachery of Images*.

Each of the worlds necessarily evolves from the world below beginning with world 1, which currently has no compelling precedent. Most important to our model is the world 1 sub-sphere of living organisms which eventually evolves to a point sophisticated enough to produce the world of conscious experience, world 2. Conscious experience and subjective thought then must be recognized as *emergent properties* of world 2.* Equivalently, world 3 is an evolutionary product of world 2. The objective knowledge of abstract thought content is the emergent property of world 3, setting it apart from other worlds of reality.⁶

In each case, and most importantly in the search for architecture, the properties and products of each successive world have a strong feedback interaction with the other worlds. We create world 3 by the subjective thought processes of world 2, but our thoughts are largely reflexively constituted by world 3 knowledge. Paradoxically, our world 3 knowledge largely creates the very minds which created it. The same reflexivity and feedback can be seen in world 1 to world 2 and world 1 to world 3 relationships. These relations and causal routes have been noted with respect to knowledge. The same reflexivity and feedback will be most important to the exploration of architecture as it relates humans to reality.

With this more-sophisticated, more specifically human pluralistic view of

* Emergent property: a property of a system or level of hierarchical complexity evident when a system is viewed as a whole, but not attributed to the summation of the properties of its components.

reality and its subjective perception*, a re-examination of the working definition of architecture is in order.

Architecture is the relationship between human individuals and their perception of reality.

“Reality” is a much more charged word. It involves the three worlds and their reflexive feedback interplay. “Perception” is less ambiguous, more attached to the individual. The phrase, “perception of reality” becomes troublesome within the construct of the three worlds because it is indicative only of world 2 subjectivity. Additionally, world 2 subjective perception of reality, as noted previously, is more-or-less the definition of “human.” Simple substitution renders the definition of architecture thus: Architecture is the relationship between human individuals and *themselves*. That has a nice ring to it, and admirable sentiments. That seems like something architecture should do: relate humans to humans. If architecture could do just this it would likely be in better shape than it is now. But by accepting this definition we are discarding a full two thirds of reality.

Established in assumption 2: reality is something outside of and separate from human consciousness, or by inflection, separate from subjective perception—meaning world 2. Following up this implication, assumption 2 (I exist in a reality separate from myself, not constructed by my consciousness) is the admission that I am (my) world 2 existing in a reality differentiated from myself, not constructed by my consciousness. Consider “reality” in this sense to be strictly defining those worlds of reality outside of subjective consciousness, i.e., worlds 1 and 3.** Since the original definition was intended to relate humans to an outside reality, it might be

*No philosophical proof is offered in this text, but can be found (and found to be sufficiently adequate to this author) in Popper’s text.

**World 3 is ultimately produced by world 2 activity, but never by an individual, and never fully experienced by non-omnipotent individuals. It persists beyond individual life spans, only to be interfaced, grasped and changed, as a separate entity of thought content by the thought process of world 2.

re-stated: Architecture is the relationship between world 2 and the worlds 1 and 3. More descriptively: Architecture is the relationship between subjective human thought processes and both the physical world and concrete human thought contents. Though clumsy and esoteric, this definition is more allegiant to the model at this state. The definition, however, indicates by omission, that architecture does not relate the physical world to the products of the human mind. It does not take long to determine that this, if anything, even the worst work of architecture accomplishes. Thus the definition for the current state of the model should relate all the established spheres of reality. “Subjective experience” seems the simplest, most descriptive phrase to indicate world 2. “Subjective” contains the implication of humanity; “experience” implies thought, perception, and all else involving human subjective thought. “Abstract knowledge” sums up world 3 adequately.

Now, along with a more sophisticated ontology of the threefold realism, we have a new definition of architecture faithful to both its original intention and the current model:

Architecture: the relationships between the physical world, subjective experience and abstract knowledge.

It is necessary to consider the possibility that not all worlds above the physical are products of the human mind. Some properties of reality may prove beyond our reckoning, at least by orthodox modes of thought, even as we add daily to the volume of abstract thought. Though not compulsory, it must be conceded that many acknowledge a vast slice of reality above and beyond physicality, subjective experience and abstract knowledge. This is the world of transcendental values, of absolutes, of infinities and ultimates. It is a world unbound by the comprehension of mind or the description of abstracts. To William Blake it is the Spirit of Prophecy, and its human manifestation, The Poetic Genius that potentiates humanity beyond its rational limitations. It is all that is inherently holy, God’s initial breath of life. Blake discards the rational as merely a way for humanity to look back on itself and manipulate its own empirical (world

3) knowledge: “the ratio of all things.” Through the Poetic Genius, the world of the creative, artistic and poetic unfolds. Rational endeavors speak only of the reductionist assumptions of scientific observations. The poetic is of God.⁷

Plato finds this slice of reality —the ultimate reality— in the form of the good. The form of the good is the force behind the truth in knowledge. It gives the knower’s mind the power of knowing, yet is beyond and above that knowledge... a world above and behind the human experience. “It is the cause of knowledge and truth, splendid as they are.”⁸ By analogy, it is essentially the sun which causes all vision growth and life; yet the sun is not itself such a precess. “The good therefore may be said to be the source not only of the intelligibility of the objects of knowledge, but also of their being and reality; yet it is not itself that reality, but is beyond it, and superior to it in dignity and power.”⁹ In pursuit of the knowledge of the good humanity is drawn from the cave of shadow, opinion, belief and illusion to the light of truth and intelligence, *noêsis*, the highest form of knowledge, the first principle, “something which involves no assumption.” Plato charges the philosopher rulers this one duty above all else: to “ascend to the vision of the good” so they may one day descend from the sun and “return again to the prisoners in the cave below and share their labors and rewards.”⁹ The vision of the good is the aspiration towards something transcendent and evolved, a higher order beyond common experience, an order, disorder, process or complexity that is the nature of things. That the truth of things may prove to require extra-rational explanations speaks to the exteriority of a universe which operates on scales and logics which challenge the capacities of our best minds and souls.

Rudolf Otto, in the exploration of the matter specifically from a religious perspective concludes that holiness or sacredness, akin to Blake’s Spirit of Prophecy or Plato’s form of the good is an *a priori* aspect of reality. In other words, this world of transcendent value, whatever its nature, exists as a basic component of the universe.¹⁰ As the human body relates to the physical world and the human mind relates to the subjective and abstract worlds, the human mind relates to the subjective and

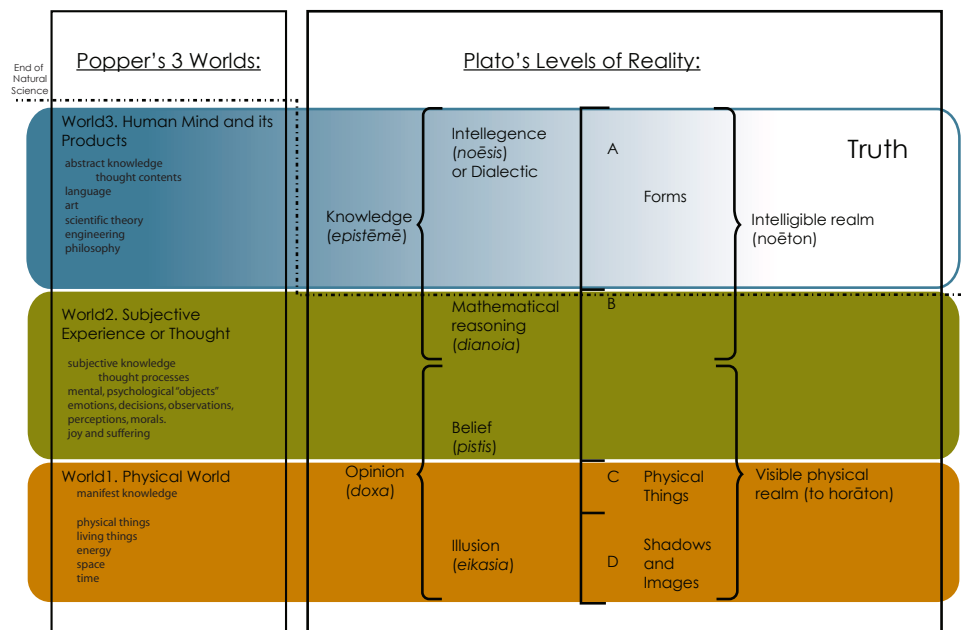
abstract worlds, the human spirit relates to the transcendent world through the spiritual capacities of individuals and cultures. Otto coins the term *numinous* in reference to experiences specific to the spirit, “This mental state is perfectly *sui generis* and irreducible to any other; and therefore like every absolutely primary and elementary datum, while it admits of being discussed, it cannot be strictly defined.” And “In other words our X cannot, strictly speaking, be taught, it can only be evoked, awakened in the mind; as everything that comes ‘of the spirit’ must be awakened.”¹¹

The purpose here is not to ascertain the principles of the reality of the numinous, the poetic, the good. The purpose here is to recognize and accept there is a vast mysterious slice of reality that is about values, quantities and qualities transcendent of materiality, subjectivity, rationality and abstraction. It is the first and the last, the most and the least. It is why merely not being dead is not being alive. It is the standard by which movement is measured in a world where the only other constant is change.

We can do no better in conclusion than the words of John Ruskin in the introduction to the greatest of his Lamps:

... but for one, the line of the horizon is irregular and undefined; and this, too, the very equator and girdle or them all — Truth; that only one of which there are no degrees, but breaks and rents continually that pillar of the earth, yet a cloudy pillar; that golden and narrow line, which the very powers and virtues that lean upon it bend, which policy and prudence conceal, which kindness and courtesy modify, which courage overshadows with his shield, imagination covers with her wings, and charity dims with her tears... There are some faults slight in the sight of love, some errors slight in the estimate of wisdom; but truth forgives no insult and endures no stain.¹²

Architecture: the relationships between the physical world, subjective experience, abstract knowledge and truth.



Level	Characteristics	Relevant Disciplines	Examples	Emergent Phenomena	Additional Measurement Dimension
9 Transcendental	ultimate, absolutes, "inescapable unknowables"	Theology, Metaphysics, Philosophy	God, the numinous	wisdom, true knowledge, omnipotence	truth, form, absolutes, universal laws, etc.
8 Socio-Cultural Systems	Roles, Communication, Value transmission	History, Sociology, Anthropology, Behavioral Science	Families, Clubs, Nations, Conversations	Culture, Economy, Government, Bureaucracy, Industry, etc.	\$, demographic data, identity, solidarity, legitimacy, value, economic statistics, reputation, power, influence, etc.
7 Humans	Self-Consciousness, Symbolic language	Biology, Psychology	People	Subjectivity, self-consciousness expression, symbolic language, world 3	mental health, literacy, creativity, expressiveness, etc.
6 Animals	Brain, Ability to Learn	Zoology	Birds and Beasts	self-awareness, world 2	stimulus response, health
5 Lower Organisms	Organized whole, functional parts (systems), reproduction	Botany	Plants	Reproduction, Growth, Simple Life	Reproduction rate, Growth rate, production, etc.
4 Open Systems	Self-maintained structure	Biology, Information Theory, Metabolism	Biological Cells	Equifinality, Environmental relationships, Self-Organization, Steady-State Finality	Info
3 Control Mechanisms	Closed-loop Control	Control Theory, Cybernetics	Thermostats, Hemostasis, Mechanisms in Organisms	Maintained equilibrium, Adaptation, "if/then" causality	Information (ID)
2 Clockwork	Predetermined Motion (may exhibit equilibrium)	Physics, Chemistry, Astronomy	Clocks, Machines, Solar Systems	Causality, thermodynamic equilibrium	time, acceleration, impulse, etc.
1 Structures	Static	Physics, Statics	Crystal Structures, Bridges	frameworks, structures, atoms, crystals	mass, physical dimensions

World 3

Self-Consciousness (World 2 begins)

Self-Awareness

End of Natural Science

Beginning of Life

Notes:

1. Karl Popper. "Three Worlds." The Tanner Lecture on Human Values. Delivered at The University of Michigan, April 7, 1978. Originally published in *Michigan Quarterly* (1979): 143.
2. Ibid.
3. Ibid: 144.
4. Kenneth E. Boulding. "General Systems Theory—The Skeleton of Science." *Management Science* v.2 n.6 (1956): 198.
5. Popper: 156. Popper's italics.
6. Ibid: 166
7. William Blake. "All Religions are One." *The Complete Poetry and Prose of William Blake*. Newly Revised Edition. David V. Erdman, ed. New York: Anchor, 1988.
8. Plato. *The Republic*, trans. Desmond Lee, Second Edition. London: Penguin, 2003: 234.
9. Ibid: 246.
10. Rudolf Otto. *The Idea of the Holy*, trans. John W. Harvey. London: Oxford, 1971: 136.
11. Ibid: 7.
12. John Ruskin. *The Seven Lamps of Architecture*. New York: United States Book Company, 1880.

Community Planning Fantasy, Utopia, Purgatory: Seaside, Florida



“America’s eighteenth- and nineteenth-century towns remain great models of urban coherence and felicity...”¹



Seaside, Florida: public/private dialogue, intimate residential centers.
Photo: dpz.com

“It is conservative, and it is democratic; it is elitist, and it is populist; it is American.”²



Seaside School: built this century.
Photo: dpz.com

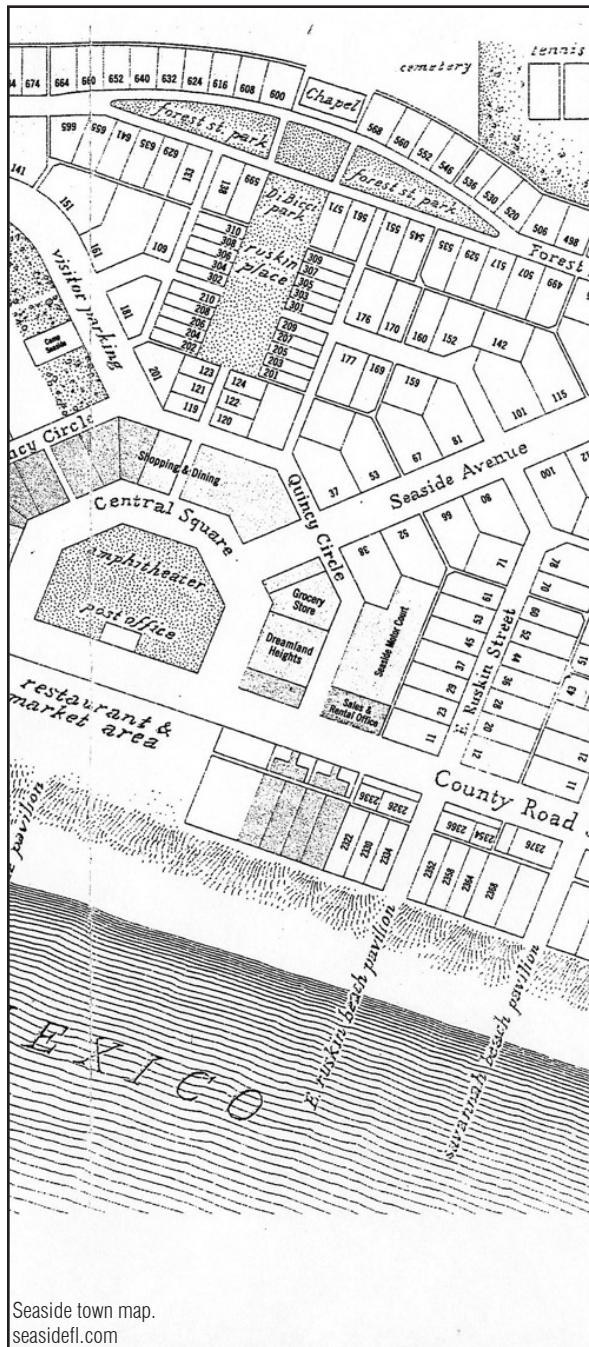


Ruskin Place and Smolian Circle.
dpz.com

Like Velveeta™ pasteurized process cheese spread, or 80s rock band Journey, Seaside Florida is a guilty pleasure. It's easy to scowl but impossible to look away. It is a bear on a bicycle, a bride's face smeared with wedding cake.

Serving as the set for the 1998 movie *The Truman Show*, it fulfills its ultimate irony. Based on capturing a reality perceived only retrospectively, it enforces an idyllic naiveté by tyrannical impositions of a fantastic plot. In the pursuit of a well-penned fiction, it dresses up and parades its residents as actors merely *playing town* in the dog-and-pony show of real-estate development. Regardless of these ills; why is the image of Seaside so difficult to shake? Certainly it is easy to shut off the television, to leave Radiant City, to log off Second Life. Truth be told, Steve Perry really can sing; and that bear is pretty good on his bike.

In a perverse sense, Seaside seems like a really nice place to live. Laugh all you like; but try this: envision an image of Seaside as a scale model, with gray boxes —something abstract and ambiguous— in place of the buildings. Without the distraction of the pastiche, what is left is a massing model of a spatial order that works... and works very well. Now you want to live in Seaside too! The space and order of Seaside are its hidden virtues, the cake beneath the frosting, so well hidden as to seem intentional, the treasure hidden in plain sight.



Streets are arranged in a hierarchy, descending in size depending on function and their position within the town. Their flexible arterial network allows a variety of routes to filter traffic through the town, unlike the standard suburban model of one large arterial feeding many capillary dead-end routes. Each street is its own type of space according to function, creating a dynamic dialogue with the play of private and public space. Small streets create more intimate spaces in the most private areas.

The radial configuration around a large public core places emphasis on the community as a sophisticated body with a strong identity. Though geographically separate, Seaside has neither gates nor guardhouse. Its openness is an invitation to visitation and exchange between residents and travelers.

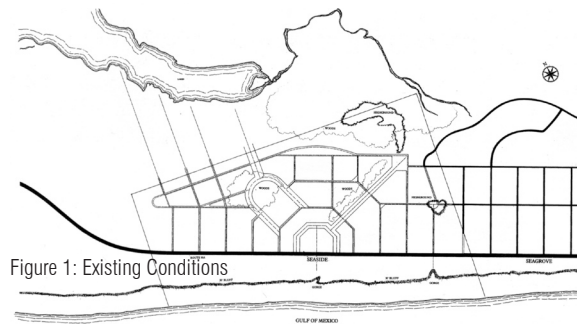


Figure 1: Existing Conditions

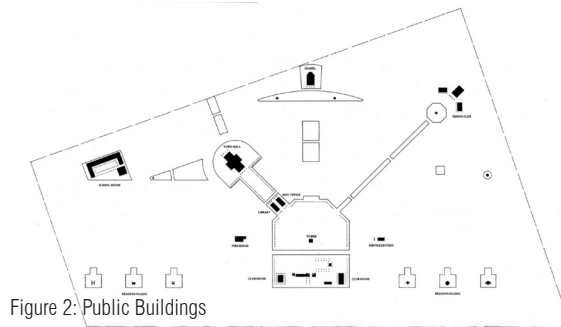


Figure 2: Public Buildings

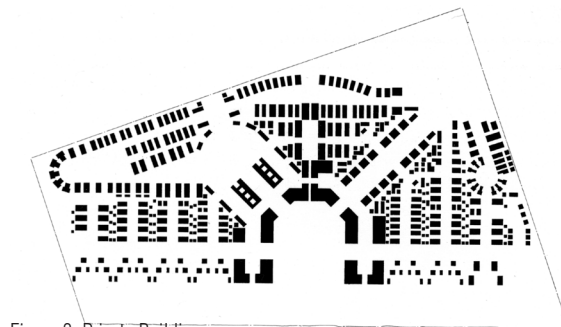


Figure 3: Private Buildings

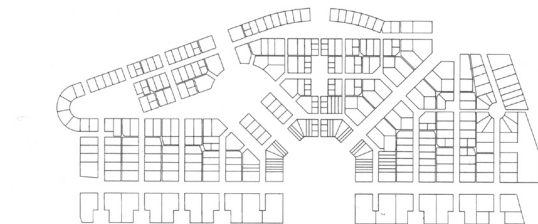


Figure 4: Private Lots

A large natural gorge to the beach determines Seaside's central square. The northern streets are left open to provide future lake access. (Fig. 1)

Major public buildings (Fig. 2) are located inland, bound to the central square by major and minor public spaces, to generate deep neighborhood activity.

Building use is not strictly delineated by Seaside code. Private buildings (Fig. 3, hypothetical projection) may be of many uses, from houses and apartments to shops, offices or motels. Buildings are controlled by zones, which determine building form in the code. Interpretation of the code is left to private designers (subject to review by the Seaside administration.)

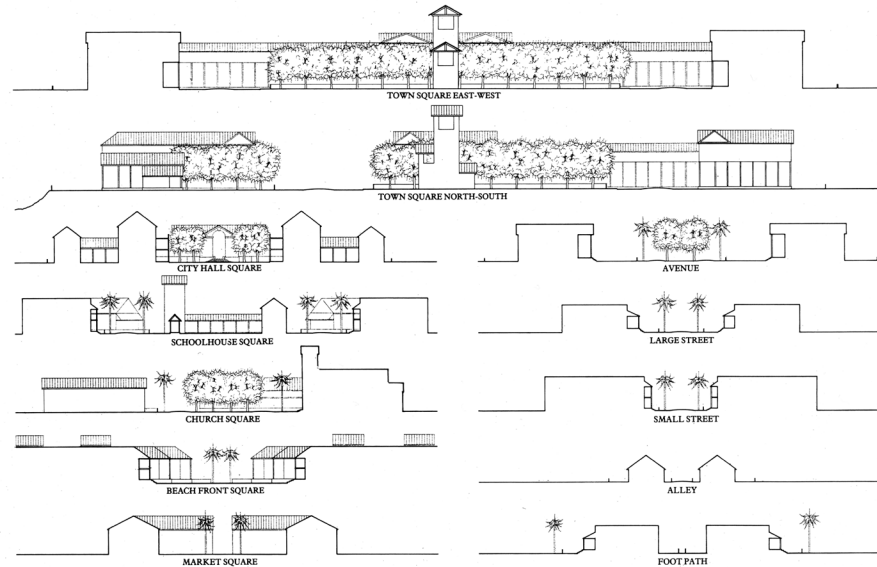
Private lots (Fig. 4) are sized according to intended but unspecified use. Residential lots become more dense towards the central square.³

URBAN CODE ★ THE TOWN OF SEASIDE

	TYPE I SINGLE-FAMILY RESIDENTIAL	TYPE II SINGLE-FAMILY RESIDENTIAL	TYPE III SINGLE-FAMILY RESIDENTIAL	TYPE IV SINGLE-FAMILY RESIDENTIAL	TYPE V SPECIAL RESIDENTIAL	TYPE VI SINGLE-FAMILY RESIDENTIAL	TYPE VII SINGLE-FAMILY RESIDENTIAL	TYPE VIII SINGLE-FAMILY RESIDENTIAL	SPECIFICATIONS
YARD AT LEAST 10% OF LOT AREA 10' MIN. WIDE									1. THE YARD SHALL BE A MINIMUM OF 10% OF THE LOT AREA. 2. THE YARD SHALL BE A MINIMUM OF 10' WIDE. 3. THE YARD SHALL BE A MINIMUM OF 10' DEEP. 4. THE YARD SHALL BE A MINIMUM OF 10' FROM THE ADJACENT LOT. 5. THE YARD SHALL BE A MINIMUM OF 10' FROM THE STREET.
PORCH AT LEAST 10% OF LOT AREA 10' MIN. WIDE									1. THE PORCH SHALL BE A MINIMUM OF 10% OF THE LOT AREA. 2. THE PORCH SHALL BE A MINIMUM OF 10' WIDE. 3. THE PORCH SHALL BE A MINIMUM OF 10' DEEP. 4. THE PORCH SHALL BE A MINIMUM OF 10' FROM THE ADJACENT LOT. 5. THE PORCH SHALL BE A MINIMUM OF 10' FROM THE STREET.
BALCONY AT LEAST 10% OF LOT AREA 10' MIN. WIDE									1. THE BALCONY SHALL BE A MINIMUM OF 10% OF THE LOT AREA. 2. THE BALCONY SHALL BE A MINIMUM OF 10' WIDE. 3. THE BALCONY SHALL BE A MINIMUM OF 10' DEEP. 4. THE BALCONY SHALL BE A MINIMUM OF 10' FROM THE ADJACENT LOT. 5. THE BALCONY SHALL BE A MINIMUM OF 10' FROM THE STREET.
OUT-BUILDING AT LEAST 10% OF LOT AREA 10' MIN. WIDE									1. THE OUT-BUILDING SHALL BE A MINIMUM OF 10% OF THE LOT AREA. 2. THE OUT-BUILDING SHALL BE A MINIMUM OF 10' WIDE. 3. THE OUT-BUILDING SHALL BE A MINIMUM OF 10' DEEP. 4. THE OUT-BUILDING SHALL BE A MINIMUM OF 10' FROM THE ADJACENT LOT. 5. THE OUT-BUILDING SHALL BE A MINIMUM OF 10' FROM THE STREET.
PARKING AT LEAST 10% OF LOT AREA 10' MIN. WIDE									1. THE PARKING SHALL BE A MINIMUM OF 10% OF THE LOT AREA. 2. THE PARKING SHALL BE A MINIMUM OF 10' WIDE. 3. THE PARKING SHALL BE A MINIMUM OF 10' DEEP. 4. THE PARKING SHALL BE A MINIMUM OF 10' FROM THE ADJACENT LOT. 5. THE PARKING SHALL BE A MINIMUM OF 10' FROM THE STREET.
HEIGHT AT LEAST 10% OF LOT AREA 10' MIN. WIDE									1. THE HEIGHT SHALL BE A MINIMUM OF 10% OF THE LOT AREA. 2. THE HEIGHT SHALL BE A MINIMUM OF 10' WIDE. 3. THE HEIGHT SHALL BE A MINIMUM OF 10' DEEP. 4. THE HEIGHT SHALL BE A MINIMUM OF 10' FROM THE ADJACENT LOT. 5. THE HEIGHT SHALL BE A MINIMUM OF 10' FROM THE STREET.

Figure 5: Seaside Urban Code.⁴

Figure 6: Street Sections accompanying the code.⁵



The key to Seaside's public, private and interstitial spaces is its Urban Code.(Fig.5) It works off the master plan to ensure certain desired spatial qualities, depending on lot type, street type and position in the town. Offsets, parking, yards and building heights are strictly regulated. A certain amount of freedom of style in design is allowed... to a certain restrained point, encouraged.

Seaside's urban code reverts to a small-town American model from when the automobile was not dominant. Streets are sized to control and impede traffic, rather than encourage it.⁶ Pedestrian-friendly gestures such as off-street paths are provided. (Curiously, excepting the main boulevards, there are no sidewalks along streets, similar to the chiseling suburbs Seaside is designed to oppose.) Yard size parametrically reacts to street type, maintaining desired ratios of space to the house and street. Houses must be close to one another and to the street. The potentially rude house to street interface is mediated by mandatory yards, porches and in some cases low wood fences.

Though from a somewhat

spurious source, the idea of this simple spatial code is alluring. Its genius is that it maintains spatial configurations in a authoritarian fashion based on a strong spatial idea without being deterministic of the results. In a sense, it is an urban DNA. The maintenance of the superstructure is ensured by the dictation of the code, but it is up to the properties of the parts (and those who design the parts) how compliance is achieved. It is the ossification of an ideal into interpretable laws of performance. Understanding of the ideal is not required, only conformity to the code. In this way it becomes ultimately democratic. The code is so simple it would be difficult to misunderstand, (notice, it is *one* page long) yet the principles and theory of its generation are much more esoteric and complex.

Notes:

1. David Mahoney and Keller Easterling, ed.s. Seaside: Making a Town in America. (New York, NY: Princeton Architectural Press, 1991): 43.

2. Ibid: 46.

3. Ibid: 100,101.

4. Ibid: 99.

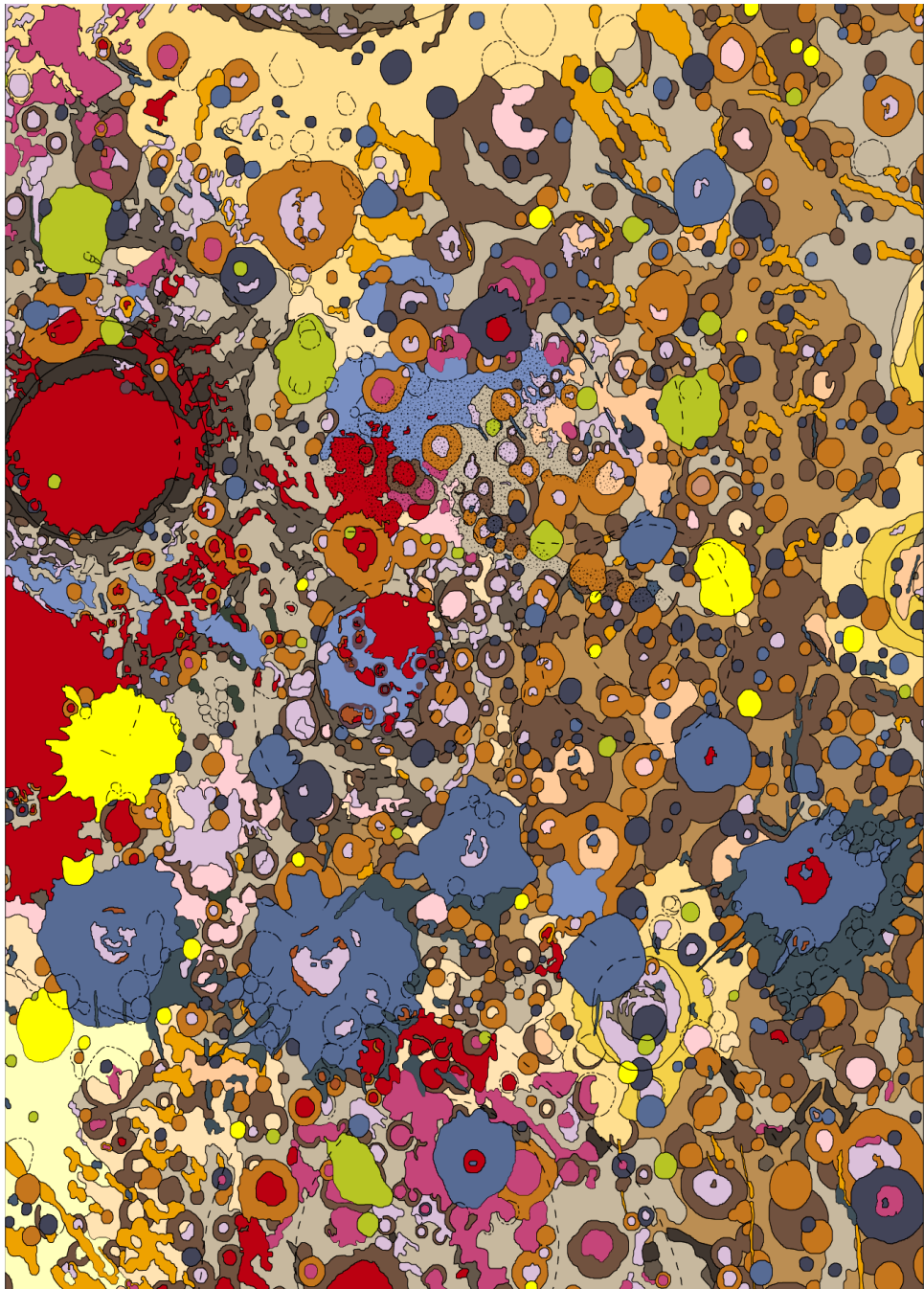
5. Ibid: 104.

6. Ibid: 55.

Site Analysis

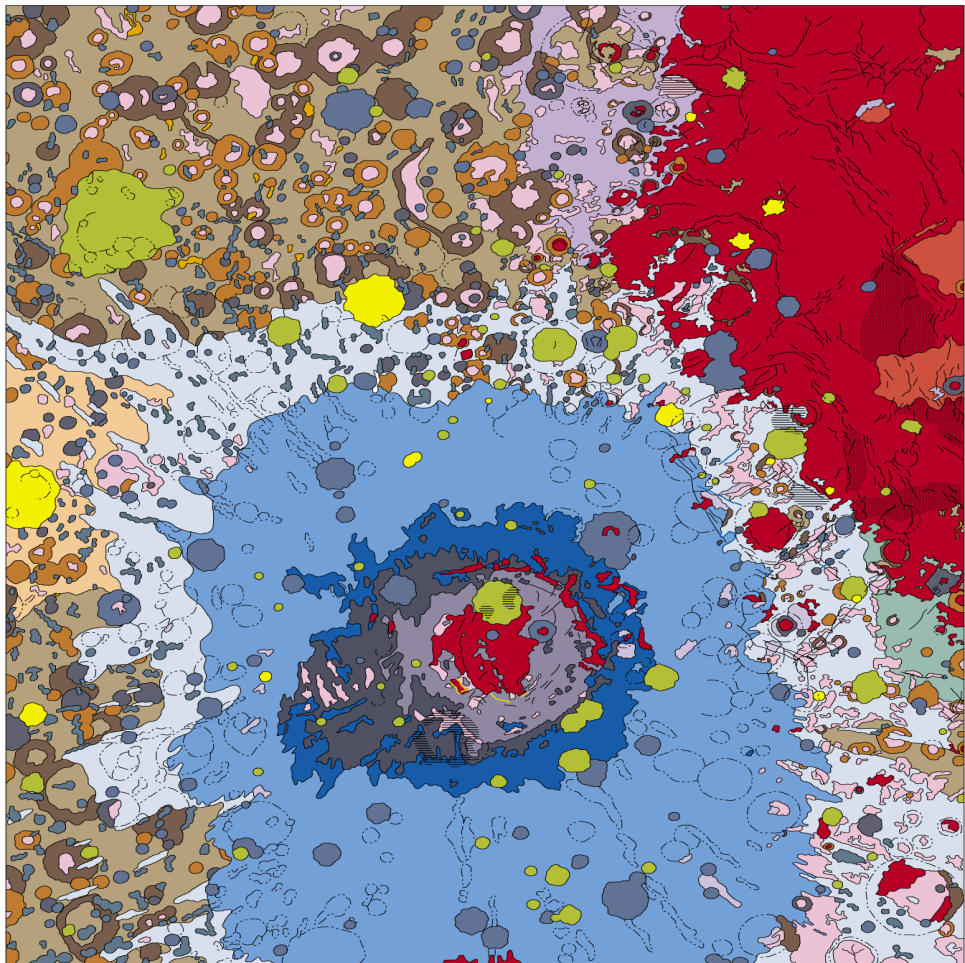


Photo: Apollo 8 crew member
Bill Anders on December 24,
1968. NASA.gov



Geologic Map of the Near Side of
the Moon. Don E. Wilhelms and
John F. McCauley (1971)
(U.S. Geological Survey map
I-703). astrogeology.usgs.gov

Spheres of Context at Scale: Architectural Determinism



Geologic Map of the West Side of the Moon. David H. Scott, John F. McCauley, and Mareta N. West (1977). (U.S. Geological Survey map I-1034). astrogeology.usgs.gov



Pyramid Lake, Pyramid Lake Paiute
Reservation, Washoe County,
Nevada.
ljplus.ru/img2/r/u/rusak_hong_kong/Pyramid-Lake_-Nevada.jpg

What role does context play with respect to architecture defined as the relationships between the physical world, subjective experience, abstract knowledge and truth? How deterministic are aspects of context on architecture itself?

The previous research indicates it may be fruitful to approach contextual analysis first from a concept of hierarchy of scales relevant to architectural relations. Further, context may be analyzed from various relevant perspectives at the hierarchical levels of scale.

The following analysis looks at the general concept of context on five scales from eight different perspectives with the intent of ascertaining how, and in what ways the various perspectives, at different scales, determine architectural relations as defined. The results give unexpected insight on what potentials context offers in building relations between the worlds, i.e., creating architecture.

Hierarchy of Scale:

Scale can range from the extremes of one Planck length (1.6×10^{-35} inches) to the observable universe (≈ 93 billion light years.) For our purposes, a more modest range was chosen. Relevant scales for projects concerning human activities seem to present themselves as scalar properties of human social activity. In other words, society organizes itself at its own relevant scales based on society's behavioral patterns. For instance, America as a sovereign political sociocultural entity tends to organize itself in a scalar hierarchy ending with nation, constituted of descending-scale components of states, counties, cities, districts, etc. It is composed of its own elements and is concurrently a component in a larger system with its own properties.

The range of scales chosen to study consists of:

1. Region
2. Municipality
3. Community
4. Neighborhood
5. Unit

Region:

For the purposes of this study region implies a scalar range from size of the state to a geographic area of the state without formal legal definitions, but encompassing a cluster of legally-defined adjacent counties. It includes, at its outer boundary, the state border and state government; at its inner boundary the cluster of counties, their borders and legal jurisdictions. The county specific to the project blends in to the next scale below.

Municipality:

Municipality typically refers to the political unit of a city. Though the specific site is effectively rural, with no such political unit, the scale of municipality can inform as to the site's potential to host such a unit, and how it would relate to nearby cities and towns in the same scale, as well as entities in larger and smaller scales. Municipalities have their own broad range in scale, often represented as population rather than physical size. For the purposes of this study, municipality shall represent populations from around 30,000 to 2 million residents. It possesses government and code as well as its relations to the county within which it resides.

Community:

Depending on a municipality's size and legal structure, communities within a municipality may be legally defined and recognized, on only perceived spatial or non-spatial enclaves. Nevertheless, the concept of community as a level of scale is introduced with the intention of defining a scale of population from 5,000 to 10,000 residents. "Individuals have no effective voice in any community of more than 5,000 — 10,000 persons."¹ With legally defined communities of this size with political representation, political alienation of individuals is more likely to be minimized or avoided. The scale of community serves a similar political purpose as a voting district or ward in some cities; but the concept is not strictly limited to a purpose in the political sphere. In fact the community, both as scale and entity can be much more.

Neighborhood:

The distinction of neighborhoods within a community promotes the heterogeneous emergence of unique and distinct homogeneous sociocultural sectors. The neighborhood gives people of like lifestyle a spatial center and culture within which to be their own form of unique. The political structure and behavior of neighborhoods should be left to the neighborhood to determine.

Unit:

The smallest considered scale is based loosely on the social scale of the family, thus includes the individual unit of the single-family residence. It also considers small businesses, store fronts and other relatively small self-contained entities of the environment. Because of the subjective nature of individual units of this scale, it becomes difficult to say anything meaningful about them in general without addressing each specifically.

Sphere:

A politician, a stock broker, a priest, an engineer, a duck, a hippie, a skier, and a blonde are all standing on top of a hill looking down. There is no punch line.

It scarcely needs stating that the perspective by which one views site drastically effects the perception of context. Traditional wisdom seems to encourage, in the approach to site analysis, the acquisition of vast amounts of any and all information suspected of being even remotely related to the task at hand. Every imaginable perspective is accounted for and expected, somehow, to inform an approach that will make it locally significant. Often, it seems, this approach becomes the pursuit in designing an architecture which attempts, as much as it is possible, not to exist.

Eventually the mountain of data becomes so unmanageable and incomprehensible the whole lot renders itself virtually irrelevant. There is no way of knowing what is important, what is most relevant. Is architecture oriented towards distant views best? Or should the profile mimic geographic features or subjective perceptions? What about all those maps of game trails, the demographic trends, the orientation of ancient sanitation systems, the entire geologic and human history of the nearest region, the nearest bakery?

From the multitude of potential perspectives by which site may be analyzed, the following eight were selected for their apparent generality, scalability, and relevance: political, economic, climate, infrastructure, ecology, sociocultural, spatial

and quality; hence referred to as “spheres.” The political sphere, briefly, consists of the abstract concept of publicly legitimized units of power, control and social order. The economic sphere involves the abstract and physical concepts and activities of currencies and the exchange of goods. Climate indicates the composite of generally prevailing atmospheric and weather conditions, seasons, temperatures, humidity, etc. The sphere of infrastructure represents the designed physical components providing for societal needs including transportation, energy, sanitation, water and communication. Ecology is the sphere wherein living organisms relate to other organisms and their environment. The sociocultural sphere is comprised of all things arising from humans in social or cultural setting. The spatial sphere includes, but is not limited to a site’s geographic, and physical features, physical dimensions and spatial perceptions at various scales. The quality sphere refers to the subjective perception of “quality of life” inherent in site. It is perhaps the most vague, inappropriately named and ill-defined of the spheres. It is intended to be a somewhat superficial catch-all for a scale’s abilities to provide opportunities for human diversions, such as recreation, natural beauty, variety, joy, entertainment, retail, social life, safety, etc.

The Analysis:

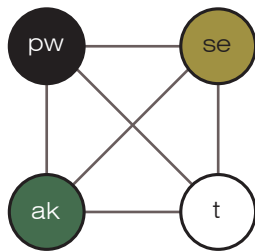
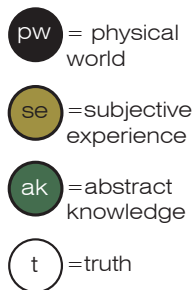
As stated, the purpose of the analysis is to discover how the spheres of context, at the various scales determine the relations between worlds of reality that are defined as architecture. The results should give a clearer indication of the particular relevancies inherent in context, and how these relevancies may most effectively and appropriately inform the architecture.

The initial analysis is set up thus:

Each of the eight spheres of site is considered independently on each of the five scales.

Under consideration is the ability of each sphere at each scale to determine the relationships between the established four worlds of reality: the physical world, the world of subjective experience, the world of abstract knowledge and the world of truth.

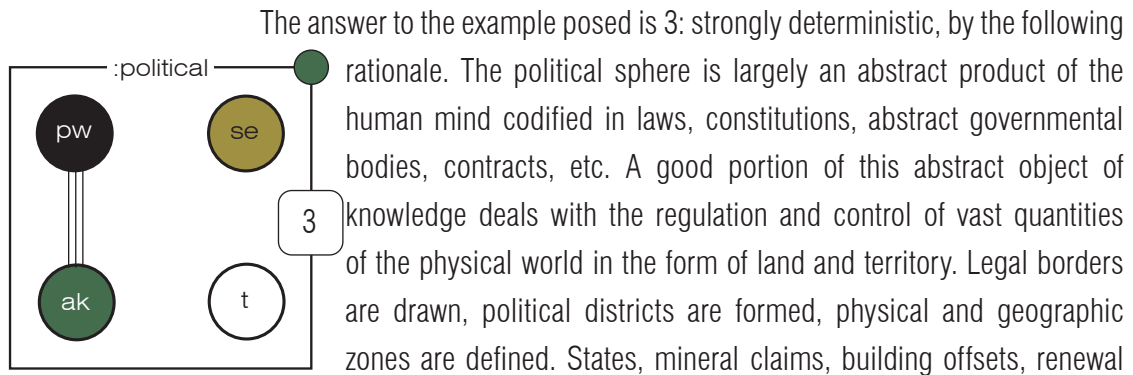
As there are four worlds, there are six possible inter-world relationships, e.g., the physical world may be involved in three separate relationships between subjective experience, abstract knowledge and truth.



For each possible inter-world relationship, the question is posed thus: **Given this relationship under consideration, how deterministic is this particular sphere (at this particular scale) to this relationship's formation?** As an example, consider the relationship between the world of abstract knowledge and the physical world (a world 1—world 3 relation by Popper's terminology.) At the regional scale, how deterministic is the political sphere on the relation in question? In other words, how influential is the political sphere on the connection between abstract knowledge and the physical world?

The answer to each question posed thus is given in a value from zero to three. 0 = not deterministic. 1 = mildly deterministic. 2 = significantly deterministic. 3 =

strongly deterministic.



districts, national borders, etc. are all politically determined physical manifestations, or physical impositions, of abstract political knowledge. Nearly any regional American map is a representation of physical geographic and abstract political relationships. By this evidence, this relationship can be said to be strongly politically deterministic at a regional scale.

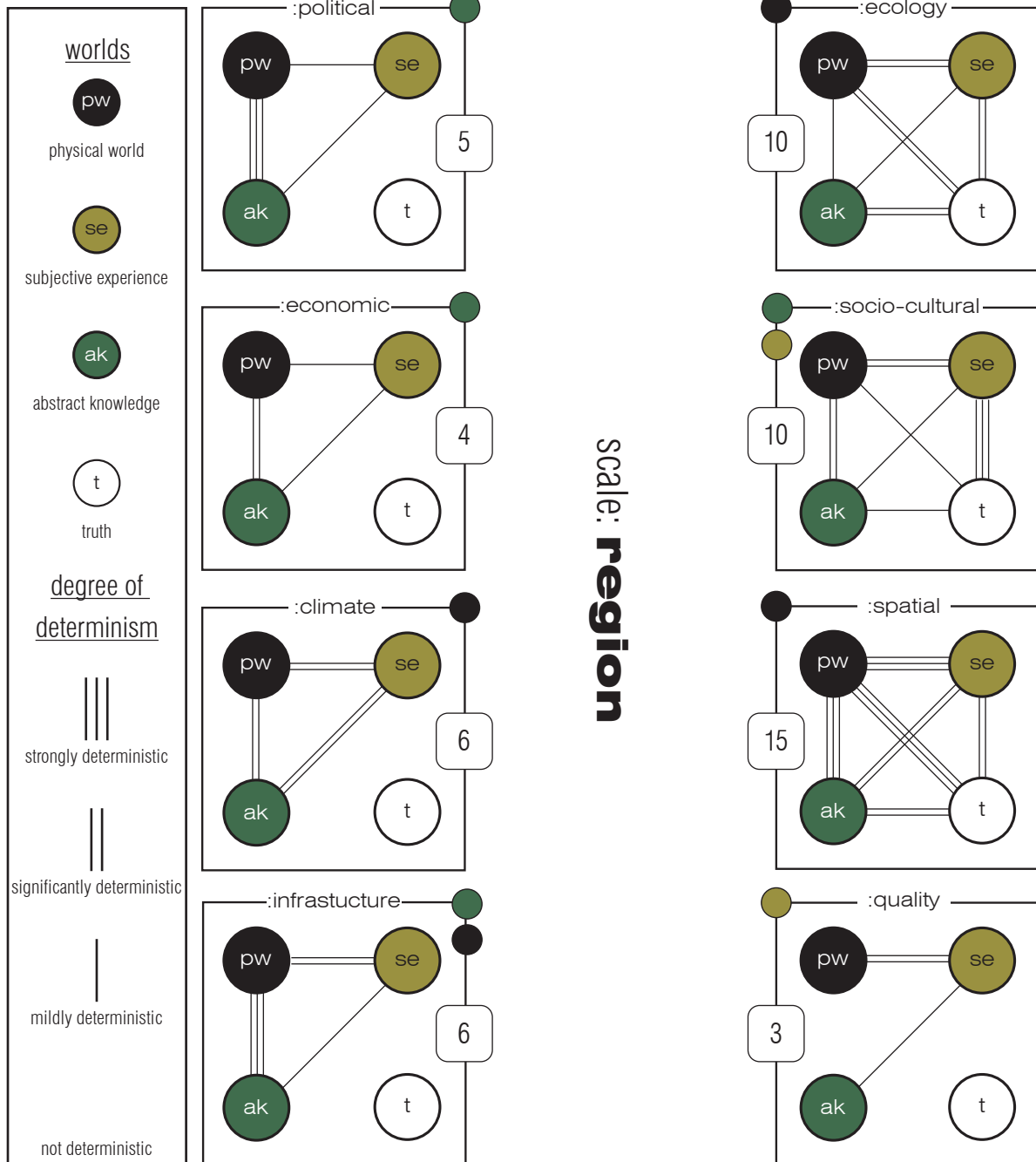
In like fashion, each of the remaining possible relations is considered with respect to the sphere at scale. Once determined, and indicated on the diagram an aggregate score, as the sum of all scores concerning the sphere is recorded in the box, enabling both sphere and scale-specific quantitative comparisons.

Following are the results of the analysis as performed in the above description.

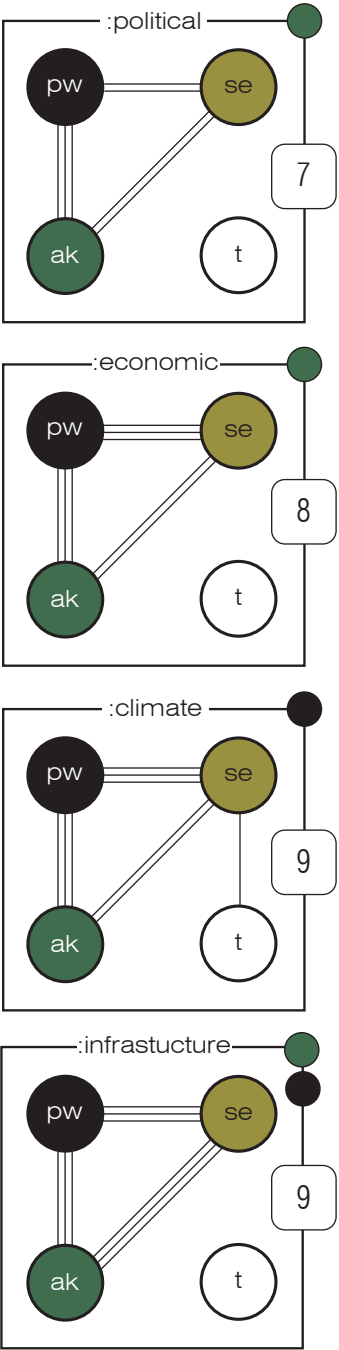
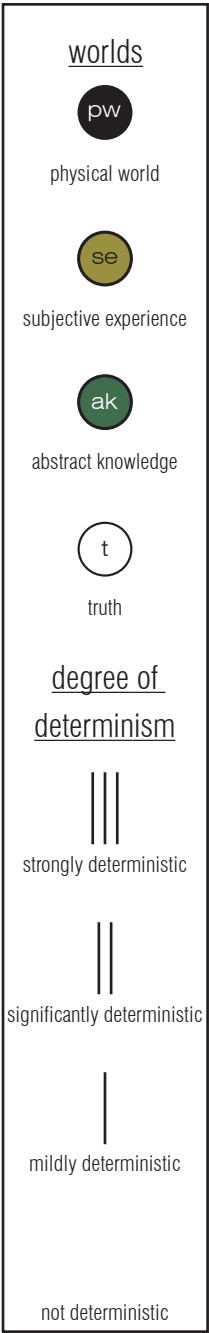
Notes:

1. Christopher Alexander, et. al. A Pattern Language. (New York, NY: Oxford University Press, 1977): 71.

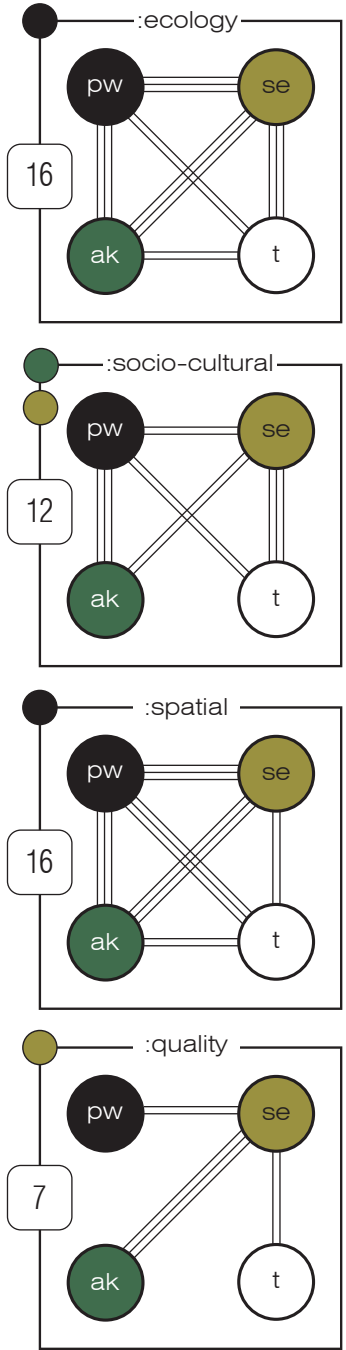
spheres of context at scale: determinism of inter-world architectural relations



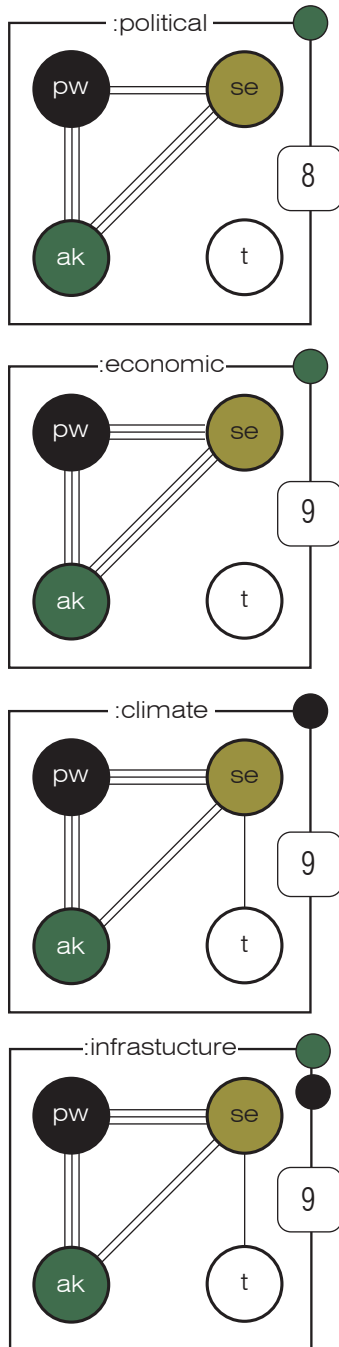
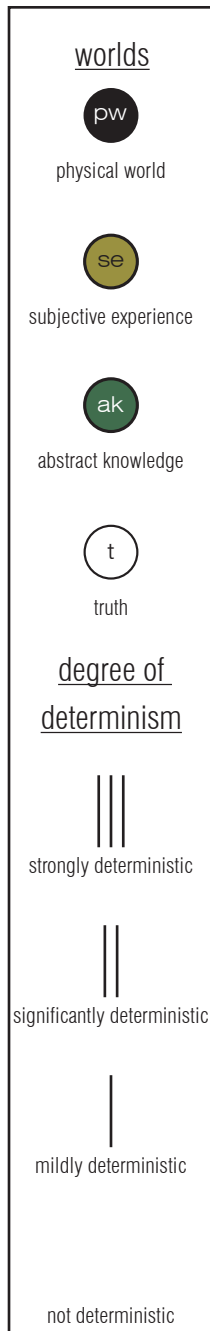
spheres of context at scale: determinism of inter-world architectural relations



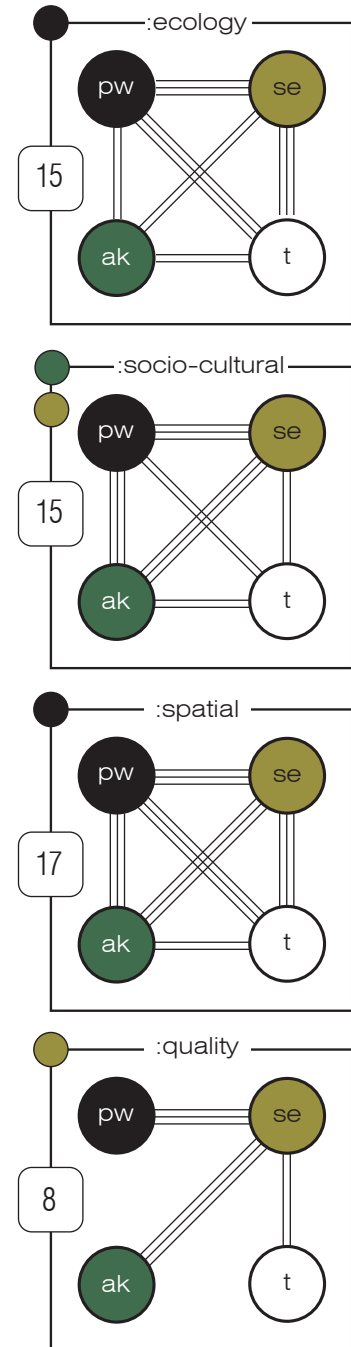
scale: **municipality**



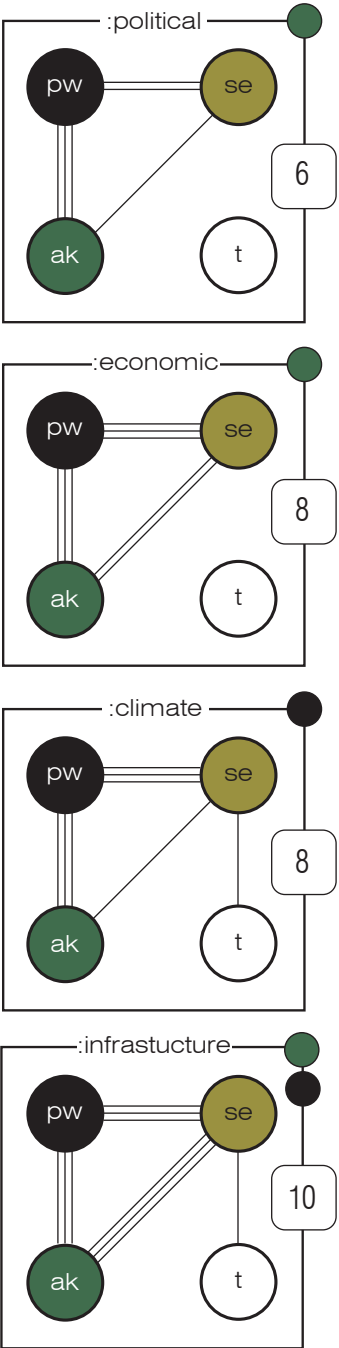
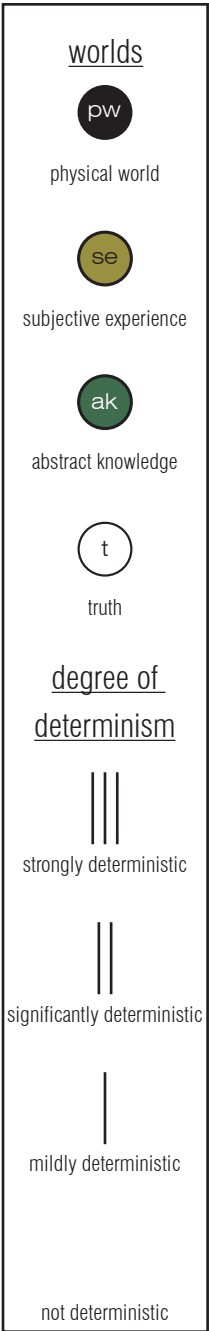
spheres of context at scale: determinism of inter-world architectural relations



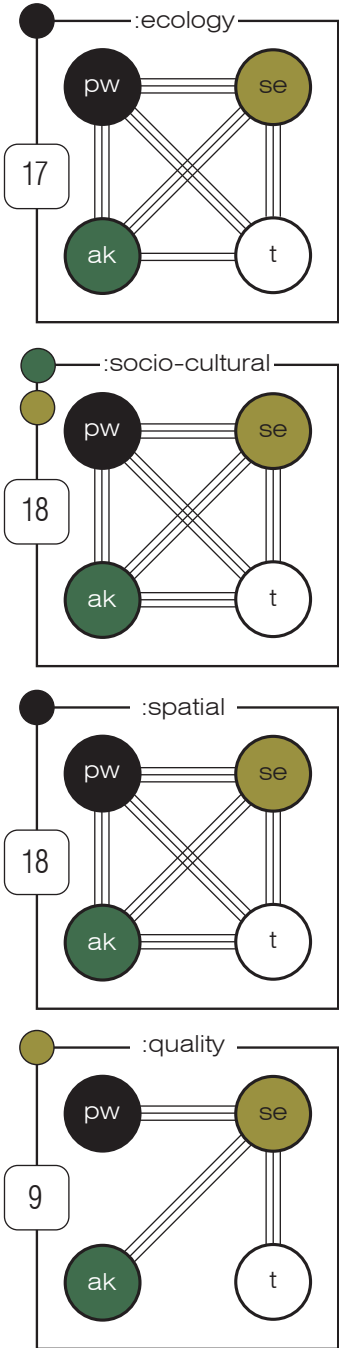
scale: **community**

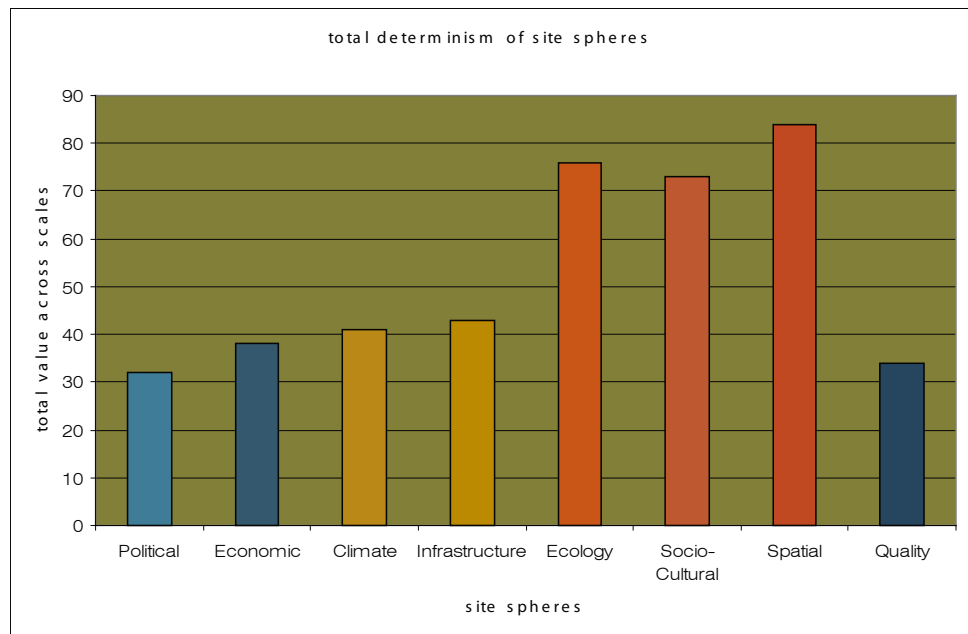
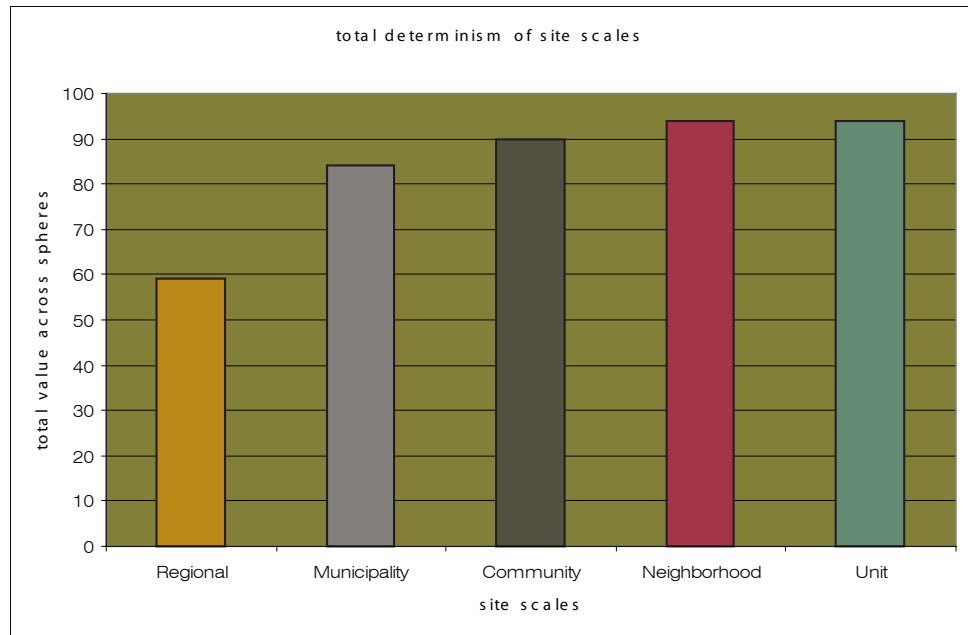


spheres of context at scale: determinism of inter-world architectural relations

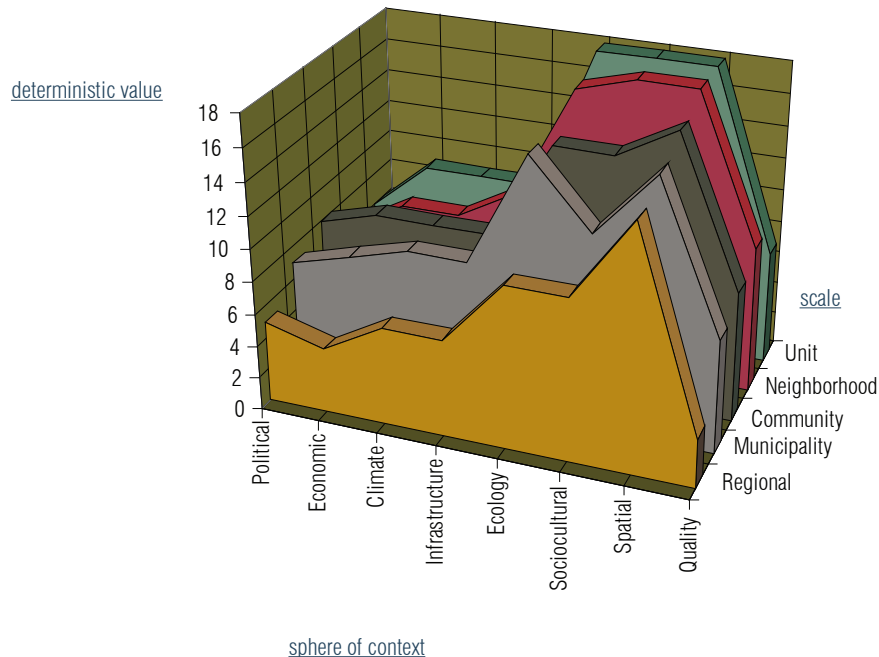


scale: **neighborhood**





context spheres at scale: determinism of architectural relations



Once the results of the analysis have been tallied, the contextual spheres which tend to possess the most sway over standard contemporary architecture hold the lowest rank by this method of analysis. Note the lowly position held by the economic and political spheres, commonly strongly deterministic to the development of “architecture” today. Conversely, the ecologic, sociocultural and spatial spheres take top position as the deterministic factors of context towards the definition of architecture under study. It is speculated that the addition of the unfashionable world of truth to the consideration of architectural relations is responsible.

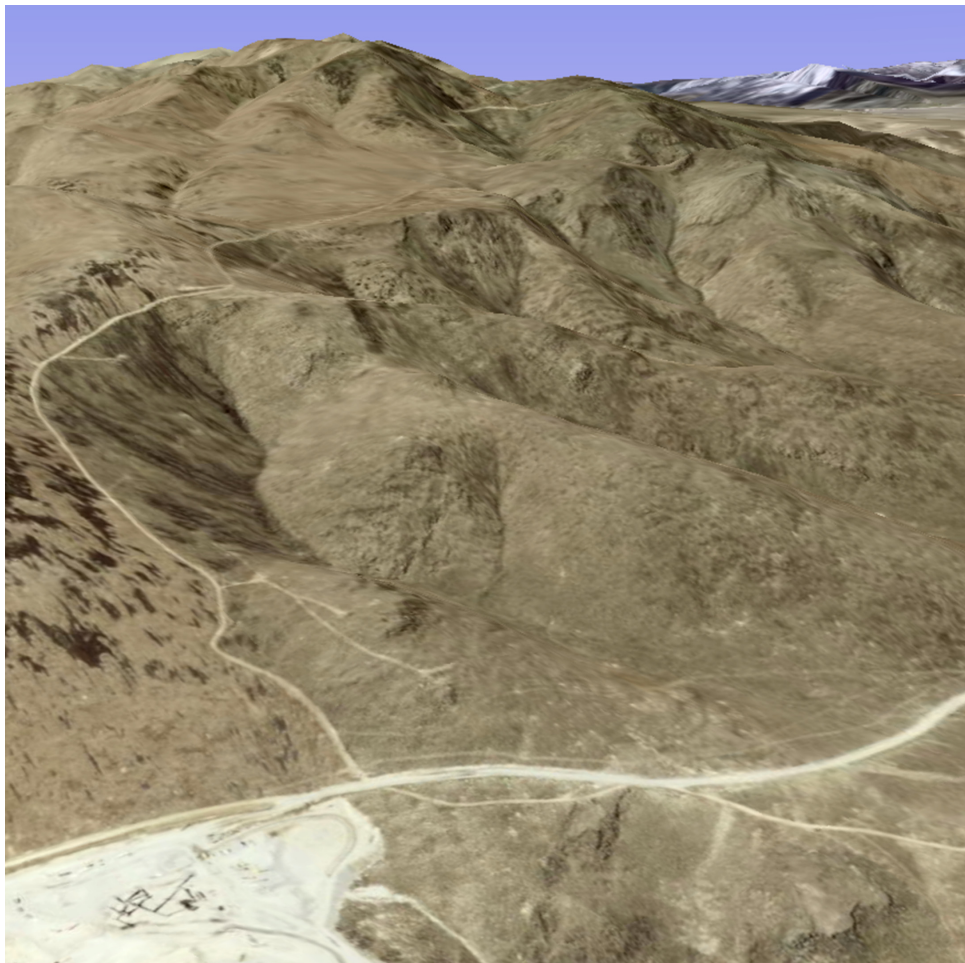
Resultant of the Industrial Revolution and the rise of man-made environmental technology, architecture has, perhaps, lost this link to the surrounding ecological system. The economic efficiency engine driving technology has placed the eyes

of contemporary society upon the elusive dollar, a medium Blake might qualify as “ratio” —an empty, manufactured value— as the medium of ascension. It is not an exaggeration to state that society’s techno-economic bias has, from this perspective, lead us to an environment which has traded, forgotten and sometimes outright rejected the world of truth in exchange for a world entirely determined by and judged by measures and values of its own invention based on the rational assumptions of its own well-meaning yet limited knowledge.

A similar situation exists in architecture’s weakened sociocultural relations. Homogenizing utopian architectural movements have sought one rational and efficient mechanistic solution for the environment of all people: composed grids of geometric solution to all problems regardless of race or nation. Paradoxically, it is the assumption of universal truths, not their exclusion that may be the source of trouble for universal and utopian architectures. However, these “truths” of modernism and even the reactionary countermovements such as post-modernism, deconstructivism, etc. fall more to the worlds of abstraction (world 3) and subjectivity (world 2) than the world of truth as described. Such may be the source of the perceived emptiness inherent in movements reacting against the perceived emptiness inherent in modernism, international style and other exclusively rationalistic post-industrial architecture.

These thoughts may not only help to shed light on the deficiencies in the built environment as perceived, but help to build new environment in contemporary society among many cultures (and its many truths)... not in the tradition of *reacting against*, or *regressing to*, but in the spirit of recovering and building upon the lost, ignored, and forgotten realities that are not ours to dictate in synthesis with those that are.

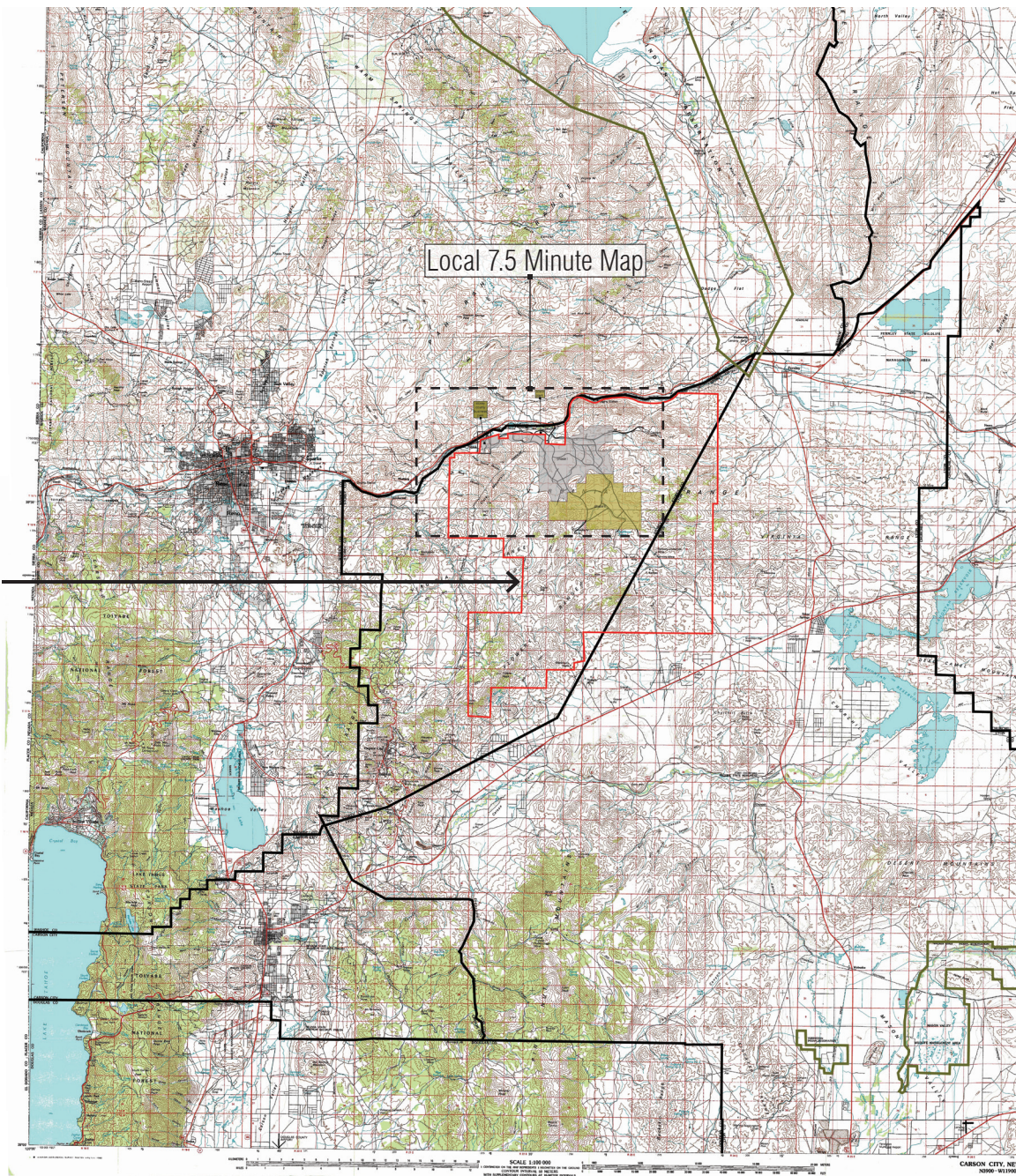
Site



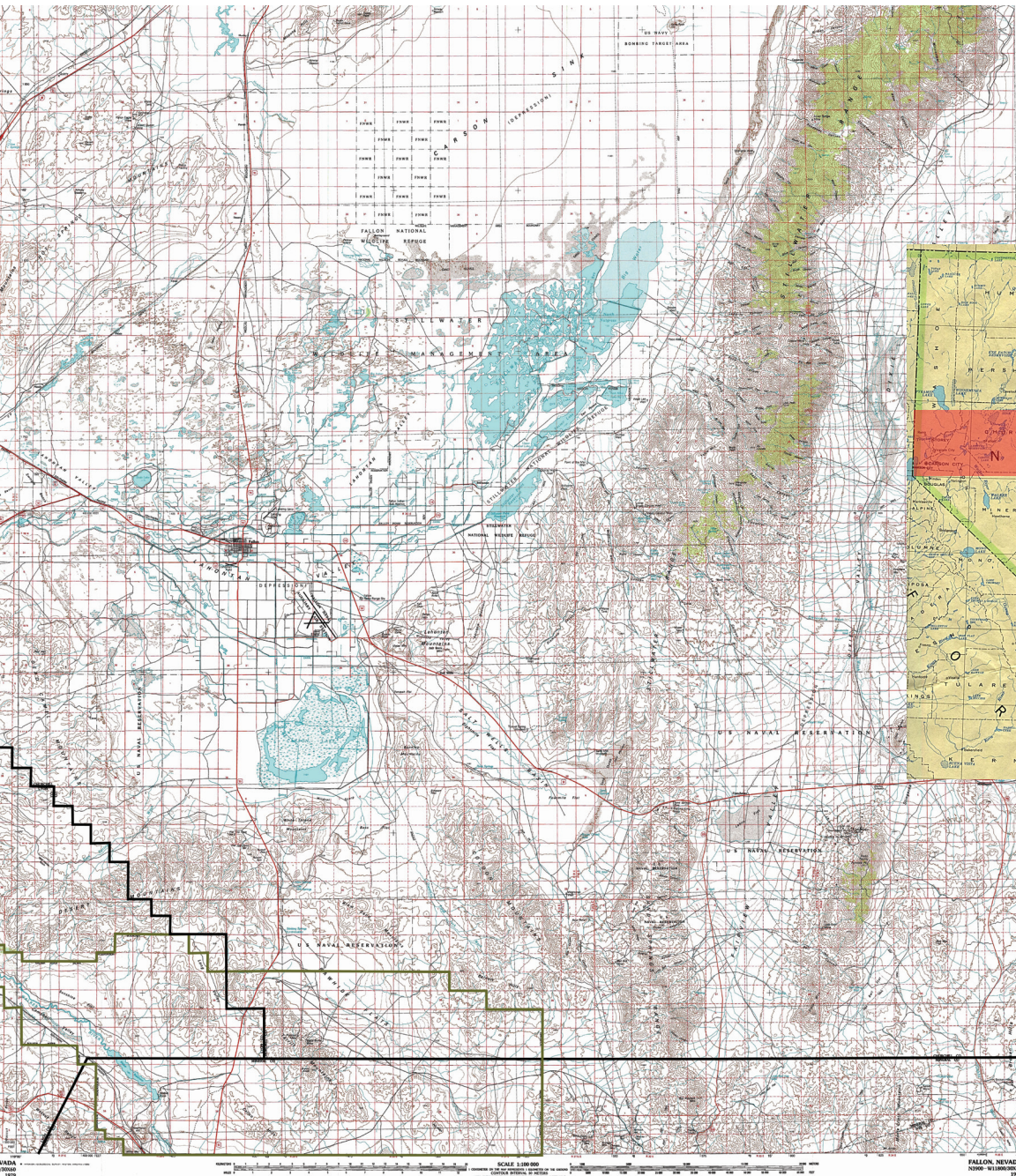
Site Aerial from Northeast.
39°32'51" N
119°30'56" W
Elevation $\approx$ 4700'
Eye Altitude: 6224'

Source: Google Earth

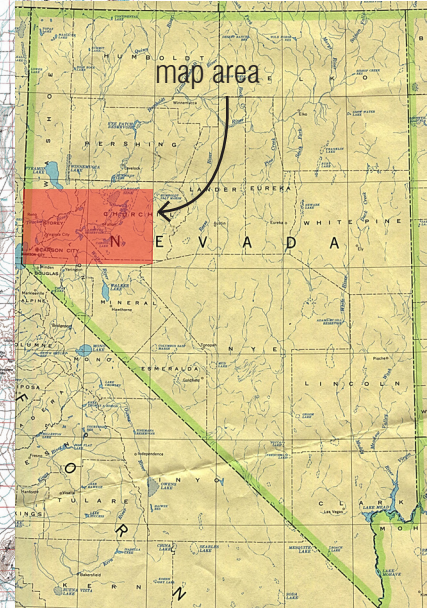
Tahoe-Reno Industrial
Center Property Line



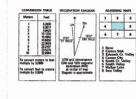
Western Nevada Regional Map



Western
Nevada (partial).
Assembled from USGS
30'x60' topographic
series.
usgs.gov



lib.utexas.edu/maps/united_states/
nevada_90.jpg



Topographic Map Symbols

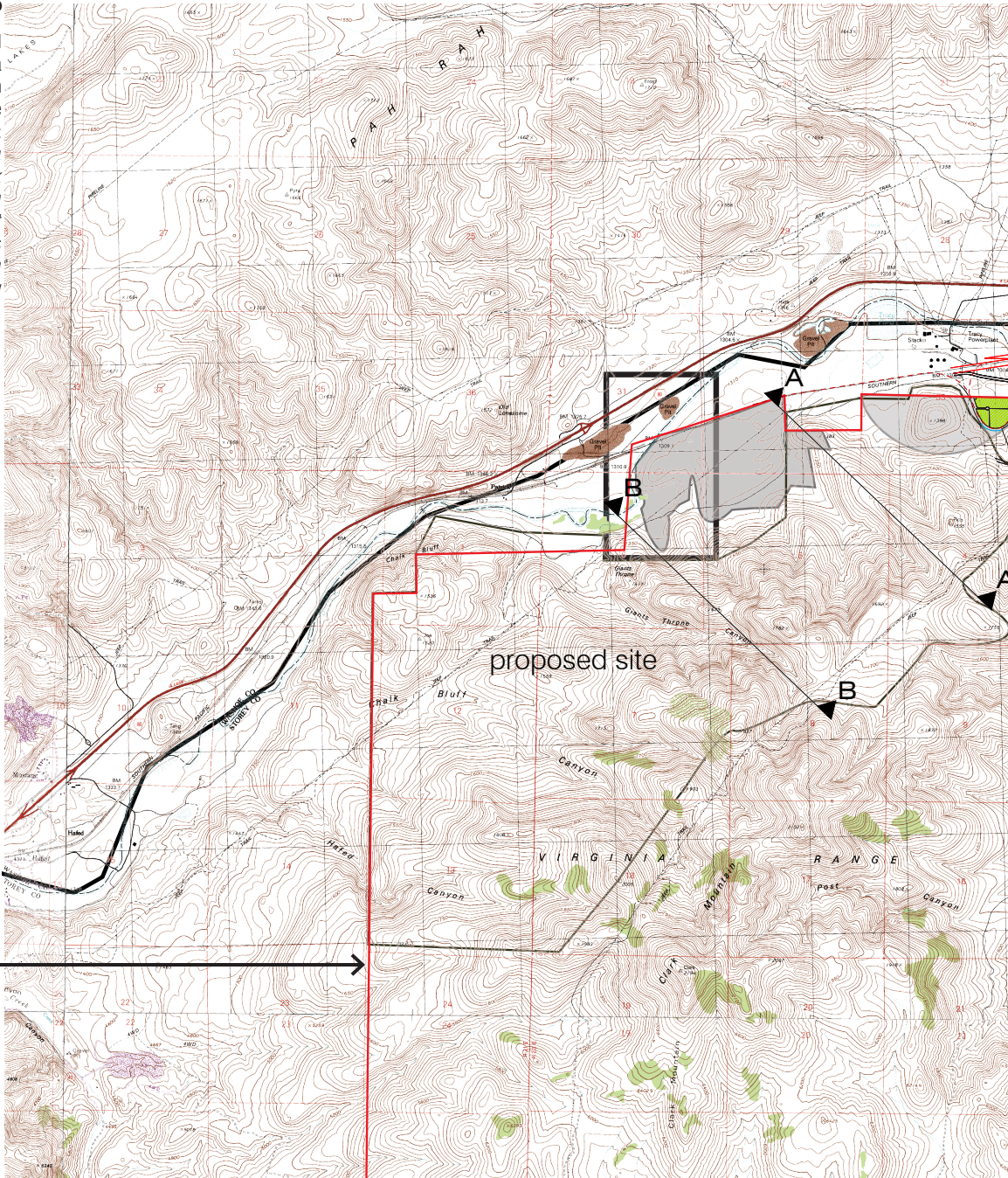
Symbol	Description
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[Symbol]	Spot heights
[Symbol]	Water bodies
[Symbol]	Roads
[Symbol]	Railroads
[Symbol]	Boundaries
[Symbol]	Settlements
[Symbol]	Vegetation
[Symbol]	Relief shading
[Symbol]	Other symbols

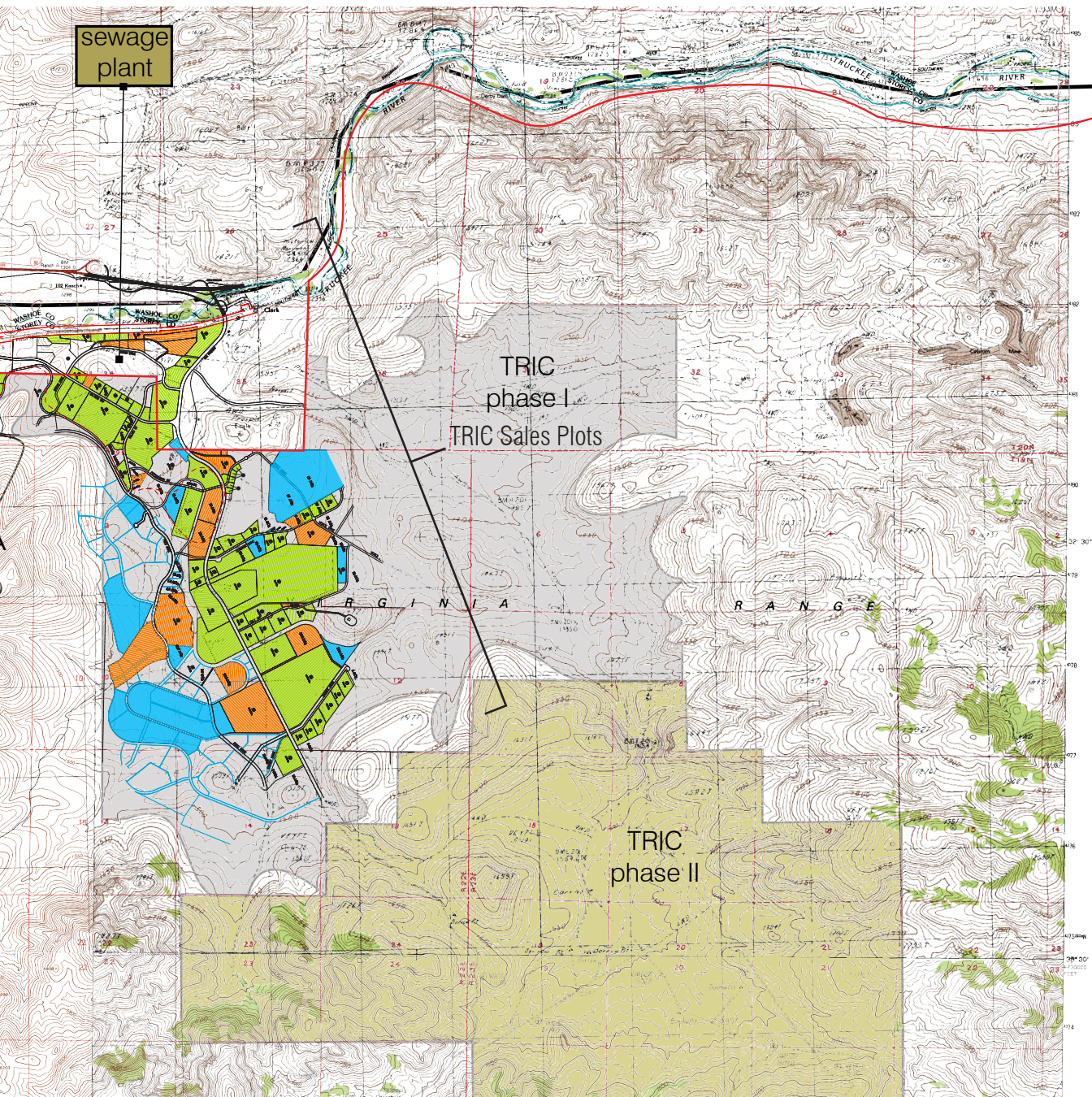
Local 7.5 Minute Map:nts

Storey County and
surrounding area
Assembled from
USGS 7.5' quadrangle
topographic series:
Vista
Patrick
Derby Dam
Steamboat
Chalk Hills
Martin Canyon
usgs.gov

- TRIC Sales Plots
-  **SOLD SITES**
 -  **ESCROW**
 -  **PENDING SITES**

Tahoe-Reno Industrial
Center Property Line





Proposed Project Site

Aerial from North

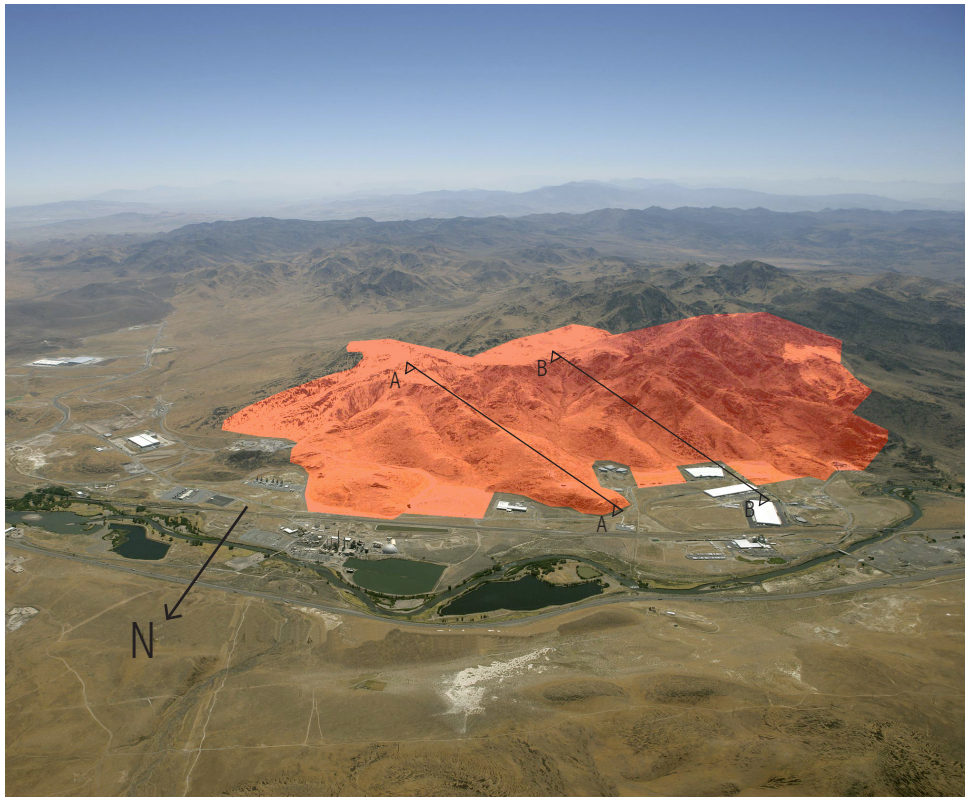
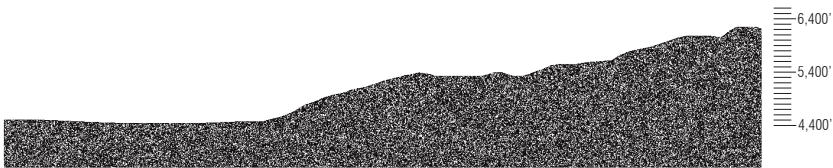


Photo: lancegilman.com

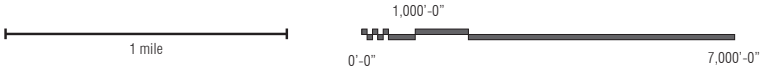
Site Sections



section A—A



section B—B



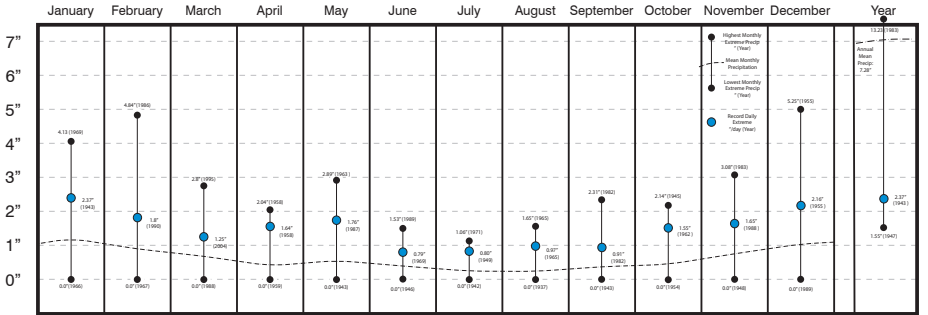
Regional Climate Evaluation Chart
30-Year Totals Means and Extremes

1977-2006

Station: (266779) RENO WFO AIRPORT
Elevation: 4,410 Feet
Lat: 39° 29'N Lon: 119° 46'W
COOP ID: 266779

Precipitation

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service
National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.noaa.gov



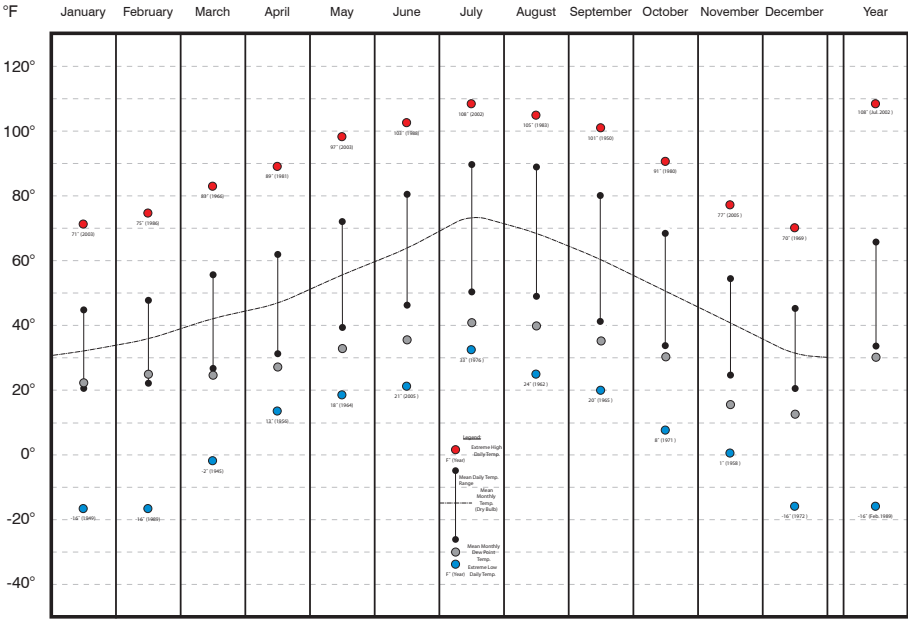
Regional Climate Evaluation Chart
30-Year Totals Means and Extremes

1977-2006

Temperature

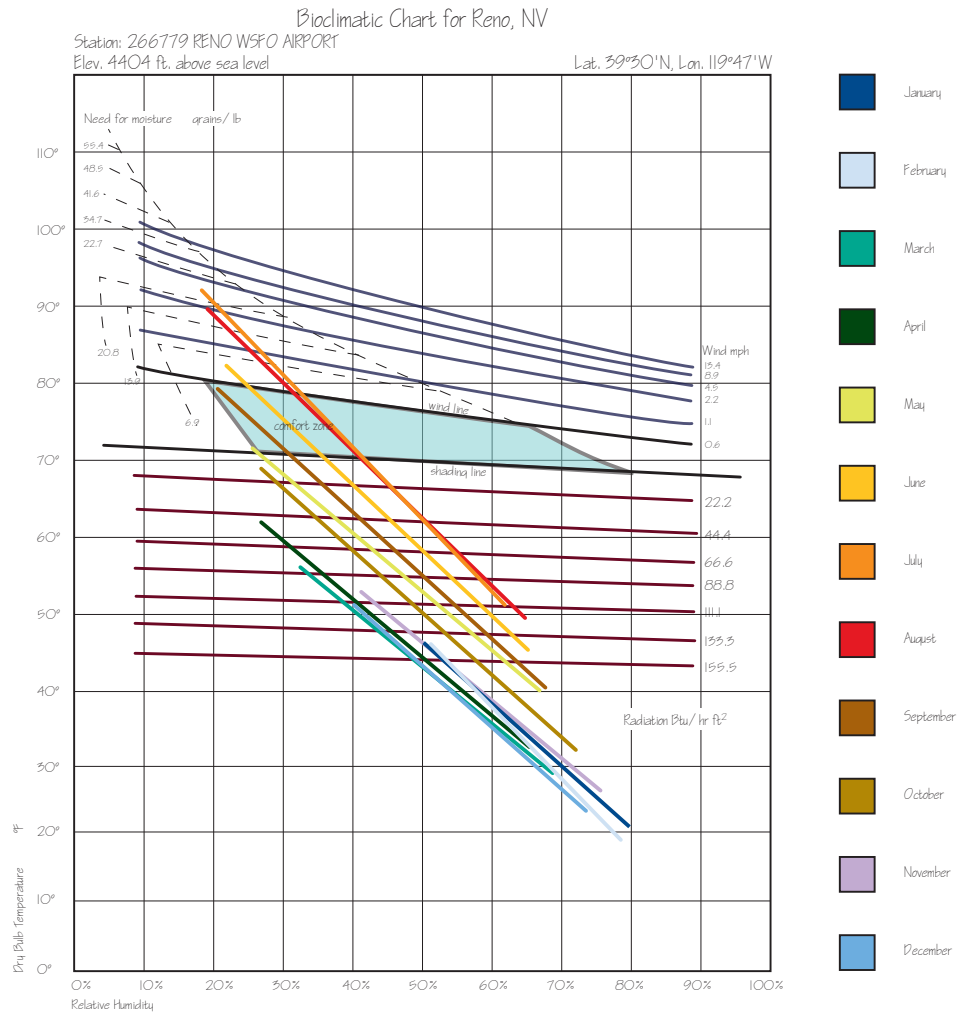
Station: (266779) RENO WFO AIRPORT
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U.S. Department of Commerce
National Oceanic & Atmospheric Administration
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and Information Service
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www.noaa.gov



Degree Days

	January	February	March	April	May	June	July	August	September	October	November	December	Year
Heating Degree Days base 65	984	756	683	502	285	91	12	22	130	416	732	987	5600
Cooling Degree Days base 65	0	0	0	0	11	72	204	164	41	1	0	0	493



Passive Strategy Calendar

Heating, Cooling and Insulation Ideals

Legend:

Full Sun

Partial Shade

Full Shade

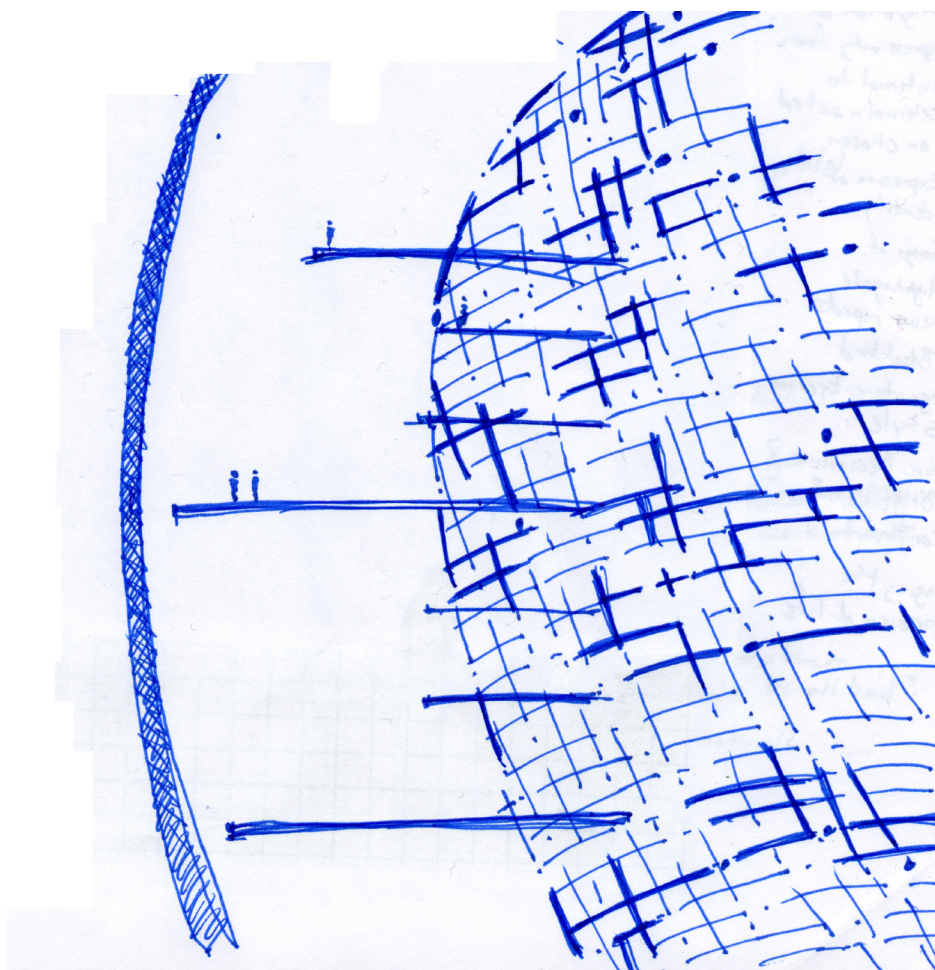
Insulate

Cross Ventilate

Flush

	Sunrise:	Mid-Morning	Noon	After-noon	Sunset	Night
January	7:30 am 115° Azimuth 0° Elevation	1:00 pm 145° Azimuth 24° Elevation	12:00 pm 180° Azimuth 31° Elevation	2:30 pm 215° Azimuth 24° Elevation	5:40 pm 215° Azimuth 0° Elevation	
February	6:45 am 105° Azimuth 0° Elevation	9:45 am 140° Azimuth 28° Elevation	12:00 pm 180° Azimuth 38° Elevation	2:40 pm 225° Azimuth 28° Elevation	5:30 pm 215° Azimuth 0° Elevation	
March	6:00 am 90° Azimuth 0° Elevation	9:20 am 125° Azimuth 36° Elevation	12:00 pm 180° Azimuth 51° Elevation	2:50 pm 235° Azimuth 36° Elevation	6:15 pm 215° Azimuth 0° Elevation	
April	5:15 am 75° Azimuth 0° Elevation	9:15 am 115° Azimuth 44° Elevation	12:00 pm 180° Azimuth 62° Elevation	2:50 pm 245° Azimuth 44° Elevation	6:45 pm 215° Azimuth 0° Elevation	
May	4:45 am 65° Azimuth 0° Elevation	9:15 am 105° Azimuth 50° Elevation	12:00 pm 180° Azimuth 71° Elevation	2:50 pm 255° Azimuth 50° Elevation	7:15 pm 215° Azimuth 0° Elevation	
June	4:30 am 60° Azimuth 0° Elevation	9:15 am 100° Azimuth 53° Elevation	12:00 pm 180° Azimuth 74° Elevation	2:50 pm 260° Azimuth 53° Elevation	7:30 pm 215° Azimuth 0° Elevation	
July	4:45 am 65° Azimuth 0° Elevation	9:15 am 105° Azimuth 50° Elevation	12:00 pm 180° Azimuth 71° Elevation	2:50 pm 255° Azimuth 50° Elevation	7:15 pm 215° Azimuth 0° Elevation	
August	5:15 am 75° Azimuth 0° Elevation	9:15 am 115° Azimuth 44° Elevation	12:00 pm 180° Azimuth 62° Elevation	2:50 pm 245° Azimuth 44° Elevation	6:45 pm 215° Azimuth 0° Elevation	
September	6:00 am 90° Azimuth 0° Elevation	9:20 am 125° Azimuth 36° Elevation	12:00 pm 180° Azimuth 51° Elevation	2:50 pm 235° Azimuth 36° Elevation	6:15 pm 215° Azimuth 0° Elevation	
October	6:45 am 105° Azimuth 0° Elevation	9:45 am 140° Azimuth 28° Elevation	12:00 pm 180° Azimuth 38° Elevation	2:40 pm 225° Azimuth 28° Elevation	5:30 pm 215° Azimuth 0° Elevation	
November	7:30 am 115° Azimuth 0° Elevation	1:00 pm 145° Azimuth 24° Elevation	12:00 pm 180° Azimuth 31° Elevation	2:30 pm 215° Azimuth 24° Elevation	5:00 pm 215° Azimuth 0° Elevation	
December	7:45 am 120° Azimuth 0° Elevation	9:45 am 150° Azimuth 21° Elevation	12:00 pm 180° Azimuth 26° Elevation	2:10 pm 210° Azimuth 20° Elevation	4:45 pm 215° Azimuth 0° Elevation	

Program



The theoretical construct states that the root of architecture springs from the *relationships between the physical world, human experience, abstract knowledge and truth*. The program focuses on the basic elemental feature of *relationship*. The research indicates that a hierarchical approach to the program on the scale of human social constructs might be most relevant to the defined perspective of architecture.

As there is no municipality to speak of on the site, the focus of program will be primarily on the scales of community and neighborhood.

The Project:

Tahoe-Reno Industrial Center is in its first of six 5000-acre phases of development. Phase 1 alone will produce approximately 100 million square feet of industrial and warehousing buildings. Reno and Sparks combined (2005 pop. 400,000) have 58.5 million total square feet of industrial buildings.¹ At full buildout, phase 1 (nearly sold out) is expected to support a 40,000 employment population.² Nearly all employees commute by Interstate 80 from nearby towns Fernley and Reno/Sparks, each about 15 miles away. Only limited and low-quality housing alternatives currently exist nearer the park, however four developments are proposed by traditional national developers. Combined the four total 21,818 housing units.³ Typically, they are standard sprawling suburban prototypes, from which a commute is still necessary.

This project proposes to offer an alternative architectural approach to the vanilla developer model. Its intention is to develop *community* in a new way based on old and new concepts.

The community must be based in close proximity to work: walking distance, or at least walking distance to mass transit. Architecture placed to necessitate a commute dooms its occupants to wasting away their lives in cars.

The automobile itself has been nothing but a scourge to the architectural (not to mention ecological) environment. This project challenges the “inevitability” of the car. It actively seeks to break its tyranny over our environment. The automobile must

take its rightful place *outside* of where people live. This community will base itself upon its occupants, and design towards the elimination of the car from our places of life.

The industrial center reserves the large, relatively flat surfaces (for many miles) for industrial development. The surrounding hillsides are simply detritus, undevelopable. With the right approach, the highly topographic regions will be utilized to architectural advantage. Proposed is a concept of 3-dimensional community. Without the impediment of automobiles, communities will be free to develop *up* instead of out. By utilizing the “useless” land, community will take its proper place out of agricultural valleys, wetlands, and other places serving better social, conservation, economic or ecological purposes.

With Seaside, FL serving both as example and warning, a 3-D urban spatial code will guide the development as a spatial context-sensitive DNA. It will be coupled with (and foiled by) practice of the *open source* “paradigm” adopted by software developers in order to promote “architecture of participation”⁴: heterogeneity, vitality, cultural (and sub-cultural) self-determinism, interdisciplinary growth, etc. With this in mind, it is anticipated that vast portions of the project will require maximum flexibility in self-determinism, adaptation and re-configuration.

In this open-source spirit, appropriate proprietary architectural solutions will be utilized such as existing prefabricated, or modular housing systems. Manufactured housing, and prefab systems offer a wealth of diverse solutions meeting architectural performance and design criteria. The environmental and efficiency arguments are obvious; yet they are under utilized in design in exchange for uniqueness, ego, or whatever. Imagine Sean Godsell specifying a Michelle Kaufmann design in one of his projects. Yet imagine a community where one can find *Futureshack*[™], *Glidehouse*[™] and Resolution:4 *Modern Modular*[™] on the same level as Team Hybrid *Cargotecture*[™].

Specific Program:

Scale: Municipality/Community

3-D Spatial Code to Guide Community Development

Hypothetical concept of buildout to about 20,000 residents

System of megastructure and superstructure

Transportation Strategy

Ecological Strategies

Infrastructure

Scale: Neighborhood

Design a neighborhood within the community at higher resolution... either based on regional demographic occupancies for housing or on a local subculture.

Population: $\leq 1,000$

Including:

Range of housing

Commercial/Retail

Commons

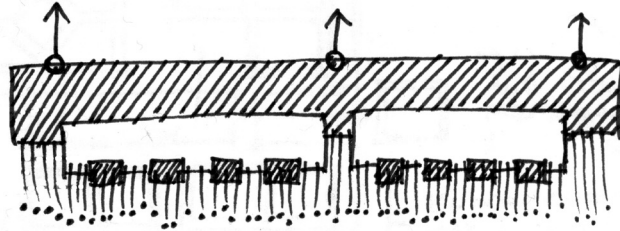
Transportation Interface

Community Interface

Identity

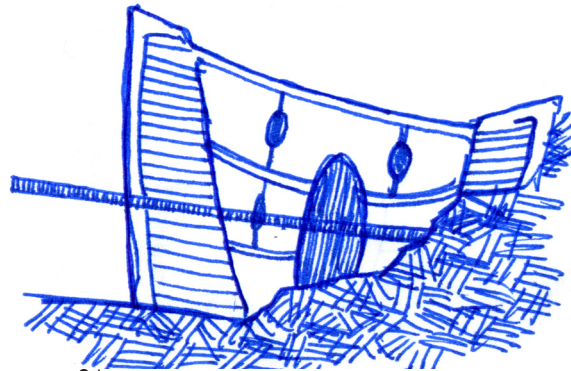
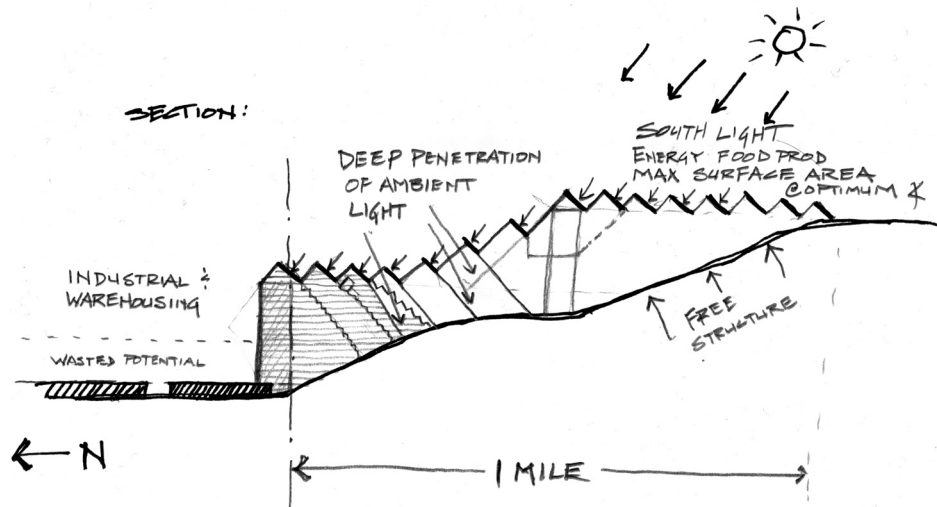
following the precepts of: 3+1 definition, interface of spheres at scale, 3-D Urban Code, Open-source paradigm, proprietary systems.

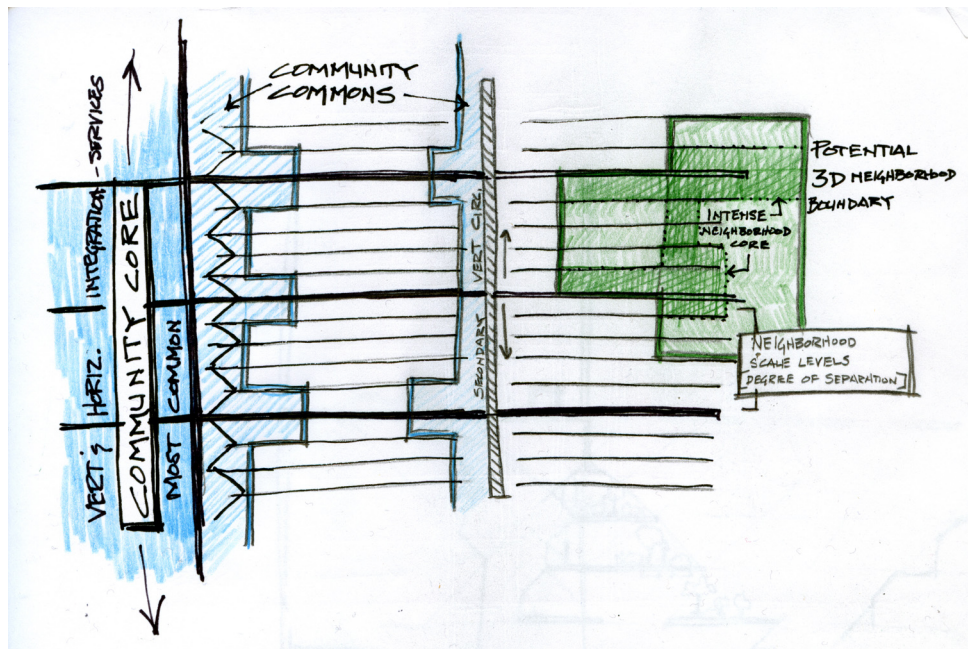
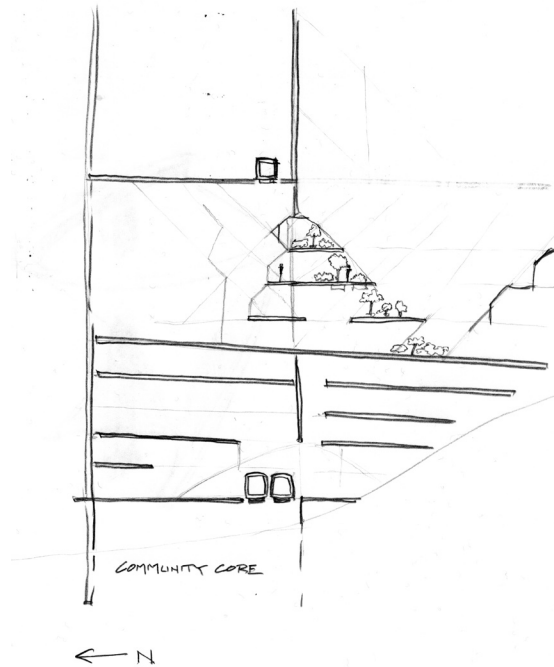
REGION
MUNICIPALITY
COMMUNITY
NEIGHBORHOOD
UNIT

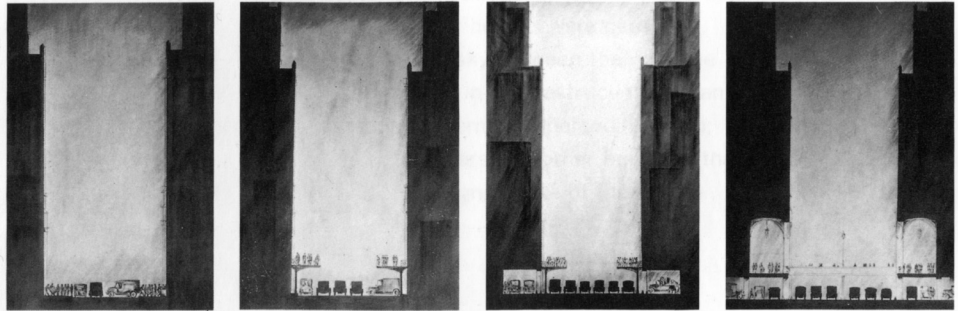


CONCEPT: 3-D ENVIRONMENT @ MUNICIPALITY/COMMUNITY
SCALE ↓

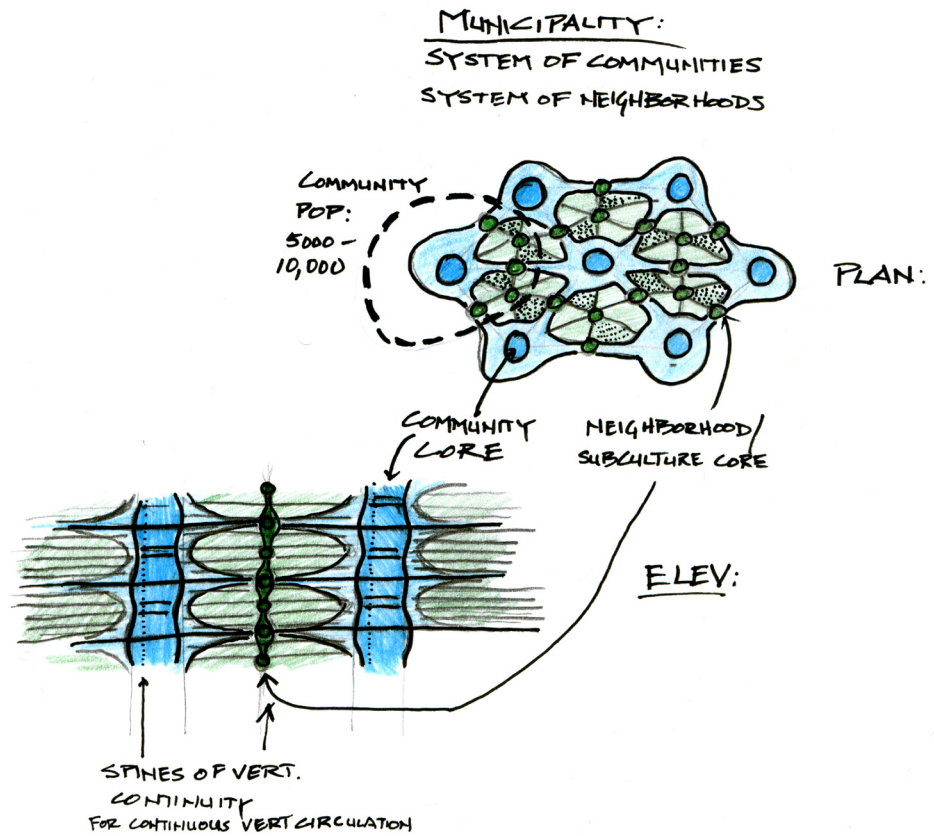
SECTION:

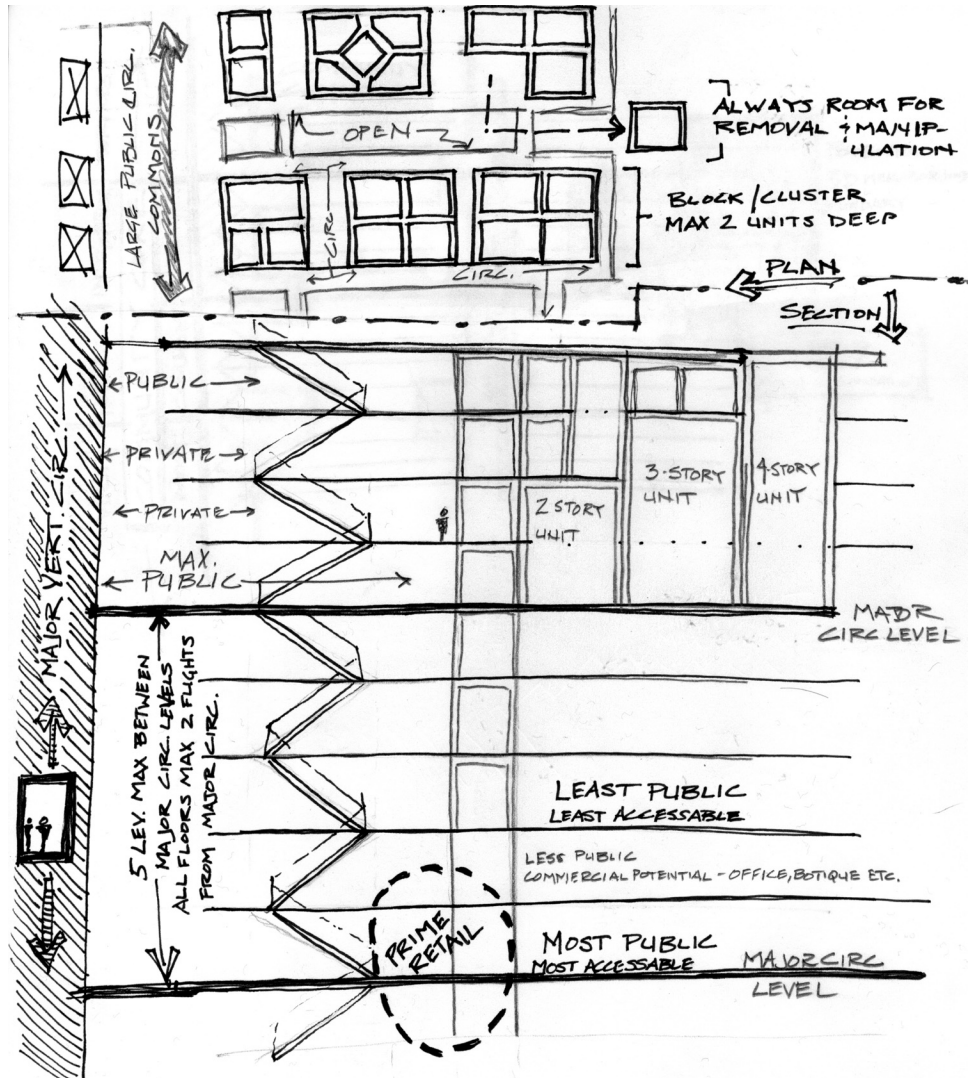


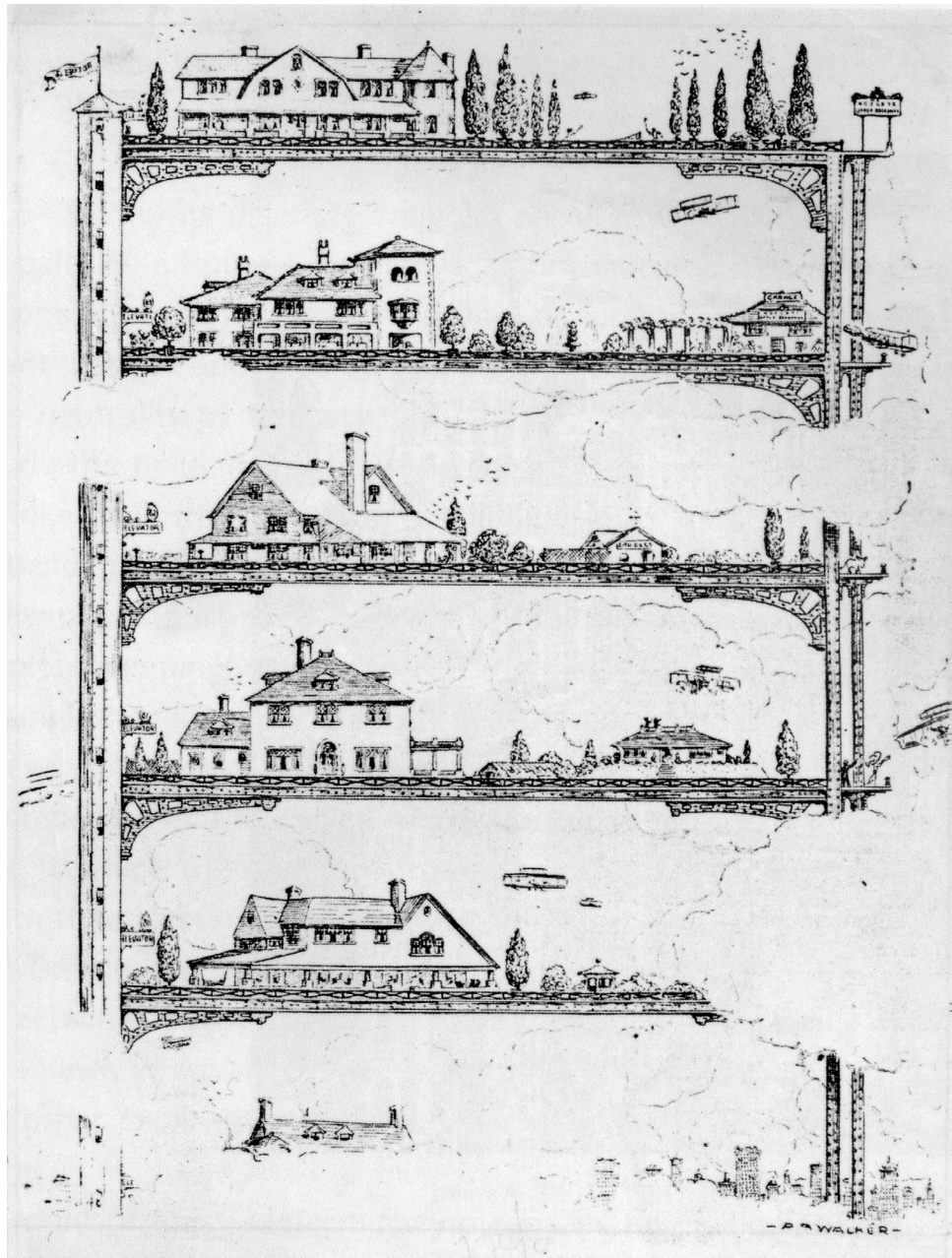




Harvey Wiley Corbett, Proposals for Relieving Traffic Congestion in New York by Separating Pedestrians and Vehicular Traffic.⁵





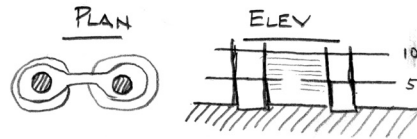


1909: "the skyscraper as utopian device for the production of unlimited numbers of virgin sites on a single metropolitan location."⁶

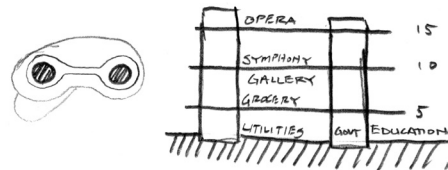
CONCEPT OF 3D DEVELOPMENT :

SERVICES AND AMENITIES ARE ADDED
AS POPULATION BECOMES SUFFICIENT
TO SUPPORT & REQUIRE THEM
- AS MUNICIPALITY BECOMES
SUFFICIENTLY SOPHISTICATED
(AND/OR COMPLACENT)

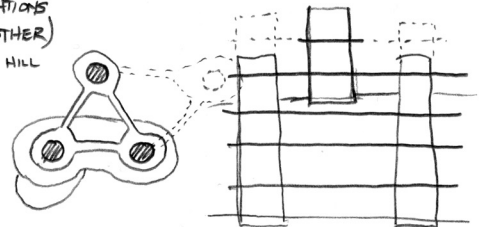
1. DECENTRALIZED COMMUNITY
CORE - FACILITIES AND
NECESSITIES COMMON TO ALL
POPULATIONS < 5000
UTILITIES - TRANSPORTATION - RETAIL
GOVERNMENT - FIRE - BASIC QUALITIES ETC.
- INFRASTRUCTURE AND SUPERSTRUCTURE
EMERGENCE OF NEIGHBORHOODS
AROUND MIXED-USE PUBLIC/PRIVATE
ZONES

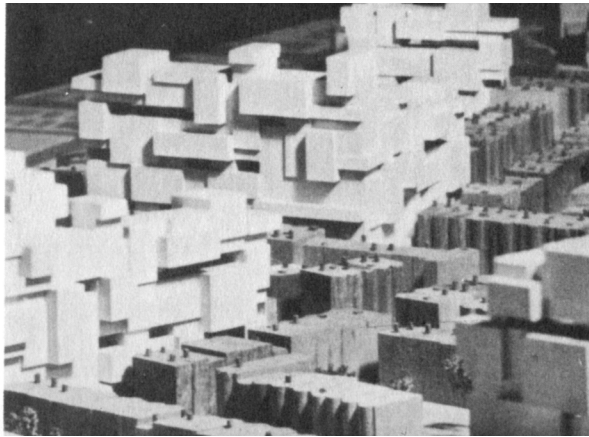


2. COMMUNITY BUILDS VERTICALLY
AS POPULATION GROWS - CORE STACKS
ADD MORE SOPHISTICATED SERVICES
WITH ADDITIONAL LEVELS
MULTIPLE NEIGHBORHOODS/SUBCULTURES
OFFER VARIETY - CHOICE



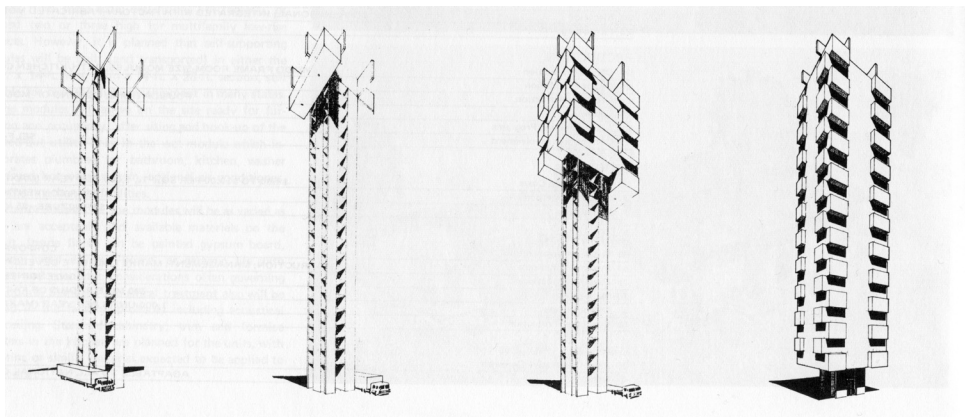
3. POPULATION AND STRUCTURAL LIMITATIONS
APPROACHED - ANOTHER (OR SEVERAL OTHER)
CORES INITIATED LATERALLY OR UP HILL
NEW CORES OFFER BACK & NEW
AMENITIES/CULTURE - DEVELOPED
IDENTITY - CONTEMPORARY VALUES
MORE ADVANCED STRUCTURE





Community Systems by Pernini Corporation, Boston, MA. 1970.⁷

N-Q-C Group, Puerto Rico. 1970.⁸



Notes:

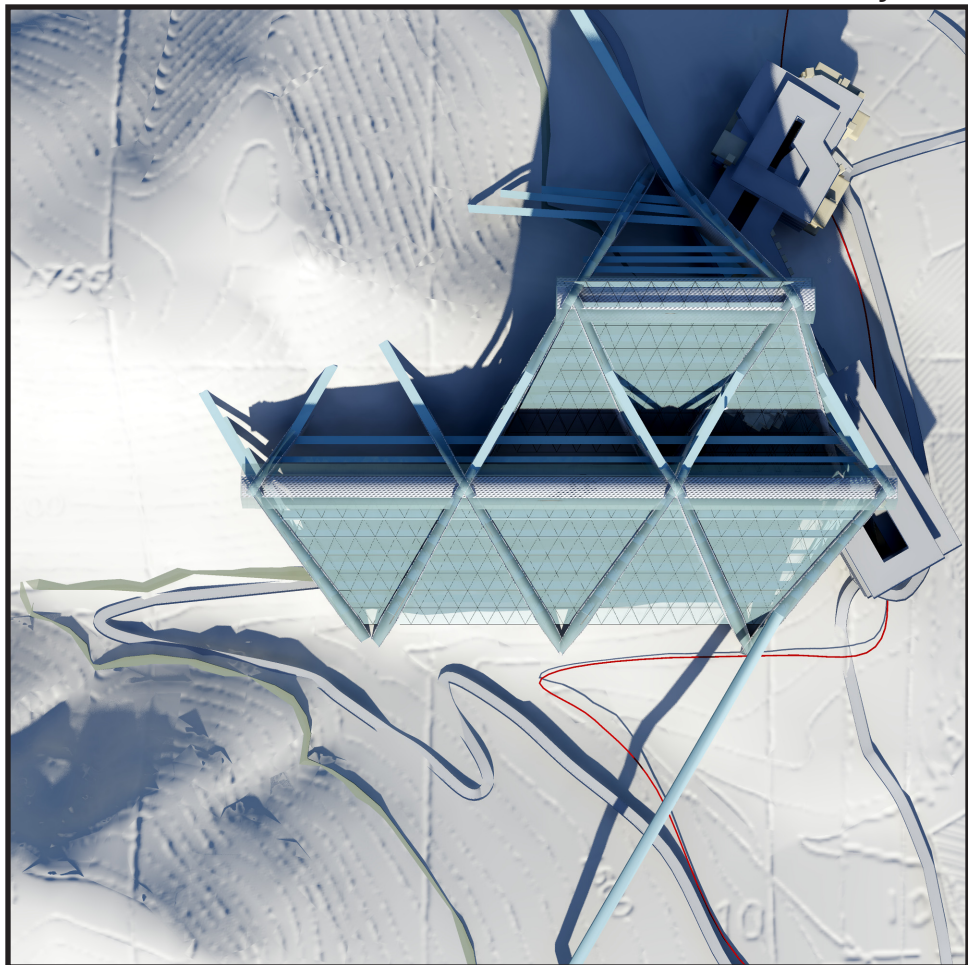
1. Susan Voyles. 2007. "Boom seen in Virginia Range." Reno Gazette-Journal, November 12.
2. Colliers International Partnership. "Developer's Corner." Colliers International Market Report: Industrial: Reno, Nevada. 3rd Quarter 2006. <http://www.colliersofreno.com> (accessed November 22, 2007).
3. Voyles, 2007.
4. Tim O'Reilly. "Open Source Paradigm Shift." http://tim.oreilly.com/articles/paradigmshift_0504.html (accessed November 30, 2007).

"I've come to use the term "the architecture of participation" to describe the nature of systems that are designed for user contribution. Larry Lessig's book, Code and Other Laws of Cyberspace, which he characterizes as an extended meditation on Mitch Kapor's maxim, "architecture is politics", made the case that we need to pay attention to the architecture of systems if we want to understand their effects.

And of course, the Internet and the World Wide Web have this participatory architecture in spades. As outlined above in the section on software commoditization, any system designed around communications protocols is intrinsically designed for participation. Anyone can create a participating, first-class component."
5. Rem Koolhaas. *Delirious New York*. (New York, NY: Monacelli Press, 1994):122
6. Ibid: 83.
7. U.S. Department of Housing and Urban Development. Operation Breakthrough. *Housing Systems Proposals for Operation Breakthrough*. (Washington D.C.:Office of Policy Development and Research, HUD,1969):334.
8. Ibid: 154.

Thesis Semester 2
Spring 2008

The Project:
 Δ City, NV



Specific Context



Wasp and Orchid
Photo: www.anu.edu.au

Concerning the situation outlined in the Program section, an initial survey of context adhering to the principles established in Spheres of Context at Scale reveals many architectural relations found to be missing, detrimental or weak. In order to more closely describe the nature of the relations in the study, and to further develop the solutions to be sought, the approach of assemblage theory as developed by Manuel DeLanda in *A New Philosophy of Society: Assemblage Theory and Social Complexity* has been adopted. DeLanda's work, as an extension both of General Systems Theory initially developed by Ludwig von Bertalanffy, and assemblage theory developed by Gilles Deleuze offers an effective way to describe and understand complex social and multi-hierarchical systems of various levels of complexity: how they relate, the systems they form in relation, how they change and the mechanisms by which change comes about. Key to understanding the assemblage is its qualification as a process of relations. Relationships between entities which are otherwise independent and self-contained constitute the identity of the assemblage. Assemblages are not limited in formation to entities or components which are alike in nature such as other more specific systems like mechanical systems between parts, biological systems between cells, or cybernetic systems between simple information. Assemblages, their properties and identities are governed by relationships determined by the relational capacities of entities involved in relationships; thus people, of biological self-conscious nature, might be involved in relationships with religious icons of molecular constitution, or with complex organizations of designed or self-organized origins.¹ The relationship-centered nature of assemblage theory makes it most appropriate in describing architecture... especially architecture so defined as a system of relationships between worlds of various natures.

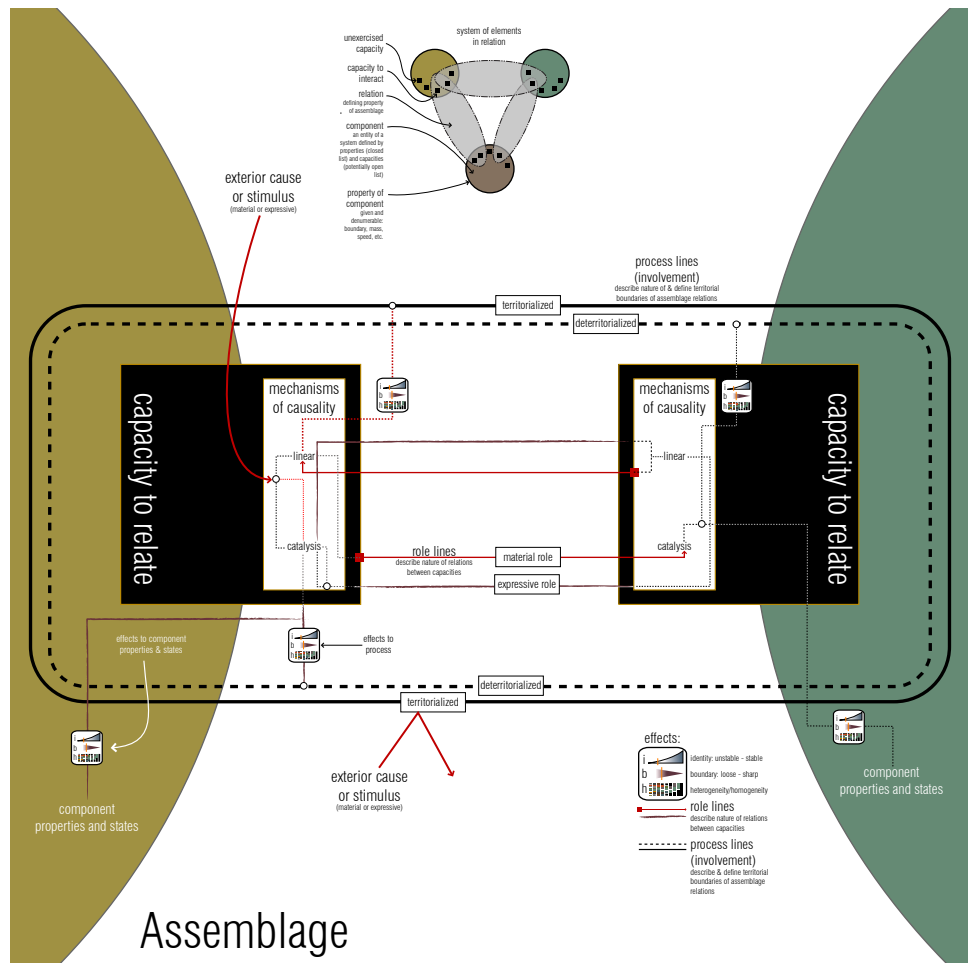
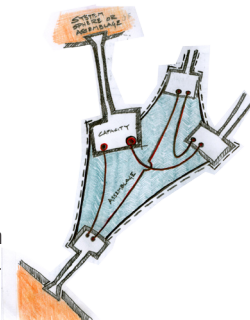
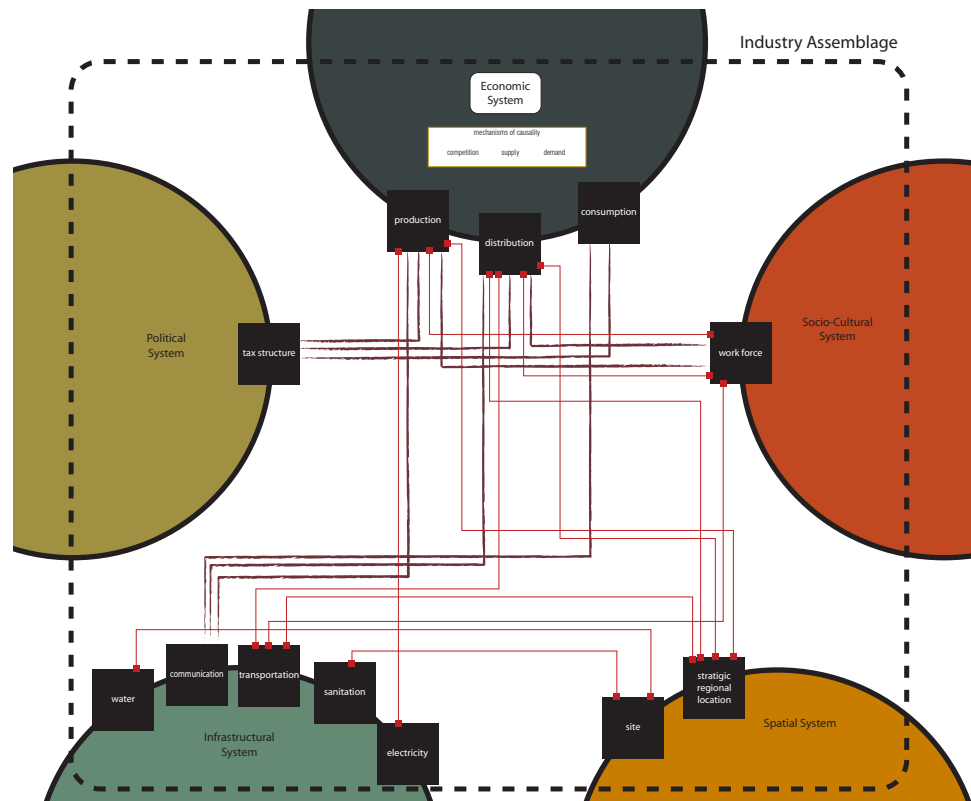


Figure 1.
Diagram of the basic components and processes of an assemblage. For a detailed description, please see DeLanda's work.

Assemblage formed by multiple relations between
the capacities of multiple entities.



In its embryonic form, the existing situation can be seen as an assemblage resulting from the relationships between the contextual spheres (most of which are assemblages in their own right) of economy, politics, infrastructure, spatial, and to a weak material degree, sociocultural. This unique situation has brought about the possibility for the formation of Tahoe-Reno Industrial Center. Nevada's unique tax structure, its economic status, its ample transportation and strategic geographic distribution potential have together, by their capacities to relate to one another formed a particularly local warehousing, distribution and manufacturing industry. Taken alone this assemblage of an industry provides much benefit to the region. When placed on a site and within a broader physical environment which—this thesis contends—must become architecture, many discrepancies become apparent.



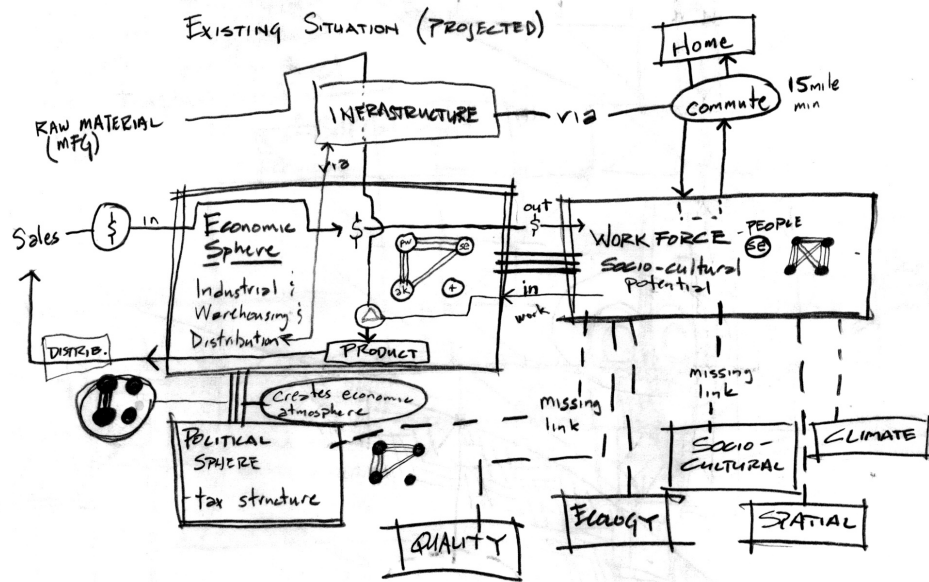


Figure 3.
Diagram of existing situation establishing missing links to spheres of context.

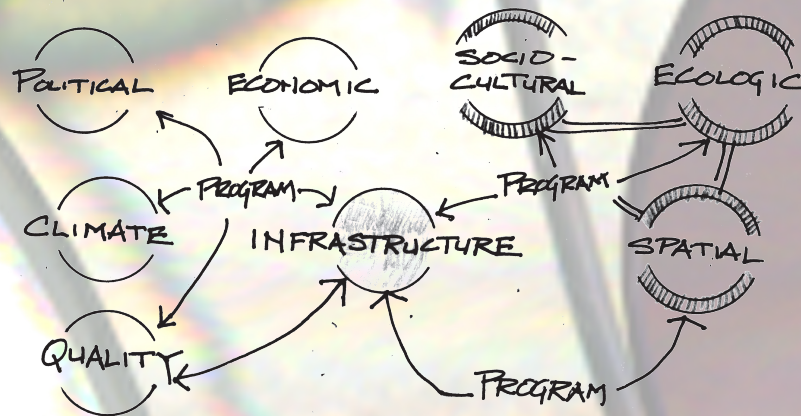
As illustrated in figures 2 and 3, many areas of concern arise when the industry assemblage centers around the chosen site from the perspective of the potential for architecture. Much of the concern arises from the considerable commute necessitated by the location of the site in relation to the location of the majority of residences, not to mention the state of the residences commuted from in the first place.

As the relationship between a workforce and industry would likely not qualify as architecture even if it wanted to, the challenge to the architect, given this situation is to forge the links missing from the situation and rectify the existing disparities in the pursuit of architecture.

The Problem

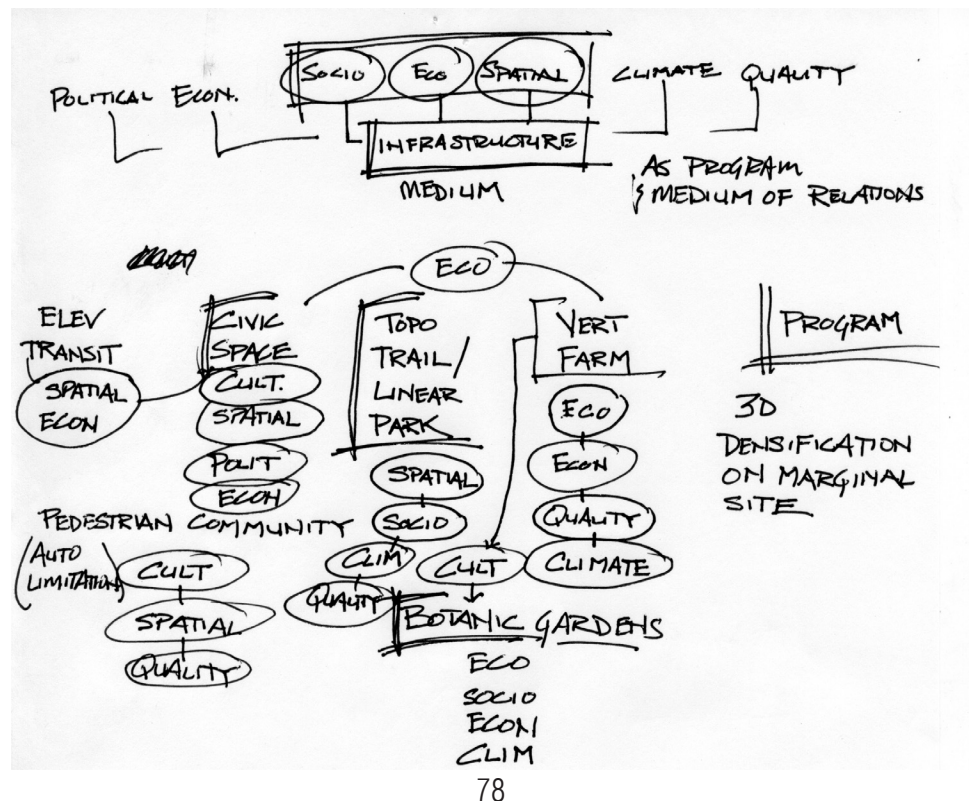
PROBLEM:

ESTABLISH ARCHITECTURAL
RELATIONS BETWEEN SPHERES
OF CONTEXT



CONCEPT: USE INFRASTRUCTURE AS A
MEDIUM TO BUILD RELATIONS
BETWEEN SPHERES

To create architecture within the context of the project site and situation in following with the architectural investigation, the concept becomes establishing designed relationships between the spheres of context under consideration in a unanimously beneficial assemblage. The strategy for this project is to program the relationships using the medium of infrastructure as a guide to present and future development in a similar way to the strategy of code in Seaside, FL. Focus will center about the sociocultural, ecologic and spatial relations to maximum effect as suggested by the context determinism study.



Program:

Elevated Mass Transit:

In keeping with the stance that autos have only damaging roles in the architecture of living places, Δ City places a severe limitation on auto transportation in exchange for pedestrian designed spaces augmented with light-rail mass transit. Autos are relegated to specific areas and zones without being totally excluded.

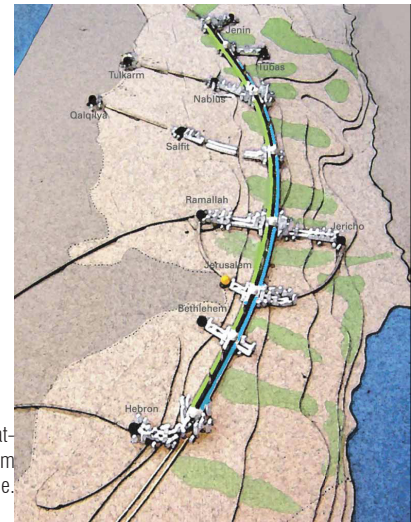
In addition, the infrastructure of the light-rail system serves multiple architectural purposes:

- its spatial placement guides future development by creating special spatial opportunities and limitations. This strategy is designed to encourage the usage of the marginal lands of the site not better used (or conserved) to other ends.

(see *the arc*)

- in conjunction with the topographic trail, it creates an elevated linear dialogue with the topography of the site.

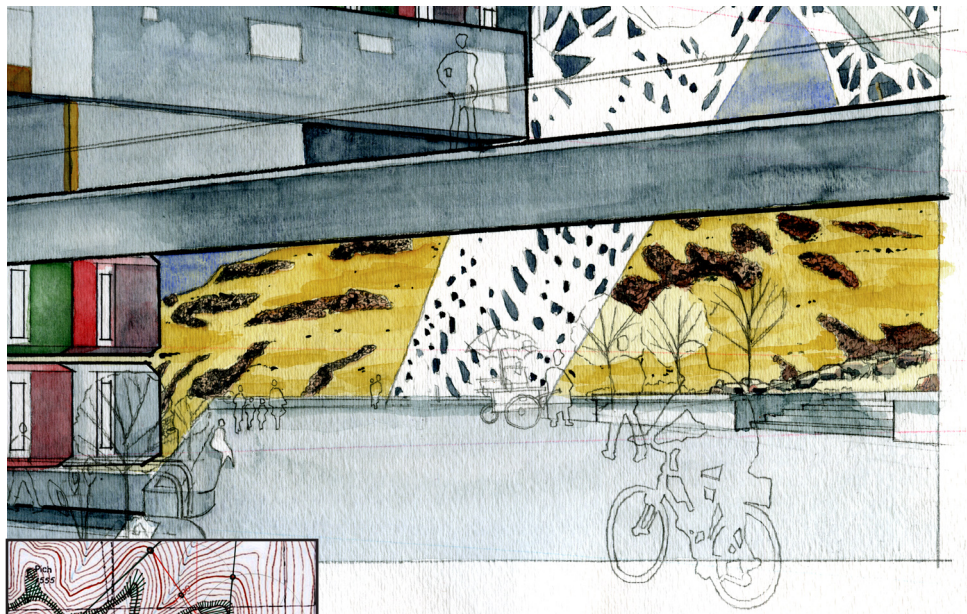
- provides a datum for the development of nodes and typologies based on adjacencies and demands.



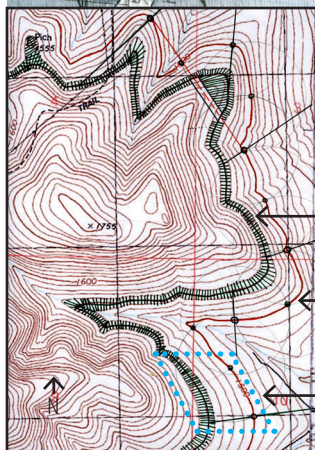
the arc: A Formal Structure for a Palestinian State by Doug Suisman strategizes a designed future density for Palestine utilizing a mass transit system as an ecologically and socially sound guide.

Topographic Trail/ Linear Park:

- provides a parallel datum to the elevated transit as a major thoroughfare to pedestrian, bike, skateboard, wheelchair, etc. traffic.
- ensures major land, ecological and recreational park access and opportunity throughout ΔCity.
- creates large open-specific spaces for use as markets, celebrations, cultural events, civic events, fairs etc.



linear park looking south



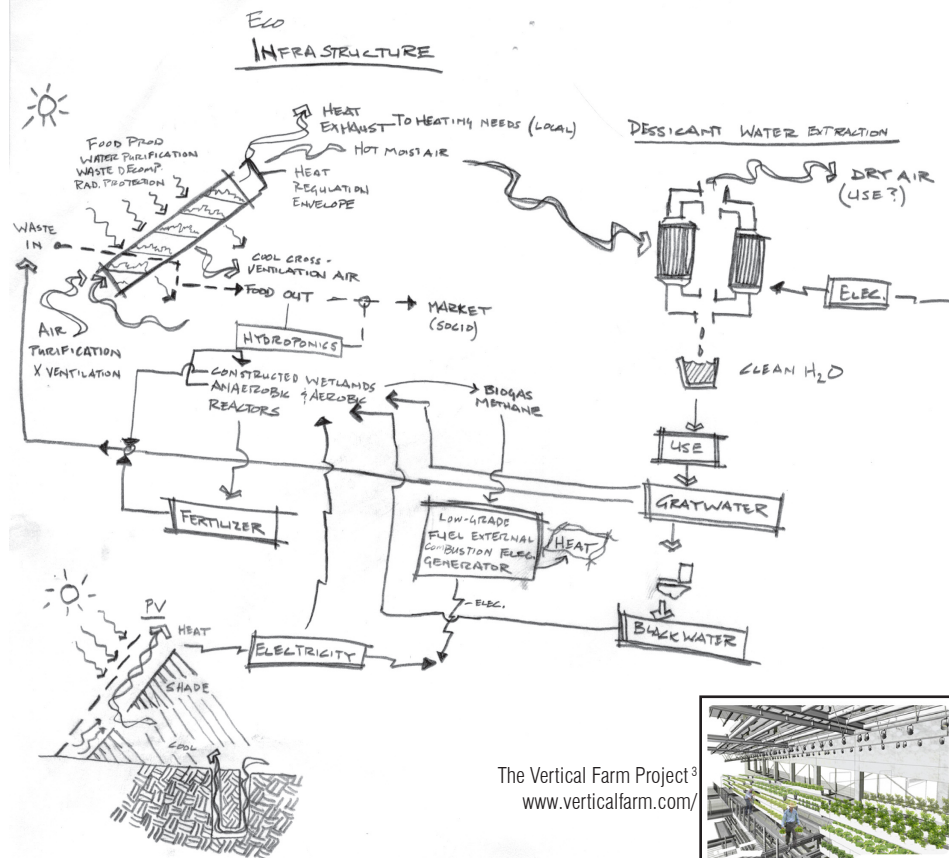
topographic trail/ linear park at 5085' elev. (1550m.)

elevated light-rail (red) based at 4925' elev. (1500m.) elevated to 5085'.

zone of opportunity

Hydroponic Vertical Farms and Botanic Gardens:

- provides major human ecological link to community.
- creates new industry providing food and significant ecological benefits such as water purification, shading, air purification, cross ventilation cooling, stack ventilation, humidity, atmospheric water extraction, aesthetic appeal, civic identity, etc.
- with photovoltaic cells, generates electricity.
- in conjunction with anaerobic waste handling technology, creates compost fertilizer and methane gas convertible to electricity from community solid waste and vegetable waste.

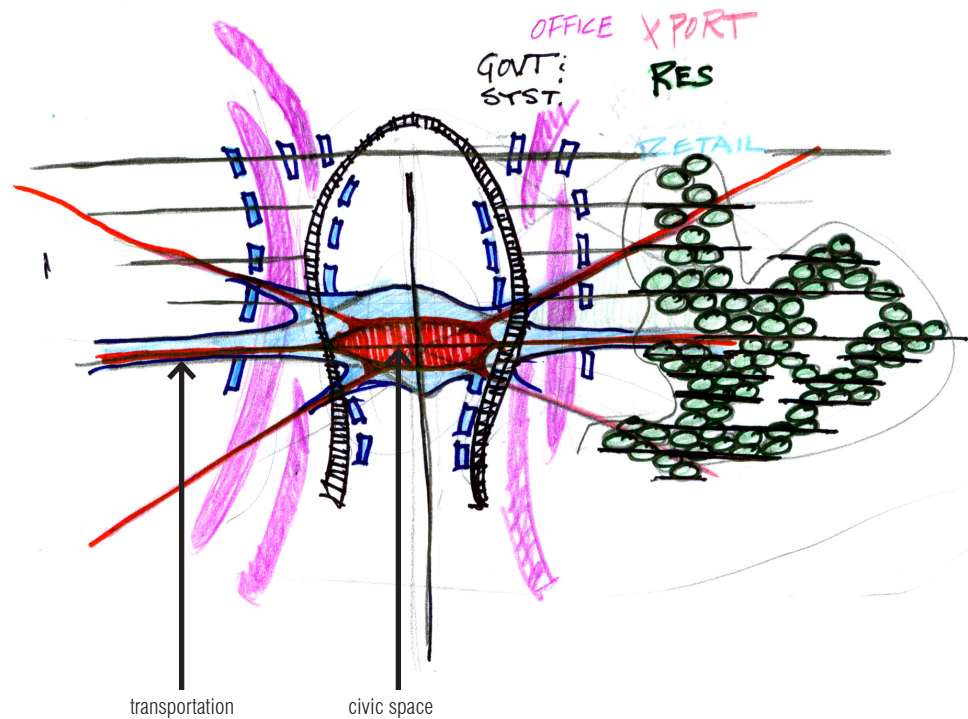


The Vertical Farm Project³
www.verticalfarm.com/

Civic Space:

- large civic spaces provide voice, identity and territory for public exchange, commerce, socialization, circulation, assembly, entertainment and networking.
- creates cultural hub and formal center for urban 3-dimensional development.
- gives ΔCity strong civic identity and urban landmark.
- like the forums of Rome, become the heart of public and social life.

civic space and transportation as development datum, section.



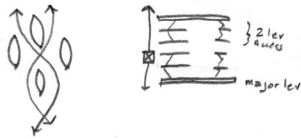
Additional Concerns for Sociocultural Program Infrastructure:

SOLID-CULTURAL INFRASTRUCTURE

INFORMATION

WIRED DATA 
 BROADCAST 
 COMMUNICATIONS
 CYBERNETIC SYSTEMS
 (REGULATORY)

SOCIAL RELATIONS



CULTURAL SPACES

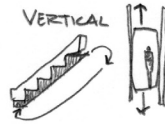


TRANSPORTATION

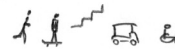
MASS TRANSIT HORIZ. RAIL



VERTICAL



PEDESTRIAN
+
PERSONAL
XPORT



MOVERS



DIAGONAL XPORT ?

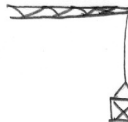


MATERIAL XPORT

RAIL

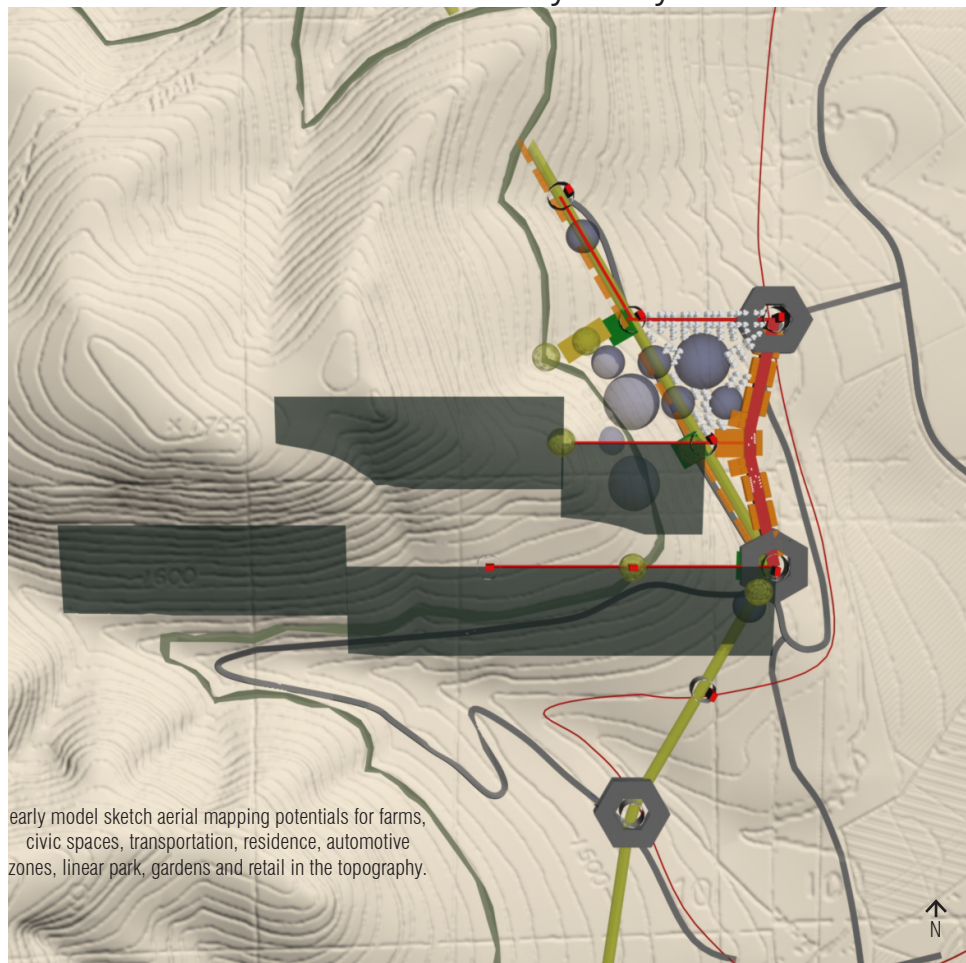


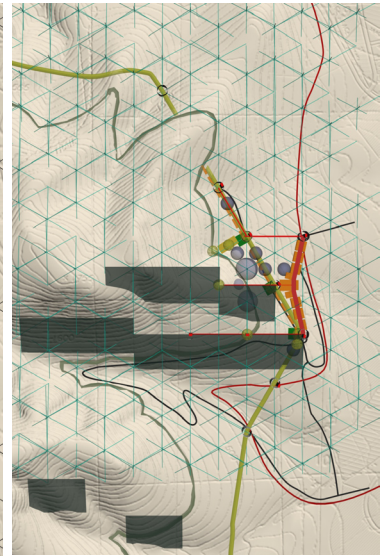
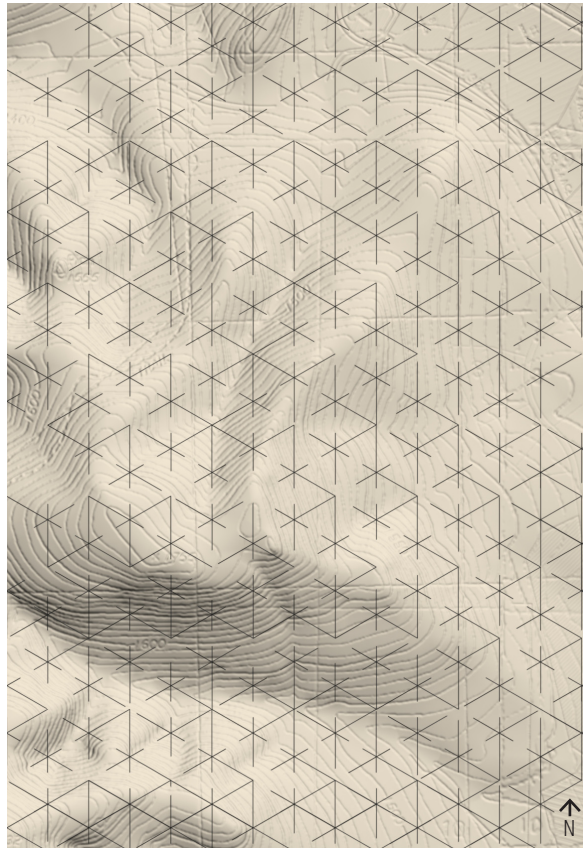
CONVEYOR



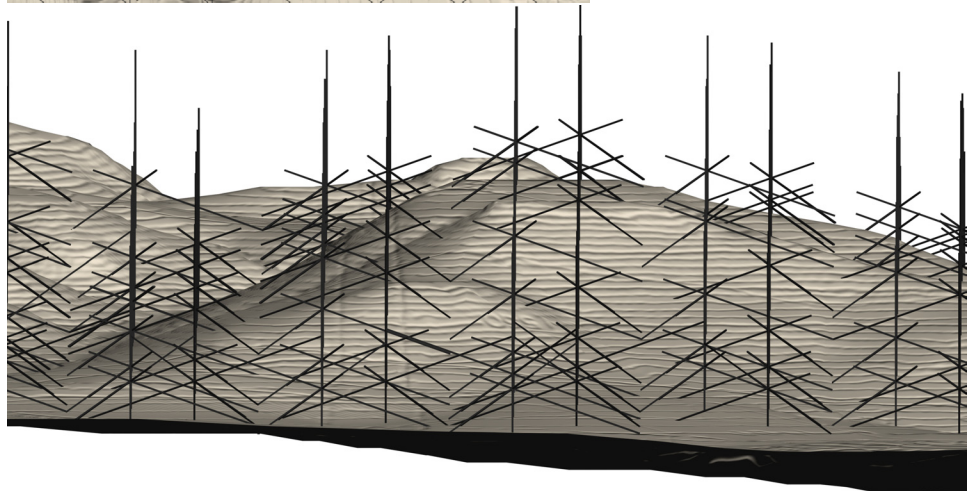
CHANNELS OF Δ
 MATERIAL FLEXIBILITY
 SPATIAL SOCIAL Δ

Process:
City as System of Relations

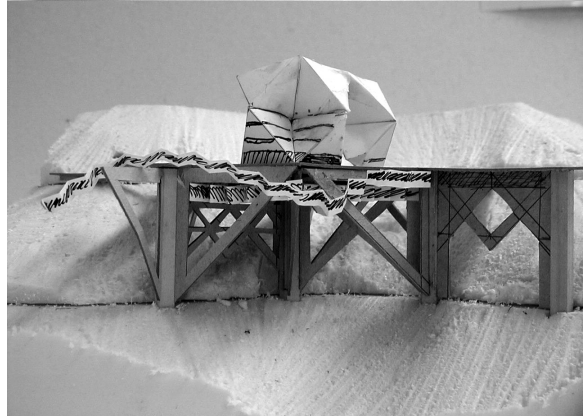
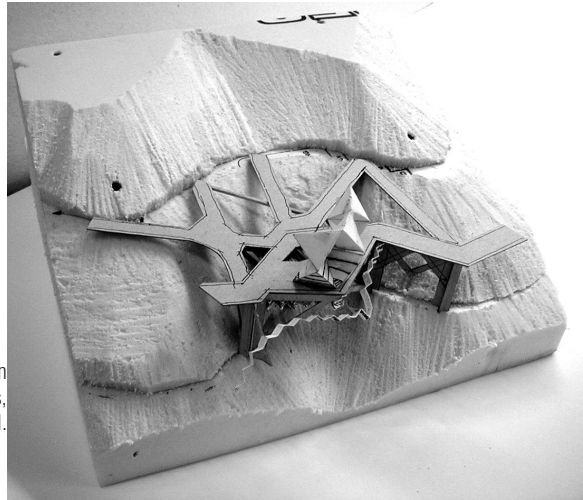




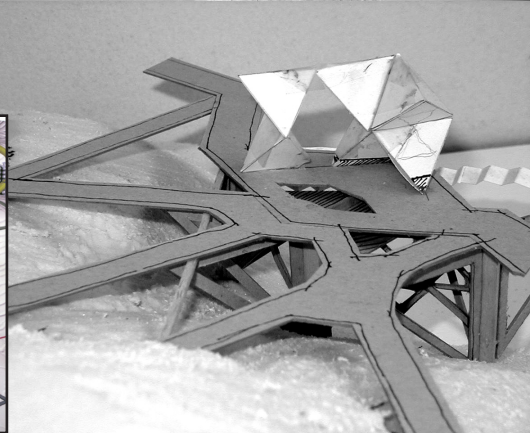
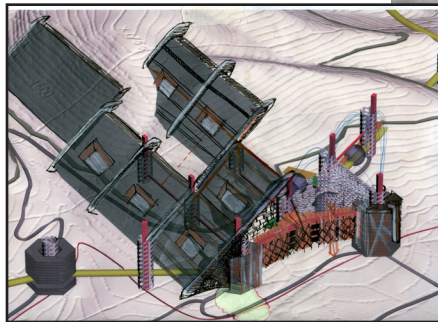
Structure on the topography:
 Early concept model exploring structural potentials for large expanses over steep marginal topography which maintain southern orientation, seismic strategy, potential for variety, flexibility, civic-scale spaces, and maximum opportunity with minimal ground-level imposition (excavation.)

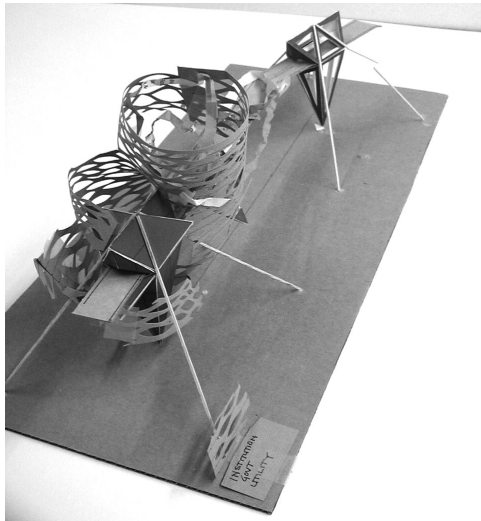


Physical study models exploring infrastructure on site with circulation, mass transit, civic spaces, residential, and retail.

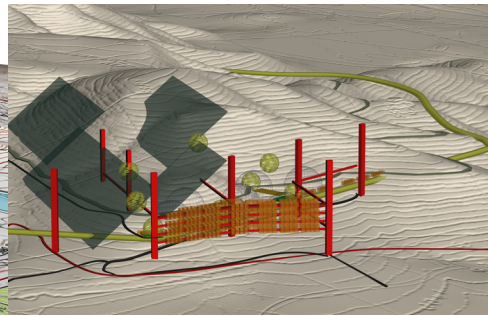
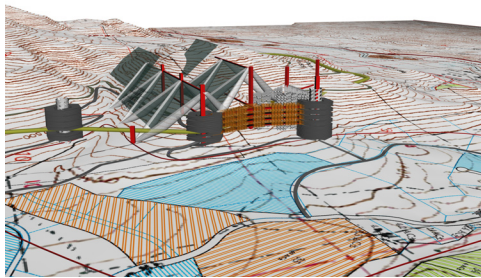


Early sketch of systems taking form on structural grid in topography.

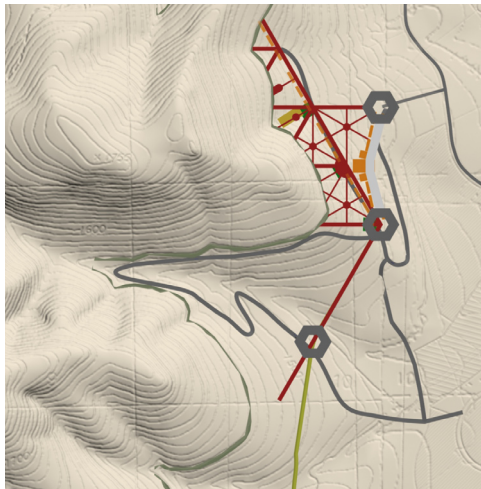




Early concept model exploring elevated transportation structures with minimal footprints and the social development patterns developing around them 3-dimensionally.

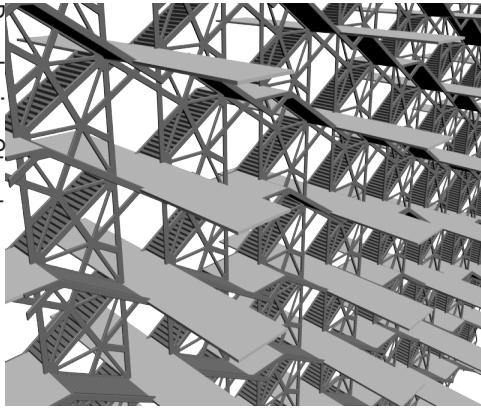


Developing primary structures and systems: service and material handling routes, mass transit, parking, retail, and hydroponics in relation to TRIC and ground vehicle and rail routes.

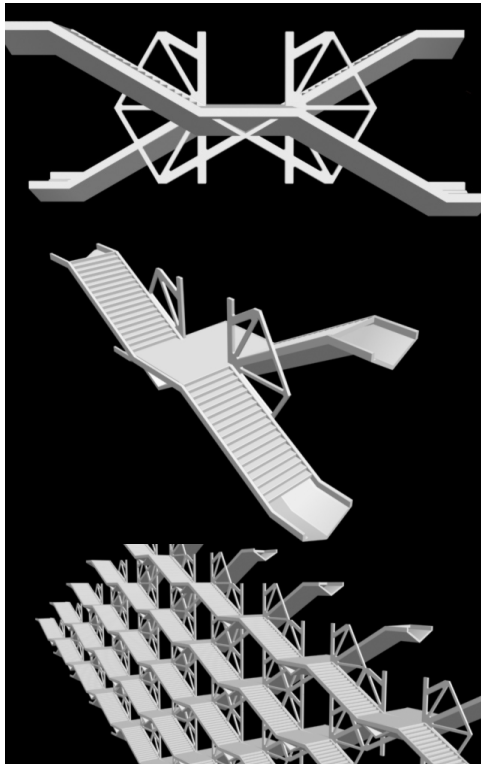
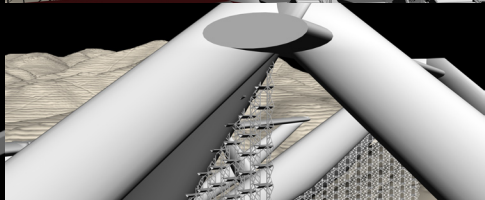
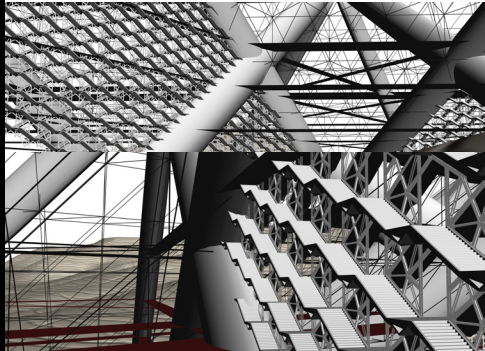
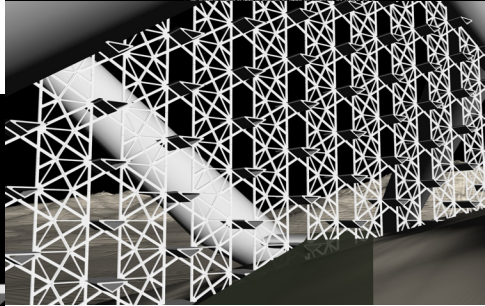
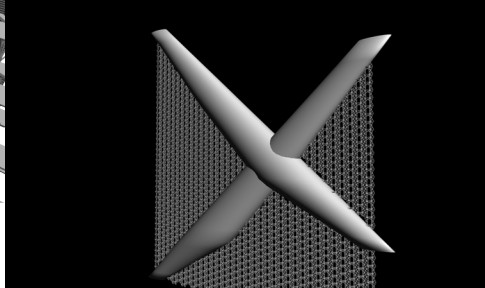
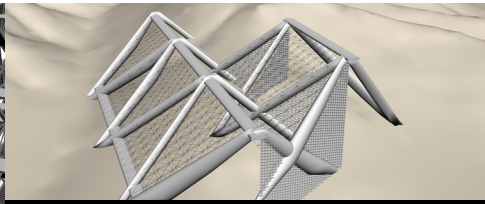


Developing horizontal levels: relationship between elevated transit and topographic trail with potential civic spaces.

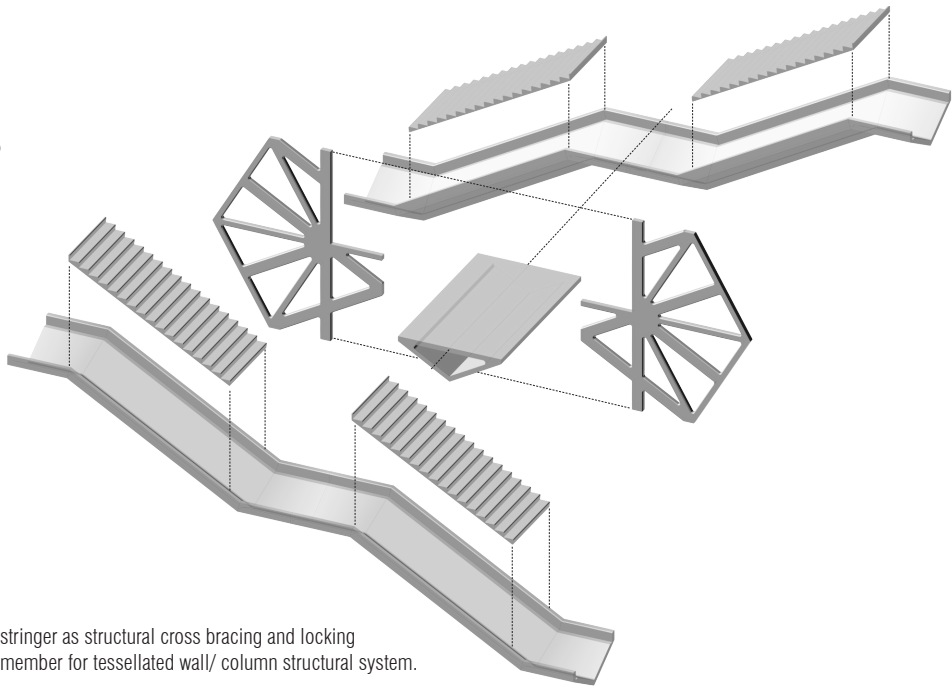
Developing Structures:



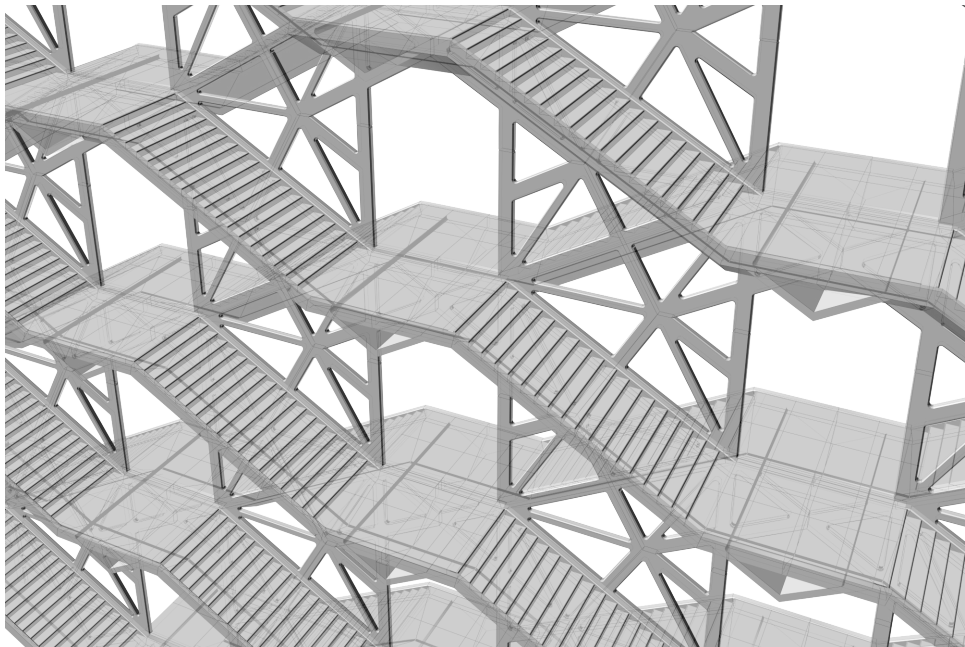
Secondary Structure: egress routes as inhabitable structure, service conduit, screening mesh and residential datum.



Developing Structures:

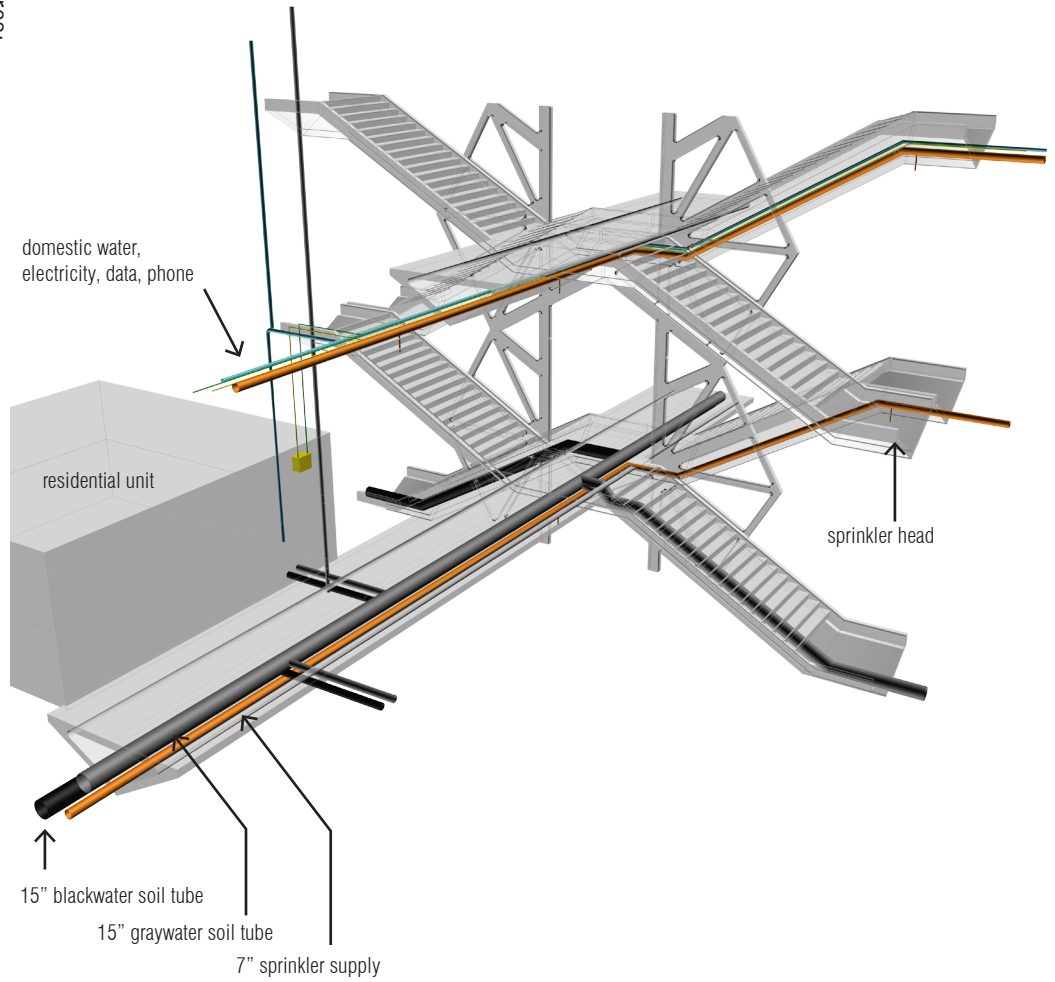


stringer as structural cross bracing and locking member for tessellated wall/ column structural system.

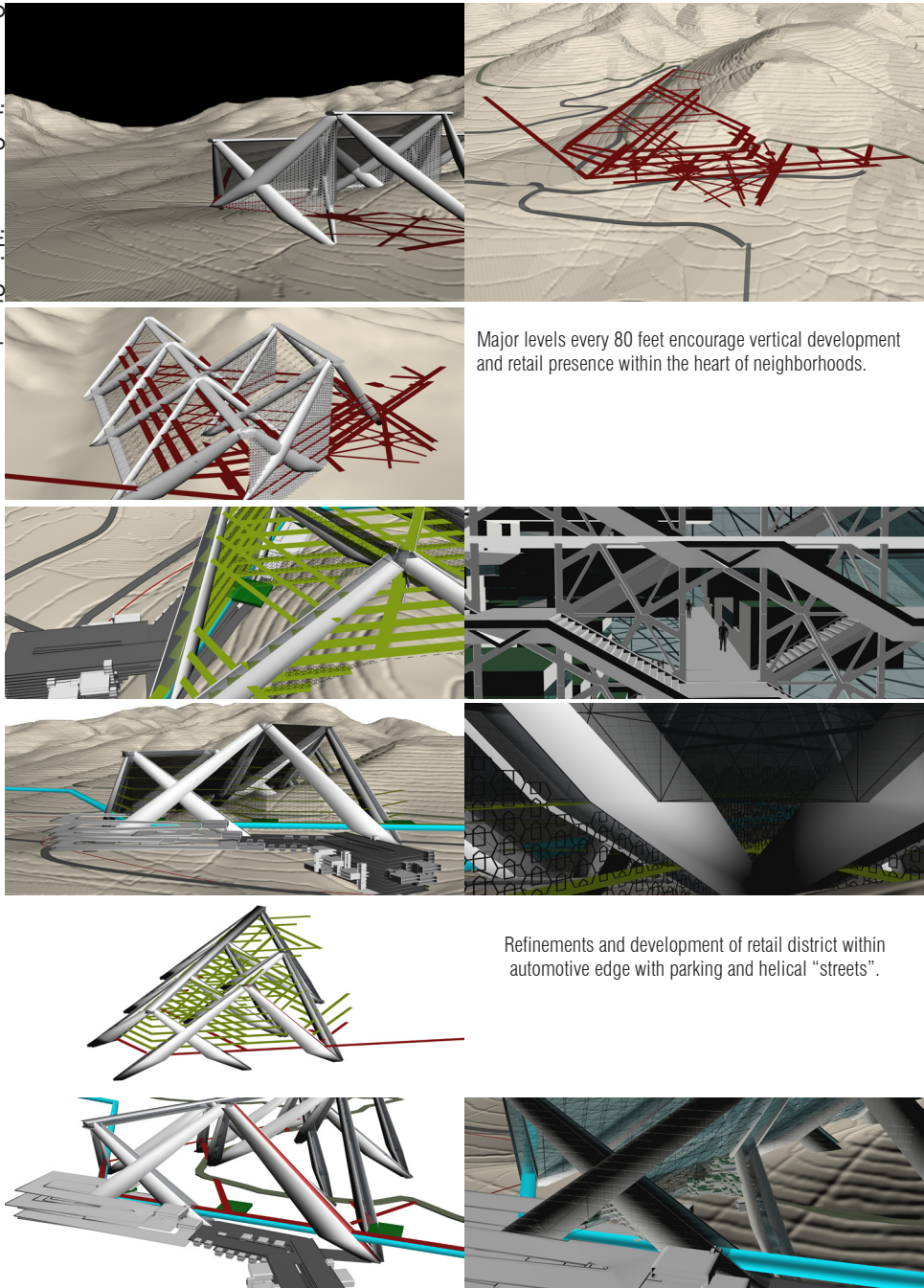


Developing Structures:

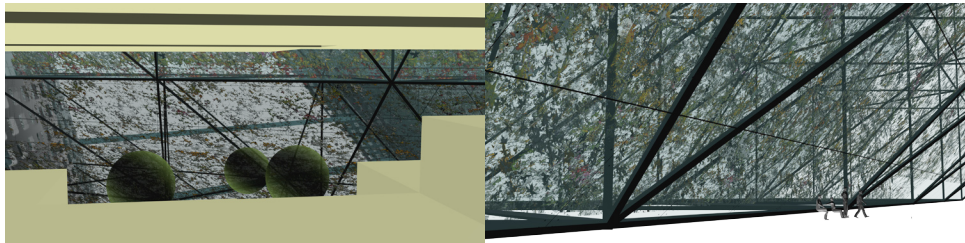
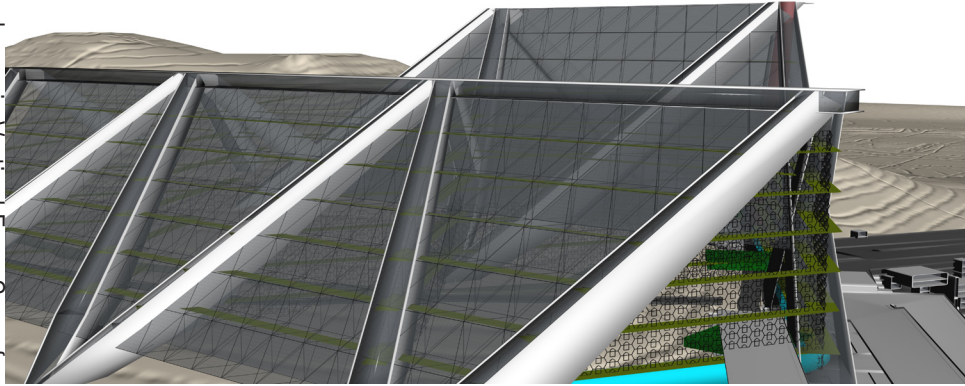
as service conduit and sprinkled egress.



Community Space within Structure:

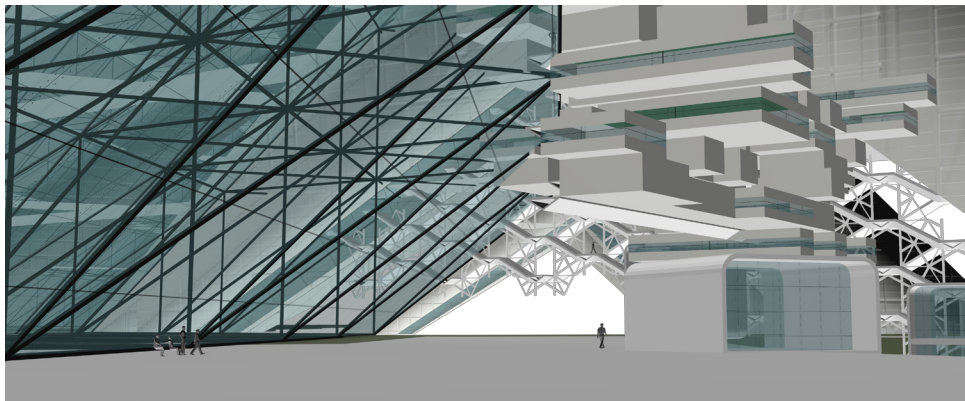


Hydroponic Vertical Farm Spaceframe:

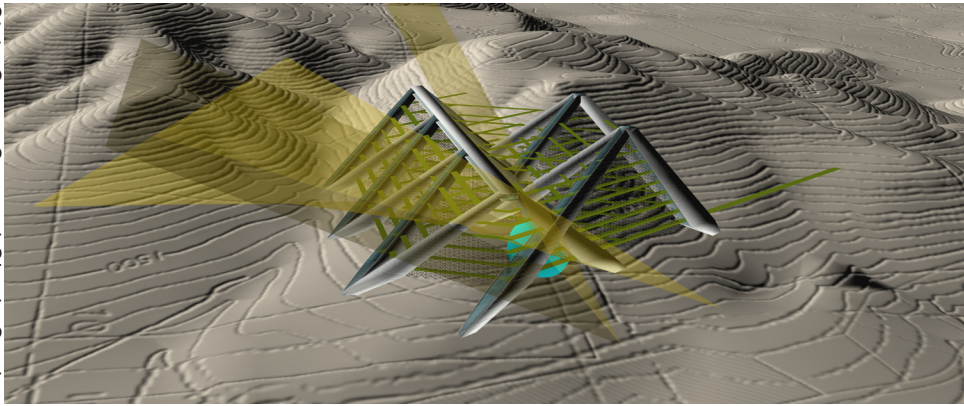


studies of large central botanic garden

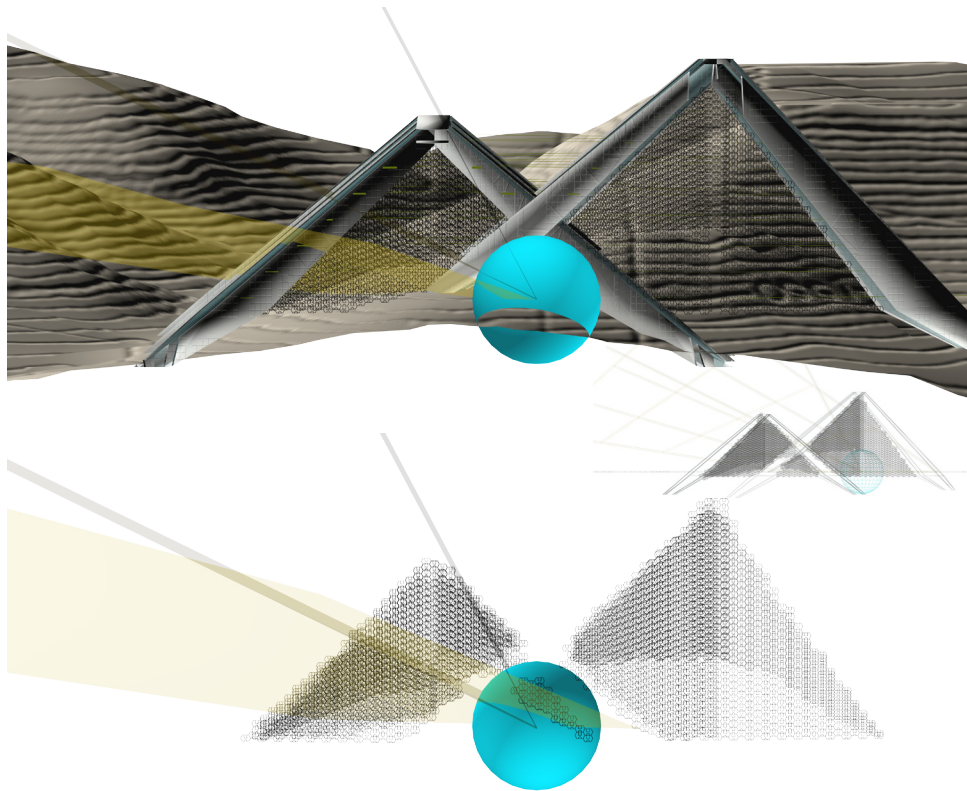
creation of large shaded civic space with adjacent housing and retail within opportunities emerging from structural space.



Civic Space Sun and Shade Study:

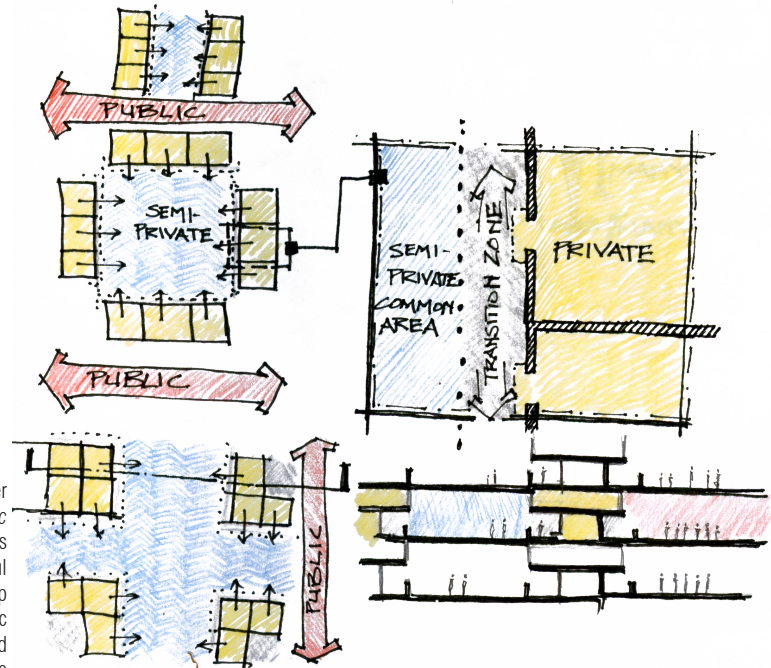


Surrounding structures were subtracted to guide development which optimizes desirable sun\ shade conditions within the civic heart.

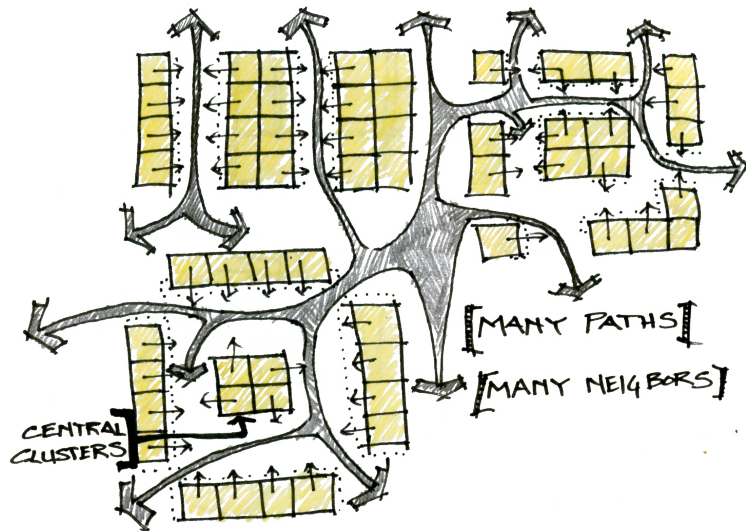


3-D Housing as Social Logic:

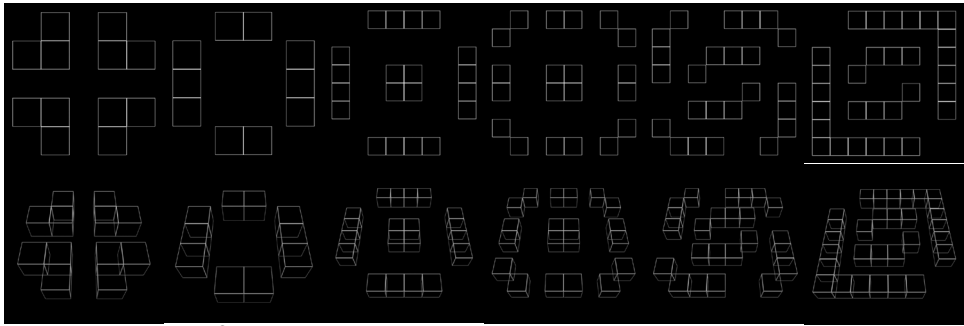
The work of Bill Hillier in *The Social Logic of Space* suggests socially successful neighborhoods develop in patterns of spatial logic which can be designed and manipulated relative to cultural differences. A few variations on some simple known social configurations were chosen from his research to develop a pattern of residential growth optimized for harmonious social potential.



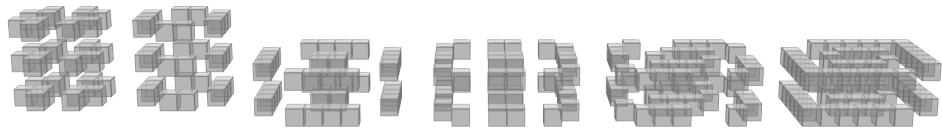
RING STREET



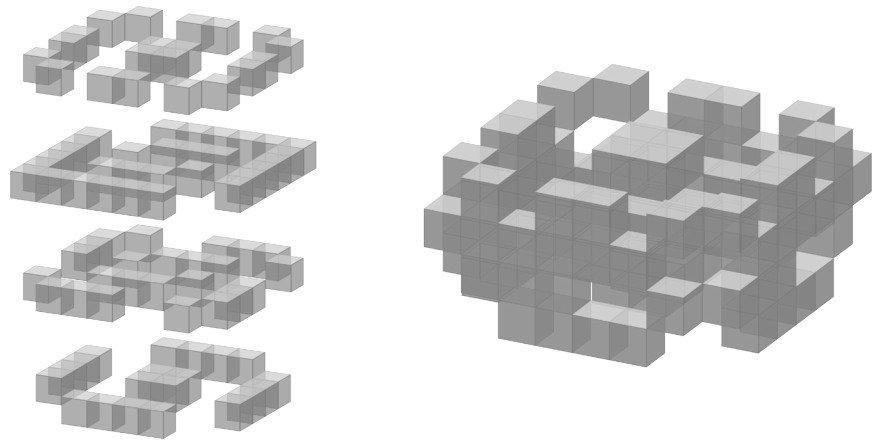
3-D Housing as Social Logic:



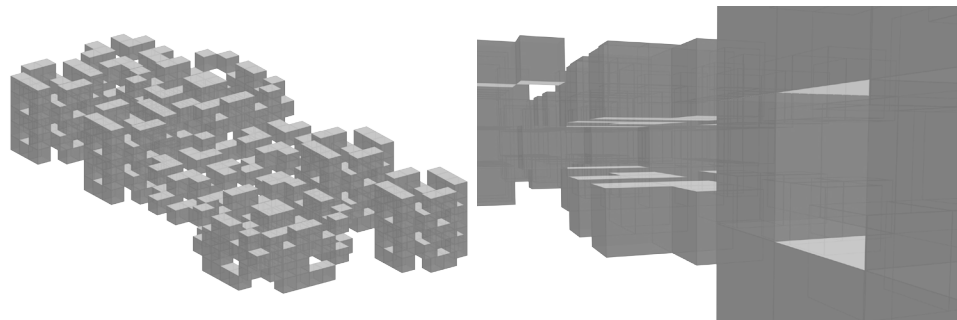
Six simple configurations of dimensionless space organized in centralized or ringed configurations



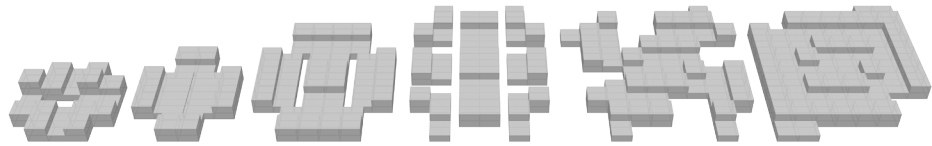
readily stack in simple 3-d configurations



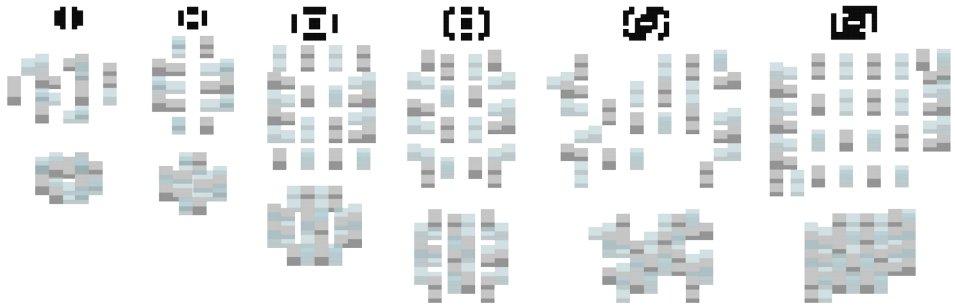
or more complex varieties.



3-D Housing as Social Logic:



Dimensionless space expanded to human scale living quarters modified to accept existing structural system of Δ City.



units:
4@1464sf
6@1968sf
population:
26

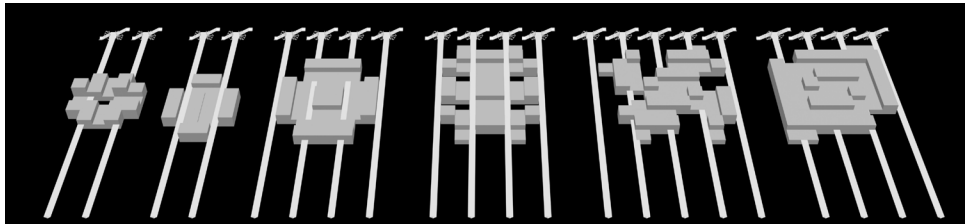
units:
2@2208sf
5@1632sf
2@1152sf
population:
31

units:
20@1728sf
population:
52

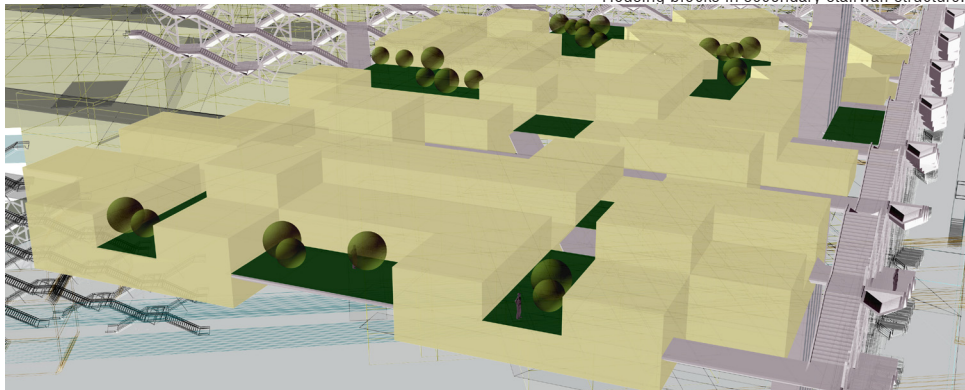
units:
20@1728sf
population:
52

units:
24@1728sf
population:
62

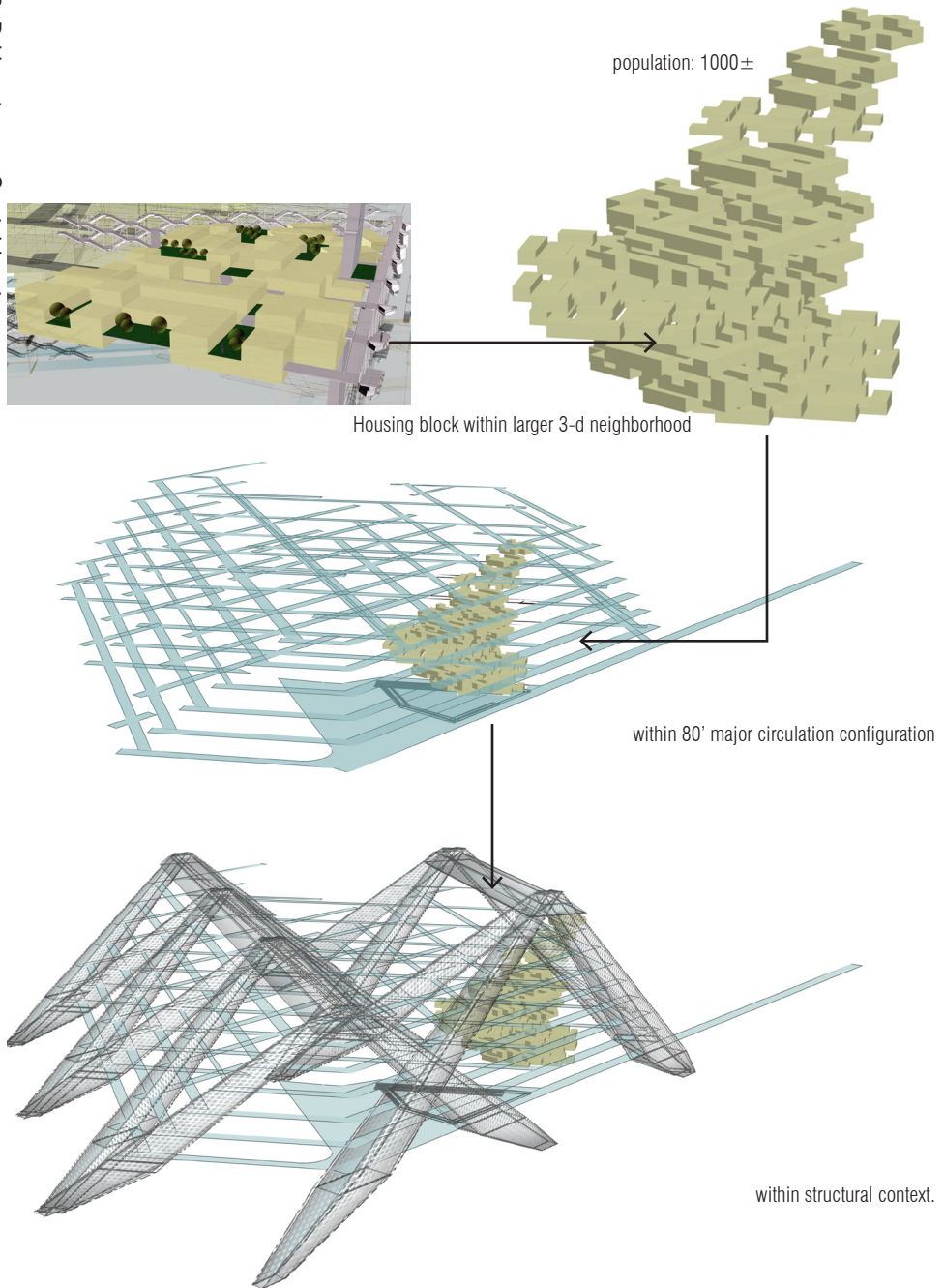
units:
31@1728sf
population:
80



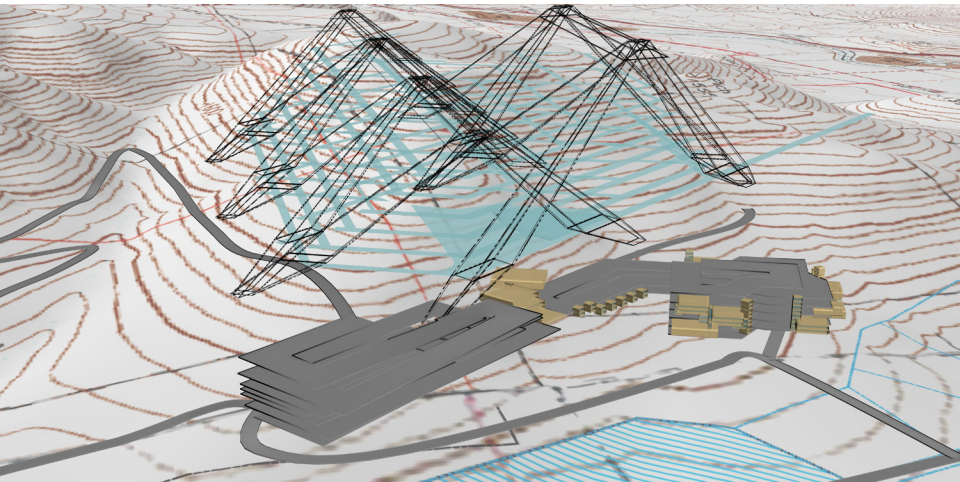
Housing blocks in secondary stairwell structure.



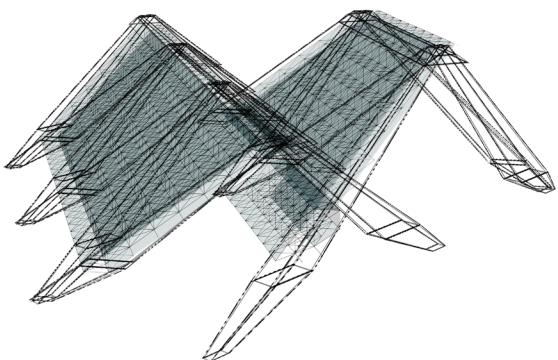
3-D Housing as Social Logic:

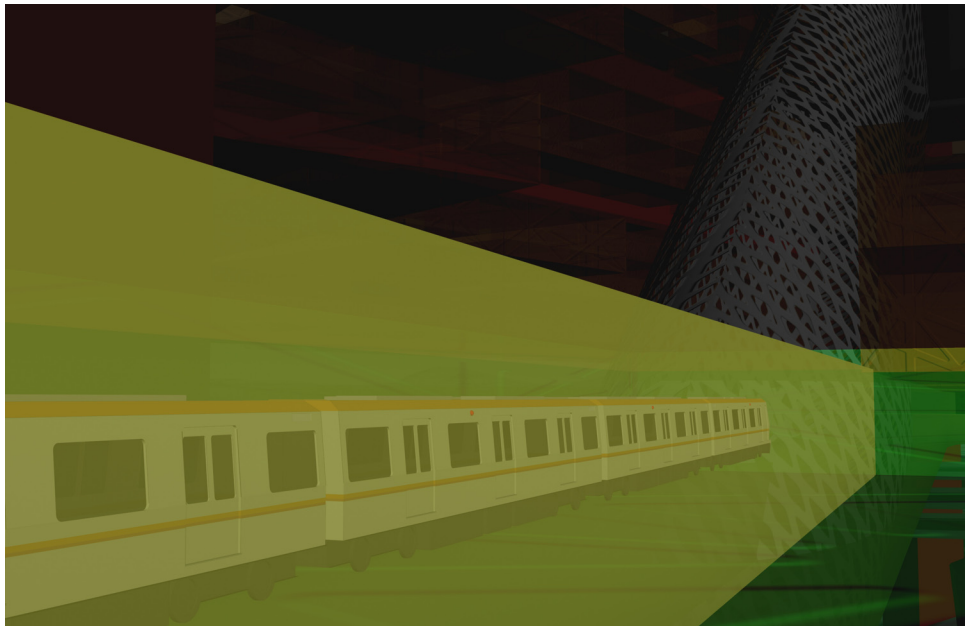
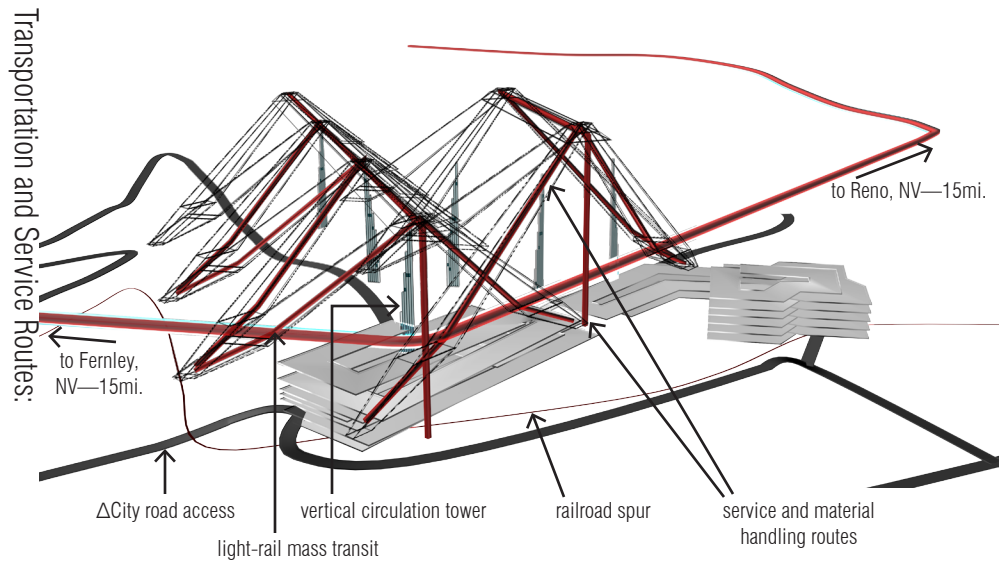


Parking Roads and Retail:

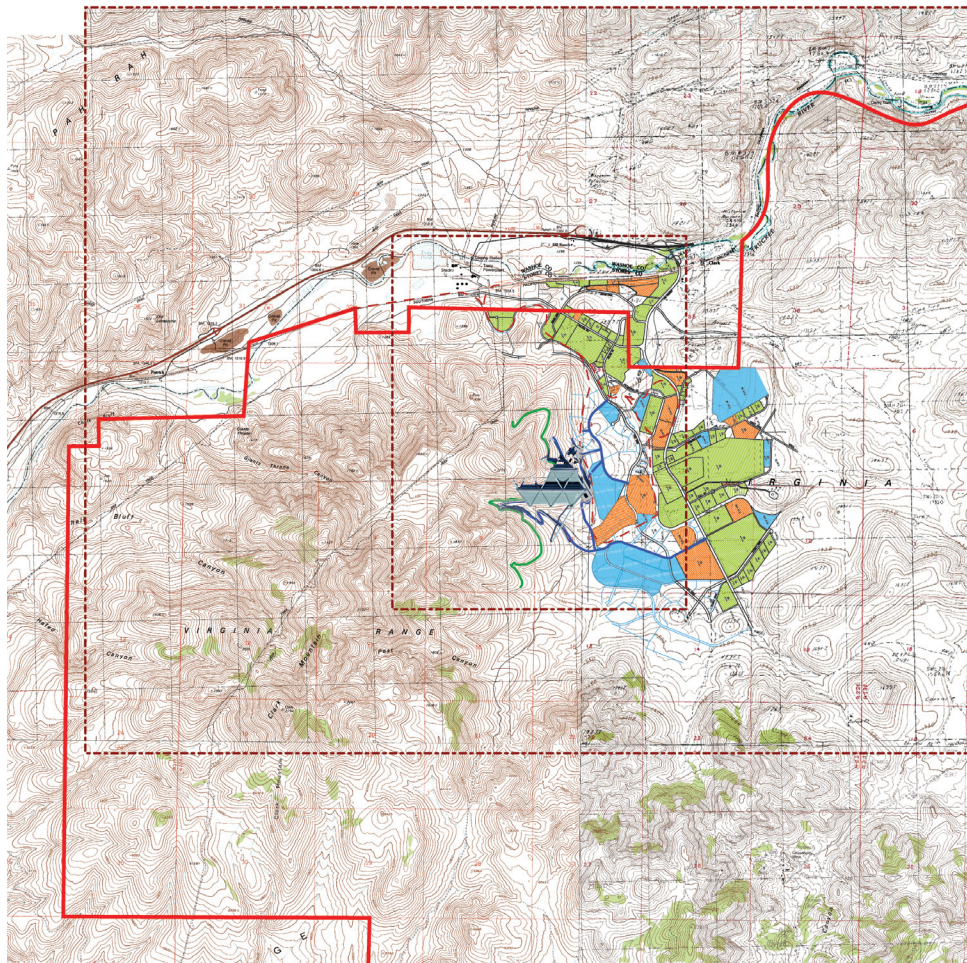


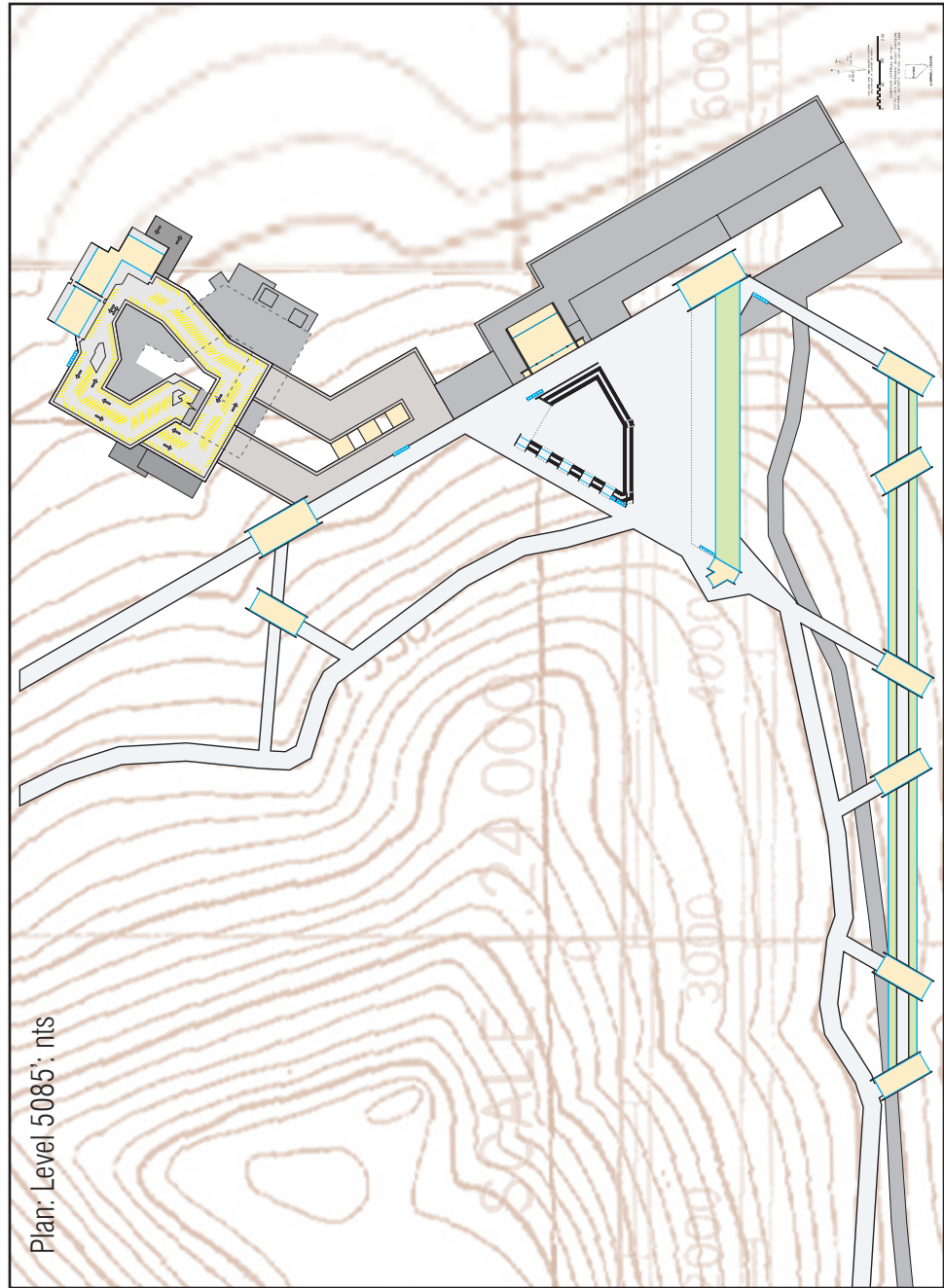
Vertical Farms and Superstructure:



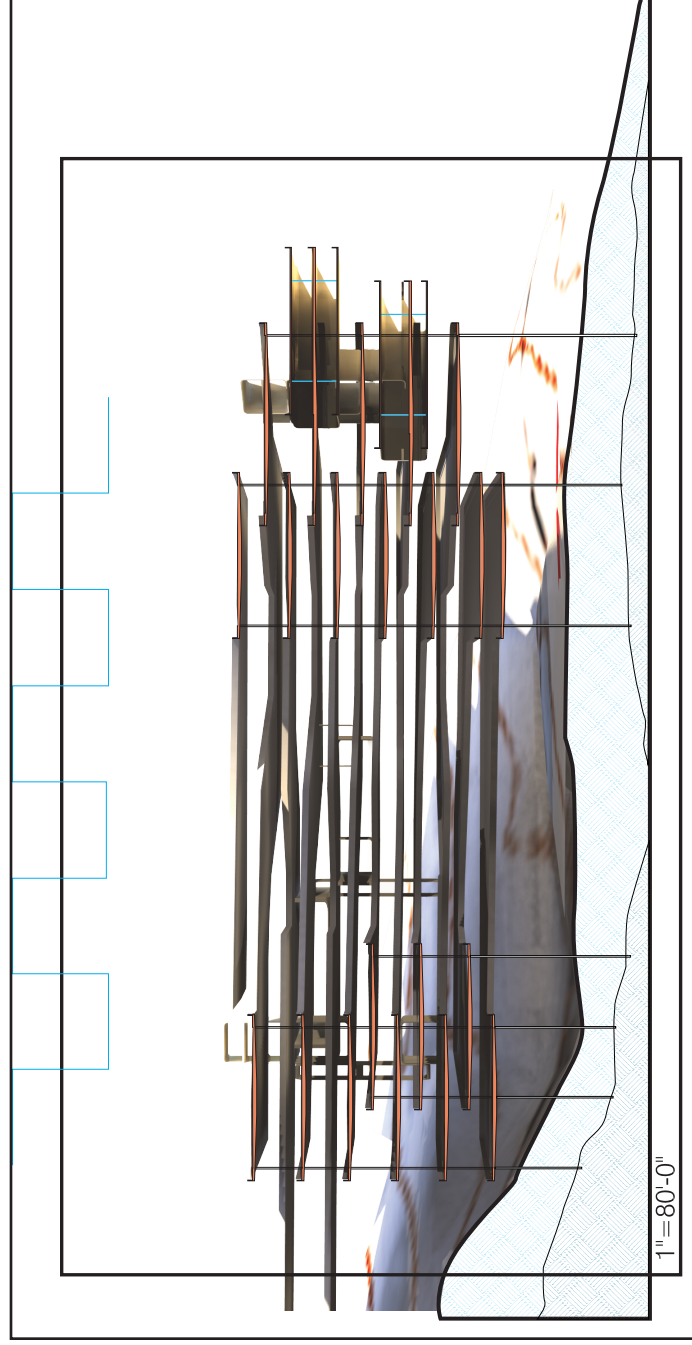


Documentation:

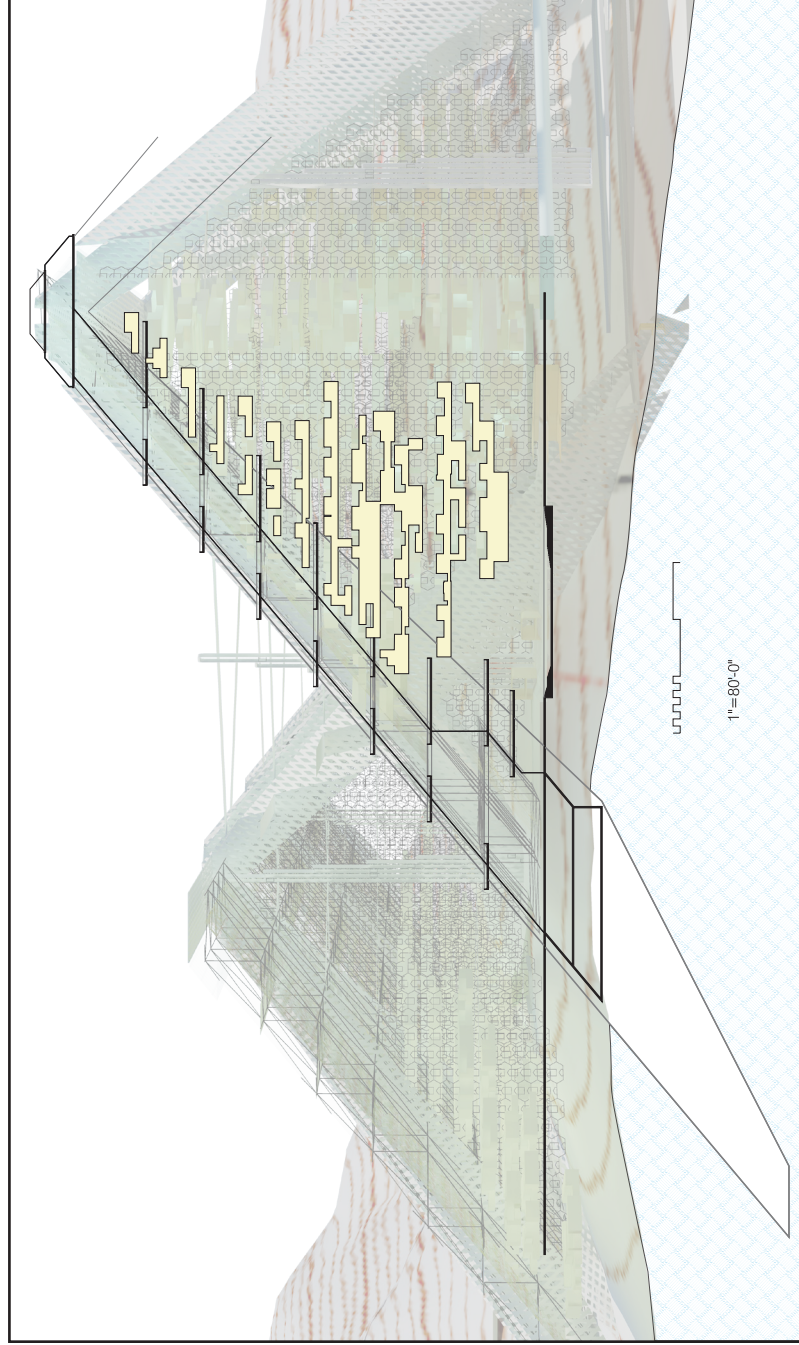




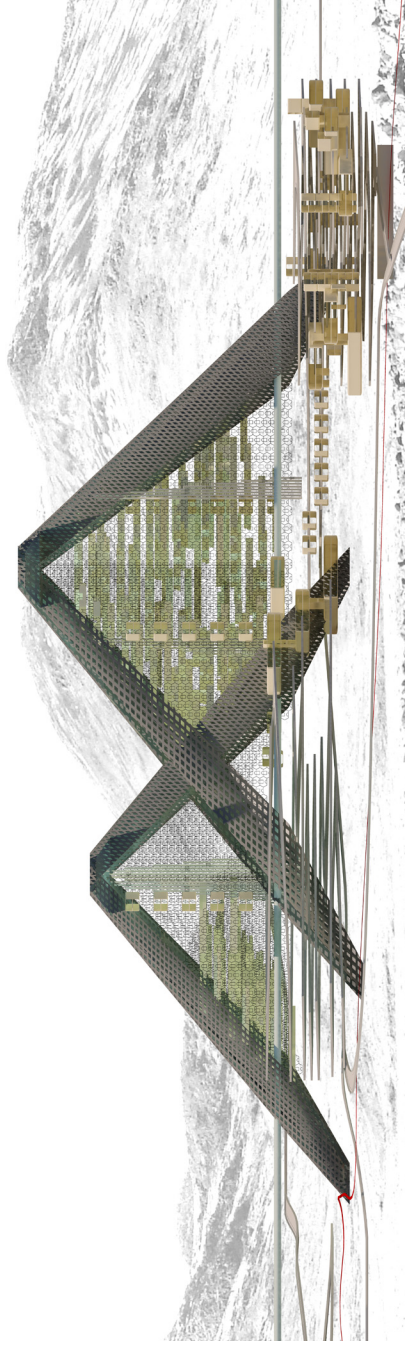
Section Through Parking Structure: nts

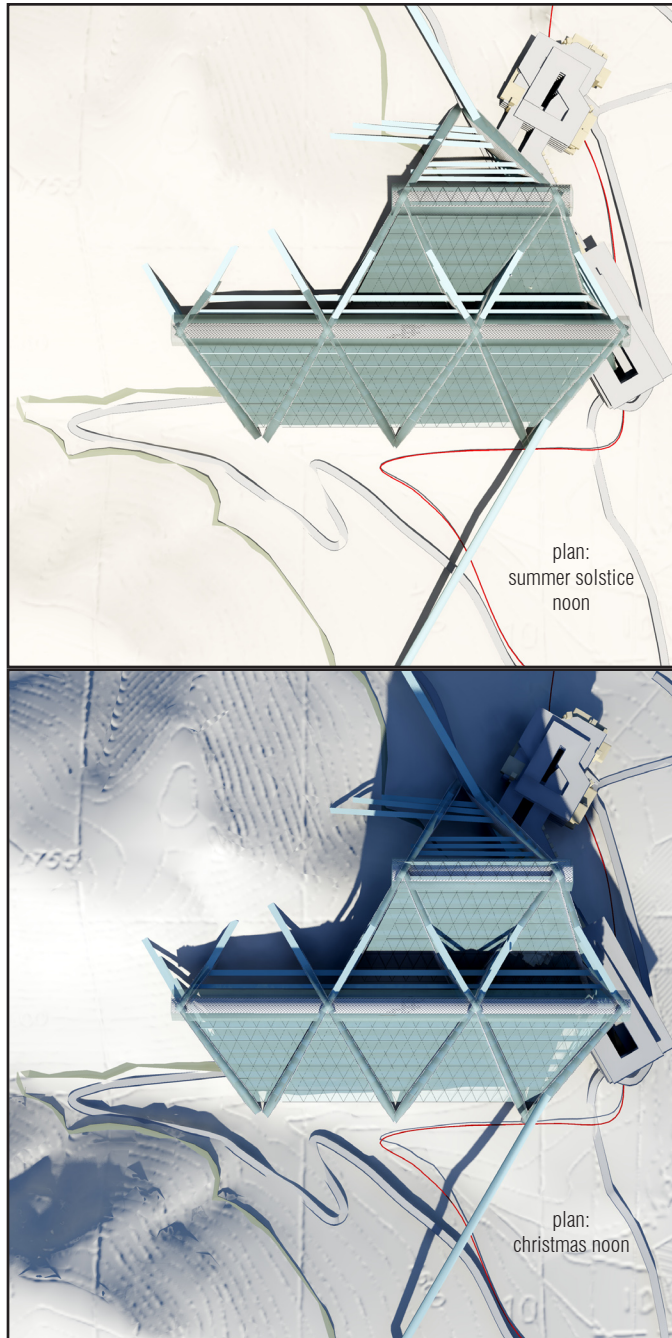


Section Through Vertical Farms and Neighborhoods: nts

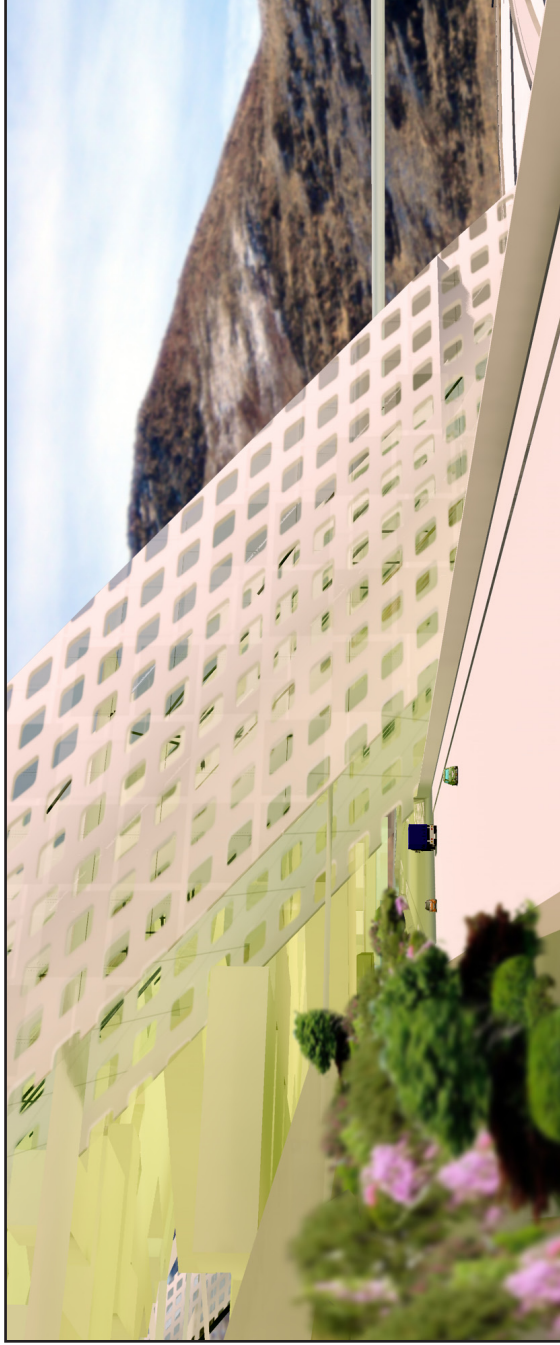


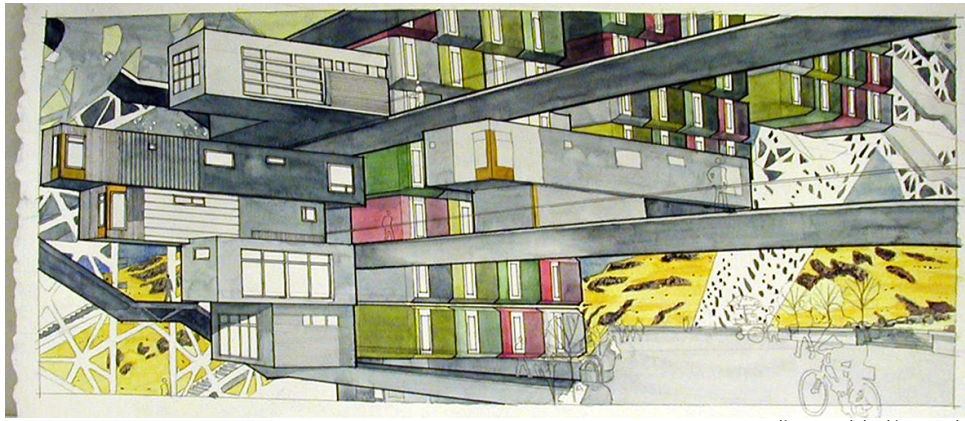
East Elevation: nts



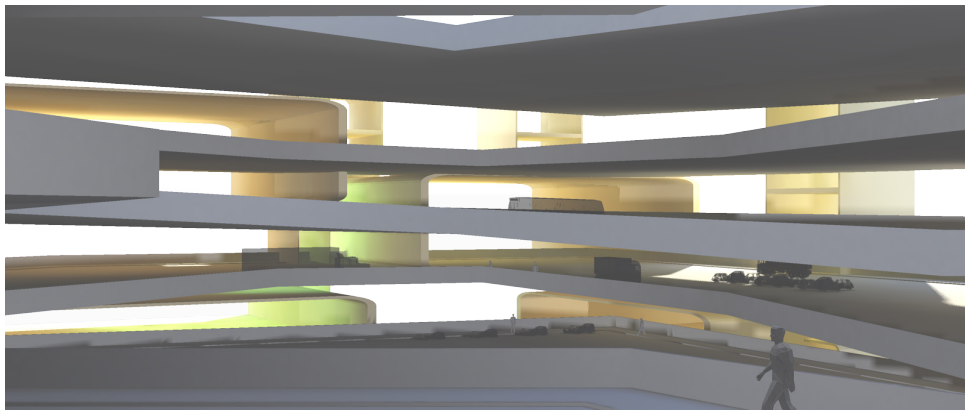


Upper automotive entry to Δ City:

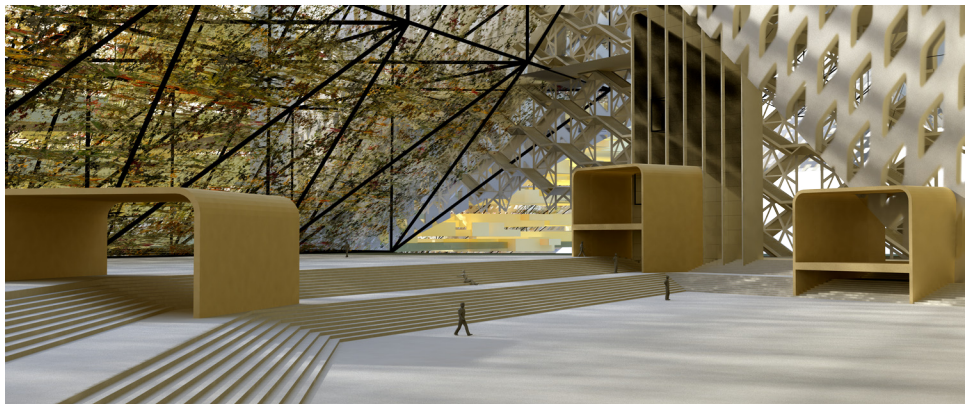




linear park looking south

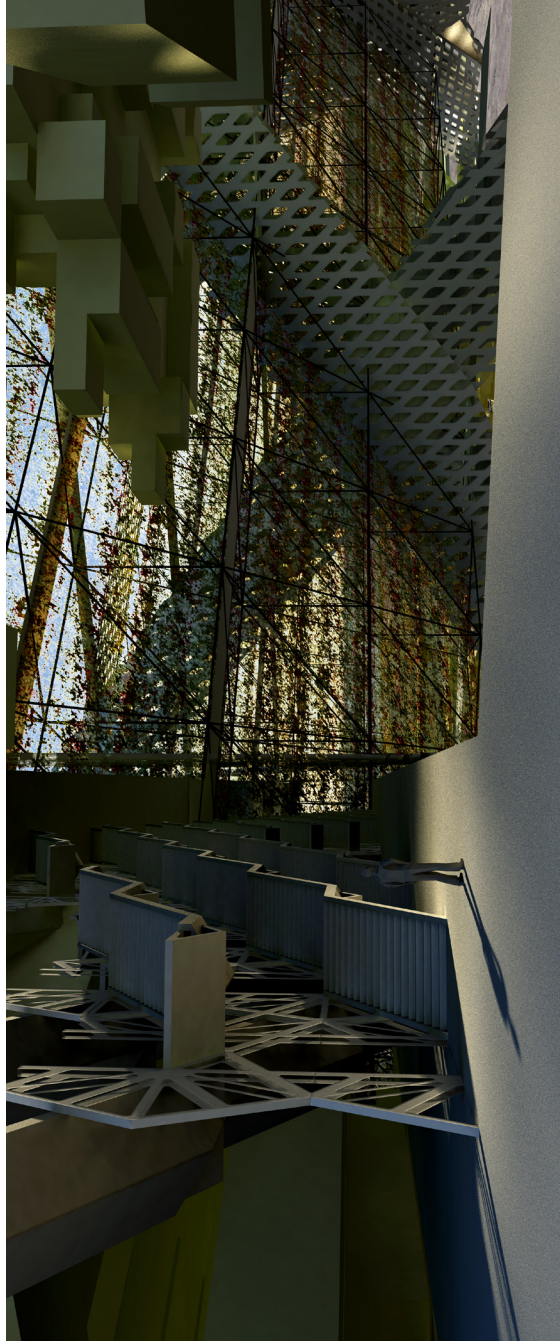


inside parking structure



civic court and botanical garden: winter light

Upper level neighborhood looking southwest: sunset



Civic Court and Botanical Garden: summer light



Notes:

1. Manuel DeLanda. *A New Philosophy of Society: Assemblage Theory and Social Complexity*. London, England: Continuum, 2006.
2. Doug Suisman, and others. *The Arc: A Formal Structure for a Palestinian State*. Santa Monica: RAND Corporation, 2007.
3. Bill Hillier and Julienne Hanson. *The Social Logic of Space*. London: Cambridge University Press, 1984.

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