Outlining the Indeterminate Emergence:
Landscape as a Framework in Contemporary Urbanism

by

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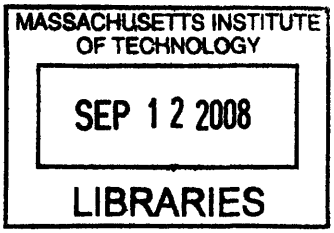
Bachelor of Architecture
Tunghai University 2004

Submitted to the Department of Architecture in Partial Fulfillment for the Degree of
Master of Science in Architecture Studies
at the
Massachusetts Institute of Technology
September 2008



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ABSTRACT

Since the last decade of the 20th century, landscape has become an emerging medium in the practice of urban design projects. Rather than architecture, landscape, once viewed as margin and subordinate of the architecture and planning discipline, now reverse its role from passive ground to active figure in the discussion of urbanism. However, the discussions surrounding landscape as urbanism still rely on case-by-case project practice and lack clarity and theoretical framework. This thesis will explore the common ground of the notion of landscape urbanism. The first part of the thesis compares the theories regarding landscape, city, and urbanism since 1960. The second part of the thesis investigates how landscape can act as a social instrument in the enormous territory of the East Valley in Phoenix when facing rapid population growth. I expect that there is a definable limit to legitimate landscape as a framework of urbanism in order to provide an alternative strategy for dealing the urban problems of contemporary metropolis.

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Acknowledgements

Alexander D'Hooghe - As my advisor, thank you for your patience and support. My time in MIT has been incredibly enriched by being your student.

Eran Ben-Joseph- Your knowledge helps me get rid of some blind points and clarify my thinking.

Mom and Dad and my dear sister - Thank you for always being there. This thesis is for you.

Contents

Chapter 1. City as Landscape: the Emergence and the Recovery of Landscape

We are now facing the world that we cannot use a single gesture to explain all the phenomena and solve all the problems of contemporary cities anymore.

Since 1977 when Charles Jencks announces the death of modern architecture[1] by arguing that modernism is unable to produce a "meaningful" or "livable" public realm[2], the emergence of postmodern architecture and urbanism in the 1970s and 80s critiqued modern architecture and planning by rejecting homogeneity, coherence, and completeness, and celebrated the heterogeneity of radical departure from half of a century of modernist development, such as Jane Jacobs's The Death and Life of Great American Cities claiming that modernism" destroyed communities and created isolated, unnatural urban spaces,"[3] Robert Venturi's Complexity and Contradiction in Architecture arguing that "modernism in unable to communicate with multiple audiences,"[4] and Aldo Rossi's "modernism fails to come to terms with the city as an historical construction of collective consciousness."[5] The reason and force behind all these developments, as Patrick Shumacher and Christian Rogner argue in the essay "After Ford,"[6] illustrates the postmodern cultural production with the crisis in the realm of mechanical production, and the shifting towards the diversification of consumer markets.[7] These social-economic transformation, including the market stratification, flexible production, vanishing state-regulation, globalization of capital markets, and exploding labor relationships,[8] undermines the architecture of Fordist strategies of rationalization and hierarchy. The modernist pattern of urbanization of projecting the total social machine into space such as comprehensive, bureaucratic, functional hierarchy fail to follow the pace of change and the

increasingly global market competition: decentralization, horizontality, transparency, fluidity, and rapid mutability. The new tendencies of post-modern principles in corporate restructuring, as Schumacher and Rogner summarize:

1. flattening of hierarchy into horizontal fields;
2. decentralization, devolution of authority and responsibility;
3. self-organization rather than bureaucratic task allocation
4. collegial communication and evaluation rather than command and control;
5. dispersal and sharing of information and technologies;
6. team-work, informal or temporary alliance, loosely occupied networks;
7. hybrid conglomerates and ad-hoc assemblages replace integrated entities;
8. increasing reliance on outsourcing. Temporary and self-employment
9. mutability, mobility, and indeterminacy as positive values;
10. processes analogous to ecological or biological systems.[9]

Even in this social, economic, and cultural atmosphere of criticizing modernism, postmodern architecture still fails to address the underlying structural conditions of the tendencies of industrialized modernity to the decentralization of urban form. Although postmodernism is motivated by the desire for communication with multiple audiences and the commodification of marketable architectural images for diversifying consumers markets, what postmodern architecture argues such as modernism lost 19th century urban values of pedestrian scale, fabric continuity, and neighborly architectural character[10] still depends heavily on a steady supply of substantial, sympathetically styled, and spatially sequenced architectural objects that could not sustain themselves given the changing context of mobile

markets, automobile culture, and the decentralization of cultural regime. The growth of the urban design discipline in 1960 seeking to extend the work of urban ordering through the aggregation of architectural elements to abdicate planning ended up with the ensemble of nostalgic urban consumption. Postmodern architecture inevitably formalized as superficial stylistic in absent context and is more retreated to "the comforting forms of nostalgia and stable, secure, and more permanent forms of urban arrangement by citing European precedents for traditional urban form."[11]

It is in this social atmosphere of contemporary cities that landscape comes to redeem itself of rather than just an autonomous nature mimic, but a lens of how we see and represent the city from different points of view: From a larger and broader perspective.

The Expanded Field: Land-Art as a Form of Indefinite Structure

It was the 1960s land art that rang a division bell of the traditional notion of landscape and urbanism.

In her essay " Sculpture in the Expanded Field," Rosalind Krauss described the art work, especially the 1960s-70s land art as the response of modernism determined rupture, which entered the category of no-man's land,[12] in Krauss's term," it was what was on or in front of a building that was not the building, or what was in the landscape that was not the landscape," which also entered the negative condition of the monument characterized by sitelessness, homeless, and absolute loss of place.[13]

Citing Robert Morris's work Green Gallery installation, Krauss claimed that it was at this time that

sculpture had entered the full condition of its inverse logic and had become pure negativity and ceased being possibility: Sculpture becomes of the combination of exclusions, the sum of the neither/nor.[14] It was at the end of the 1960s that sculpture began to focus on the outer limits of terms of exclusion. A time that traditional term of non-architecture and non-landscape could not define the limits of sculpture anymore. According to Krauss:

> It seems fairly clear that this permission(or pressure) to think of the expanded field was felt by a number of artist at about the same time, roughly between the years 1968 and 1970. For, one after another, Robert Morris, Robert Smithson, Michael heizer, Richard Serra, Walter De Maria, Robert Irwin, Sol LeWitt, Bruce Nauman had entered a situation the logical conditions of which can no longer be described as modernist.[15]

By mapping out the structure of the expanded field, Krauss extended the definition of sculpture as simply between non-landscape and non-architecture to a transformed structure that sculpture is no longer "the privileged middle term between two things that it isn't. Sculpture is rather only on term on the periphery of a field in which there are other, differently structured possibilities."[16] Therefore, besides sculpture between not-landscape and not-architecture, extended from complex axes and neuter axes , three other new term are outlined: site-construction between landscape and architecture noted by the work of Robert Smithson's Partially Buried Woodshed, marked sites between landscape and not-landscape noted by Smithonson's Spiral Jetty, and axiomatic structures between architecture and not architecture noted by Richard Serra.[17]

The expanded field of sculpture, as Krauss argued, possess two feature characterized by the production

of postmodernism:[18] One is the practice of individual artists, and the other is the question of medium, which both suggest a way that the logic of the space of postmodernist practice is no longer organized around the definition of a given medium, rather, "through the universe of terms that are felt to be in opposition within a cultural situation,"[19] therefore addressed the conditions of possibility.

Landscape as a Map of Processing the Values

In 1969 Ian McHarg published his influential work *Design with Nature*. In the essay" Processes as Values", given Staten Island as the case study of overwhelming values such as conservation of geographic diversities, active and passive recreation for metropolitan need, and emergent urbanization for commerce, industry, and residential use, the evaluation of different interests values became the problem and the main issue of the destiny of the unique island.[20]

Under so many dynamic historical, physical, and biological processes, McHarg argued that the first point to be made of the proposition is that it was not a plan. He argues that a plan included "the entire question of demand and the resolution of demand relative to supply, incorporating the capacity of the society or institution to realize its objectives."[21] Rather than a plan in which the criteria were often obscure and covert, McHarg suggested the study should be rational from exact science made on data subjects such as geology, soils, and ecology, and anyone applying this study would be likely to reach the same conclusion in the end.[22] Therefore, the community can employ its own value system which McHarg claimed to be the most important improvement in planning method.

McHarg further illustrated the method by beginning with the assumption that nature is process exhibiting both opportunities and limitations to human use.[23] Under this premise, all basic data such as climate, historical geology, surficial geology, hydrology, soils, plant ecology, wildlife habitats, and land use were compiled and mapped and await for future interpretation and evaluation. From each of the major data categories a number of factors are selected and evaluated and each prospective land use will have certain factors of greatest importance and will be a ranking to be arranged in a hierarchy. Over thirty factors are considered through twelve maps and finally composite the map of Conservation, Recreation, and Urbanization use, as McHarg described, these mosaic and anarchic maps of values reveals the real complexity and variabilities and therefore are rational, explicity, replicatable as a planning process and can be employed by the community in its own development.[24]

The Staten Island study proposed by McHarg hence freed itself from the rigid superimpose of fixed designation of zoning by traditional plan. It suggested a dynamic reading and representation of the facts through exact scientific way and thus left no space of vagueness. Although dogmatic in the rational ecological approach, the importance of the statement of a map rather than a plan unveiled the emergence and recovery of landscape as a broader thinking of the real complexity of our everyday life.

Landscape as a Cultural Agency: The Reality of Our Everyday Life

In his essay" Axioms for reading the landscape: some guides to American Scene," Pierce Lewis outlined the importance of cultural landscape, as he denoted, "nearly everything that we can see when we go outdoors" and has little to do with the skilled work of landscape architects. Therefore, landscape no

longer means just "prettified natural landscape", rather, it has a broader meaning of cultural aspects, as Lewis argueed," that all human landscape has cultural meaning, no matter how ordinary that landscape may be"[25]

To read landscape through cultural sense of the ordinary world, especially the American everyday life, Lewis suggested seven axioms such as Landscapes as a Clue to Culture, Cultural Unity and Landscape Equality, Common Things, Historic Axiom, Geographic (Ecologic) Axiom, Environmental Control, and Landscape Obscurity.[26] In these axioms, Lewis argued that nearly all items in human landscapes reflect culture in some way and provided strong evidence of the kind of being. Given the nature of the common landscapes is so hard to study by conventional academic means because of negligence and snobbery , he suggested the importance of common things as well as history, geographic context, physical environment, and the message landscape contains of by change the way of how we see. The point is to embrace the alternation of seeing, reading, and thinking to raise the questions we never asked before and avoid the serious doctrine and just is.

In this sense, Ann-Spirn further provided a different view of seeing the city as a larger landscape framework. In her essay "the Granite Garden: Urban Nature and Human Design,"[27] Spirn pointed out that the respect for the limitations imposed by nature and exploitation of its resource had led to memorable urban form in that a city's natural environment and its urban form together record the interaction between natural processes and human purpose over time and thus shape the city's unique identity.[28] As she described, all these interactions between human activities and the natural environment create an ecosystem different from the one before the city, a system uniting the flow of natural process

such as energy and materials as well as human cultural processes:

> Modern metropolises have taken on an entirely new form. The boundaries of many order cities now overlap at their edges, forming vast urban fields with multiple centers, rather than a single core.... Huge urban constellations, each composed of many cities, surround most of the remaining wilderness areas of the United States. Real solutions to the problems of both city and suburb can now be achieved only through understanding the place of each within the larger region and by viewing city, suburbs, and countryside as a single, evolving system linked by the processes of nature and the social and economic concerns of humans.[29]

Given the fact that city dwellers have showed an everlasting pursuit of nature through history, Spirn concluded that nature, rather than just a romantic attachment to ornament, should be viewed as a work harmonic with the reshaping of the city.

Landscape, thus become a new tool of seeing the city beyond the traditional scale.

Landscape as a New Territory of Spatial Configuration

In bridging the gap between human agency and natural environment, Richard T.T. Forman suggested another spatial scale finer than biosphere, landscape, to integrate planning for a sustainable environment.[30] In his essay" Ecologically Sustainable Landscapes: The role of Spatial Configuration," Forman illustrated landscape as a mosaic of local ecosystems and human activities. Among the ecological spatial theory focusing on scale, pattern or dispersion, and path dynamic; landscape ecology, especially

spatial configuration focusing on time and change, variables and values, and spatial scales has the great potential for a sustainable environment.[31]

Forman further argued landscape ecology as a discipline focusing on the spatial relationship, fluxes, and changes in species, energy, and materials across large land mosaics and thus can be differentiated into four basic types according to their structural characteristics: (1) scattered patch landscapes such as the desert with scattered oases, (2) network landscapes such as stream system in grassland, (3) interdigitated landscapes such as housing development along roads interfingering with un built surroundings, and (4) checkboard landscapes such as regular agricultural fields with alternating crops.[32]

Given the fact that a smaller unit can affect neighboring units and broader scale, Forman argued that it is critical to identify the most appropriate fine-scale unit to plan and manage for sustainability, thus, landscape, as Forman suggested, had the advantages over the region for sustainable development that is characterized by a time of several human generations, adaptability and change in ecological and human systems, slowly changing variables with irregular circles, and mosaic stability permitting ongoing rapid fluctuations with component spatial units. The development of theory and principles at the landscape scale, as Forman argues, will enhance our ability to an optimal spatial configuration of ecological integrity and human aspirations.[33]

This emergence and reconsideration of landscape was further explored by Carol Burns in her essay "On Site."[34] Rather than viewing site as a subordinate within modern architecture standardization, Burns pointed out the reactions against the modernization homogeneity and the awareness of site has begun

to frame the problem of producing architecture, and thus is considered other than architecture in economics, politics, and socio-cultural conditions in the awareness of the relationship between cultural production and the local circumstances of material practice.[35] As she argued:

> At present, site is frequently seen as a synchronic phenomenon, irrevocably divorced from other times. The history of a setting is acknowledged only insofar as the forces acting upon it have affected its present visible form...However, local circumstances cannot be considered simply in terms of space; they also require a diachronic apprehension of time.[36]

Considering site within architectural thinking, Burns proposed two opposed conceptions: (1) the cleared site, based on the assumption that the site is unoccupied, lacking any prior constructions and thus natural constructions are secondary to architecture and planning, it depends on the mathematicization of land and economic and governmental control, such as Jeffersonian grid, Albany Government Center, Acopolis, attempting to conquer a territory in a single effort and thus precludes existing conditions, change, development and future planning;[37]and (2) the constructed site, emphasizing the visible physicality, morphological qualities, and existing condition of land and architecture, it suggests a way that building and setting are seen to be shaped through obviously physical processes that depends on the visible layers of landscape phenomena consisted of prehistoric forces, agriculture, industrial, and present processes. Rather than mathematical abstractions, the constructed site is shaped by layers of physical material and thus depends on the section as a composite device.[38]

Burns further illustrated the terms such as "lot," "plot," "context," "region," "landscape," and "position"

when discussing constructing the common language of a site.[39] What is important is that landscape, as Burns defined here, is not just literally meant as a portion the eye comprehend in a single view of the picturesque. Rather, it implies the meaning of "survey," "to look over," " to delineate extent and position by measurement," and thus distinguishes it self from the aesthetic and mathematic aspect of site: the distancing between the individual (society) and land. Therefore, landscape and survey, in Burns's term, "informs ways of seeing because they are forms of knowledge."[40]

Moreover, given the fact that each term Burns described above still have gaps between each other and overlap, it is, as Burns argued, impossible to define the particular architectural site in the general notion because of the multiplicity and disjunction. As she quoted in Ernst Cassier's term," It is, as it were, the fundamental principle of cognition that the universal can be perceived only in the particular, while the particular can be thought only in reference to the universal."[41] The site is a medium through which we experience the whole mean while represents the whole rather than just a particular parcel. Thus, as Burns argued, the site is a product of culture, a product not finished or closed, a human work not completed or abandoned, and hence is open, as she quoted Peter Caws's words, "No totality can be meaningful in any case, except a finished one, which can only be a part of our present totality and which necessarily has a closed structure, whereas the 'structuality' of situation...is open."[42]

City as Landscape of Collective Individual Experience

In his essay" Stim and Dross: Rethinking the Metropolis," Lars Lerup provides a unconventional

perspective of contemporary metropolis:[43] By changes of view from 28th floor, the metropolis of Houston becomes an "oceanic experience", a mental map that is leaner, meaner and more superficial then the European metropolitan experience and thus escape the dogma of a traditional city observation and more towards to individual interpretation. As he quotes Robert Smithson's observation:

> I was also interested in a kind of suburban architecture: plain box buildings, shopping centers, that kind of sprawl. And I think this is what fascinated me in my earlier interest in Rome, just this kind of collection, this junk heap of history. But here we are confronted with a consumer society. I know there is a sentence in The Monuments of Passaic where I said, " Hasn't Passaic replaced Rome as the Eternal City?[44]

Lerup illustrated his metropolitan experience of Houston through readings of two megashapes: Zoohemic Canopy and downtown Houston, and both of them can be read through two ways, one from inside thorough the fragments resulting in the comprehension of the logic of the shape, and one from outside summing up the understanding of the whole as a figure, which is a much more traditional perspective.[45] Therefore, the Houston consists of the components such as the "Holey Plane" suggesting the struggle of economics against nature, man-made-world and the wilderness; "Field and Room" characterized by the ground and the canopy of trees and thus shape an ocean of endless surfaces embracing change and fluidity; "Dross" of the ignored, undervalued economic fragments of the metropolis which are more temporary and biomorphic than concrete and manifested classics; "Stimulators" of interlocking systems anchored by technology and machine, which is ignored by architectural practice.[46]

Lerup argued that it is this marginal experience long neglected by traditional discipline but spontaneous self-steering interlocked system that forms the logic of contemporary metropolis: the complex matter which is subtle and can only be experienced as a mental map of each individual. The contemporary metropolis is, thus, in Lerup's term, a hybrid field of stim and dross and it is time for "the Age of Integration: the age of manifolds of wonderful complexity."[47]

This flaneur-like metropolitan observation shares similar points of view with Joachem Schneider's perspective. In his essay, "A discussion of the individual in the city as landscape," citing August Endell's idea of urbanity using landscape as a description of city, he argues the discovery of the city as a landscape through individual perception becomes important and provides an imagining model of landscape into the urban context, and only thought this subjective construction of the image of landscape can a modern city become a "accumulation of various sensations."[48]As he described:

> The City as Landscape, As it is, the city for the hearing is a mobile, highly structured being, more though to the seeing it provides inexhaustibly; the city as landscape, as colorful permanently changing image provides a wealth, an abundance that long sequences of mankind will never exhaust.[49]

Other than the "objective city" that is based on economic order and consciously formed, this "subjective city" experience that is unintentional, coincidental, and irrational becomes another important interpretation of urbanity in the contemporary context. As Schneider argued, the city no longer exists in the singular form, but in the plural ones:[50] the dispositional imagination is more important than a definite form. Therefore, only by taking on the unintentional aimlessness viewpoint of a stranger and

wanderer may one escape the stigma of traditional criteria of evaluation, which leads to the experience of city as a landscape, a metal construction.[51] As Schneider put it:

> Landscape could take on a mediating role between the freely available and the acquired, between the seemingly undetermined and the defined, between the subjective and the objective....one can make out interesting analogue to the concepts f the current planning discourse:
>
> a. the void is no longer nothing. It is elevated from a dispositional space for various \ unpredictable maneuverable demands to the goal of planning;
>
> b. multi-readability and non-determination have replaced functionality as paradigm for planning the public space.
>
> c. in a technically and economically optimized society, vacant space, gapes, and niches are appreciated as spaces of cultural renewal within public urbanity.
>
> d. bodily sensation and the relation of the body to space are increasingly being discussed as part if urban planning.
>
> e. the landscape is hoped to "secure relative open spaces against the constraints of the existing culture and society. Open spaces that don't merely relieve, but help develop the independent points of view and forms of behavior that bring about the active intersections in society and culture.[52]

Thus, landscape, once described as only an image of drawing, now broadens its definition to embrace the movement as a form of perception, a form of human flux, and a form of collective primary experience, which is, in Lucius Burkhardt's term, "Landscape is not to be sought in nature but in our heads; landscape is a creation that helps a society that is no longer dependent from the soil to survive."[53]

Landscape as a Form of Dynamic System of Emergence: Event Structure of Time

In his essay "Landscapes of Change: Boccioni's Stati d;animo As a General theory of models," Sanford Kwinter argued that most classical theories of form such as hylomorphic model that two abstract elements form a thing, reductionism that complex phenomena to simpler isolated systems that can be fully controlled and understood, and quantiatative methods reduce phenomena to the ideal scale at which only quantities left and no more qualities exist within a system (the basis of the Cartesian grid system), are limited by a major shortcoming that they are unable to account for the emergence, or genesis, of forms without recourse to metaphysical models.[54]

As Kwinter described, modern typological theory introduced by Poincare is a breakthrough of the limitations of the systems mentioned above in that it "entailed the revival of geometrical methods to study dynamics, permitting one visually to model relationships whose complexity surpassed the limits of algebraic expression" and"permits one to study not only the translational changes within the system but the qualitative transformations that the system itself undergoes."[55] Therefore, topology theory, rather than X-Y systems, have the great capacity to describe transformational events that represent the real discontinuities of the evolving system. It is a system that defined by "singularities", the variability and contingency rather than the grid.[56] Therefore, this dynamic theory of morphogenesis characterizes the emergence of forms by not only the irruption of a discontinuity on the system but in it or of it.[57]

Kwinter further illustrated the form problems of emergence by borrowing the concept of catastrophe theory that describes a system mutating or jumping into an entirely different level of activity of

organization, which is characterized by the differences, the potentials linking points and drawing flows within the system.[58]As he argued:

> Forms represent nothing absolute, but rather structurally stable moments within a system's evolution; yet their emergence (their genesis) derives from the crossing of a qualitative threshold that is, paradoxically, a moment of structural instability.[59]

Thus, as Kwinter pointed out here, forms of catastrophe are no longer systems understood in classical sense, but rather, they are "dissipatitve systems", an open, dynamic system that is evolving, which recognized that every event (or form) enfolds within it a multiplicity of forces and is the result of not one, but many different causes.[60] They become sets of the virtual form that are real "folds" in real n-dimensional space that can "give rise to indeterminate morphogenetic events in the n+1 space, the space one dimension higher up."[61]

It is the "epigenetic landscape" by Conrad Waddington that Kwinter suggested the most powerful geometrical concept in describing the relation between phenomenal forms and the morphogenetic fields[62] because it is an descriptive model rather than an explanatory device that is "undulating topographical surface in phase space whose multiplicity of valleys corresponds to the possible trajectories of any body evolving on it." [63]As he argued:

> The rivulets and modulations of the epigenetic landscape correspond to built-in tendencies, or default scenarios that would condition the evolution of forms in the hypothetical absence supplementary

forces acting over time. The form of the epigenetic landscape is not "essential," fixed or predetermined. It is only a template, or virtual form, assembled in another dimension, as a multiplicity generated by an extremely complex field of forces...[64]

Therefore, as Kwinter pointed out, once time is introduced into epigenetic landscape, a form can gradually unfold on this surface as a "historically specific flow" or matter that actualizes the forces converging on the plane, which illustrates the phenomenal forms in our lived world and thus are enfolded in a virtual space, actualized only "in time" as a suite of morphological events and differentiations embedded themselves into the epigenetic landscape.[65] Bioccini's three panels, as Kwinter illustrated, represented this unique structure of unfolding the epigenetic landscape (contemporary metropolis phenomenon) through three single facets and thus become forms in evolution, event-generated diagrams, and all multiple forces across all dimensions of space converge in a frame, "a single specific instant in time."[66]

Similarly, although on a larger urban context's point of view, Kenneth Frampton illustrated this unique form within the larger urban context by reading contemporary metropolis as a mega form given the contemporary context of international capitalism. In his essay "Towards an urban landscape," Frampton conceived megalopolis as a new nature in which city core no longer act as a civic center by giving ways to emerging dispersed shopping centers.[67] This megalopolis, as Frampton described:

We cannot reduce the predicament of the urbanized region to a matter of simply finding and applying new forms of appropriate land settlement., it is important to recognize that the dysfunctional and

wasteful dimensions of the ever-expanding megapolis cannot be adequately answered through inventing new aesthetic criteria or through the hypothetical application of revitalized avant-gardist stratagems in new guides and at new scales.[68]

This new form, megalopolis, as Frampton described, is an "irreversible historical fact" that has new ways of life and thus has nothing to do with traditional city.[69] Citing Collin Rowe's book "Making a Middle Landscape," Frampton concluded this emerging unprecedented megalopolitan form in his 12 point assessment:

7. Two salient factors may be derived from Rowe's thesis, however;first, that priority should now be accordedto landscape, rather than to freestanding built form, and second, that there is a pressing need to transform certain megalopolitan types such as shopping malls, parking lots and office parks into landscaped built form." [70]

10. Cities have always been constructed, in one way or another, out of fragments, and one cannot expect the megapolis to be any different. Building invariably proceeds by fits and starts. A certain amount of capitalis amassed, and when this has been expanded, the one-off building process summarily ceases. As architects, we need to conceive of future urban interventions in such a way as they have a wide-ranging catalytic effect for a given amount of investment. Their "open" character in this regard should also be capable of being "closed' when necessary.[71]

This new form of megalopolis, as Frampton argued, conceives landscape as a remedy that plays an

important role in compensating the "destructive commondification of the man-made world."[72] The fragmented new urban reality becomes the new potential ground for the design discipline. As Frampton cited Shadrach Wood's Pamphlet What U can Do: "Urbanism and architecture are parts of continuous process. Planning(urbanism) is the correlating of human activities; architecture is the housing of these activities...(Urbanism) remains abstract until it generates architecture."[73] Therefore, architecture of the megalopolis becomes a minimal catalyst that embraces the broadest possibility within the larger metropolitan context, and landscape form, as Frampton argued, becomes the "fundamental material of a fragmentary urbanism than the freestanding aestheticized object."[74] Thus, the intervention of urban problems is condensed to a "structural plan" after overall consideration of political, social, and economic changes and possibilities rather than a "physical plan."[75]

Almost an echo to Frampton's point, in his essay, "Whatever Happened to Urbanism?" Rem Koolhaas argued the emergence of landscape as a remedy for contemporary metropolis at the scale demand by the issue of quantity:

> Modernism's alchemistic promise to transform quantity in to quality through abstraction and repetition –has been a failure, a hoax: magic that didn't work.[76]

Koolhaas hereby outlined the emergence of a "new urbanism" staging uncertainty and irrigating the territories with potential, rather than the arrangement of permanent objects by giving orders and stable configuration by imposing limits and definite form.[77] This new form of urbanism, as Koolhaas argued, will be more about expanding notions, separating and identifying entities, and discovering unnamable hybrids. Infrastructure substitutes the city itself of embracing the meaning of the modern metropolis, in

Koolhaas's term, it is the "reinvention of psychological space."[78] Therefore this "new urbanism" becomes an entity that contains "more," "modified," and underdevelopment. As Koolhaas outlined:

> Since it is out of control, the urban is about to become a major vector of the imagination. Redefined urbanism will not only, or mostly, be a profession, but a way of thinking, an ideology: to accept what exist.[79]

The survival of urbanism, hence, will be the imaginary of the new emergence: more than the subject with matter and substance, more than architecture, more than certainties, and more than limits. Liberated from its traditional framework, urbanism becomes a liter notion devoid of presumed responsibilities and more of collective ideology. It is no longer the object of permanence, but subject of impermanence and thus becomes, in Koolhaas's term, a "Lite Urbanism." [80]

Finally, urbanism becomes a landscape.

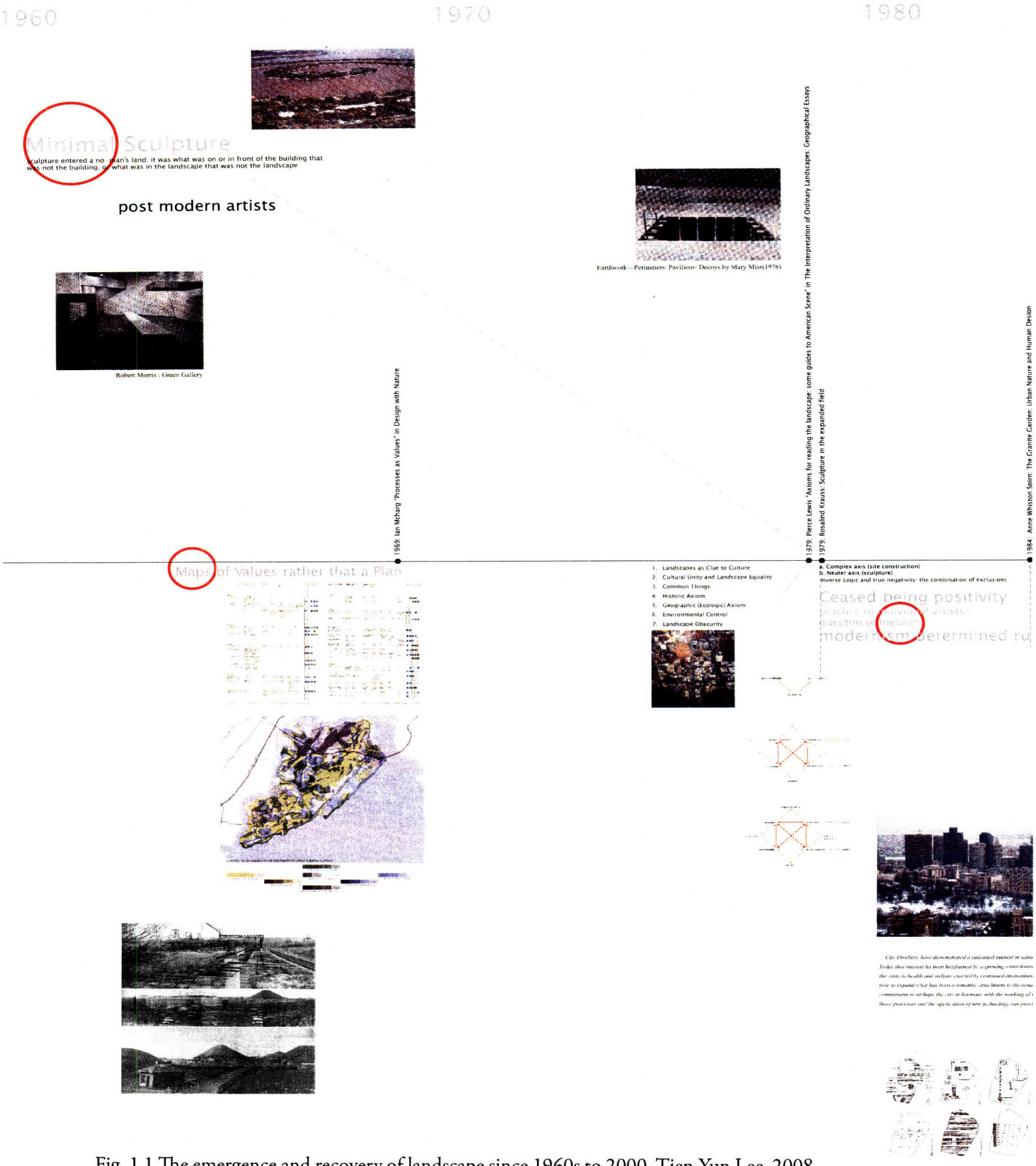


Fig. 1.1 The emergence and recovery of landscape since 1960s to 2000, Tien-Yun Lee, 2008.
Source: Dean Almy, *Center, Volume 14: On Landscape Urbanism* (Austin: The Center for American Architecture and Design, 2007)

1990

2000

metropolis through photogrpher's view since 1970s

Strangeness

reclaiming the residue spaces in the exsiting city

Terrain Vague

incapability of architecture and urban design

continuity

flows, energies, the rhythms established by the passing of time and the loss of limits

American Cities
Immersive Geographical Space
Freedom

The unhappable system of late capitalism

The third space
no-man's-land

Hybridity

Foucault's Urban configuration of power:
1. sovereign power
2.disciplinary power
3. bio-power

Heterotopia discontinuity

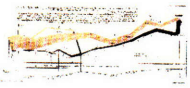
simultaneity and geographical coexistance or juxtaposition of things

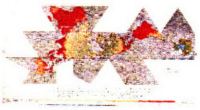
Interpretive form of urbanity:

a: the objective city: economical order, city defined by its use
b: the subjective city: coincidental , irregular, irrational city, individual action and experience

City as Landscape:

the void is no longer nothing
multi-readability and non-determination
acant space, gapes, and niches are appreciated as spaces of cultural renewal within public urbanity
bodily sensation and the relation of the body to space
the landscape is hoped to secure relative open spaces against
the constraints of the existingculture and society





mapping

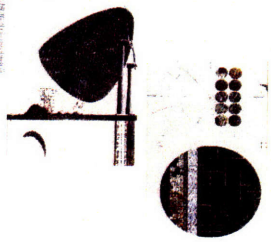
Earnst Cassirer: Mediated mode of being
maps and territories as" thoroughly mediated products"
"site" a much larger and more active milieu
than a simply geometrically defined parcel of lan

utopia of process utopia of form

from static object space to space-time relational systems Map> plans

Operational structure of mapping
a. Fields b. extracts c. plotting

drifting layering gameboard rhizome



Form problems

hylomorphic models
Reductionism
Quantitative methods

Modern topological theories

Transformational events

Virtual Form
Unfolding

Synthetic landscape

Time

1990: Richard T.T. forman, Ecologically sustainable landscapes: the role of spatial configuration
1991: Carol Burns, On Site
1992: Sanford Kwinter, Landscapes of change: Boccioni's Stati D'animo as a generaltheory of models
1994: Lars Lerup, Stim and dross: rethinking the metropolis
1995: Ignasi de Sola-morales, Terrain Vague
1995: Kenneth Frampton, Toward an urban landscape
1995: Rem Koolhaas, Whatever happened to urbanism?
1996: Sze Tsung Leong, Readings of the attenuated landscape
1997: Joachem Schneider, A discussion of the individual in the city as landscape
1997: Landscape urbanism conference, Graham Foundation, Chicago
1999: James Corner, The agency of mapping: speculation, critique, and invention
1999: Stan Allen, Infrastructural urbanism
1999: Alex Wall, Programming the urban surface

for nature, Park, Suburb, and Garden City

Mosaic

Cleared Site

Constructed Site

change of views

mental map

megalopolis

airspace

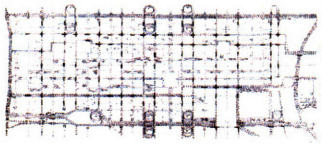
field, room

stimdross

event-space

megapolis as a new nature

motopian city



landscape freestanding built form

megapolitan types:

shopping malls

parking lots

office parks

Ecological spatial theory

Static: pattern of dispersion path dynamics

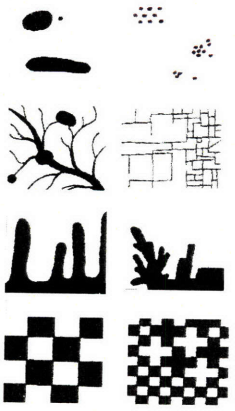
sustainable environment

1. a time period of several human generations
2. adaptability and change in ecological and human systems
3. slowly changingfoundation variables usually with irregular circles
4. mosaic stability, permitting ongoing rapid fluctuations within component spatial units

Variables and Values

Basic Landscape Types

1. Scattered Patch Landscpes
2. Network Landscapes
3. Interdigitated Landscapes
4. Checkboard Landscapes



landscaped form

fragments

weakend subjectivity

atopicity

Minimalism

acting by not acting

modernism: tansfor quantity to quality through abstraction and reptition

"new urbanism"

uncertainty

irrigation of territories with potential

definite form
meticulous definition
imposition of limits

expanding notions
denying boundaries
separating and identifying entities
discovering unmappable hybrids

city

manipulation of infrastructure
endless intensification
diversificatons
shortcuts
redistributions
reinvention of psychological space

new
more
modified
civilized
underdevelopment

Lite Urbanism

infrastructural urbanism

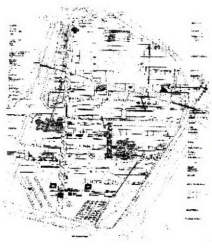
a. architecture's instrumentality can be reconceived
not as a mark of modernity's demand for efficient implementation, but as a site of architecture's contact with the complexities of the real

b. practice engaged in time and process
a practice not devoted to the production of autonomous objects, but rather to the production of directed fields in which program, event, and activity can play themselves out

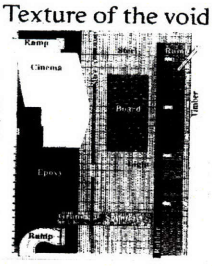
Infrastructure

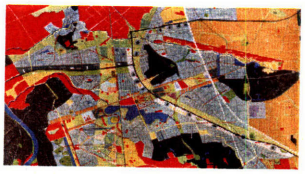
prepares the ground for future building and creates the conditions for future events
Its primary modes of operation are the division, allocation, and construction of surfaces

Infrastructure's medium is geography
Infrastructures are flexible and anticipatory
precise and indeterminate at the same time
~~predetermined state~~
fixing points of service, access, and structure
bottom-up
from self-referentiality and individual expression toward collective enunciation
accommodate local contingency while maintaining overall continuity
organize and manage complex systems of flow, movement, and exchange
a series of check that control and regulate flow
allow detailed design of typical elements or repetitive structures,
facilitating an architectural approach to urbanism
infrastructural design begins with the precise delineation of specific architectural elements within specific limits



Texture of the void





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Chapter 2. Landscape as Urbanism

I. Ecology and Beyond: Landscape as an Urban Process

In 1996, the term "Landscape Urbanism" was first coined by Charles Waldheim with conversations with James Corner on the notions of "Landscape as Urbanism."[1] Later in 1997, the first conference of Landscape Urbanism was held at the Graham Foundation in Chicago. Soon after that, new academic programs regarding landscape urbanism were burgeoning, such as Landscape Urbanism program at University of Illinois at Chicago, and Landscape Urbanism at Architectural Association in London. Since then, landscape urbanism has become a notable term in the realm of landscape architecture and urban design, especially in dealing with the situation of contemporary urban problems like de-densification, sprawl, post-industrial no-man's land, and rapidly growing territory that are too complicated and too immense to be solved by the traditional design technique. This emerging notion suggests that using landscape as a medium to create and adapt urban effects through organization of horizontal surfaces, rather than costly fixed built form.

James Corner, probably the most notable and productive theorist in this emerging field, first brought the formulations "landscape of urbanism" into being in his research during mid-90s. As a landscape architect, he argues that only through the imaginative reordering of the design disciplines and their objects of study might we have some potential traction of the contemporary city.[2]

As a landscape architect, he critiqued his predecessor on two tracks: First, he pointed out that the studies by Ian McHarg in the nature and city of regionally scaled environmental planning practice was merely narrow ecological agenda regardless of the human agency and cultural construction.[3] Second, he critiqued the present average landscape architecture practice are just uncritically reproduced stereotypes like suburban parks, public plazas, and the pastoral parks that are "engaged in the creation of scenographic screening for otherwise harshly engineered and profit-optimized environment." [4] He argues that the current environmentalism and pastoral ideas of landscape is naïve and irrelevant to the current of global urbanization.

In the context of post-industrial society, it seems that the traditional boundary of design and planning discipline is obsolete. In his essay Terra Fluxus, James Corner points out some potentials of landscape urbanism in dealing with the contemporary condition:

> ...the ability to shift scales, to locate urban fabrics in their regional and biotic context, and to design relationship between dynamic environmental process and urban form.[5]

Furthermore, he outlined four provisional themes regarding landscape urbanism: First, Corner put emphasis on addressing processes over time by explaining that "The principle is that the processes of urbanization—capital accumulation, deregulation, globalization, environmental protection, and so on –are much more significant for the shaping of urban relationship that are the spatial forms of urbanism in and of themselves ....This emphasis on urban processes is not meant to exclude spatial form but rather seeks to construct a dialectical understanding of how it relates to the processed of flow, manifest, and

sustain it."[6]

For Corner, landscape urbanism is a notion though which we can understand cultural, social, political, and economic environments as embedded and symmetrical with the "natural world."[7] It develops a space-time ecology that treats all forces and agents and considers them as continuous networks of inter-relationships in the urban field: terra fluxus.[8]

Second, Corner stresses the importance of staging of horizontal surfaces, the ground plane , the "field" of action constituting the urban field across wide range scales, where roofs and grounds become one and the same.[9] He further emphasizes the surfaces understood as urban infrastructure by borrowing Rem Koolhaas's notion that urbanism is strategic and toward the "irrigation of territories with potential."[10]

> Unlike Architecture, which consumes the potential of a site in order to project, urban infrastructure sows the seeds of future possibility, staging the ground for both uncertainty and promise. This preparation of surfaces for future appropriation differs from merely formal interest in single surface construction....Landsccape urbanism is here both instigator and accelerator, working across vast surfaces of potential...The thrust of this work is less toward formal resolution and more toward public processes of design and future appropriation. Concerned with a working surface over time, this is a kind of urbanism that anticipates change, open-endedness, and negotiation.[11]

Third, and the weakest and most critical part of the field, Corner explained the operation and working method to conceptualize urban geographies that function across a range of scales and implicate a host

of players. Beyond the issue beyond representation, he argues that the operative strategy and techniques should address the sheer scope of issues. Landscape urbanism, although is still obviously lacking in this aspect, Corner believes that it is more integral to any real and significant practice of synthetic urban projection and suggests a reconsideration of traditional conceptual, representational, and operative techniques.[12]

> The possibilities of vast scale shifts across both time and space, working synoptic maps alongside the intimate recordings of local circumstances, comparing cinematic and choreographic techniques to spatial notation, entering the algebraic, digital space of the computer while messing around with plaints, clay, and ink, and engaging real estate developers and engineers alongside the highly specialized imaginers and poets of contemporary culture—all these activities and more seems integral to any real and significant practice of synthetic urban projection.[13]

Finally, Corner pointed out the imaginary as primary motivation of any creative endeavor. He argues that the failing of the twentieth-century planning is the lack of imagination with regard to the optimized rationalization and capital accumulation. For Corner, landscape urbanism is first and last an imaginative project, "a speculative thickening if the world of possibilities." [14]

> Public space in the city must surely be more than mere token compensation or vessels for this generic activity called 'Recreation.' Public spaces are firstly the containers of collective memory and desire, and secondly they are the places for geographic and social imagination to extend new relationships and sets of possibility. Materiality, representation, and imagination are not separate worlds; political

change through practices of place construction owes as much to the representational and symbolic realms as to material activities.[15]

Corner concluded his essay by returning to the paradoxical separateness of landscape from urbanism, saying that neither term is fully conflated into the other. He believes the paradox is not only inescapable but also necessary to maintain in that the failure of earlier urban design and regionally scaled enterprises was the oversimplification, the reduction , of the pheonomenal richness of physical life and urban experience.[16]

...The union of landscape with urbanism promises new relational and systemic working across territories of vast scale and scope, situating the parts in relations to the whole, but at the same time the separateness of landscape from urbanism acknowledges a level of material physicality of intimacy and difference, that is always nested deep within the larger matrix of field."[17]

In the meantime, as an architect's perspective and response to this emerging field, Charles Waldheim also described the phenomenon that landscape as a unique medium capable of describing the contemporary decentralized urbanization in the context of complex natural environment.[18] In his essay" Landscape as Urbanism", Waldheim points out that over the past decade landscape not only emerged as a model for contemporary urbanism, but also underwent a process of self discipline renewal in intellectual and cultural aspects, and thus becomes a locus for discussions of urbanism, the field have been long occupied by architecture, urban design, and planning:

> ...Contrasting to this tradition. Contemporary practices of landscape urbanism reject the camouflaging of ecological systems with pastoral image of 'nature.' Rather, contemporary landscape urbanism practices recommend the use of and the public landscapes they engender as the very ordering mechanisms of the urban field itself, shaping and shifting the organization of urban settlement and its inevitably indeterminate economic, political, and social futures.[19]

In Waldheim's opinion, landscape urbanism is a discipline realignment that critiques both architecture and urban design's inability to offer coherent, competent, and convincing explanations of contemporary conditions—the temporal mutability, the horizontal extensivity, and the rapid change, in which landscape replaces architecture's historical role as the basic building block of urban design and fills up the professional void.[20] Landscape here provides the character that the buildings cannot achieve—the efficiency: by only through the organization of surfaces rather than the costly, slow, and inflexible "weighty apparatus."[21]

Waldheim especially mentions recent public works in Europe as examples of revealing the role of large-scale landscape as an element of urban infrastructure: the airport, logistical zone, industrial water front, metropolitan riverways, and water-treatment facilities, once viewed as the marginal field of traditional urban design mainly focusing on buildings and plazas, now rise as the locus of contemporary urban practice in the context of mobile capital, automobile culture, and the flux, the indeterminacy of contemporary culture.[22] Among these projects, he especially took Parc de la Villette as an example and mentioned that:

> The competition for la Villette began a trajectory of postmodern urban park, in which landscape was itself conceived as a complex medium capable of articulating relations between urban infrastructure, public events, and indeterminate urban futures for large post-industrial sites, rather than simply as healthful exceptions to the unhealthy city that surround them...Through their deployment of postmodern ideas of open-endedness and indeterminacy, Tschumi's and Koolhaas's projects for Parc de la Villette signaled the role that landscape would come to play as a medium through which to articulate a postmodern urbanism: layered. Non-hierarchical, flexible, and strategic. Both schemes offered a nascent form of landscape urbanism, constructing a horizontal field of infrastructure that might accommodate all sorts of urban activities, planned and unplanned, imagined ad unimagined, over time.[23]

For Waldheim, landscape urbanism offers not only strategies for design, but also provides cultural category, a lens through which we see and describe the contemporary city, especially through the aspect of field ecology by study of species and their relation to natural environment.[24] It is this aspect that distinguishes the advantages of landscape urbanism from the traditional one: the conflation, integration, and fluid exchange between (natural) environmental and (engineered) infrastructural systems, which makes landscape urbanism a useful framework in dealing with the contemporary post-industrial abandoned and toxic sites.[25]

In 2001, the City of New York Department of City Planning launched the Fresh Kills competition. The 2,200-acre site, mainly four filled mounds from about 90 to 225 feet, consisted of complicated natural systems such as geology, contaminated soils, hydrology, plants, wildlife habitats, forest, fresh waters

wetlands, previously industrial landfill, bird flyways, would now be given not only landfill decomposition consideration, but also changing community needs. The competition of the master plan sought to address lands use issues, landfill operations, natural ecologies, and the flexible and phased proposal of" passed end use" that will continue to unfold within and beyond the site, from "Landfill to Landscape."[26]

In the winning proposal "Lifescape" by James Corner/Field Operation, the Fresh Kills is seen as a catalyst for reshaping the identity of Staten Island from a "backyard by-pass" to a "nature-lifestyle island."[27] Here Corner proposed a reversed development pattern he called "nature sprawl" by imaging the Staten Island as a net wok of greenways, recreational open spaces, ad restored habitat reserves and thus develop as new form of public-ecological landscape, which he called "an alternative paradigm of human creativity, biologically informed, guided more by time and process than by space and form."[28]

Formally speaking, Lifescape is a matrix of three systems: First, "threads" of linear pathways and elements that directs flows of water, energy and matter around the site, organized along existing and newly proposed swales, pathways, contours, habitat corridors and connections. Second, "Islands" of clustered grouping that provide denser nets of protected habitat, seed source, and program activity. Third, "Mats" of surfaces and fields that create patch-like mosaic surfaces to provide self sustainable coverage, erosion control and native habitat. This three interrelated spatial systems are claimed to maximize opportunities of access and movement.[29]

In terms of staging the lifescape, three main phases are set up to facilitate this master plan of thirty year time frame. The first is "seeding," by beginning the restoration of native habitats and creation of

recreation amenity for the immediate neighbor hoods. The second phase "infrastructure" happens right after the closure and stabilization of the landfill, which will install new roadways, utilities, plantings and structures to set up wide range of programs. The third phase "programming " suggests the dynamic and flexible way of occupying the landscape, including golf, sports, education, arts, and green houses. "Adaptation" will be the longer term of the third phase, which will be the free-form modification intended to be open and flexible to accommodates any future programs.[30]

In Lifescape, landscape becomes an integration tool that embraces not only ecology but also public amenity, nature, traditionally conceived separated from culture, can be integrated into man-made landscape. Corner described this result as:

> ...a synthetic, integrative nature, simultaneously wild and cultivated, bewildering and cultivating. Nature is no longer the image we look at , out there, but the field we inhabit, an active lifescape where life below ground, on the ground, in the water, and in the air is continually manufacturing new environments a sit reproduces and evolves.[31]

In Corner's opinion, this lifescape is "culture" in that it is a design strategy that "ecological reflection, recreation, active sports and exercise, creativity, performance and culture events, community development , economic enhancement and neighborhood revitalization all take their place alongside the micro-macroscopic processes of lifescape."[32]

Contrary to Corner/ Field Operation's proposal emphasizing the nature lifestyle approach, Hargreaves

Associates' extremely simple proposal "Parklands" for Fresh Kills outlines another important aspect that is within landscape urbanism domain: the scale.[33] Hargreaves pointed out that it is the scale, the vastness undertaking that forms the main challenges of Fresh Kills.

> We are reminded that large landscapes are living, dynamic entities set in motion by initial designs and forever evolving in relation to human activities and biological development.[34]

In this almost formless scheme, Hargreaves proposed three phases of development that combines the current conditions of each landfill with contextual properties and projects an understanding of community desires: In the first stage is "succession" requiring little work to make land useable by diversifying species of flora and fauna to inhabit and enrich the site right after the landfill closure; Second stage will be the" operation" of more intense preparation by reconfiguring the landfill closure to include multipurpose lawn platforms connecting existing road, thus establishing accessible active program for use beyond the physical boundary; Final stage is the "transformation" of heavily modified and programmed landscapes that reestablishing a new isolated Lake Island for bird sanctuary, the intensively programmed centers in accessible flat area, and the stablilzed landfill for World Trade Center Memorial.[35]

Again, as Hargreaves mentioned, what distinguishes Fresh Kills from other projects, is the scale. When a project is beyond human perceptive scale, it needs an alternative strategy to deploy design approach that can on one hand provide visible framework and on the other hand allow enough flexibility for uncertainty and instability. It is why ecology becomes important when dealing with large scale site and

territory because soil, water, bio-diversity, topography is the main visible figure when viewing in a larger scope. It provides potential to integrate relations between different species, and framework to bridge the gaps between disciplines. Beyond ecology pre-determined outcome, recent landscape urbanists argue that ecology should have more social and cultural aspects in terms of human intervention, i.e. design.

In Corner's view, the term landscape urbanism is paradoxical but imaginative tool that is aimed to provide and provoke broader thinking and debates toward the contemporary urban practice. It is through this rhetorical ambiguity that allows possibility and allows both field, landscape, and urbanism, compensates oneself from the other. Rather than a dictating paradigm or dogma, this emergent field is more like a framework that still struggles to find its limit. The question thus will be that where is the limit? How do we define the "frame", the locus of the landscape urbanism, the indeterminacy? What does landscape mean in the contemporary society regarding urban practice? (other than its original meaning, drawing?) How far can we go to define the limits of the large scale projects when we presume that they will change anyway? How to define the indeterminacy? How to bridge the gap between field ecology and urban process? It is this interdisciplinary notion that makes landscape urbanism an intriguing and promising discourse, and problematic.

II. Staging the Indeterminacy/ Locus of Indeterminacy

Given the territorial scale of contemporary metropolis, the concern of the urban context changes from singular object to plural fields of points. This new ground contains the seed of the new urban potential

catalysts and thus is promising. The question and challenge is how to find the constraint of this new liberal unfolding of urban setting, meanwhile anticipates enough flexibility for the unexpected chaotic order: How to describe the totality through the parts without exhausting the whole becomes critical.

Landscape as a Resistance of Impermanence

In Linda Pollak's essay "Constructed ground: Questions of scale," she argues that landscape urbanism is a discipline that admits the urban reality of temporality. The transforming of an incommensurable urban landscape that suggests a way that does not have complete control of the relationship between its constitutive elements, and thus architecture is a device than an object, which challenges architectural notions of closure and control.[36]

In this sense, she argues that the methodology of figure/ground failed to engage the material aspects of a site in that it view the ground as only a void around buildings.[37] Here she proposes the notion of "constructed ground" that is a hybrid framework that engages the complexity of contemporary urban landscape by crossing the disciplinary boundary between architecture, landscape architecture, and urban design.[38]

> This framework invests in the ground itself as a material for design, using landscape as both structuring element and a medium for rethinking urban conditions, to produce everyday urban spaces that do not exclude nature.[39]

Thus, the goal of constructed ground is to address the concerns of architecture, landscape, and city at the same time without losing their own importance, which often happen in the traditional discipline division.[40]

By citing Heri Lefebvre's "spaces of difference," that city in its complexity is far from being a neutral container, and is a field in tension, includes natural process and social space that "encounter , assembly, simultaneously... of everything that is produced by nature or by society, either through their cooperation or through their conflicts,"[41] Pollak argues that constructed ground is the performing of space of difference in that it provides a framework that embraces different scales of negotiation at which architecture, landscape architecture, and urban design "can operate can operate performatively to engage dimensions of difference that characterize the space that is being produced."[42]

In Pollak's opinion, the concept of scale as a representation of spatial differences can thus moderate relationships between architecture, landscape, and city across a range of formal, ecological, social issues. Again, borrowing Lefebvre's diagram of nested scales that first providing the transitional scale mediating private and global and secondly each of these scales is integrated within the other two, the diagrams characterizes a basis for design approach that can sustain a dynamic and multidimentional differentiation of space in that "the overlay of terms recognizes that all scales are internally differentiated, and that while hierarchies of scale exist, they are not fixed or singular."[43] Therefore, the unity here is, in Pollak's term, "neither an a priori nor a necessary attainable condition of identity helps to frame it in terms of processes of becoming, with the capacity to include multiple and perhaps contradictory traits."[44]

In this sense, Pollak suggests a virtual urban realm, the "bigness", in terms of monumentality that the concept of the sublime, associated with landscape, can provide an alternative strategy for integrating scalar difference.[45] She argues that sublimity has more to do with the perception of uncontainability than with objectively definable size in that it "engages the contradiction between the idea of the totality of a thing and the perceived impossibility of understanding the thing in its totality."[46] As she quoted in Immanuel Kant's term, the sublime can be found in the object "is so far as its boundlessness is represented in it and yet its totality is also present."[47]

In sum, Pollak explains the importance of the role scale can play to embrace an inclusive concept of urban landscape that is continually reinvented and reconstructed. Landscape thus in its scale provides a ground that can be utilized by different constituencies meanwhile allows the unexpected to happen, which offers means of enveloping something too large or complex to be comprehended as a single totality, and suggests designing the undefinable, through which "unanticipated spatial characteristics may emerge from the interplay between elements and through inhabitation."[48]

Therefore, what remains important in this new territorial scale becomes crucial—when the viewpoint is from the aerospace and satellite, everything becomes incommensurable: they are either too big or too small—they constitute a megaform. Therefore, the critical mass, the collective junction, and the strategic points become the essence of the discussion of the emergent field regarding the discussion of urbanism.

That is, the infrastructure.

Landscape as an Instrumentality of Infrastructure

Richard Weller uses another rhetoric term "Art of instrumentality" to describe the characteristics of landscape urbanism, which is suitable of blurring the division between planning and design, architecture and landscape, fields and objects, instrumentality and art.[49] In his essay "An art of instrumentality: Thinking thorough landscape Urbanism," Weller attempts to explain what does landscape mean in the city to illustrate the importance of the emergence of landscape.[50]

> What is meant by landscape cannot be considered unless one works through what can be meant by ecology, and it is perhaps there that we find a new conceptual imaging of landscape, one which landscape urbanists sensibilities apprehend as a hybridization of natural and cultural systems on a globally interconnected scale. Such an apprehension, which will be argued, necessarily interweaves the untenable polarizations of design and planning stereotypes.[51]

Weller argues that here ecology is not only a meta-science measuring that was previously beyond measurement, but also a discourse which implicitly leads to questions of meaning and value, questions of art.[52] The way of considering and constructing places begins to embrace terms such as diversification, flows, complexity, instability, indeterminacy, self-organization. Therefore, as Weller emphasizes, landscape urbanism is not just about high-density urban areas and civic spaces, it is, in Weller's term "about the entire landscape off which the contemporary global metropolis feeds and into which it has ravenously set its rhizomatic roots, a growth framed in the aerial photo or the satellite image."[53]

Citing Corner's work *Taking Measures Across the American Landscape*, Weller describes Corner's work as "constructed ecology"[54] in that rather than proposing a answer for everything trying to "save the world", the collage maps, photos, and site data by Corner are only "representational to outline the synthetic future."[55] Borrowing Koolhaas's idea that city should be read as simply as "SCAPE" as a condition in which architecture, infrastructure, and landscape are undifferentiated and subject to the same forces,[56] Weller further admits that it is impossible to have a plan to master the whole contemporary complicated metropolis.[57] The only thing we can do is staging the uncertainty, as he quoted in Koolhaas's term" irrigating territories with potential."[58]

> Instead of master plans, which guide the arrow of time to a fixed point, landscape urbanists, while cognizant of the whole. Make partial interventions, strategic moves which might incite loops of non-linear change throughout a system. Perhaps then there is a clue for how planning's pretences to the whole and design's preoccupation with parts can come together in a more finely tuned and instrumental landscape architecture ...a move toward an ecological art of instrumentality.[59]

It is this so called the art of instrumentality Weller mentions above that makes landscape urbanism fascinating in that landscape get rid of its predetermined nature of being considered as the absence of infrastructure and just a pastoral image reproduction of eighteenth century English aesthetics regardless of the truth of contemporary reality. Landscape no longer serves as just the role of cleaning up the mess left by modern infrastructure.[60] As Weller put it:

> ...the landscape itself is a medium through which all ecological transactions must pass, it s the

infrastructure of the future and therefore of structural rather than (or as well as) scenic significance.[61]

Therefore, landscape here is not just a picture—it becomes infrastructure, the art of instrumentality.

Infrastructure as Urbanism

In his essay "Infrastructural Urbanism," Stan Allen further describes the notion of rethinking infrastructure by outlining the notion of infrastructural urbanism which is beyond stylistic and formal issues and offers a new model for practice and a renewed sense of architecture's potential to structure the future of the city, which understands architecture as a material practice, an activity that works in and among the world of things, and not exclusively with meaning and image. He points out:

> It is an architecture dedicated to concrete proposals and realistic strategies of implementation and not distanced commentary or critique. It is a way of working at the large scale that escapes suspect notions of master planning and the heroic ego of the individual architect. Infrastructural urbanism marks a return to instrumentality and move away from representational imperative in architecture.[62]

Here Allen further explains that infrastructure is work of the material practice with performance of energy inputs and out outs, which is not about expression of the point of view of an author or of the collective will of a society; rather, they condense, transform, and materialize concepts.[63] He claims

that only though this practice can architecture's instrumentality be reconceived—not as a mark of modernity's demand for efficient implementation, but as a site of architecture's contact with the complexity of the real. Furthermore, this practice is not devoted to the production of autonomous objects, but rather to the production of directed fields in which program, event, and activity can play themselves out: it is engaged in time and process.[64]

In his seven propositions for infrastructural urbanism, Allen argues that, first, by manipulating geography, infrastructure constructs the site and prepares the ground for future building and events rather than propose specific building on given site.

> ...Its primary modes of operation are: the division, allocation, and construction of surfaces; the provision of services to support future programs; and the establishment of networks for communication, and exchange.[65]

Second, infrastructure are flexible and anticipatory in that they work with time and are open to change by specifying what must be fixed and what is not—they can be precise and indeterminate at the same time.

> ...They work through management and cultivation, changing slowly to adjust to shifting conditions. They do not progress toward a predetermined state (as with master planning strategies), but are always evolving within a loose envelope of constraints.[66]

Third, infrastructural work recognizes the collective nature of the city and allows for the participation of multiple authors and creates a directed field where different architects and designers can contribute while setting technical and instrumental limits of their work.

> ...Infrastructures give direction to future work in the city not by the establishment of rules or codes (top-down), but by fixing points of service, access, and structure (bottom–up)... Infrastructure itself works strategically, but it encourages tactical and instrumental improvisation. Infrastructural work moves away from self-referentiality and individual expression toward collective enunciation.[67]

Fourth, infrastructures accommodate local contingency while maintaining overall continuity meanwhile free from formal debates.

> Nevertheless, infrastructure's default condition is regularity—in the desert, the highway runs straight. Infrastructure are above all pragmatic. Because it operates instrumentally, infrastructural design is indifferent to formal debates. Invested neither in (ideal) regularity nor in (disjunctive) irregularity, the designer is free to employ whatever works given any particular condition.....Invested neither in (ideal) regularity nor in (disjunctive) irregularity, the designer is free to employ whatever works given any particular condition.[68]

Fifth, infrastructures organize and manage complex systems of flow, movement, and exchange. They are a series of check that control and regulate flow and thus cannot be simply viewed as a utopian way of enabling new freedoms and net gain through new networks.

> ...Not only do they provide a network of pathways, they also work through systems of locks, gates, and valves... What seems crucial is the degree of play designed into the system, slots left unoccupied, space left free for unanticipated development. This also opens the question of the formal description of infrastructural systems: infrastructure tend to be hierarchical and tree-like. However, there are effects of scale (a capillary effect when the element get very numerous and very small) and effects of synergy (when systems overlap and interchange), both of which tend to produce field conditions that disrupt the overall tendency of infrastructural systems to organize themselves in linear fashion.[69]

Sixth, infrastructural systems work like artificial ecologies by managing the flows of energy and resources on a site, and thus direct the density and distribution of a habitat.

Seventh, Infrastructures allow detailed design of typical elements or repetitive structures, facilitating an architectural approach to urbanism with the precise delineation of specific architectural elements within specific limits.

> Unlike other models (planning codes or typological norms, for example) that tend to schematize and regulate architectural form and work by prohibition, the limits to architectural design in infrastructural complexes are technical and instrumental. In infrastructural urbanism, form matters, but more for what it can do than for it looks like.[70]

In these seven points, Allen declares that infrastructure, as a material work, is a behavior of large-scale assemblages over time, structures that work primarily with performance rather than image or meaning, and thus are less concerned with what things look and more concerned with what they can do. They are

practices that deploy an open catalog of techniques without preconceived formal ends.[71] Infrastructure are, as Allen quoted in Walter Benjamin's term, "...structures to act as a scaffold for complex series of events not anticipated by the architect—meanings and affects exiting outside of the control of a single author that continuously evolve over time."[72]

In this sense, Rem Koolhaas's competition for Melun-Senart new town becomes prominent in that it reverses the notion of simply viewing landscape as a marginal field dominated by buildings, rather, landscape here becomes an ordering infrastructure that secures the future space quality when facing the uncertain political and economical change. Landscape, as an infrastructure, provides the framework for the richness of new public programs and imaginations, which avoids the formal ends, and towards a field of open-ended structure consists of existing habitats, historical fragments, infrastructure corridors, and new programs. As Koolhhas put it,

> At a moment when the complexity of each three-dimensional undertaking is internal , the preservation of the void is comparatively easy. In a deliberate surrender—tactical maneuver to reverse a defensive position—our project proposed to extend thus political shift to the domain of urbanism: to take urbanism's position of weakness as its premise....Instead of a city organized through its built for,. Melun-Senart will be formless, defined by this system of emptiness that guarantees beauty, serenity, accessibility, identity regardless—or ever in spite of—its future architecture.[73]

On the same track, Elizabeth Mossop describes in her essay "Landscapes of infrastructure" that what is significant in landscape urbanism in the development of contemporary urbanism is its establishment of

infrastructure and associated landscape in the generation of public space.[74]

> Landscape of infrastructure has become the most effective means to explore the relationship between natural processes and the city, which is the integral factor in a truly synthetic landscape urbanism.[75]

Tracing back to Frederick law Olmsted's Boston Emerald Necklace interweaving transport infrastructure, flood and drainage engineering, the creation of scenic landscapes, and urban planning and Central Park, Mossop cited the work by Patrick Geddes, Benton MacKaye, Aldo Leopold, and Lewis Mumford and points out that it was the first half of the twentieth century that ecology and planning were first time linked, which later led to Ian McHarg's applying the understanding of ecological processes and natural systems to human settlements and planning.[76]

Further, Mossop argues that infrastructure is the most important generative public landscape in the explorations of landscape urbanism,[77] rather than the consideration on just technical criteria and exempted from functioning socially, aesthetically, and ecologically. She cited landscape architect Kathy Pool's term regarding public infrastructure that "through roughly 150 years of industrialization we have come to believe that the politics of efficiency are beyond question and that standardization is the ultimate expression of democracy."[78] to describe the fact that all types of spaces are valuable and thus should be inhabited in a meaningful way.

This requires the thinking of the mono-functional realm of infrastructure and its rescue from the

> limbo of urban devastation to recognize its role as a part of the formal inhabited city. Designers need to engage with this infrastructural landscape: mundane parking facilities, difficult spaces under elevated roads, complex transit interchanges, and landscapes generated by wasted processes.[79]

This infrastructural landscape, as Mossop suggests, should happen by an instrumental engagement with ecological process and with the function of infrastructure and the social and cultural needs of the community.[80] This development of integrating the relationship between natural systems and the public infrastructure suggests developing urban strategies through the networks of landscape infrastructure related to ecological systems in that the most permanent elements of the city is often the underlying landscapes such as geography, topography, and the climate, which recognizse the importance of place in connection to the natural systems: thus, the underlying structures of topography and the structuring elements of urban form become related rather than indifferent.[81]

Here new designed landscapes develop new hybrid systems engage natural process without romantic picturesque landscapes meanwhile challenging the notion of infrastructure as simply technical considerations. Thus, the infrastructural landscape becomes a framework that have the broader meanings of ecological sustainability, connection to place and context, and cultural relationship, which underlies other urban systems and provides the most permanent layer of urban development to ensure the legibility of natural system and regional cultures.[82]

New Public Realm

Among these urban infrastructure discussed by landscape urbanism, urban highways, given its large scale, gather the most intense discussion because it, as Jacquelline Tatom describes, "strategically engage the urban landscape at a metropolitan scale within the constraints of the prevailing political economy, and to consider environmental and infrastructural systems as primary ordering devices."[83] Urban Highways are, part structure and part earthwork, part architecture and part landscape. In cultural aspect, Tatom points out that these urban highways "concentrate public resource on a scale that begs a broader definition of the public good that would ensure their diversion."[84]

As the frameshift of design practice with the emergence of landscape urbanism, urban highways, once viewed as marginal technical issues, now have the chance to become the locus of new design discipline and offer new opportunity for new public activity from utility to amenity and from infrastructure to urbanism.[85] Citing Haussman's infrastructural projects in Paris, Tatom pointed out that the Haussman's boulevard system already suggests a modern urbanism that envelopes an whole system of not just an independent efficient circulation system in the city, but also an overall intervention to provide the residential and public spaces necessary for everyday urban life embedded in modern sanitation systems, which is an urban renovation that solves the technical sanitation problems as well as cultural and administrative concerns.[86]

In Barcelona, the city's second beltway, the Ronda de Dalt, new projects integrating transportation infrastructure and landscape provide an example of how urban highway can integrate urban life: Here

the projects collect and distribute local and regional transportation network with local conditions by new open spaces programs based on the studies of the section. Hence, the traditional multiway boulevard is folded and thickened: the depression of the highway provides a extended ground for not only intersections within the city's major avenues that distribute entering and existing vehicles, but also provides collective lands large enough for public programs such as transfer stations, parking, park and recreation amenities. Leftover lands from highway construction was later subdivided into parcels for new housing and public facilities and thus becomes a thick urban edge.

The Moll de la Fusta designed by de Sola-morales provides a microcosm of the role Barcelona's programmed highway can play within a larger urban realm. The site is complicated aligned with highway and waterfront and thus provides the opportunities for the articulation of the sectional integration of public transportation, local circulation, pedestrian deck. Through the thickening of the boulevard by arranging programs sectionally with terraces and roads, the new programmed urban highway forged a new surface of experiencing the everyday urban life without sacrificing the individual experience of pedestrians and drivers. Thus infrastructure and landscape provide a framework for local traffic and new urban activities as well as vivid place identities.[87]

This mass scale integration of urban infrastructure is in a sense, reminiscent of the Potteries Thinkbelt proposed by Cedric Price in that by renovating an abandoned railroad and integrating it to the local transportation system, the new public program spawn themselves along the new thickened infrastructure corridor and crystallizes its new legibility in the urban realm defined by integration of different transportation systems.

The large urban highway realization here unveils the possibility that the mobilization of urban infrastructure can integrate the public and private resources, political will bureaucratic structure and thus provide a new manifestation of the public realm. The integration of new highways morphologies into the fabric of cities constitutes a new overall urbanism that expresses life of every day, which transforms the city with news formal and experimental identity as well as provides a ground for the existing experience by providing multiple program richness while maximizing the use of public resources.[88] especially as social, ecological, and ultimately cultural aspects. Therefore urban highways no longer act as a violent construction that disrupts the physical and social connection, rather, they reestablishes a morphological continuity of the urban fabric where pedestrian and drivers, residents and commuters, communities and capitals are given equal consideration. Therefore, the design of urban highways becomes the design of the public realm, from utility to urbanism, from liability to opportunity. [89]

III. Towards a New Hybrid Form of Publicness: Landscape as a Public Structure

The new public realm, the form of the planned indeterminacy and uncertainty, and the constructed open-ended hereby constitute the public structure that regulates the urban flow and process that embraces the momentum and potential for modern metropolis. The transportation nodes, the transfer stations, the post-industrial factory fields, the global economy junction, and the large parks replace the role of squares, plazas, and landmark buildings when discussing the new public space of contemporary urbanism.

In his essay "Programming urban surfaces," Alex wall describes recent urban projects in Europe between the category of landscape and urbanism, which as he points out, marks a shift from the enclosed-object design to manipulation of large urban surfaces and thus the "enabling function of the functioning matrix of connective tissue that organizes not only objects and spaces but also the dynamic processes and events that move through them."[90] Rather than thinking landscape as simply the space between buildings and wholly green space, Wall defines landscape as urban surface that is the extensive and inclusive ground plan "the field" of the city, a ground structure that organizes and supports a broad range of fixed and changing activities in the city, which is dynamic and responsive; and unfolds events in time, in Wall's term, "less design as passive ameliorant and more as active accelerant, staging and setting up new conditions for uncertain futures."[91] As he argues:

> This adaptability derives in part from the planner character of the surface, to its smooth and uninterrupted continuity, but also from the equipment and services embedded within it. Thus , if the goal of designing the urban surface is to increase its capacity to support and diversify activities in time—even activities that cannot be determined in advance—then a primary design strategy is to extend its continuity while diversifying its range of services.[92]

In describing the contemporary regional metropolis characterized by polycentric and web-like sprawl, Wall points out that the infrastructures and flows of materials have become more significant than static political and spatial boundaries, which he illustrates as "from forms of urban space to processes of urbanization,"[93] and towards a regional or global surface that processes numerous dynamic and temporal network across the urban system[94] that focus more on new kinds of urban site (the peripheral sites),

more on the increase in mobility and access referred not only to the visible transportation but also to the invisible flows such as the growth of population, capital, information, and more on the paradigm shift from viewing cities in formal terms to looking at them in dynamic ways and thus infrastructures, network flows, ambiguous spaces substitute the importance of square, park , and district in traditional urbanism, and the term like "rhizome," "dispersed," " diffuse," become important in describing the conditions of contemporary metropolis.[95] As he says:

> A renewed concern with infrastructure, services, mobility, and with the provision of flexible, multifunctional surfaces promises a revitalized role for the design professions. The grafting of new instruments and equipment onto strategically staged surfaces allows for a transformation of the ground-plane into a living, connective tissue between increasingly disparate fragments and unforeseen programs.[96]

Further, Wall argues that the agenda of the surface is not only about individual but also event-structures that could trigger metropolitan dynamics and therefore can achieve individual freedom with new collective structures: Landscape here, as Wall quoted Koolhaas's term in description of multilayered competition for the Parc de la Villette, has become "landscape of social instruments."[97] Rather than design of styling identity, representation and formal composition, the surface is a strategic organization to anticipate and accommodate changing demands and programs.[98] Therefore, the surface, noted by Wall with definitions of thickening, folding, new materials, non-programmed use, impermanence, movement[99] has become a field of social instruments, a collector as well as distributor, and inhabitable field full of social interaction and towards a new democratic space, a new publicness.

Alex Wall is not the only one who brings up the discussion of how landscape can act as a public entity, a new demovratic space. In her essay "Looking back at Landscape Urbanism: Speculations on Site," Julia Czerniak makes the statement that "to think about landscape is to think about site."[100] By applying Carol Burns's distinguishing examples of "cleared" and " constructed" site, Czerniak extends the notion of site that rather than just a building lot, a site should be considered as a design work, a larger complex landscape that can be read across disciplinary, professional, and generational boundaries.[101] In her opinion, landscape urbanism is "the conceptualtion of design and planning for urban landscape from an understanding of landscape's disciplinarity, functions, formal and spatial attributes and process impacting many scale of work."[102] It is concern not only with how landscape performs, but how it appears:

> The relationship between performative and representational agendas in landscape practice has been a central aspect of several projects of the past....The intentions of their examinations are three-fold: the first is to observe how site particularities, both physical and discursive," make their appearance and the operations used to bring them into being; the second is to speculate on the implications site-generated work poses for landscape and the contemporary city; finally and most importantly, suggests that the generative capacity of a site—variously constructed as a spatial location, a physical and cultural context, and a discursive position which is value-driven—can inform a landscape's representational content all the while addressing its ever-shifting emergent and temporal nature."[103]

For Czernniak, landscape is not simply the background for architecture, it is figured and visible.[104] However, the contemporary challenge of landscape practice will not only be just the issue of form/

function, but will be how to bring its publicness into being: the meaning to the public, in Czerniak's term, "the debate between constituencies and resources—the promise that multiple scales of reference as a mode of operation holds for public role of urban landscape in the contemporary city."[105] She further elaborates the notion of the public of landscape as an "emergent and temporal nature: the fluid and shifting occupations that it sponsors, a social fluidity of individual and collective relationships with the land"[106] rather than just a medium itself that design practice often neglects.

In this sense, Czerniak suggests that landscape's "etymology" must be fully engaged when qualifying urbanism by landscape: how it looks in terms of its appearance, image, and representational concerns in addition to its meaning as picture and changing system of social and ecological interrelations. It is the landscape's representational agenda that contemporary practices favoring time over space, performance over appearance, effect over meaning, cannot avoid.[107] When concluding the ideal form of the public of landscape, she argues:

> Probably the most effective public art form there is –the park itself is an ongoing process, the domain where society and nature meet.[108]

Several recent projects can refer to this trend of providing new hybrids in creating new publicness. In the project of Yokohama International Terminal designed by Foreign Office Architects in 1996, the floors of the terminal itself are distorted and thus transformed into a new civic activity ground, which marks an intention of integrating the complicated programs such as land and sea, natives and foreigners, city and harbor, most importantly, public and private.[109] With the clear edge but blurred core, the terminal

becomes a field that the limited and concrete form never exist, rather, it provides the flexible and open character for alternative uses, which allows different facets of urban life to happen. By wrapping differences into a coherent system, it creates an liberated landscape that allows the unexpected and indeterminate future. That is, the anticipation of uncertainty.

This strategy of programming the emptiness into a new public entity can also be seen in the works of OMA/Rem Koolhaas and some Dutch landscape architects, notably, West 8/Adriann Geuze.

In the project of Illinois Institute of Technology (IIT) student center, Rem Koolhaas proposes a scheme with clear edge by outlining the existence of the existing shortcuts and paths and reversed the role of them by treating them as the new axis of the public programs. The new programs of the building thus are dispersed and overlapped along the path, the void, and the emptiness. By doing so, the voids have their meanings once again and thus triggered the unexpected activities and civic needs. It is not simply a building any more; it is a new public realm.

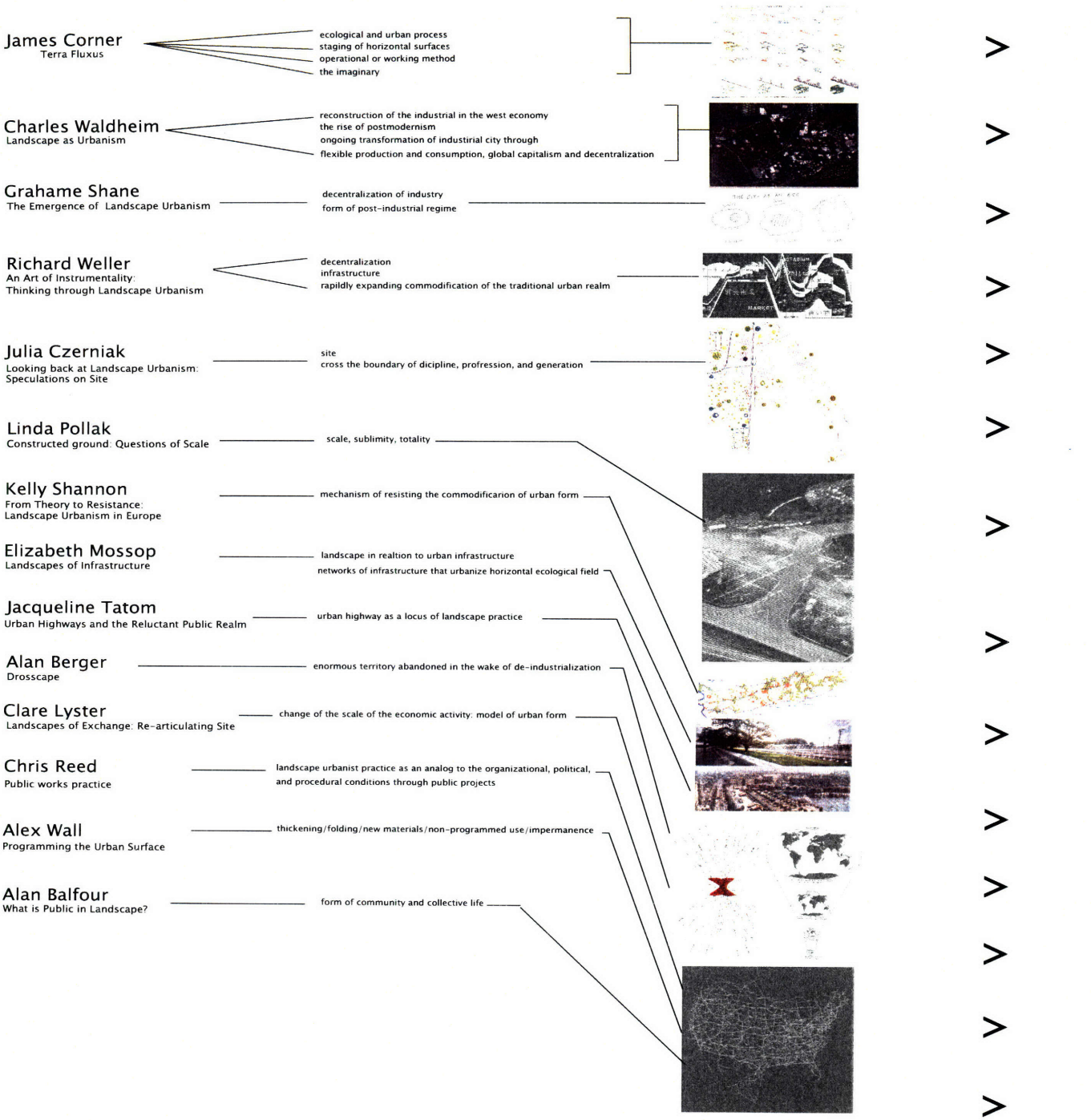
Similarly, in West 8's proposal for Schouwburgplein, the multilayers of the parking lot surfaces not only solved the engineering issues such as parking and drainage, but alos served as a new public field for multi-program uses, which unfolded je new urban reality and regulated matrix of programmatic need, which, in Wall's term, "not only toward physical but also social and cultural transformations, functioning as social and ecological agents."[110]

To sum up from these examples, landscape thus proves its potential as a public structure for carry the hope of forming a new dynamic system of flux and mobility for contemporary metropolis. This public

structure, rather than seeing city a spatial terms, suggests that viewing city as a system of part of all process and systems, which regulates network of flows, nonhierarchical ambiguous surfaces, continuous tissue, and stages the common ground strategically for unforeseen conditions characterized by dispersal, decentralization, mobility, flexibility, and most importantly, the uncertainty and indeterminacy.

The public structure thus becomes the synthesis of society, economics, nature, culture, planning, architecture, landscape, and is a hybrid form that suggests the invention of future events.

It is the agent of the ever-changing social activity. The new publicness.



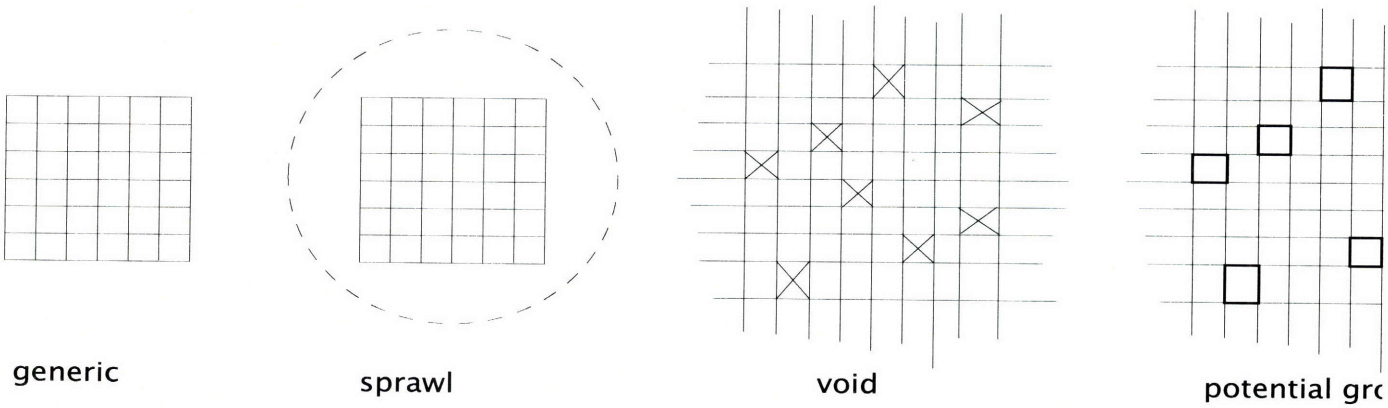


Fig. 2.1. Framing of the landscape urbanism theory, Tien-Yun Lee, 2008.
Source: Charles Waldheim, Landscape Urbanism Reader, 2006

process>form
ecology + cultural, social, and economic aspects
space-time interrelationship
cultural reconstruction>"nature" autonomy

temporal mutability, horizontal extensibility > building block
large-scale infrastructural landscapes>buildings and plazas, image of nature
urban field shaping indeterminate political, economic, and social futures
integration of exchange between natural and infrastructural system
integration of transportation infrastructure into public space

void--indeterminacy--construction--infrastrucure regime
disappearance and erasure> emergence of settlement patterns over time
the challenge of dense urban form emerging from landscape and urban ecology supporting performance space
hybrid form of late capitalism

hybridization of natural and cultural systems on a globally interconnected scale
diversification, flows, complexity, instability, indeterminacy, self-organization
architecture looks to landscape as the broader informational field and cultural conditions for greater control.

reading "site" across disciplinary, professional, and generational boundaries
relationship between performative and representational agendas
fluid and shifting occupations
social fluidity of individual and collective relationships with the land

incommensurable urban reality--architecture is a device, rather than an object
transform an urban landscape not in complete control
city as a "space of differences" in complexity aspect
scale as a representation of spatial differences, allowing things to happen
bigness, monumentality, sublime + landscape, offering alternative strategy for engaging scalar difference
contradiction between the idea of the totality of a thing and the perceived impossibility of
understanding the thing in its totality sublimity

landscape practice as a resistance of the commodification of urban form
>resist the homogenizing effects of late capitalism, internationally imposed " generic" models of modernization and urbanization
urban landscape into the larger cultural imagination
capacity to theorize and project urban sites, regional territories, ecosystems, networks, infrastructure, and large organizational fields
re-engagement with landscape trough" megaforms" and "landforms"
architectonic form--> the landscape medium
indeterminacy regarding future development and the incapacity to shape it as a definite form
agriculture and weak urbanization
landscape colonization

relations between horizontal ecological field and the networks of infrastructure that urbanize them
fragmented matrix of disconnection land uses>core/ periphery model, dense middle
blurring boundaries and hybrid landscapes: crossing of disciplinary boundaries
unnaturalness of urban landscapes
functioning ecologically based systems that deal with human activity and natural process in the urban environment.
synthesis of social, political, and economic factors, as well as issues related to urban wildlife and water management

Integration of highways into the fabric of cities, especially as social, ecological, and ultimately cultural artifacts
morphological continuity of the urban fabric that overcomes the social and physical disruptions
contemporary highway urbanism includinf suburban expansion
frameshift of the design of urban highways, from utility to urbanism, from liability to opportunity
urbanism of massive scale
design of urban highways as the design of the public realm

waste landscapes of rapid horizontal urbanization and land after economic production regime ended
post-industrial debris between the core and the periphery
in-between surfaces
terra incognitta: fragmented spread, escaping wholeness and objectivity > placemaking
small scale site design-->regional landscape deficiencies of the urban realm

at/singular-->across/plural articulations of network and territory
collisive sites and piggyback programming
surface accumulation territorial morphology merging infrastructure, commerce, and information systems
weak geography exploration of social, political, and cultural impact in the reinterpretation of public space
territorial mergers

blurring of distinctions between traditional fields of practice
appropriation of infrastructural strategies and ecological tactics for new civic programs
activation of multiple, overlapping networks and dynamic coalitions of constituencies
catalytic and responsive operations
performance-based, research-oriented, logistic-focused, networked

character of late capitalism: placelessness and mobility (flux)
city as a network rather than a system, polycentric
physical + social and cultural transformations
functioning matrix
a field of instrument
mobility and access: surface as collector and distributor
hybrid form

landscapes of popular desire: front lawn, city park, state and national parks + landscape of infrastructure
changing perceptions of reality
commodification of landscape

process
space-time

infrastructure
infrastructural landscapes as public spaces

hybrid form
planning+design
architecture+landscape
field+object
instrumentality+art
nature+culture

cross-disciplinary
blurred boundary
fluidity

collective
social device
sublimity
totality

resistance
anti-generic
indeterminacy
colonization

unnaturalness
synthesis
matrix
network

urban highway
massive
continuity

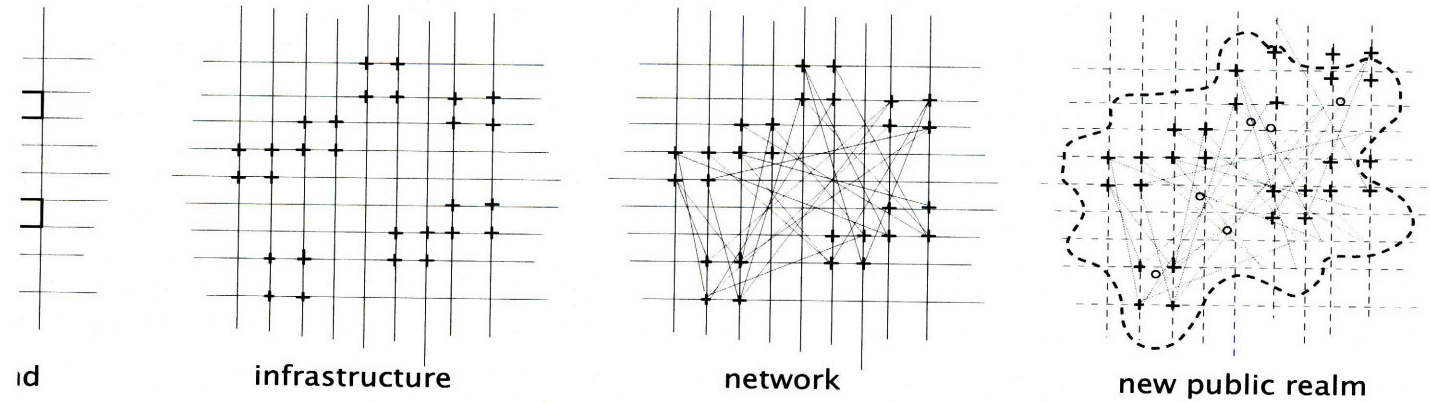
fragment
post-industrial
urban realm
capital

across
plural
merge
territory

urbanistic-system-builder
new public works
civic infrastructures
catalytic

mobility
collector /distributor

public



id

infrastructure

network

new public realm

Notes

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Chapter 3. Case Study: Phoenix

History

The First Century to 1400 A.D.

It was among 700 AD that first settlers, Hohokam, a Pima word which means "those who have gone" came to Phoenix area developing a system of canal that carried water from Salt River to their agricultural fields to grow corn, bean, cotton , squash, tobacco, and provided drinking water to their village built of brush and mud.[1] Hohokam agricultural society depended heavily on water. The main canals were as wide as 30 feet and 15 feet deep, with lateral ditches about 6 feet across, and more than 500 miles of heir canals carried water as far as 10 miles from the Salt River.[2] Around the end of the thirteen century, these settlers left because the soil became water-logged and thus non-productive.

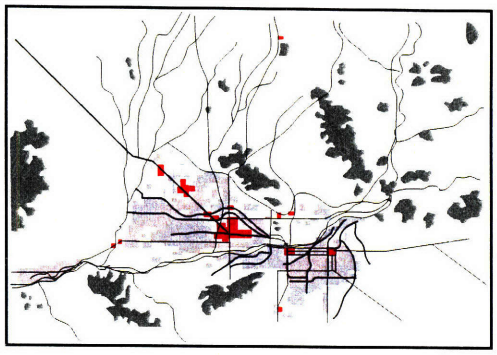
Fig. 3.1. (Top) Prehistory Phoenix. Tien-Yun Lee, 2008.
Fig. 3.2. (Bottom) Phoenix in 1400 showing the settlement area (red dots) and ditches. Tien-Yun Lee, 2008.
Source: Central Arizona Chapter American Institute of Architects, *A Guide to the Architecture of Metro Phoenix*, (Phoenix: Phoenix Publishing, Inc., 1983), 4.

1865-1877

Settlement Period

This period is characterized by land clearing, ditch digging, and adobe constructing that conquered the desert. Nearly half of the residents were Mexican. It is about the middle of this period that settlers established distribution point for mining and farm product to deliver them to the north.[3] The beginning of modern settlement happened around the period prior to 1870.[4] US Army at Fort McDowell grew hay and barley by utilizing Jack Swilling's ditch, which led water from the Salt River. The name "Phoenix" was designated in May 1868, as a recall of Greek myth: a bird that was consumed by fire every 500 years and reborn from its ashes.[5] In November 1870, William Handcock surveyed the townsite under the employment of the Salt river Valley Town Association. The result of the survey held sufficient number of lots for public sale and in turn the survey was completed in 1871. At this time, the townsite was 1 mile long, ½ wide and contained 98 blocks from Apache Street on the east to Yavapai Street on the west, Van Buren on the North to Harrison on the South.[6] It is also the same year that the Maricopa county was formed and Phoenix became the seat of the county. The goods were most carried by freight wagons from Los Angeles or Santa Fe and thus ensured the survival of the community.

Fig. 3.3. Phoenix arounf 1870s. Main line rail infrastructure was completed and water was brought to urban area (red) through new canals. Agriculture and mining became the economic engine. Tien-Yun Lee, 2008.
Source: Central Arizona Chapter American Institute of Architects, *A Guide to the Architecture of Metro Phoenix*, 4.



1870-1910

Territorial Period

Valley Population from 350 to 35,000[7]

It was among this time when the present neighborhood such as Phoenix, Tempe, Mesa, Glendale, Scottsdale were founded. Some civic facilities like Arizona State University formed.[8] Water was brought to valley fields from the Salt River by new canals converted from the HoHoKam and agriculture and mining were main economic bases. Main line rails were connected. The Territorial Period contains three main periods:[9]

a. Civilization: 1877-1885

It was the railroad, namely Southern Pacific Railroad running miles south of Phoenix marked the periods between the Settlement and civilizing.[10] Not only carrying wider range of the goods from other area, the construction of railroad also served as a role of bringing new settlers to Phoenix much easier. With mayor, council, newspaper, bank, and other social and cultural amenities such as churches and schools, Phoenix now established a more complex form of government. Ice became manufactured.[11]

b. Sophistication: 1886-1895

With the arrival of the railroad into the city, Phoenix became more sophisticated in that the city was directly connected to the intercontinental railroad and travelers got immediate access to the city without

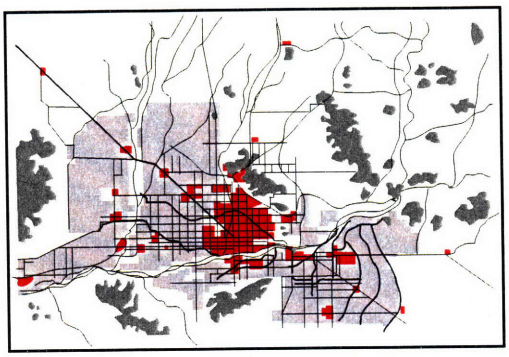
using the wagon riding, furthermore, merchant trafficked product more quickly than before.

The railroad boosted the city's growth especially in agriculture because local growers could ship goods to other markets other than Phoenix meanwhile made various consumer goods available. As the industrial area developed around the railroad, new residents came in pursuit of the well-watered desert image proposed by the boosters. The infrastructure such as water supply, electricity, telephone, and gas were established. It was also because of the railroad that changed the building type of Phoenix: the import of the brick soon substituted the adobe.[12]

c. Romanticing: 1890s-1929

With the 1895 completion of Santa Fe, Prescott and Phoenix Railroad, Phoenix now had greater opportunities for the transcontinental communication and expanding national markets which drew a lot of entrepreneurs.[13] The romanticizing of the past began since the original settlers were aging and new settlers were unable to participate in the foundation of the old west. It was this time that Indians began to have agreement with the U.S. government and lived in the reservations.[14] The Fort McDowell was closed around this time. Around 1920s, Pioneers Days was instituted by republicans to celebrate the older settlers and their experience. Tourism, especially the "Romantic West" promoted by elegant resorts, became the focus of the boosters after the federal reclamation projects of stable water supply.[15] The dry air, sunshine, and the warm winter made the image of Arizona from simply a place for health seeker of Tuberculousis to a place of vacation and recreation.[16]

Fig. 3.4. Phoenix 1910. The urbanization area (red) and the agriculture field (grey) show how Phoenix expanded toward the surrounding desert. Tien-Yun Lee, 2008.
Source: Central Arizona Chapter American Institute of Architects, *A Guide to the Architecture of Metro Phoenix*, 5.



1910-1950

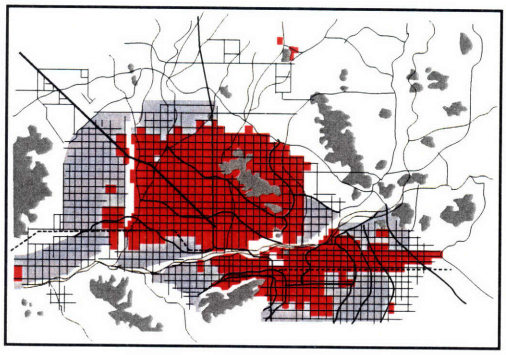
Early Statehood and War Time

In 1912, Arizona became the 48th state and Phoenix was selected as the capital of the State of Arizona on February 14, 1912 with the valley population growing to 332,000[17]. Most important infrastructure around this time might be the 1915 completion of the Roosevelt Dam providing stable water supply, which led to the agricultural boom later.[18] With the expansion of agriculture comes with more dams and tourism and thus led to the upgrade of transportation system: the latter-abandoned peak-reached street railway, the beginning of the paving of the roads, and the transcontinental highways and Sky harbor Airport. Automobile became a driven force for the development of tourism industry this time because it offered a closer look and individual experience of the Wild West. This tourism boom was further enhanced since the branding of the Salt River Valley by dubbing it "the Valley of the Sun" in 1930s.[20] The tourism became a collection of not just landscape of wilderness but also a collective image of citrus, canals, Indian ruins, reservations, and booming museums. The coming of World War I and World War II around this period triggered the economic boom of the Salt River Valley: Goodyear grew long-staple cotton for auto tires and World War I, and with the cotton growers recruited from the southern border, the greatest migration of Mexicans came into Arizona during 1910-1930s.[21]

Fig. 3.5. Phoenix 1950. The developer-built housing triggered the rapid groeth of the city and spread over the outer farmlands and desert. Tien-Yun Lee, 2008.
Source: Central Arizona Chapter American Institute of Architects, *A Guide to the Architecture of Metro Phoenix*, 5.

1950-1990

Urbanization Postwar Boom

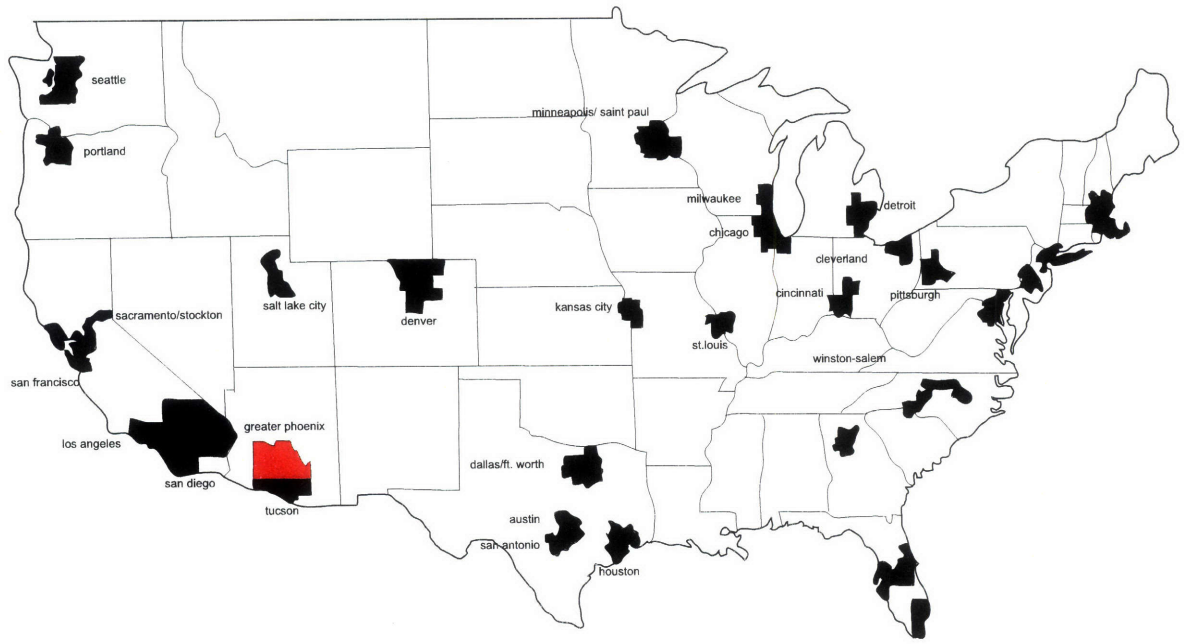


Valley Population: 1,510,000 (1980)[22]

Phoenix has grown rapidly since World War II. Many veterans once trained at the military bases here returned with their family and started a new life by joining emerging electronics and defense industries after the war. Therefore, developer-built homes spread out over farm and desert due to the availability of evaporative coolers for business and homes and more and more people stayed in the valley during summer time. Refrigerating for cooling became standard for new home construction. Generation of the retried people also triggered the market of retirement communities around the perimeter of Phoenix. Sun City, which might be the most notable example of large real-estate development this time, promoted itself along with the valley as a new way of retirement setting that redefined the meaning of being old: rather than passive decay, retirement is the beginning of new lifestyle with active leisure, social interaction with age peers, and immune from urban pollution.[23] Suburban sprawl happened around this time: central cities retail vanished because of the booming of suburban shopping centers; non-residential buildings such as convention center appeared and dispersed all over the valley. New "clean" industry such as sports and entertainment industry moved in the central core as the downtown stores changed to

Fig. 3.6. Phoenix 1990. The boom of the suburban villages. Tien-Yun Lee, 2008.
Source: Central Arizona Chapter American Institute of Architects, *A Guide to the Architecture of Metro Phoenix*, 5.

the suburban malls. Private automobile dominated the transportation; interstate freeways were built and streets were upgraded; public transit system was unable to sustain and thus a grid bus system serving regional-wide public transit service emerged. The whole area became a resort destination and became the 22nd largest metro area in the country and the city the 9th largest city.[24]



1990-present

Contemporary Challenges:

Desert Urbanization

Since 1990 the urban planning area has expanded over 2,000 square miles and has been home of 2,000,000 people.[25] Between 1990 and 2000, metropolitan Phoenix added more than 1 million new residents growing from 2.24 to 3.25 million people and thus has become the fastest growing metropolitan area in the nation.[26]

Fig. 3.7. Urban population over 1 million in 2000. Tien-Yun Lee, 2008.
Source: Arizona State University, *Greater Phoenix Regional Atlas: A Preview of the Region's 50-Year Future / Greater Phoenix 2100*, http://www.asu.edu/copp/morrison/Atlas-5.pdf

Nowadays the urbanized Phoenix is roughly half the size of urbanized Los Angeles, but only has a one-fourth population of Los Angeles.[27] Phoenix has the least developed urban core than any large city in America. The built up areas within the metropolitan area are mostly patches of cities, native American reservations, municipal parks, cotton fields truck farms, housing, and shopping centers. Rather than human artifact, Phoenix is characterized by the sublime natural landscape within the built environment like infinite desert and mountains as a symbol to outer world and thus gives its citizens a collective identity.[28] The desert and mountainous landscapes around the urban fringes play an important role in the Phoenician's outdoor activities and the identity as the nation's most notable desert city and tourism attraction.

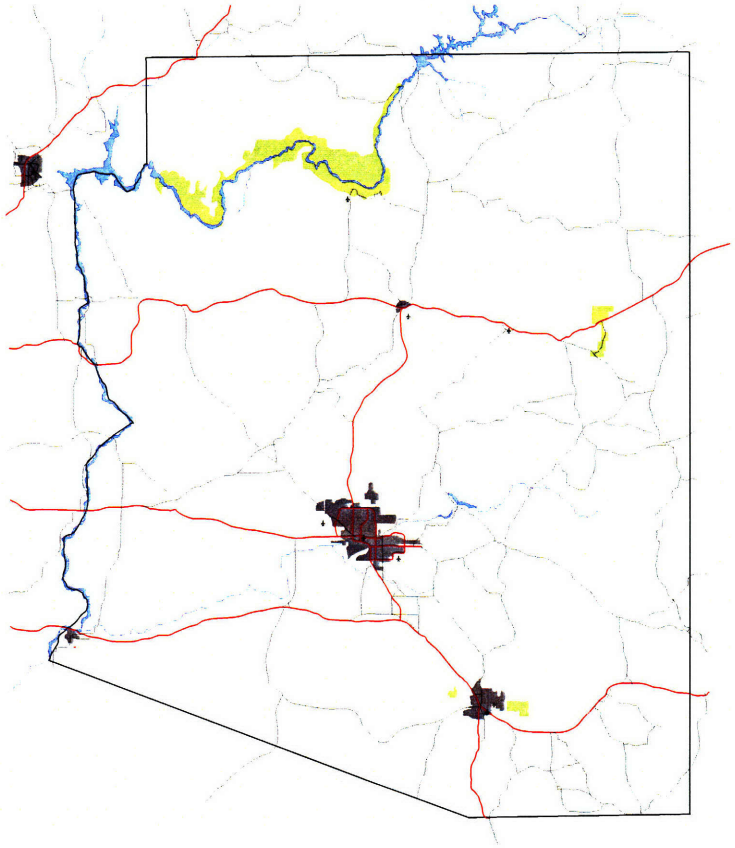


Fig. 3.7. The Southwestern hub. with Las Vegas on the left hand side and Tuscon on the right, Phoenix has the great opportunity to be a transportation node serving not only Arizona but also the entire Southwest. Tien-Yun Lee, 2008.

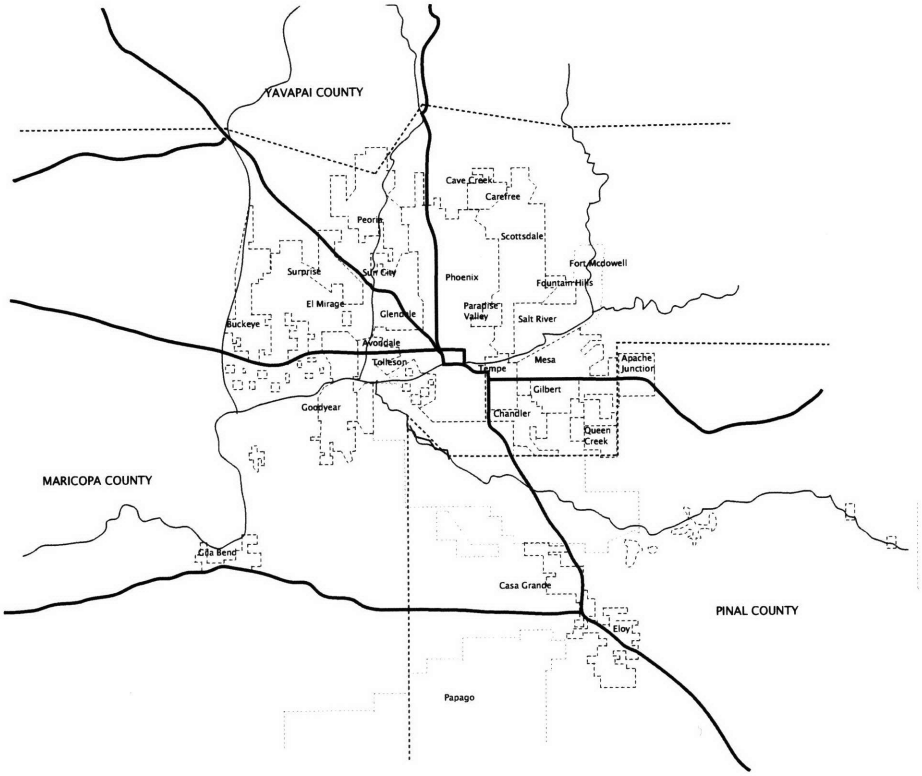
Given the fragile desert landscape characterized by extreme temperature and precipitation, the history of Phoenix and Arizona can arguably be described by human efforts to moderate these extremes: from the construction of water storage and delivery systems, introduction and application of evaporation cooling system, to the flood control and water policy. The reason why Phoenix becomes the nation's fast growing metropolitan area is the consequence of the success in managing the water. According to the 2007 U.S. Census Bureau report, metropolitan Phoenix ranked as the fourth fastest growing metropolitan area within the nation with 787,306 population growth from April 1, 2000-July 1, 2006.[29] Now the city is currently the fifth largest city in the United States with a 2007 estimated population of 1,512,986.[30] The projection of the metropolitan population growing will be seven million before 2050.[31]

The issue of the Phoenix 's future is that will there be enough water and space to support he future population when facing the uncertain climate and rapidly growing population? Given the precious vastness of the desert, the region's future challenges seems to lie at larger scales in terms of air quality, water supply, open space preservation, transportation, and regulation of urban growth.

Phoenix in flux

The environmental transformation of the valley triggered the social transformation in terms of ever-changing social dynamic: With the process of becoming one of the nation's largest metropolitan areas, the huge influx of people and diverse or race and ethnicity emerged. Now it is a diverse city populated by

Native Americans, Mexicans, Chinese, African Americans, and migrants from California and Midwest.[32]



Gated and master-planned communities are now occupying Phoenix's urban fringe promoting sense of belongings for new comers. Large scale immigration and demographic change in Phoenix has caused a pattern in which the Anglos continuously move to the urban fringe meanwhile the minorities occupied the core of city.[33] Now the inner cores of Phoenix and Masa are dominated by minorities and the Anglos dominate suburban neighborhoods of northern and eastern Phoenix where there is a cooler temperature and better view.[34]

What growth and newness mean become an issue for not only urban economy but also civic identity. Domestic migration from other parts of the U.S., and migration from abroad, both keep Phoenix in a

Fig. 3.8. The incorporate city limits of Phoenix, which shows that rather than a visible urban core, Phoenix is characterized by several suburban neighborhoods. Tien-Yun Lee, 2008.

constant stage of demographic flux. Migrants tend to be 20-year-old young people and thus the reason why Phoenix's population is relative young with the median age is 33.0 years compared to 35.9 for the nation,[35] which is mostly due to eh rapidly growing Hispanic population that forms 25 percent of the population and growing proportion of the labor force.[36] Being the largest source of Phoenix's new immigrant population, the Mexican migrants contribute to the growth and redevelopment of inner city neighborhood by transforming them to shipping centers. The city is now facing the gap of different cultures and interests: people who want to remain the traditional lifestyle, and people who search for a cosmopolitan immigrant-oriented 24/7 way of life.[37]

Facing the rapidly growing diversity, many Phoenicians retreat to communities with people who can share the same values and lifestyles. The master-planned communities on the urban fringes, weak regional traditions, and overwhelming culture of migration, all force Phoenician's need to settle immediately and start new social network right away. Interestingly, people on Phoenix's urban fringe are more familiar with neighbors, more likely to walk outdoors, than they do in the urban area.[38] The master-planned communities become a microcosm of creating new lifestyles and a shelter for Anglo Phoenicians to isolate themselves from city centers and clash of cultures.

Given the volatile cultural diversity, the social challenge for greater Phoenix will be how to create a meaningful civic life and regional identity hand in hand with the Phoenix's large scale, increasing diversity, international connections, and increasingly cosmopolitan lifestyles.

Management of the Growth

Although the growth is inevitable, Phoenicians seem to be not so concerned about land given the plenty of land with few natural barriers, low-density suburban automobile-oriented setting, and market force and real estate profit.[39] With abundant land, rapid population growth changes land use and built environment: former farmland to the east was transferred to urbanization, highway 101 acts as a trigger of northwest, and the emerging development corridor along interstate 10 in the west. The urban sprawl across the desert, in critics' view, lacks the sense of place and recognizable identity as the nation's notable desert city. The one-mile blocks, the big boxes in commercial zones, and the endless parking lots and wide avenues and garages, together create a streetscape that undermines neighborliness. Phoenix lacks a recognizable urban core, where meaningful public spaces and visible landmark symbols can happen. It has no critical mass; it is a flatness of clusters of suburban centers.

Phoenix's density is very low if it is measured as persons per square mile in the range of Maricopa and Pinal counties and Indian reservations, agriculture land, and desert and mountains within the urban landscape. If only the urbanized parts of the urbanized area are considered, Greater Phoenix's density is 3,638 persons per square mile, which is higher than Washington D.C.(3,401), Philadelphia (2,861), Boston(2,323), and Atlanta(1,783).[40] Given the fact of the need to reach collective water source, the development of desert city has to grow in a concentrated pattern. Most new perimeter developments in Phoenix are dense with four homes per acre[41], including condominiums and higher-density housing. This compact development at the urban fringe, however, cannot stop the leapfrog development beyond the boundaries of built area. For example, large Indian communities to the south and northeast are being

integrated to metropolitan lifestyle through casino; farmers on the fringe create a cultural landscape that preserve agriculture and pursue suburban development at the same time: new agrarian lifestyles of "agritainment" to mix agriculture and entertainment in order to higher their incomes by rising the land prices and crop sale; rapid seasonal urbanization of 250,000 to 300,000 elderly snowbirds during the winter months, especially in the east Mesa, and Apache junction.[42]

With the rapid urbanization, the preservation of open space, especially the desert, becomes critical given the fact that recent growth mostly happen on virgin desert: vast natural desert are now being converted into housing development. While the desert requires a large are for flowing water, the urban development replaces the desert by hard urban surfaces and runoffs are channelized—the artificial landscape becomes the new scenery. Nowadays the public become to be aware that the state-owned space at the urban fringe is being threatened by the relentless development. The urbanization increases the value of the desert land and thus contributes the revenue for the state. However, given the vastness characteristic, desert is not only a asset under the market force, but also plays a significant role in bio-diversity and public good in terms of aesthetic, social, and spiritual value. As the urbanization expand, the development at the fringe becomes profitable in the name of regional prosperity. How to manage the growth in a coherent manner to ensure the win-win situation of the real estate growth and precious desert becomes critical in Phoenix and the region's future land development.

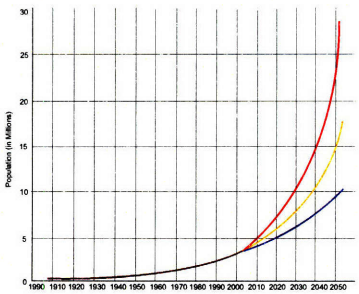


Fig. 3.9. The growth sceneario of Phoenix, which shows that by 2050, there will be at least 10 million people in the greater Phoenix region. Tien-Yun Lee, 2008.
Source: Arizona State University, *Greater Phoenix Regional Atlas: A Preview of the Region's 50-Year Future / Greater Phoenix 2100*, http://www.asu.edu/copp/morrison/Atlas-5.pdf

Mobility: Urban Highway

Automobile travel contributes to Phoenix's low-density built environment. The one-mile grid of old agriculture service road serves as a medium of freedom and flexibility for drivers. The downtown planned light rail that will open in 2008 is also based on the fact that people will drive car to the stations.[43] Wide streets, fast food restaurants, drive-in facilities, RV-resorts, parking lots, shopping centers, theaters, office buildings, all serve as a ground for automobile drivers: Phoenix has an urban form designed for the automobile because automobiles are ideal for the flat terrain and soils of the valley.

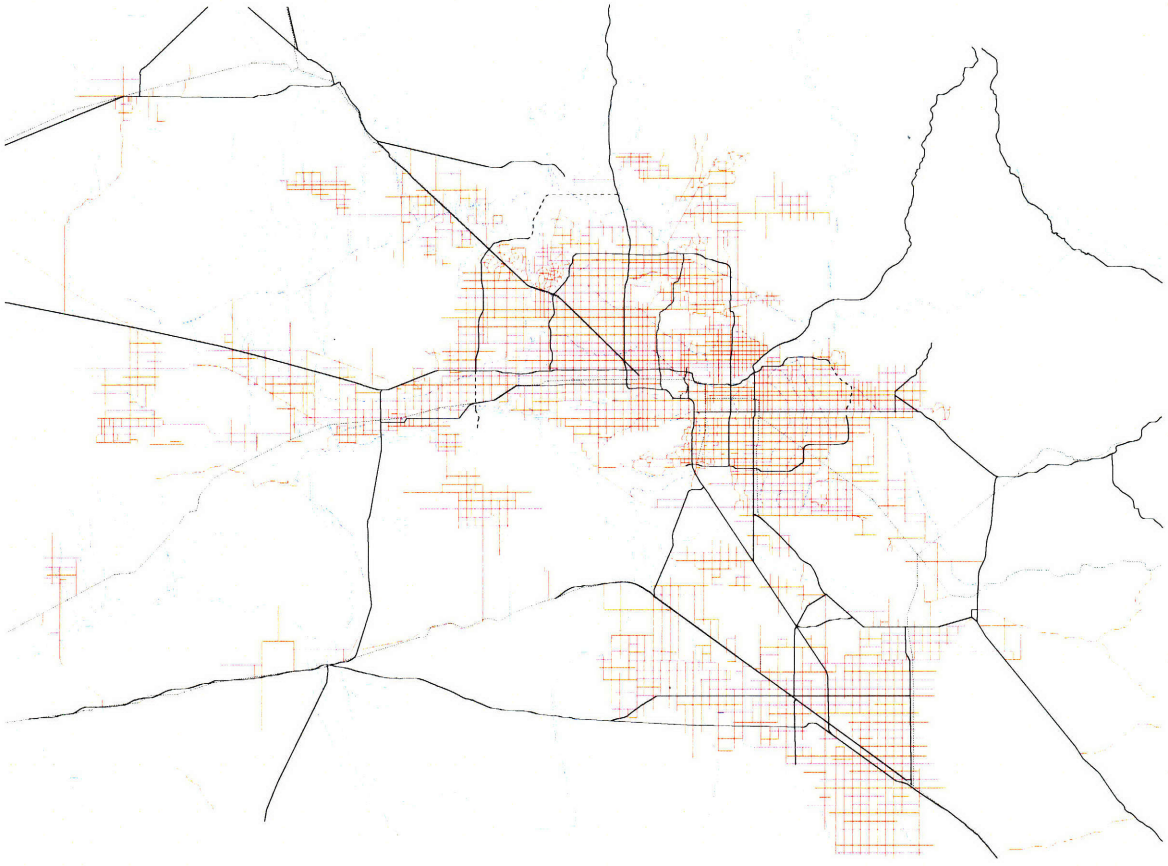


Fig. 3.10. Infrastructure network and nature environment of greater Phoenix, together show the most important two components of whole region: Water and highway. Tien-Yun Lee, 2008.

Claiming that no farm was more than two miles from a paved road, the extensive highway network is the consequence of the postwar period boom.[44] However, it was not until 1960 that freeway construction began constructed and thus Phoenix lost the opportunity for federal interstate support during 1950s and 1960s and thus had to search for local funding for new freeways.[45] Proposition 300, which was a public initiative proposed by the Phoenix Metropolitan Chamber of Commerce in 1985, funded by additional sales tax revenues to create the network of freeways, parkways, and public transit improvement, finally proved itself in vain due to the poor economy during 1980s and 1990s.[46] Eventually funded and built since 2005, the freeway system of Phoenix has an inner loop surrounding the urban core and outer belts and east-west and north-south urban highways across the metropolitan area.[47]

The development pattern under the influence of highways, the sprawl, forces Phoenix to embrace urban villages a s a model for future growth rather than a single city with downtown jobs and suburban residential area: Village centers become the core for shopping, leisure, housing and working. By dividing the metropolis to several finer cores, density is increased, and the balance between working and housing is achieved. The decentralization of the urban core happens in the traffic corridors such as eastward from Sky Harbor International Airport into Tempe, I-10 freeway to Tucson, I-17 freeway to Flagstaff., and I-17 and 101 loop freeways.[48] Today people of Phoenix combine their trip with work, shopping, and recreation. Multi-purpose trip now contribute to 30 to 50 percent of urban travel.[49] The transportation and residential development rely a lot on automobile travel that create a built environment that requires more automobile travel, and more sprawl. The issue of the future development will be how to create residential developments with nearby employment opportunities to reduce the travel time and congestion. Light rail system, although some critics argue that Phoenix cannot sustain it due to the lack

of a critical urban mass, still suggests a trend for future development that promotes a denser and more walkable urban form that attempts to integrate automobile–oriented isolated clustered development.

Linking Past to Future: Valley Downtown, Village Centers

With the suburban expansion after the World War II, the downtown Phoenix no longer serves as main civic center because of the booming of the suburban retail and new industrial activities. Nowadays the downtown Phoenix is full of big box buildings such as science and history museum, convention center, baseball park, and basketball arena rather than fine-grain activities to attract people to the main street. Now city centers are mostly on the outlying fringe and serve as a local consumption for the neighborhood communities such as Chandler, Gilbert, Glendale, Mesa, Peoria, Scottsdale, and Tempe. Among these outlying communities, Mesa emerged in the early twentieth century as a trading center of the East Valley while Glendale as of the West Valley.

Among the downtown development within metropolitan Phoenix, Tempe's downtown is relatively small and fine-grained based on the preserving of historic buildings and attracting people onto the streets with small shops and pedestrian activities. Contrary to the automobile-driven development patter happening all around Phoenix, Tempe's development is mostly based on transportation crossroads and the redevelopment of the Salt River, which used to be a crucial element of the agricultural society and people's daily life. Contrary to Phoenix's downtown, Tempe's downtown still remains a critical mass due to its centralized communities, especially Arizona State University, which makes Tempe a college town

and the economic development is vertical rather than horizontal. Mom-and-pop sores are now gradually replaced by global brand like Starbucks in the name of future development.

Postwar growth and new land development has undermined the Phoenix's downtown business by changing the geography of markets with countless newly-opened suburban strip malls and shopping centers. With the retail and service weakened in downtown Phoenix, now only banks and governmental services remains there with workers left after 5.p.m. The development at the fringes weakened the economic position of the downtown. Phoenix's characteristic of outlying growth, desert and mountain scenery, lack of historic landmarks, migrant population, and notion of urban villages with separate village centers rather than a single urban core, all make itself devoid of interesting and profitable downtown density and activities.[50] Although there are already some downtown redevelopment projects, the large civic infrastructure in downtown Phoenix still lacks fine-grained and pedestrian-scale development such as bookstore, coffee shops, and outdoor restaurants that attract people onto the streets. Large buildings, hard and hot artificial surfaces, and giant parking structures, all pose an uninviting gesture to human scale activities.

Based on the fact that Arizona State University downtown campus will enroll 15,000 students by 2015,[51] and the downtown leader's attempt to attract important genomics research institute to the state, research becomes the new fashionable promoting term in the downtown development: now the city boosters are trying to transform downtown Phoenix into a place where new knowledge can be products and services and thus creative people will like to wok and live here. Together with the proposed new light rail system anticipated to operate in 2008 bringing more people to downtown, knowledge-driven

downtown economy becomes the vision and salvation of the downtown decline.

As Phoenix and outlying development reach the limits of the available lands, downtown redevelopment becomes critical and there is gradual need for more mature form of growth and development. Struggling to find their unique characteristic, these valley downtowns continue to manage the balance between the downtown decline and rapid suburban growth while seeking profitable business at the same time.
The most ambitious plan to link the past to valley's future development, might arguably be Town Lake in Tempe. Located in the bed of the Salt River, Town Lake used to be the centerpiece of the city's early agriculture and the city life user to be closely tied to the river. The dry from 1940s to mid 1960s made the city lose its connection to the river bed has become home to landfills and industrial business since then.[52] The idea of reclaiming the river began in 1966 and was completed in 1999 when the water from the Central Arizona Project flowed into it.[53] The lake provides a ground for urban activities such as canoe, jogging, picnic, concerts, and sports while promotes density and vertical development. It also serves as a reminiscent of a dry river that used to flow through Phoenix, which connects the future to the past.

The uncertainty of the desert and growth play an important role in Phoenix's development. The struggle to overcome the extreme natural conditions, desert iconography, creates a very unique sense of place with the largest and most complicated water supply system. The development of the masses and indoor air condition makes Phoenix no different than other cities in the world and therefore makes new dwellers unaware of the desert around them. However, the urbanizing desert relies heavily on the water—not only the water in Salt River, but also the underground aquifers. The rapid growth is fragile

since they are based on the overwhelming need for water delivery and storage. Scientists argue that the large urbanization is based on the assumptions of abnormal precipitation.[54] There seems to be little concern about how to control the state-owned lands at the urban fringe: they are sold and used as private development in a very fast and without –vision pace. The sale of public land facilitates the sprawl, and vice versa. Far early in 1975 the Maricopa County Comprehensive Plan, the officials already admitted that it would be impractical to prepare a plan for every lots and parcel in the entire county since the location of large development was determined by land owners and developers.[55]

Phoenix is now at a crossroad seeking better balance between urban infill and urban fringe development. Given its dynamic and rapid change of the growth, Phoenix can serve as a prototype for rapid growth urbanization by managing the growth and connecting the urban setting with the desert context, together with the larger framework of regional transportation, water supply, and environmental issues. The intensification of land use, water supply, environmental quality, and open spaces preservation of desert fields become the new—century agenda of the Valley.

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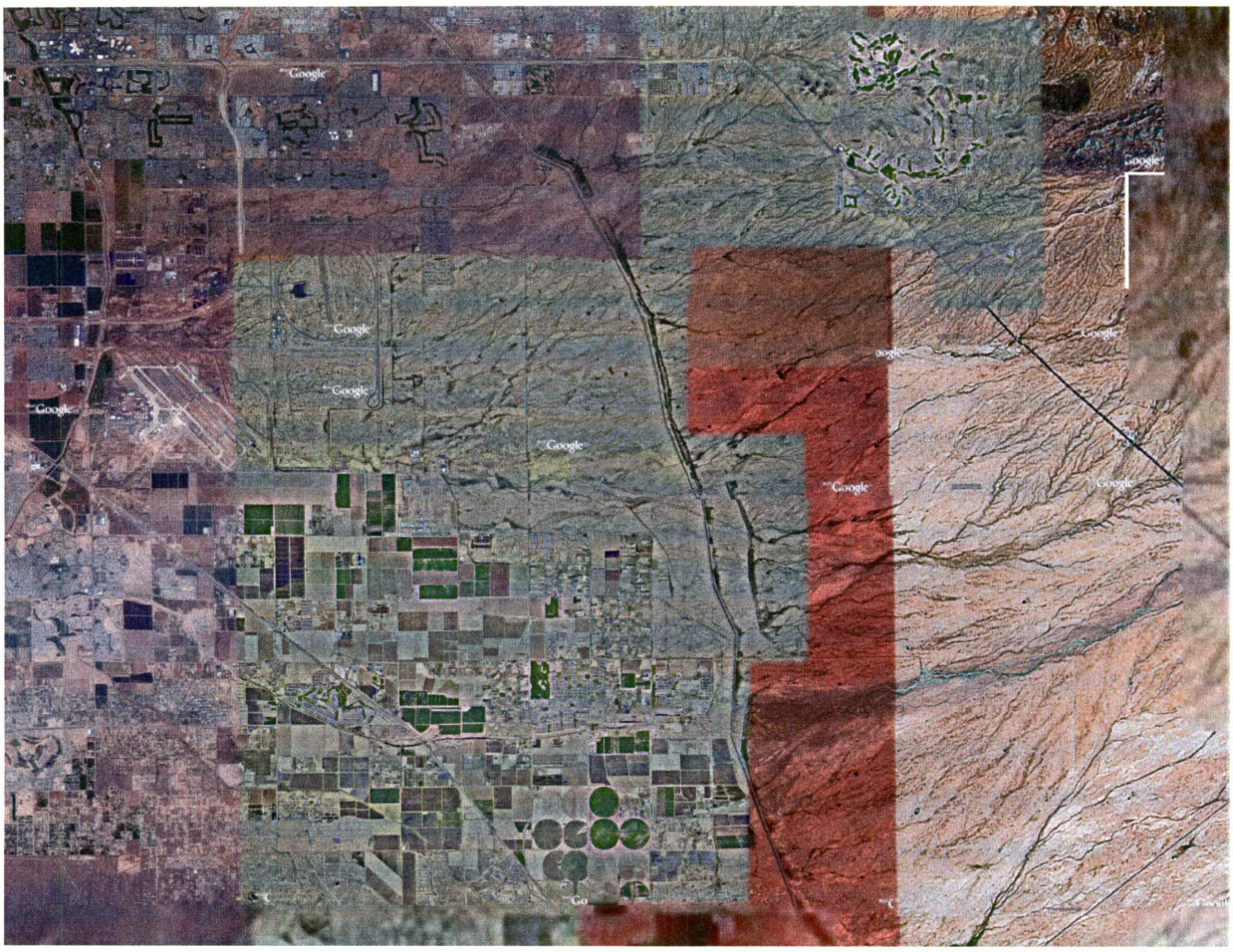
46. Ibid.
47. Ibid., 153.
48. Ibid., 157.
49. Ibid., 166.
50. Ibid., 177.
51. Ibid., 185.
52. Ibid., 195.
53. Ibid.
54. Ibid., 205.
55. American Institute of Architects, *A Guide to the Architecture of Metro Phoenix*, 20.

Chapter 4. Design Proposal

Site: Phoenix-Mesa Gateway Airport area

Ranked as the third largest city in Arizona and the 38th largest city in the United States,[1] Mesa is a 128 square mile suburban city 15 miles to the east of Phoenix emerging from the original Hohokam canal, settlement of gold explorers in the 19th century, founded in January 1878 by Mormon pioneers, and home for the military families of Falcon Field Airport and Williams Air Force Base since 1940s.[2] Between 1950 and 1960, more and more commerce and industry including aerospace companies had come to Mesa while most of the residents earned their living directly or indirectly from farming of mainly citrus and cotton. Since 1960s, more and more high-tech companies had emerged in the city of Mesa with the number of over 100 firms now including health facilities. Now the employment percentages of population geography of Mesa is composed most of retail (31.2%), office(25.7%), public(16.1%), industrial (14%), and residential(1.4%).[3] With the population of 462,823 and a growing speed of 58.2% from 1990-2008,[4] Mesa is a thriving metropolis maintaining the feel of a suburban environment because of low costs of business, affordable housing, and well-educated workforce with a relatively young age because of the attraction of the high-tech economic base environment. Between 1995 and 2004, Arizona had the second highest percentage growth rate and Mesa area contributed to it with a growing rate of 14 % since 2000.[5] The dynamic recreational, educational, and business amenities together with year-round activities such as golf, hiking, and biking possible year-round due to the mild weather make Mesa a burgeoning host for new mountain West lifestyle. With the rapid urban growth

and expansion, it is estimated that Mesa will have a population exceeding 630,000 when being built-out.[6]



Transportation

Several regional freeways serve as the transportation infrastructure of Mesa: U.S. route 60, locally known as Superstition Freeway, running from Phoenix to Apache Junction, and SR87, Loop 101, Loop 202, and the under-study SR 802.[7] However, the only public transportation relies on regional valley bus

Fig. 4.1. East side of the city of Mesa, showing the Phoenix-Mesa Gateway Airport area and the former GM proving ground on the left. The future State Route (SR) 802 will connect the orignal Phoenix inner freeway loop on the left and the freeway on the far right, which makes the proving gound and the surrounding a very strategic point for future growth and development. Source: Google Earth

which only operates from Monday to Saturday. There will be a new metro light rail scheduled to operate in 2008, but only serves a small portion of the west part of Mesa. Two airports serve as the main anchor for regional transportation need of Mesa: Falcon Field Airport in the northeastern part of the city, and Phoenix-Mesa Gateway Airport in the southeaster area of the city. Originally Williams Air Force Base, the Phoenix-Mesa Gateway Airport serves limited air service to Sky Harbor International Airport and designated as a reliever airport, which also seeks the highest potential in creating jobs and commercial development.

In 2004, the 1800 acres of the 5000-acre General Motors (GM) desert proving ground near the Phoenix-Mesa Gateway was sold to the local business man to be developed, which will change the city's land use plan in order to accommodate a project that could attract at least 17,000 jobs.[8] The rest of the land was ready for redevelopment when the facility was closed in 2005. The development plan envisioned a master plan of mix use project which will combine homes, office buildings, and shopping centers to meet the need of future employment growth and shopping options triggered by the new SR 802 highway corridor. This whole area, which shapes the last big urban void the existing Mesa fabric, will allow new need for not only the adjacent neighborhood but also the whole region, the East Valley, and will form a second urban core of the city of Mesa.

Together with the development of the airport, Mesa initiated a plan called Mesa Gateway strategic development plan for the Mesa Gateway Area (MGA).[9] In this plan, the Phoenix-Mesa Gateway will become the engine for the economic growth southeastern Mesa and the adjacent region, which began in June 2007 and will be completed by May 2008.[10] Located within the boundary shaped by airport,

freeways, railroads, roadways, universities, and enormous virgin land for development, the value and asset for this area will be the integration of land use and transportation and in the end provides a innovative and sustainable solutions for future growth. The stakeholders are compromised of landowners, business, universities, and community members.[11]

Urban Challenges/Urban Design

In an ever-changing metropolis like Phoenix, the design challenge will be how to provide a framework that support the future growth, but at the same time, leave enough flexibilities and possibilities for quality of life, collective activities, and the desert iconography. Given the enormous available land, architecture as a single gesture becomes relatively pointless. What constitute the scenery is the collective form of the mass and void, the sublimity of the territory, that is, the landscape.

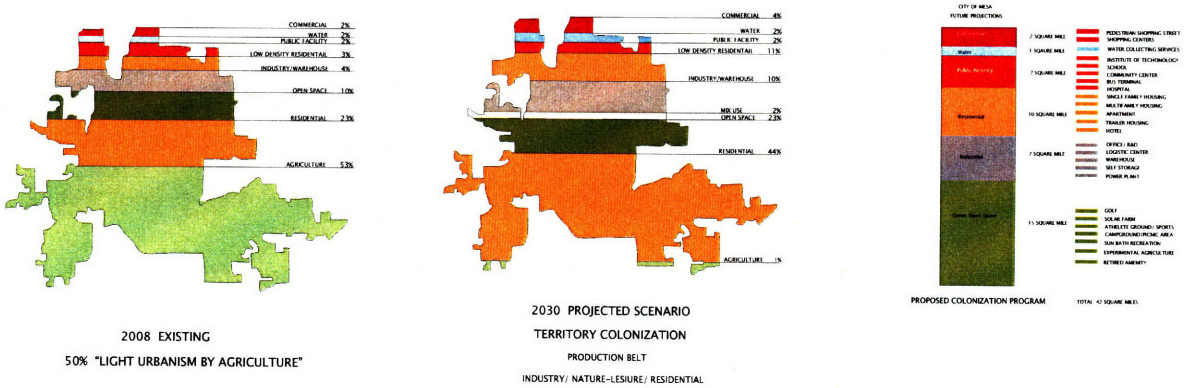
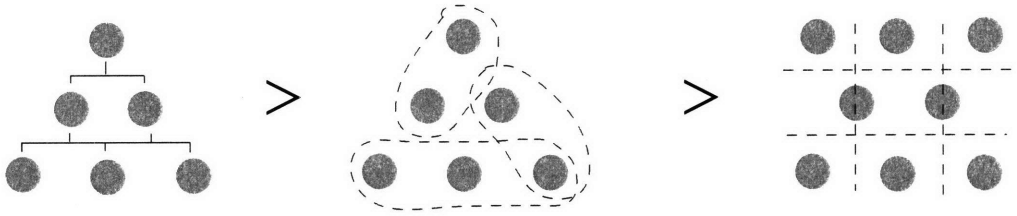


Fig. 4.2. Phoenix existing and future program distribution showing a existing "light urbanism by agriculture" and a proposed 30-year territory colonization by clean industry/nature-leisure/residential oriented programmatic use that will suit the growth. Tien-Yun Lee, 2008. Source: 1. Maricopa Association of Governments, *The Urban Atlas of the Phoenix Metropolitan area,*1998, 2. Arizona State University, *Greater Phoenix Regional Atlas: A Preview of the Region's 50-Year Future / Greater Phoenix 2100*, http://www.asu.edu/copp/morrison/Atlas-5.pdf

Landscape as a medium/ Landscape as a strategy:

Phoenix's growth has a lot to do with the transportation corridor, especially along the freeway. Urban highway here becomes an integrating medium that not only serves as an everyday commuting need, but also a trigger for future development and tourism. In an automobile-oriented metropolis like this, how to utilize the area surrounding the freeway becomes critical. Together with the future proposed new freeway route SR 802 that connects the original urban core loop and the regional highway extending to the southeastern region, the place where new freeway will be constructed become the new breeding ground for the essence of new development. Therefore, how to bring these strategic points together and thus spawns a new potential field become crucial.



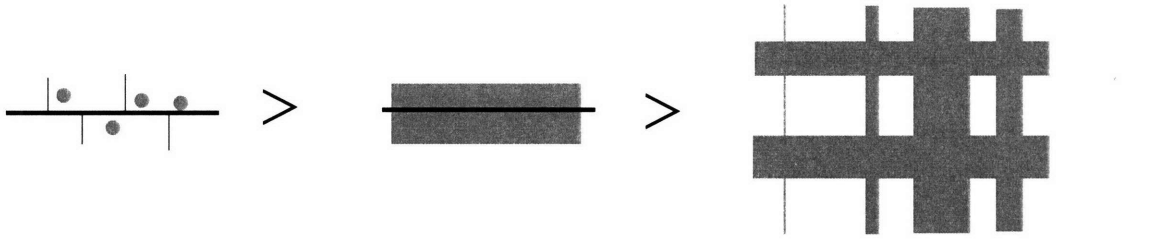
The Phoenician Belt / Corridor

Rather than thinking urban highways and building lots in a separate way, this design proposal suggests a reverse solution to fit the enormous scale: by integrating the freeway and potential development area together, the limit of the growth is outlined, and the development density and real-estate benefit are secured: The resource such as electricity, water, and transportation can be intensified and thus creates a

Fig. 4.3. The transformation of the social production. From the modernism bureaucracy characterized by single abstract modern architecture to the postmoderism non-hierarchy matrix pattern characterized by larger territory networks, landscape carries the great opportunities than architecture in terms of flexible and adaptable social production in contemporary cities. Tien-Yun Lee, 2008.

compact and collective use. Most important of all, the preserved open space, especially the desert and stream area, guarantees the high-quality living quality for a desert development and sustainable vision for the whole region. It is a desert iconography: a microcosm of infinity.

Aimed for the estimated population of approximately 150,000, the development area is dispersed into 42 square miles with a density of 3,500 people per square mile. Each belt is composed of mostly three components: the central boulevard of the urban highway, the outside arterial, and the programming chamber shaped by central boulevards and the arterials inside with public nodes. As a reminiscent of the grid patterns in urban Phoenix, these belts are one-mile wide but are divided into a finer grained scale: 0.5 mile from central urban highway boulevard to the outside arterial, which allows rapid automobile scale transportation and pedestrian scale accessibility at the same time.



Anticipating that there will be new consideration of the former industrial site GM proving ground and new development and expansion of Phoenix-Mesa Gateway Airport, the east-west horizontal band becomes a solution for the future growth that not only serves as the parallel supporting base for the

Fig. 4.4. The transformation of Phoenix urban boulevard: Rather than non-organized-and-controlled programs dispersed around the highway, this design proposal suggests a thickened surface with clear development limits and edges by treating the highway area as an entity, a living boulevard and the network of boulevards will weave a new public realm. Tien-Yun Lee, 2008.

urban highway, but also suggests the difference between highly-developed area, under-developed area, and preserved area. Therefore the development pattern and space quality are secured. Basically four large program cluster are outlined: From the northern housing belt that connects the existing neighborhood meanwhile serves as housing need for the future employment in this area; the mix-use logistic, culture, commercial, and office belt serving as the administration center of this new area that stretches from the former GM proving ground and ends at the eastern canal; the third belt of logistic zone around the southern area of the Phoenix-Mesa Gateway Airport, low-density suburban housing, and retail that constitute the future programming from agriculture to culture; the fourth belt that contains RV resort mobile housing, culture facilities such as town centers and schools, and nature reclamation and preservation of streams and desert landscape that will extend and touch the future junction of the freeway interchange.

The development phase grows hand-in-hand with the construction stage of the urban highway. Thus, the growth is under control and anticipatable rather than unleashed booming.

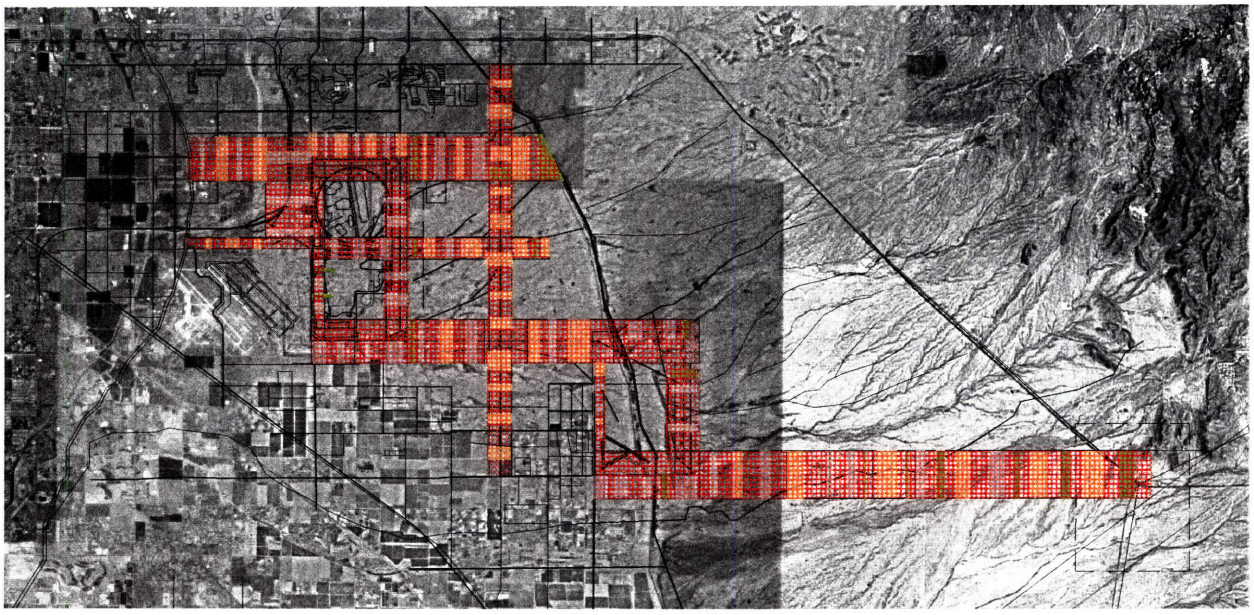


Fig. 4.5. The coneptual drawing showing the landscape band strategy. Tien-Yun Lee, 2008.

The Role of Urban Highway

Since urban highway, the SR-802 becomes a trigger of the development in this area, the role of the space in-between the highway becomes crucial regarding new potential of new civic program. From the entrance at the GM proving ground, the highway is depressed to allow the upper level civic ground to happen; in the middle, the highway interchange is integrated into the logistic center and become the local magnet; to the far southeast with the rising horizon, the highway is elevated and thus creates the space underneath, which will be the new linear civic program locus. Urban highway no longer serves as a divider in the metropolis, rather, it becomes the connector as well as distributor. It becomes the boulevard. It becomes the street of life.

Public Realm / The Controlled Space

Within the belt, public realm is defined by nodes of public nodes and thus constitutes the field of social instruments[12]. These controlled spaces, the mass that crystallizes the locus of public activities, are hybrid that contains mix-use building envelopes like community centers, schools, offices, as well as hard-scape open spaces such as civic plaza, park, and parking lots with sports field. What is important is that, there

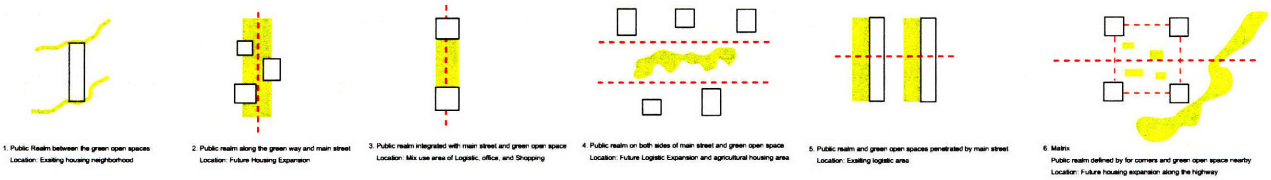


Fig. 4.6. Different typologies of public realm in diffenent sites (from left to right): 1. Existing housing neighborhood, 2. Future housing expansion, 3. Logistic/office/shopping mix use, 4. Future logistic and agicutural resort, 5. Logistic area near the airport, 6. future mobile housing along the highway. Tien-Yun Lee, 2008.

is no single dictated use of each node: as an echo of the follies in the Parc de la Villette competition project by Bernard Tschumi, these nodes are defined field waiting for undesignated activities to happen. Each node has more than one program within. It is the staging of the uncertainty, the outlining of the emergence.

The public realm composed of these controlled space are under the guidance of public fund and social intervention and symbolize the potential of the enormous field. From the community centers and schools of the northern belt, the civic complex of cultural and commercial office building envelopes of central belt, the logistic centers and community amenity of the agriculture/ culture belt, to the town centers and schools of the southern-end natural reclamation and preservation belt. The new public realm, the controlled space, marks a resistance of the wild capitalism and towards a collective iconography of the community, society, and the environment.

This public realm is the very essence of the design, and thus stages the public structure.

Private Parcel/ The Free Space

Contrary to the public ream/ controlled space, the free space are characterized of their private development which liberate themselves from the control of the public fund and thus give the developers freedom to have different schemes—without undermining the total spatial quality of the environment. Basically the programmatic function of the free space will be low-density housing and private-fund

development which will only allow 3,000 people per square mile. From north to south, the free spaces are suggested but not limited to the use of apartment housing, offices, warehouses, and mobile housing such as RV resorts. The outlined land can be further parcelized into finer-grain use. Before the intense development, the land is just infrastructure-ready ground full of potential waiting for being developed. The free space thus marks a milestone that liberates the private sector power and admits the uncontrollable and unexpectable urban reality, in the mean time, sets the minimum limit and guideline for future potential, say, the uncertainty.

Green Open Spaces

In the desert environment, the green open space, the landscape, is relatively fragile compared to those in the common urban setting. The preservation of the green open space is not only the replica and mimic of the existing natural environment. Rather, the preservation serves as a tool of bring back what nature used to be and its meaning to the citizens. Therefore, how to define the term "nature" with regards to cultural agency becomes important. Three strategies of reclaiming and recovering the nature thus emerge:

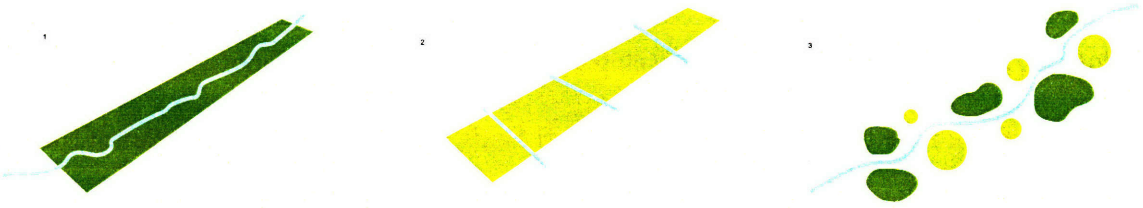


Fig. 4.7. The stablizing of the green open spaces (from left to right): 1. Greenway along the stream, 2. Colonized fields along the irrigation canal, 3. Preserved wilderness and along the stream. Tien-Yun Lee, 2008.

1. The "natureless" open space

This typology of green open space happens within the belt. Contrary to the latter two typologies, this type of green open space is heavily-programmed with civic activities, such as community parks, sports fields, and track fields. With the smaller size but more intense programmatic use compared to the former two, this type of open space is the breeding ground for urban activities. Outlined in-between the public realm and private parcel, this space serves as a buffer zone between the urban life and thus provides a promising future in terms of life quality and market value. It is the plane of events; nature becomes culture here. It is, the naturelessness.

2. The colonized wilderness

The open space between the belts will be the fields for the colonized wilderness, which means though the programmatic uses such as large urban parks, the industrial relic, the intense-urban-programming remains, and the streams and canals will be the main urban leisure magnet in-between the belts. These places in-between are the reliever of the urban life. There are design actions on these voids but remains minimal: They are the lightly-programmed void.

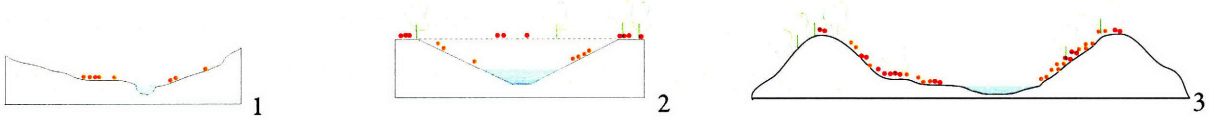
3. The preserved desert

Given the incommensurable desert landscape, the desert itself plays an important role in the identity of the Phoenix. Rather than sprawling the development to the desert, this proposal suggests condense the development within the belt, and preserve the desert lands, especially those on the east of the site with fragile streams, washes, and terrains. There will be no design action on the desert; the desert stays the same just as it was. By doing so, the wilderness remains intact meanwhile provides enough good-quality

open space for urban life in terms of water storage issue and tourism, thus eventually creates an iconography of desert life. That is, the infinity.

Canal/ water system

The treating of the canal is the essence of the development of a desert urban life. Three scales and strategies thus are applied:



1. Stream and washes

Together with the preserved desert, this scale of water resource preservation assures enough open space for wild life to roam, meanwhile allows enough capacity for the flash flood. Most important of all, it gives human being a total recall of the nature experience.

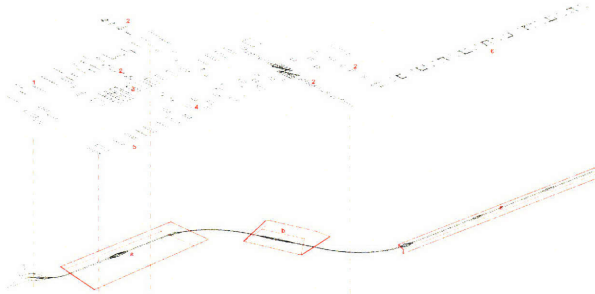
2. Chanelized canal spines

The smallest scale of the canal system. It will run through each belt and becomes the corridor for urban recreation and leisure programs meanwhile leave enough space for sudden flood.

3. Main Canal Corridor

This system will utilize the existing ring shape canal that supplies water for the urban life. It will act as the main recreation and leisure spine for aqua activities and thus give the technical function a human-scale programmatic use. It will become the magnet for the regional outdoor activities. It links in-between the belts.

Fig. 4.8. Water treatment (from left to right): 1. Preserved stream with minimal public use, 2. Chanelized canal with public programs on top or both sides, 3. Themed water park with intense public use. Tien-Yun Lee, 2008.

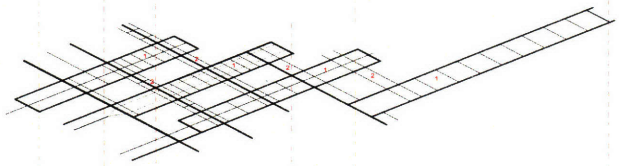


Public Realm

Nodes of public building define the limit of the development. Public amenities such as school, hospital, library will happen at these nodes. Commercial activities will happen along or between these nodes

Proposed new urban highway

Spaces around the highway become the new public realm:
a. depressed highway provides new ground for activities
b. highway and public platform are on the same horizon
c. elevated highway provides underneath spaces for public activity



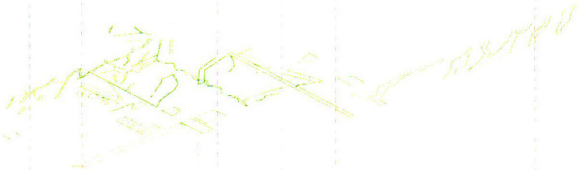
The Band / Circulation

1. Main arterial on both sides and minor roads inside (East-West first stage infrastructure)
2. Main arterial in the middle (North-South future expansion)

These two systems ensure the growing quality and limit of the development

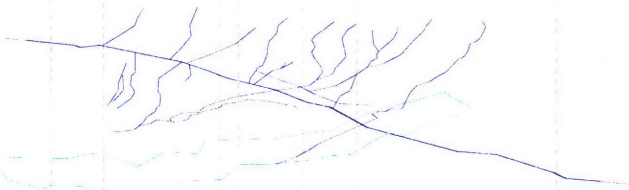
Parceling of private sector

With the public structure established and ensured, every kind of individual parceling can happen here without losing the quality of totality



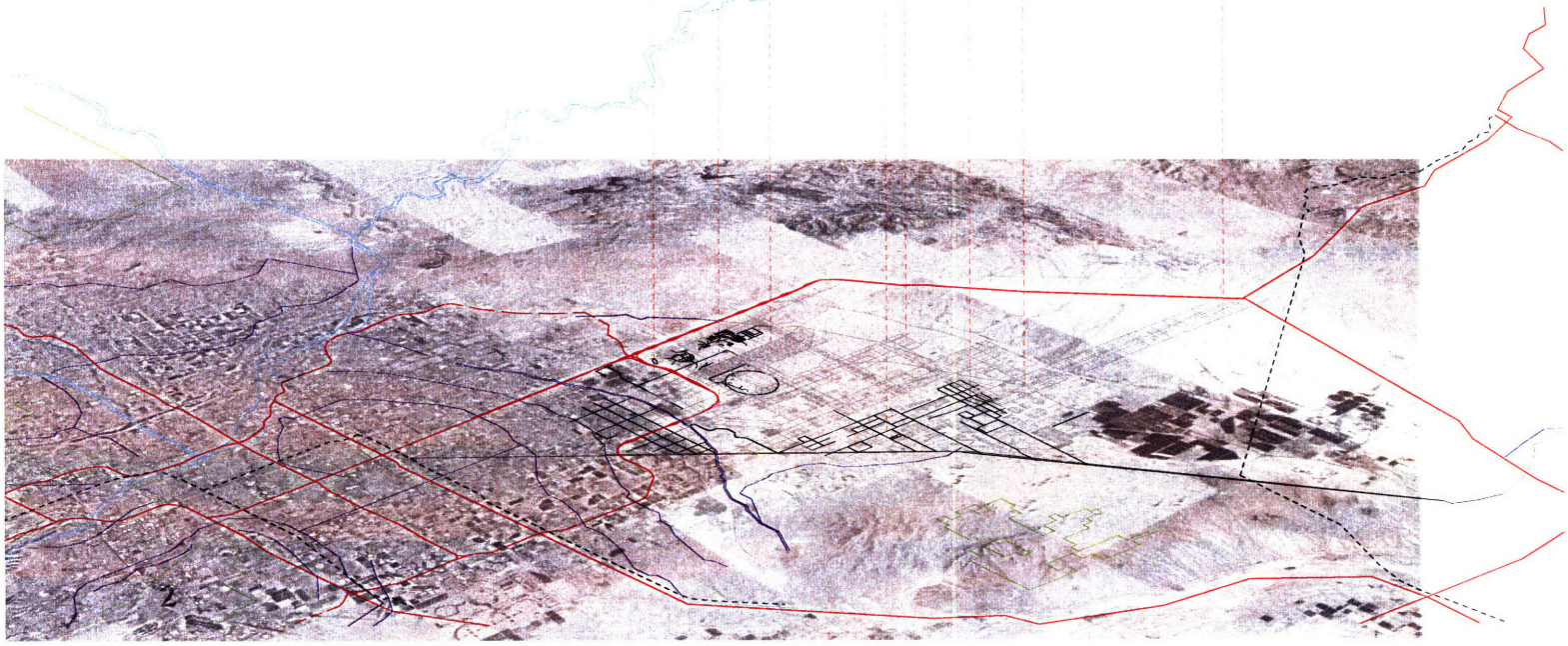
Stablizing green open space

1. Greenway along the preserved stream
2. Agriculture farm along the irrigation canal
3. Wilderness and colonized civic program along the stream



Waterway

1. Preserved stream and light public program within flash flood
2. Channelized canal with intense public program on top or on both
3. Themed water park (water course changed)



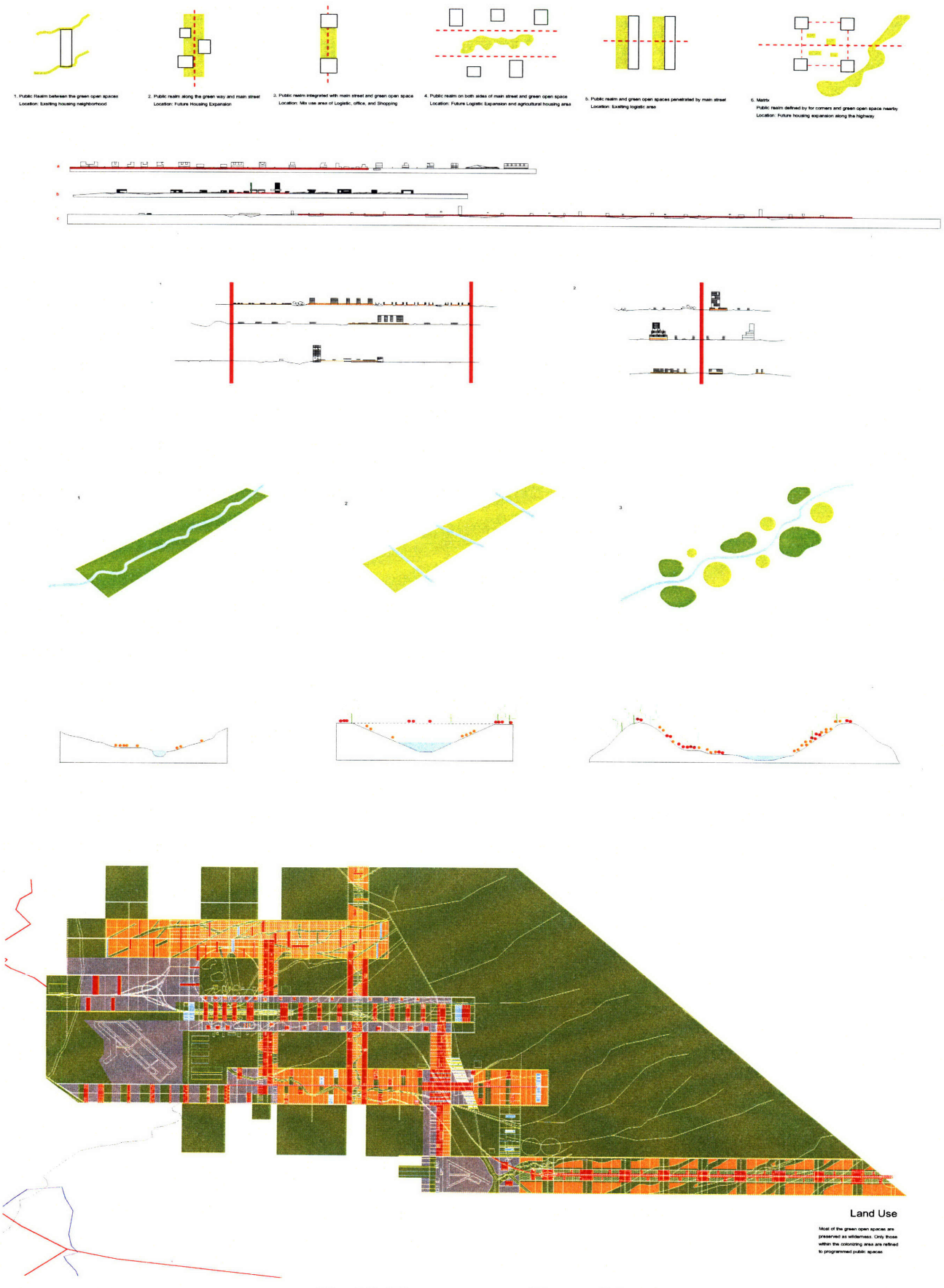
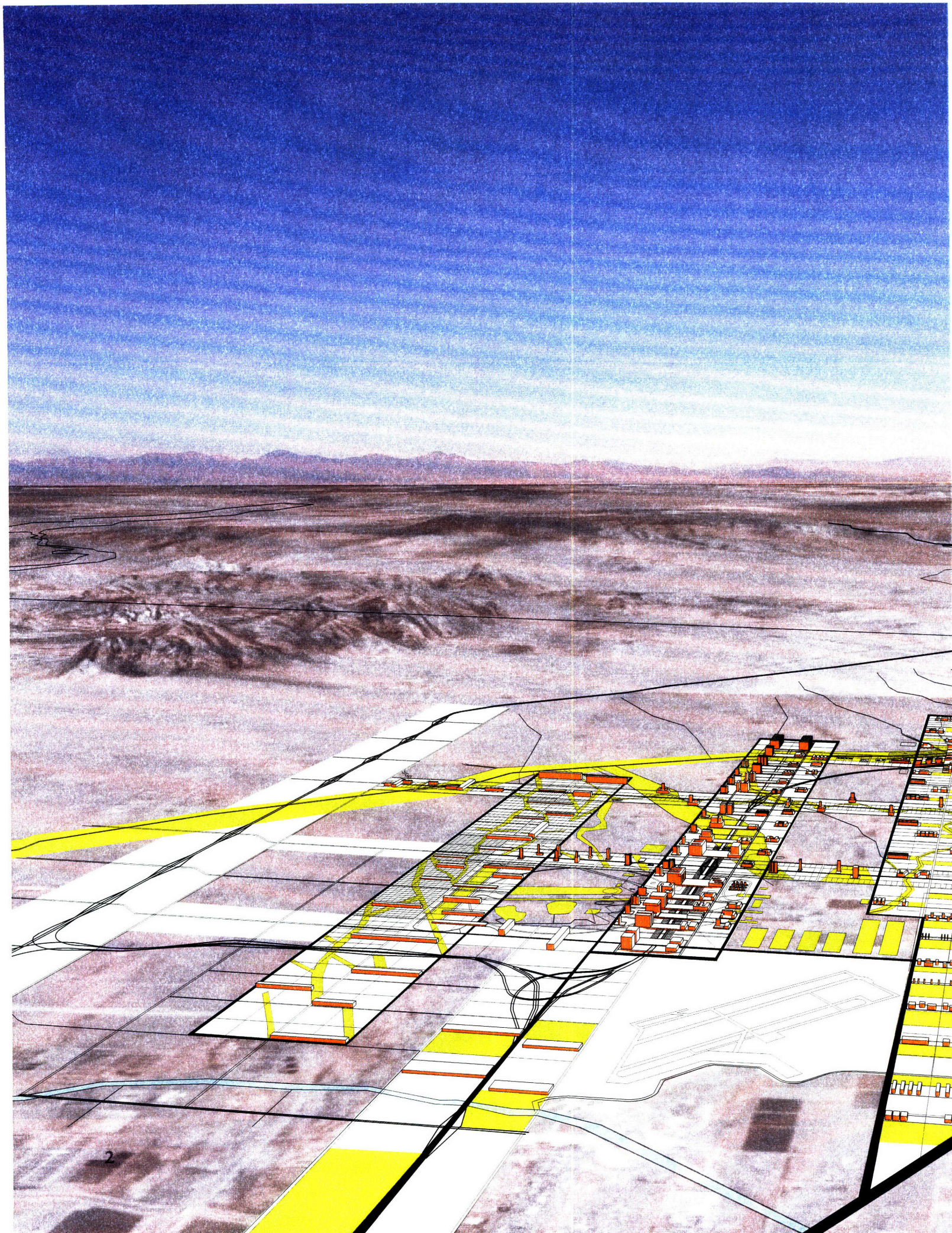


Fig. 4.9. The integration of layers of the urban system, Tien-Yun Lee, 2008.



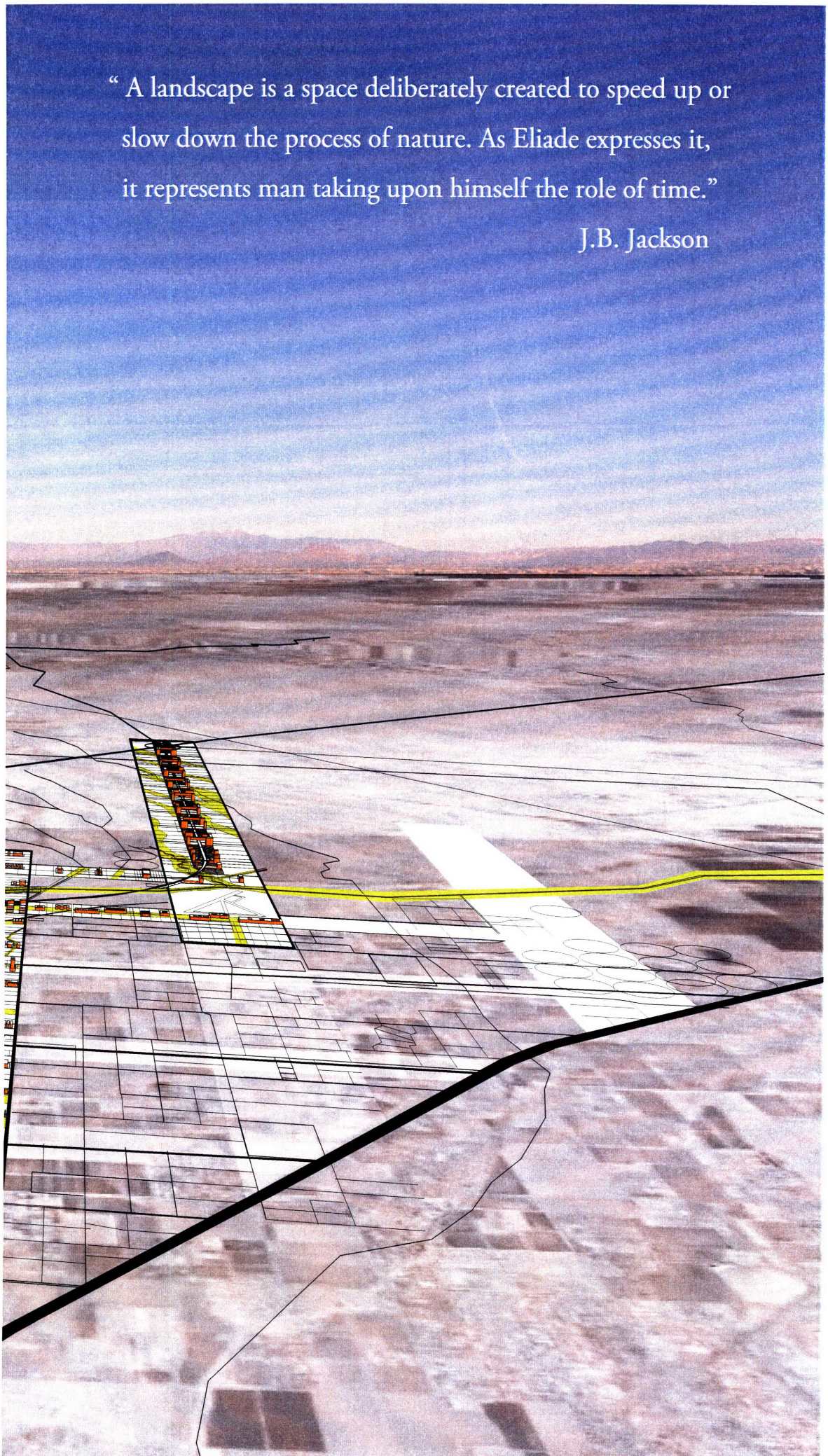


Fig. 4.10. Aerial view from urban Phoenix toward the new city. Tien-Yun Lee, 2008.

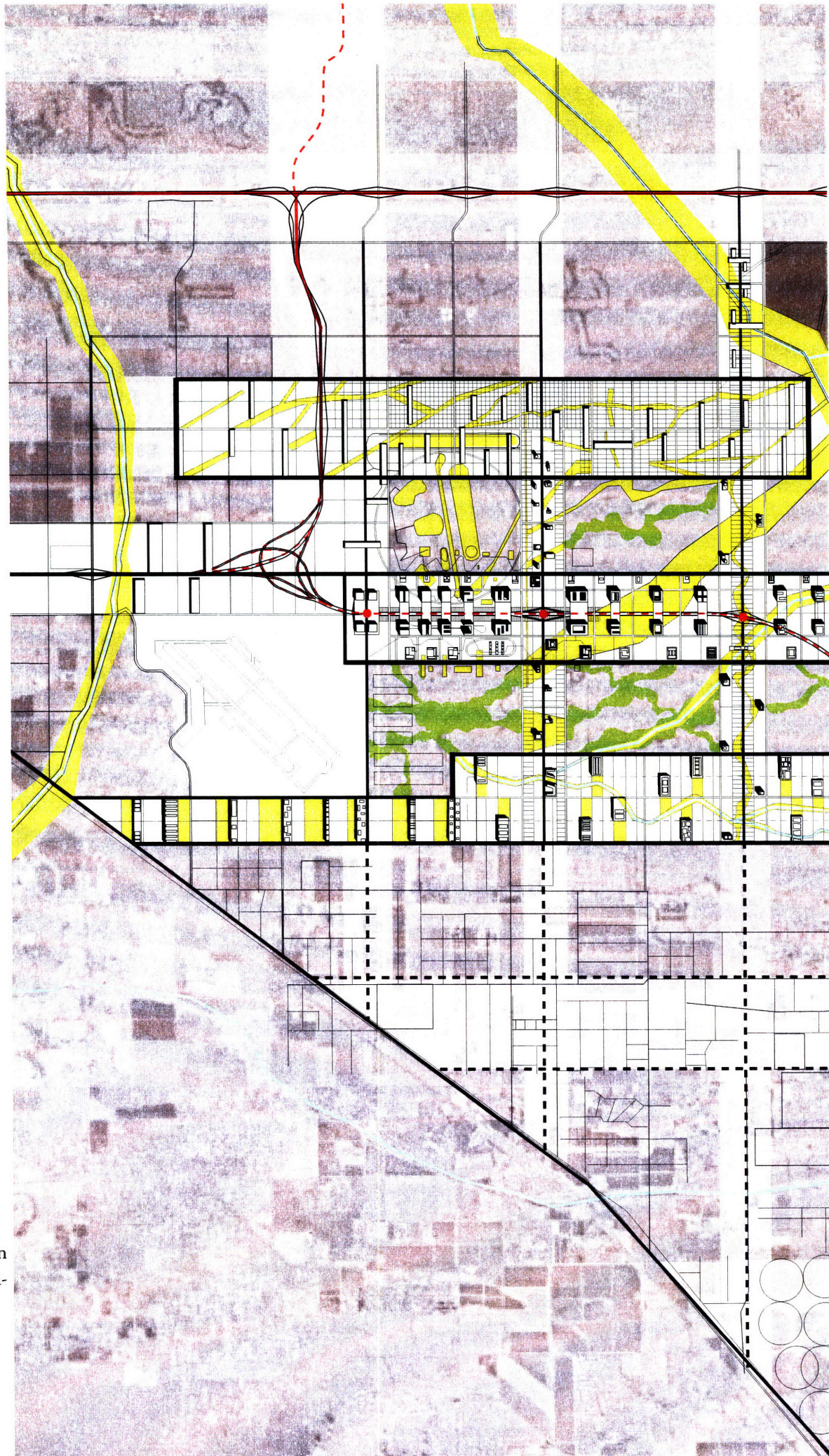
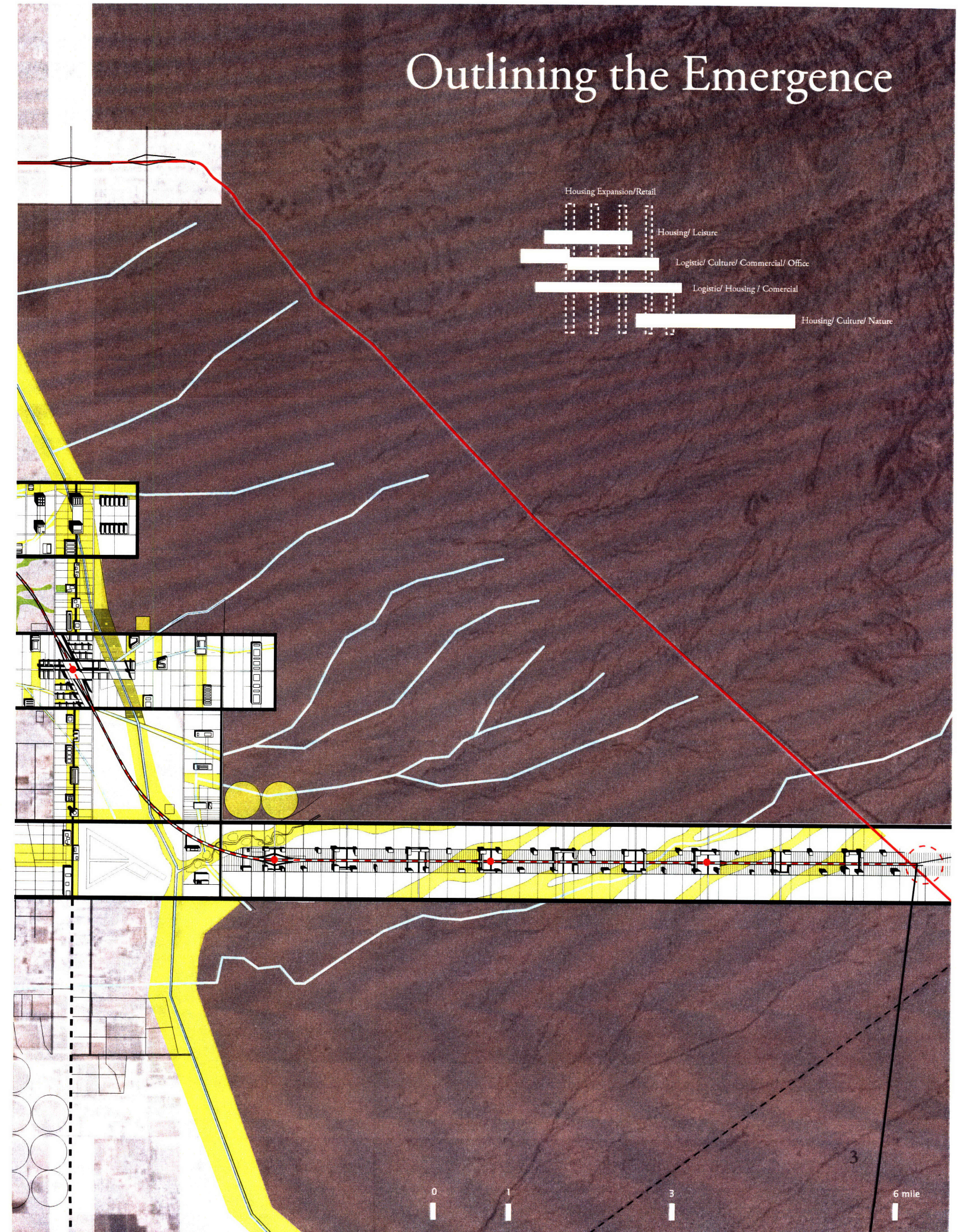


Fig. 4.11. Master plan of the new city. Tien-Yun Lee, 2008.

Outlining the Emergence



Design Locus 1: Public Structure as Logistic Complex

This locus focused on the transformation from post-industrial remains to urbanization.
Office Logistic centers and shopping centers are the main components of the public realm.
New public activities will happen in-between the former training ground asphalt, new proposed freeways, and logistic and shopping clusters. There is no single use of a particular site: every place suggests mixed-use and ultimate utilization of the space which aim to provide an intense urban life.

The Consumer's Ground is the suspended deck on top of the freeway which links the shopping center. The deck is a thickened surface with outdoor public activity on the top (athlete's field) and indoor public activity (shopping) meanwhile legitimize the existence of place of freeway spaces. It is a reminiscent of Albany City Hall Plaza but much more open and civic. It occupies the anchors of the public life and condenses them.

The remain of the site will only be defined by several paths and gardens, which is very lite programmatic use. Some will be the future development site but most of them remain empty and intact.

Design Locus 2: Public Structure as Agriculture Complex

This locus illustrates a strategy from agriculture culture. That is, the agrarian urbanization.

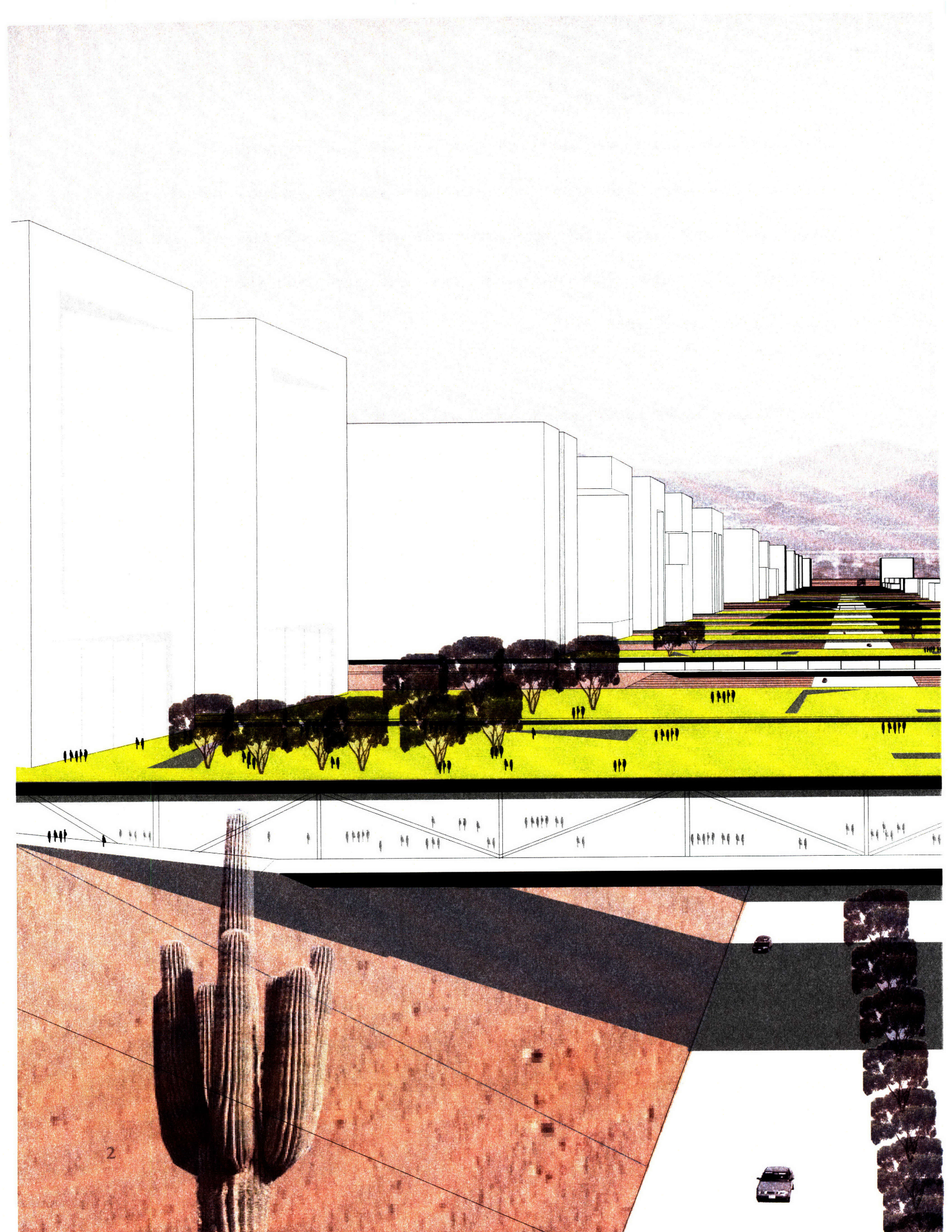
By infilling and juxtapositoning new civic programs (civic chamber), the newly programmed warehouse

and the canal and interchange surrounding become the new public realm for urbanization. Agriculture as culture here becomes a light strategy for organizing and integrating public surfaces. For most warehouses, the newly infill sports fields become the new interface that provides new publicness to both the workers and city dwellers. The sports field becomes the new public realm where people from all walks of life meet and celebrate.

Here parking lots become a platform for new urban activity by the crossover of hard (human) and soft (nature) programs. As a new magnet of outdoor activity, the parking lot used to be a mundane symbol of automobile-oriented city and was presumed as marginal and negative. However, for a city like Phoenix, the use of automobile is inevitable, and the parking lots thus carry a great opportunity for social life: Besides shopping centers, parking lots might arguably be the place where different people meet most. Hence, the reprogramming of the parking lot, the infrastructure, become the "critical mass: of a new metropolis. The new parking lots will be a ground for the overlapping of program, which lead to a thickened surface legitimating the new public.

Stretching out of the parking lot is the green belt along the exiting canal, which will suit the experimental agriculture and can be future pracelized into finer grain. Rather than its ancestor of crop productivity, he new agrarian field will be a showroom of the tourism-based agriculture which uses more technology in less land.

Future development of the remaining of the site will be only defined by the nodes of public amenity such like schools. In this drawing, the example is the farming institute.



2

Landscape is not the environment. The environment is the factual aspect of a milieu: that is, of the relationship that links a society with space and with nature. Landscape is the *sensible aspect* of that relationship. It thus relies on a collective form of subjectivity.... To suppose that every society posesses an awareness of landscape is simply to ascribe to other cultures our own sensitivity.

Augustin Berque

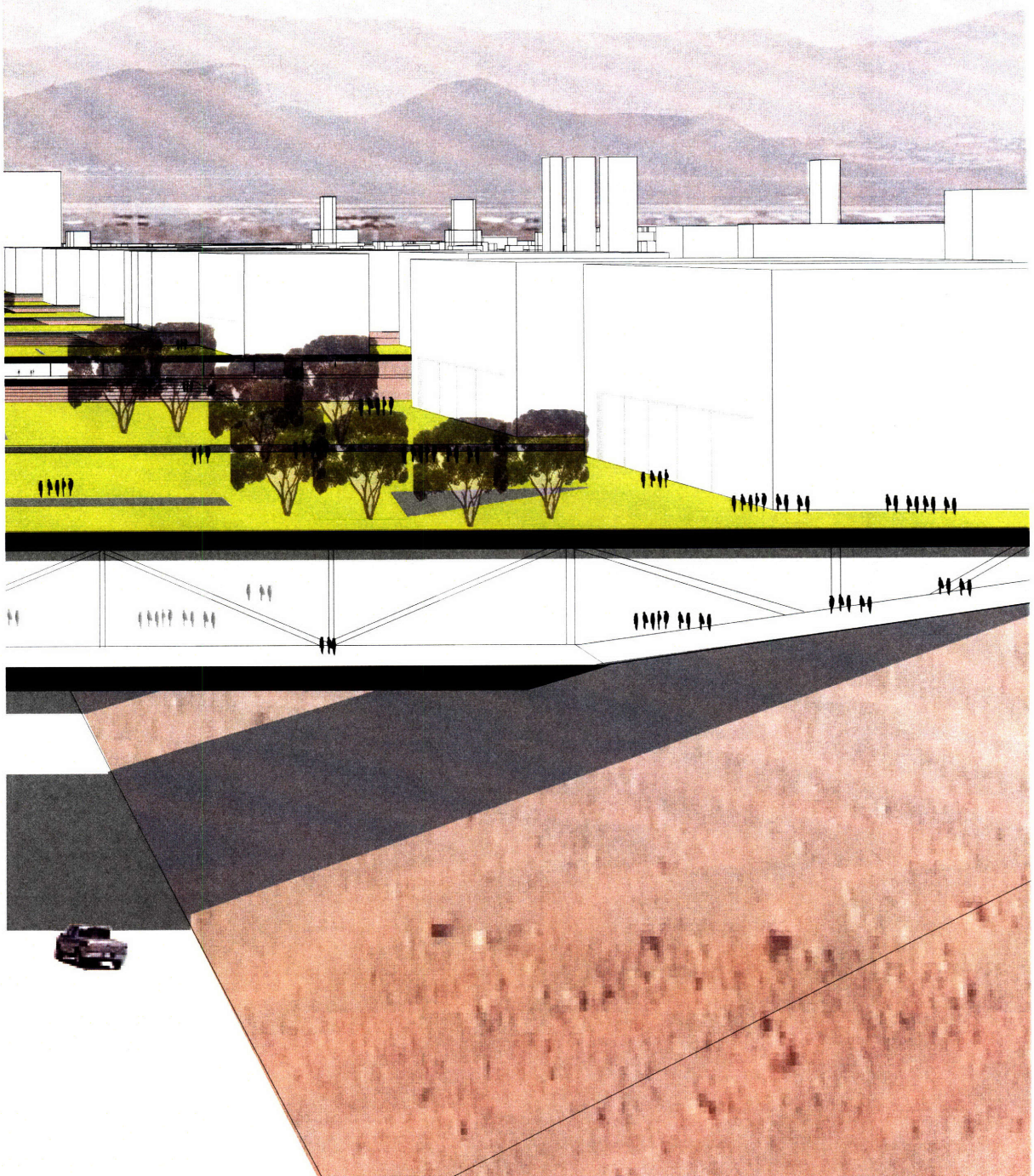
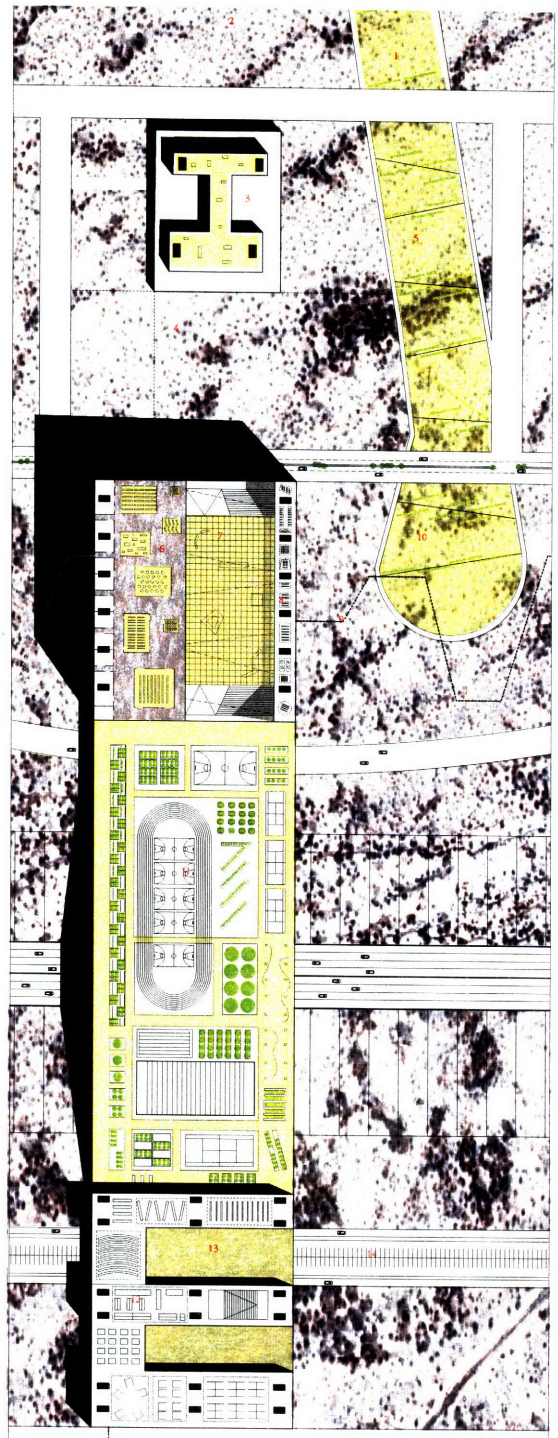
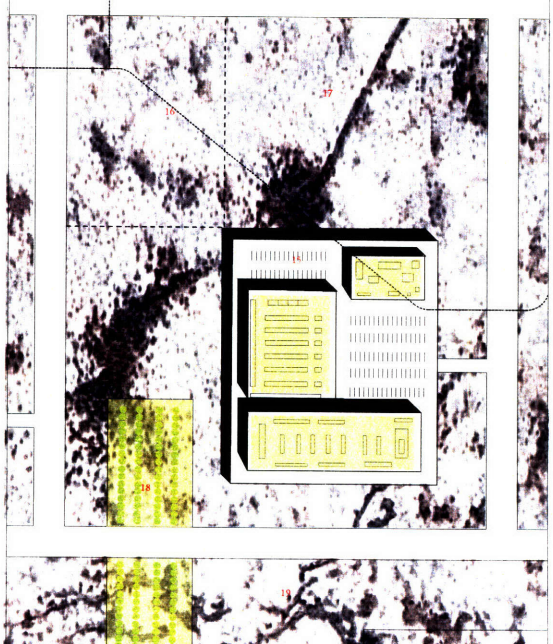
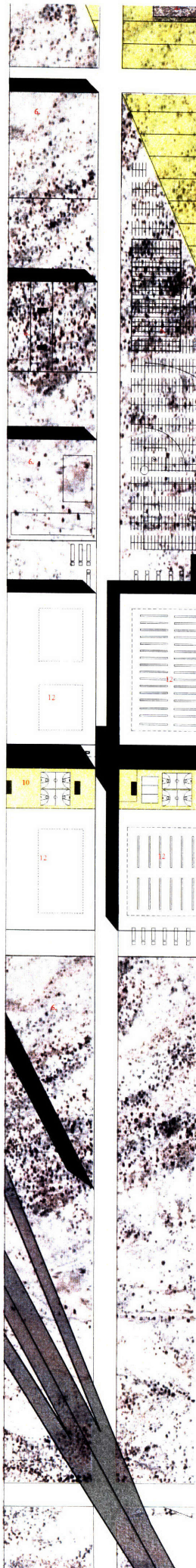


Fig. 4.12. Perspective of the Locus 1 looking to the east: The logistic complex. Tien-Yun Lee, 2008.







Locus 1:

From Post-industrial remains to urbanization

Logistic Complex

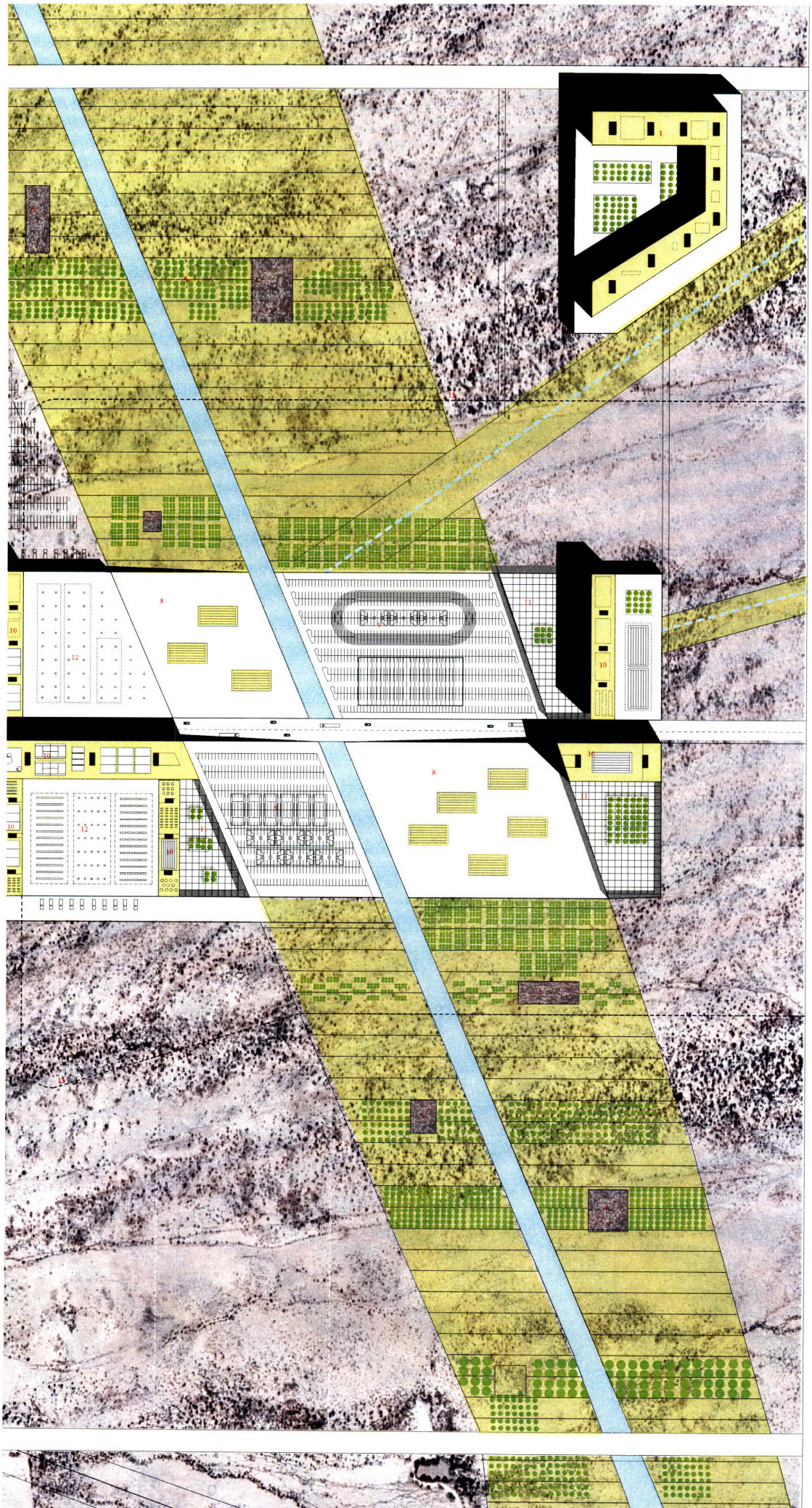
Office Logistic centers and shopping centers are the main components of the public realm. New public activities will happen in-between the former training ground asphalt, new poposed freeways, and logistic and shopping clusters.

The consumer's ground

Suspended platform on top of the freeway which links the shopping centers. The platform is a thickened surface with outdoor public activities on the top (urban gameboard) and indoor public activity (shopping) meanwhile legitimize the existence of place of freeway spaces. It is a reminiscent of Albany City Hall Plaza but much more open and civic.

1. Proving Gound Garden
2. Preserved Wilderness
3. Headquater Office
4. Prepared Land for Future Office Buildings
5. Office Square
6. City Theater
7. Outdoor Theater
8. Office
9. Bike and Pedestrian Trail
10. Civic Complex Common
11. Urban Game Board Platform (Shopping Underneath)
12. City Library
13. Roof Garden
14. Parking Lot
15. Logistic and Retail Complex
16. Bike and Pedestrian Trail
17. Prepared Land for Future Logistic Development
18. Logistic Garden
19. Preserved Wilderness for Future Airport Expansion

Fig. 4.13.
Plans of the public realm.
Tien-Yun Lee, 2008.



Locus 2:

From Agriculture to Urbanization

Agriculture Complex

By infilling and juxtapositoning new civic programs (civic chamber), the newly programmed warehouse and the canal and interchange surrounding become the new public realm for urbanization. Agriculture here become a light strategy for organizing and integrating public surfaces.

Future development will be only defined by the nodes of public amenity such like schools. In this drawing, the example is the farming institute.

1. Farming Institute
2. Water Garden
3. Farming Administration
4. Farming Gallery
5. Farming Demonstration
6. Future Warehouse and Parking
7. Farming Office
8. Swimming Pool
9. Parking and Event Ground
10. Civic Chamber
11. Shadowed Event Space
-12. Warehouse
13. Pedestrian and Bike Trai
14. Preserved Land for Future Housing Development

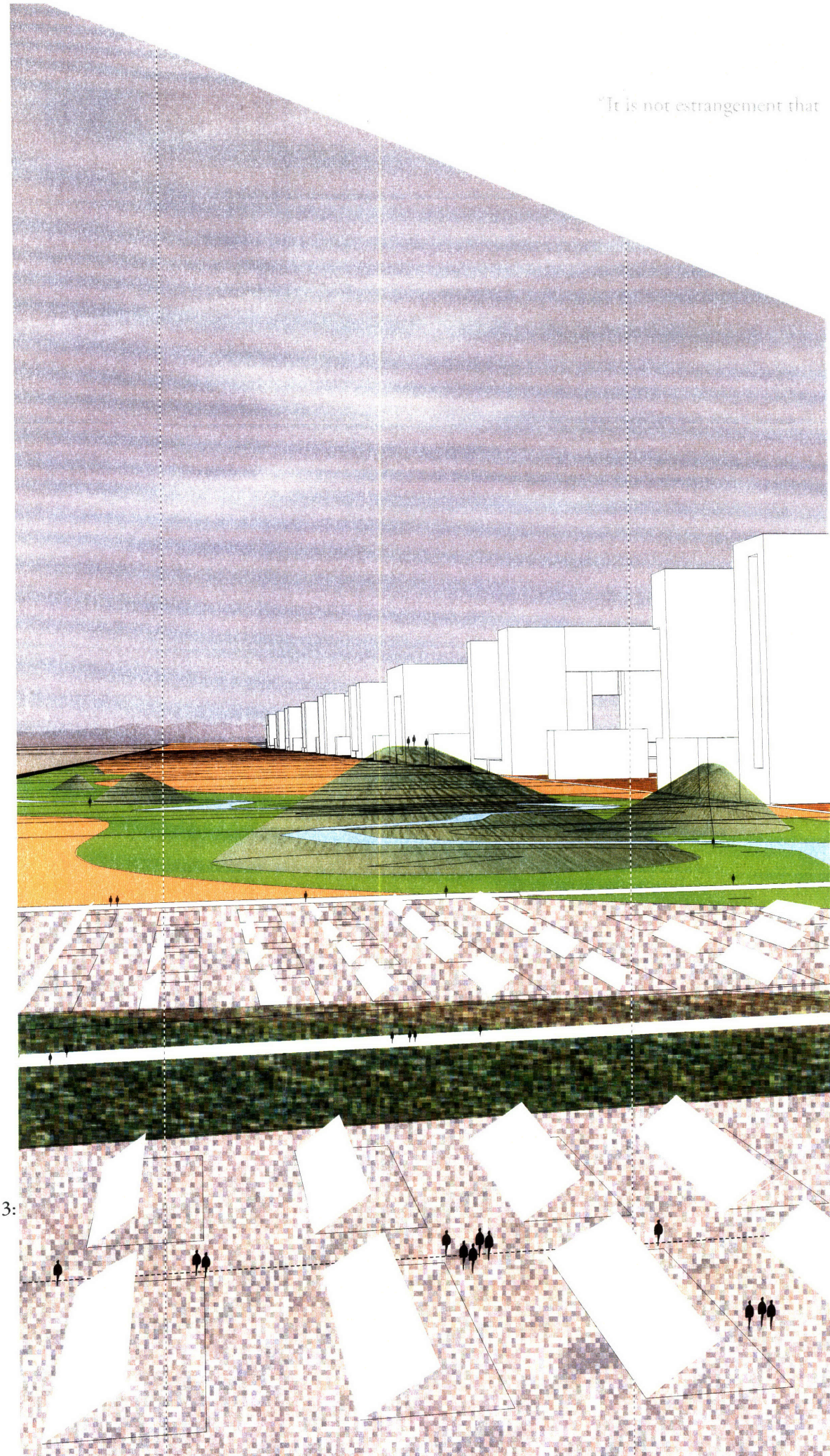
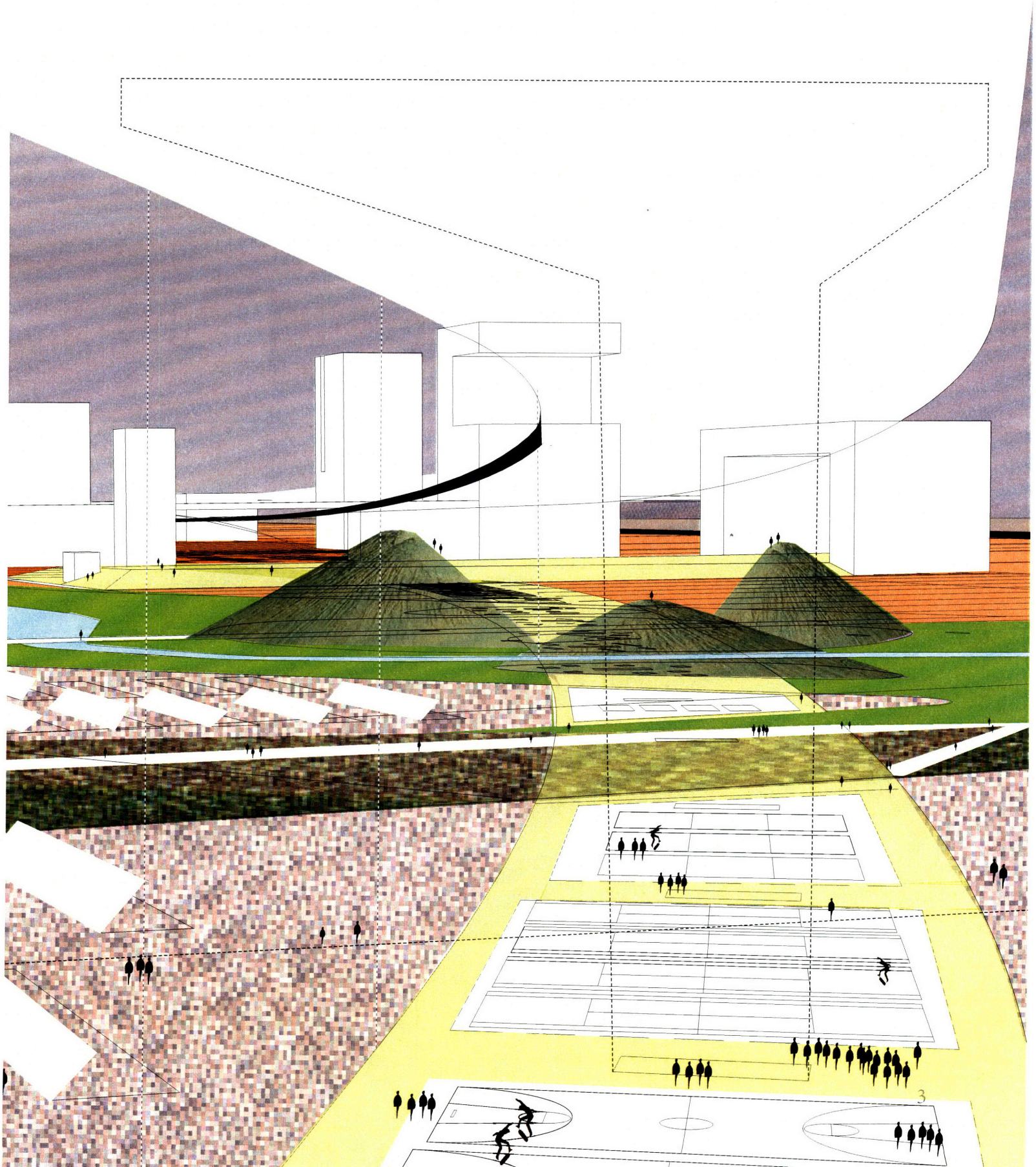
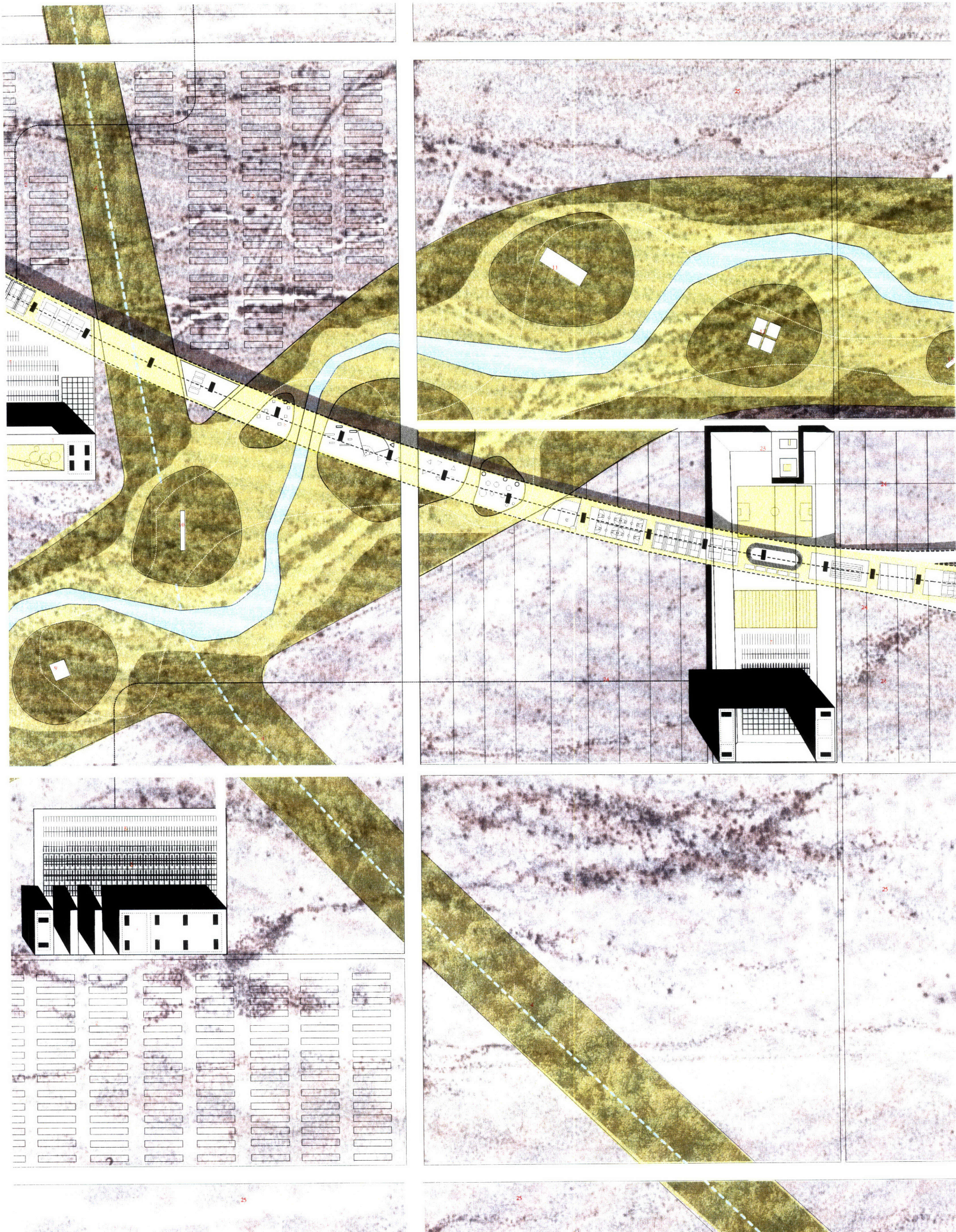


Fig. 4.14.
Perspective of the Locus 3:
Linear Park City.
Tien-Yun Lee, 2008.

cures landscape. It is the other way around. And the estrangement that landscape procures...is absolute." -Jean-Francois Lyotard-





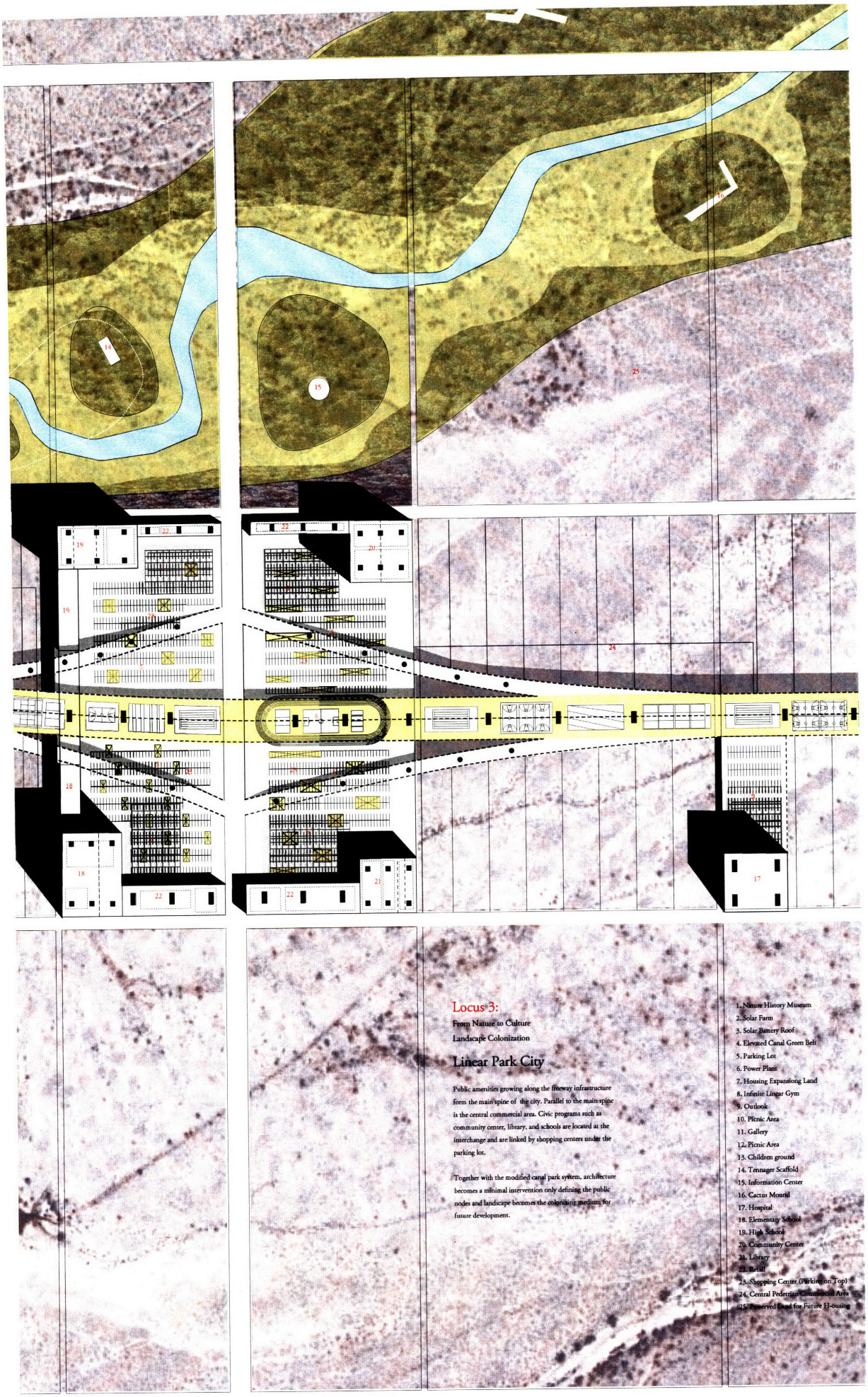


Fig. 4.15. Plan of the Linear Park City. Tien-Yun Lee, 2008.

Design Locus 3: Public Structure as Linear Park City

This locus represents the process from nature to culture. That is, landscape colonization.

Public amenities growing along the freeway infrastructure form the main spine of this typology. Parallel to the main spine is the central commercial area. Civic programs such as community center, library, and schools are located at the interchange and are linked by shopping centers under the parking lot.

Together with the modified canal park system, architecture becomes a minimal intervention only defining the public nodes and landscape becomes the colonizing medium for future development.

The park reclaims and refines the original stream of the land and therefore transform them civic programmatic use while leave enough capacity for the flood.

Phasing of the Belts/Bands

Stage I. Preparation

In this stage, the seeding of the infrastructure is the main concern. The location of the new freeway State Route 802 will be determined at this stage, which will also constitute the development locus. The former GM-proving ground will be the main prepared ground and base for the future development of the East

Valley.

1. Seeding of the new and existing infrastructure

State Route 802, the Williams Gateway Freeway location is determined and so are the locations of the interchanges. Gateway from the original urban freeway loop to the East Valley will be designated, which will change the fate of the post-industrial site, the former GM proving ground. The original tracks of the proving ground will be evaluated and some are changed into the service road of the new development. The upgrading of local highways begins this time.

2. Outlining of the public complexes

In this period, the interchange between the urban loop and SR-802 situated to the west of the former proving ground is completed. The first staging of reclaiming the proving ground will be finished, which will cut it into two pieces of developed area on the north and preserved area on the south. The logistic office complex starts to claim the freeway space, and the first stage of housing neighborhood, which will suit the workers of the logistic office complex, is completed.

3. The fully-built of the proving ground limit

The urbanization reaches the limit of the former proving ground and towards the east upgraded highway edge. The nature colonization of the future development on the east begins at this time: Several preserved green open spaces are outlined before the development.

Stage II. Adaptation

In this stage, the growth of reaches the former lightly urbanized ground: the farmland.

The agriculture field is transformed into much intense use for further urbanization. And the refine, renewal, and remodel of the existing infrastructure start to take place. The development limit meet with the virgin lands of the nature environment characterized by desert.

1. The completion of the logistic/office/shopping complex.

The second interchange of the logistic belt is completed and the growth reaches the former highway edge. Former green open spaces now integrate with the public nodes.

The urbanization of the linear park city begins.

2. Nature Colonization

At this stage, the limit and edge of the linear park city is defined. With the outer service road and development boundary outlined, several nature open space within the development chamber are preserved and further refined given the future consideration of the civic use.

3. Linear Park City fully built

The infrastructure of the linear park city is completed at this stage and the further parceling of the first stage housing belt and the logistic belt to the north of the former proving ground begins. The intensification of the density ensures the efficiency of the public infrastructure and the sustainability of the scarce nature resource.

Stage III. Anticipation

At this stage, the belts of development are completed and thus serve as a prototype of desert urbanization that can be applied into other parts within the valley. The main concern will be how to connect the public resource, especially the nature open spaces together with regional consideration. Therefore, the valley becomes a network clearly interwoven by human agency/ built environment, local ecology/colonized nature, and wildlife/the wilderness and preserved desert environment.

1. Built out of the four belts

Four belts reach their development limits, which will house 150,000 people with a density of 3,000 people per square mile. The connection between the four belts begins, which will basically be the highway infrastructure and water resource concern. Space that are not defined by the belts are preserved as urban parks, and each of them will be roughly 2 square mile.

2. Expansion beyond the belts

The housing expansion between the belts begins. Green open space starts to integrate the existing water infrastructure as a unified entity along the canal. Therefore, the canal becomes a public activity catalyst that forms a larger public realm to not only local residents, but also to the well being of the entire valley. It also connects the four belts isolated belts.

3. Application of the belt strategy

Future development beyond the site will also use the belt strategy used in this proposal to search a

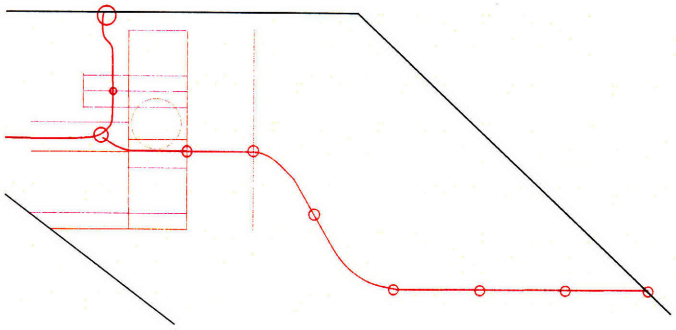
balance between the growth pressure and the environment sustainability: The built environment will be condensed in the outlined belts with the colonized nature open space within, and what is beyond the belts will be the nature, the preserved wilderness, the desert iconography.

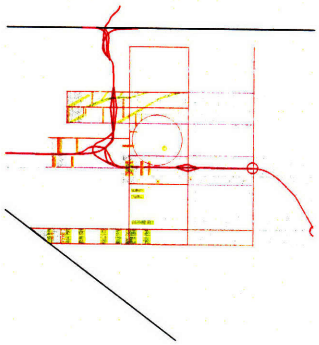
The phasing of the entire development will take 30 years.

Notes

1. City of Mesa, http://cityofmesa.org/residents/about_mesa.aspx.
2. History of Mesa Arizona, Mesa Arizona Convention and Visitors Bureau, http://www.mesacvb.com/static/index.cfm?contentID=97.
3. Ibid.
4. City of Mesa, http://cityofmesa.org/residents/demographics/default.aspx.
5. Ibid., http://cityofmesa.org/residents/demographics/age.aspx.
6. Ibid.,http://cityofmesa.org/neighsvc/Housing_Master_Plan/pdf/Mesa_Profile.pdf.
7. Phoenix - the Valley of the Sun @ RockyMountainRoads, http://www.rockymountainroads.com/phoenix.html.
8. Development planned for GM Proving Ground property, *Phoenix business Journal*, http://www.bizjournals.com/phoenix/stories/2006/04/03/daily53.html?from_rss=1. see also New project near airport grounded in Mesa, *Eastvalleytribune,* http://www.eastvalleytribune.com/story/77332.
9. Mesa Gateway Strategic Development Plan, City of Mesa, http://cityofmesa.org/citymgt/mesa-now/issues/gatewaysdp.aspx
10. Ibid.
11. Ibid.
12. Wall, Programming the Urban Surfaces

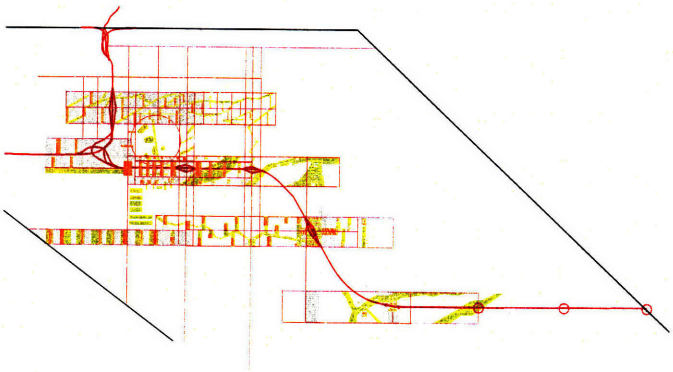
Stage I. Preparation

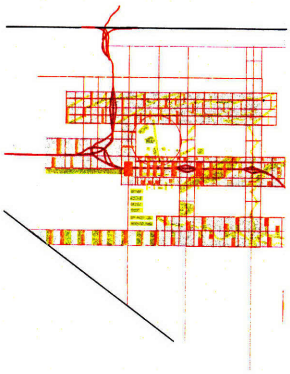




STATE ROUTE 802 (WILLIAMS GATEWAY FREEWAY) LOCATION DETERMINED
INTERCHANGE LOCATION DETERMINED
GATEWAY OF THE NEW CITY DETERMINED
PROVING GROUND ROUTE CHANGED FOR WEST-EAST DEVELOPMENT
EVALUATION OF PROVING ROUTES FOR LOGISTIC SERVICE ROAD
LOCAL HIGHWAY UPGRADED

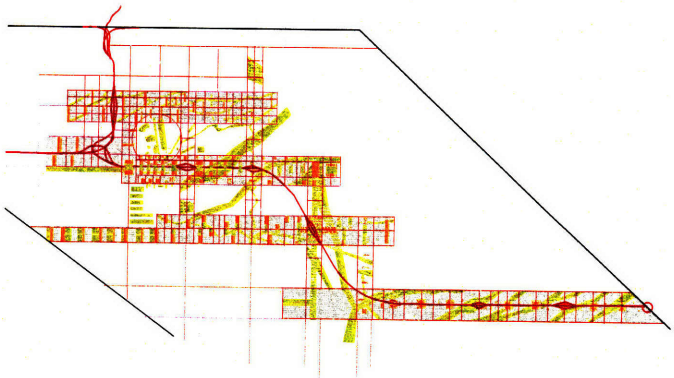
Stage II. Adaptation

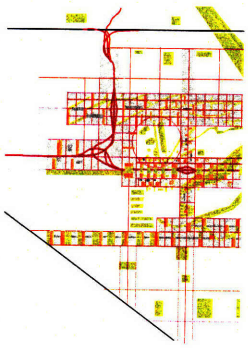




LOGISTIC/OFFICE/SHOPPING COMPLEX FULLY BUILT
SECOND INTERCHANGE OF THE LOGISTIC BELT COMPLETED
FORMER GREEN OPEN SPACES TRANSFORM INTO PUBLIC NODES
THE URBANIZATION OF THE LINEAR PARK CITY BEGINS

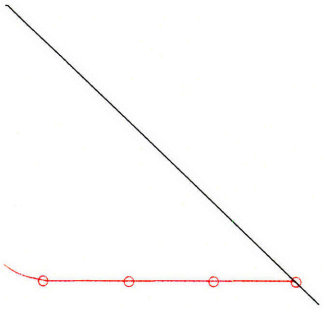
Stage III. Anticipation



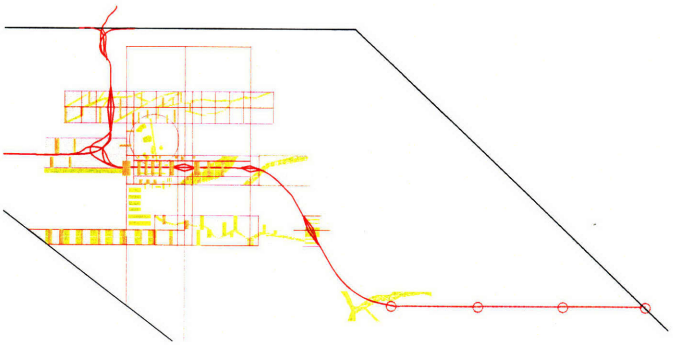


FOUR BELTS FULLY BUILT FOR 150,000 PEOPLE
CONNECTION FOR FOUR BELTS BEGINS
SPACE BETWEEN FOUR BELTS ARE PRESERVED AS PARKS

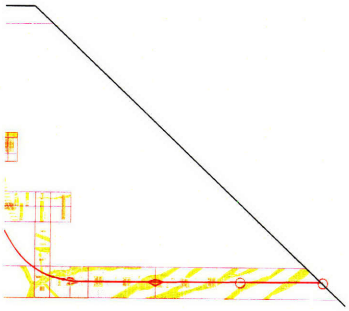
HOUSIN
GREEN C
FUTURE



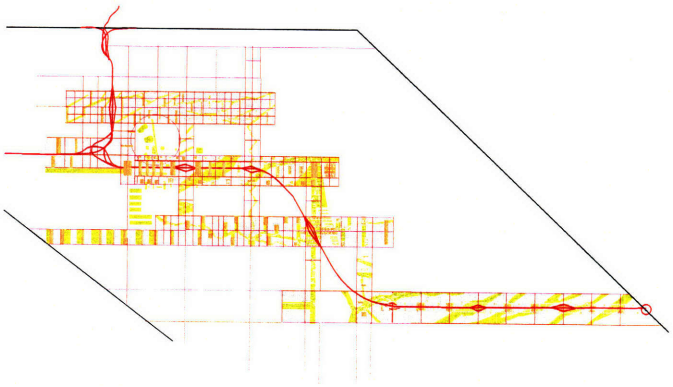
UBLIC COMPLEXES OUTLINED
ITERCHANGE AT THE MAIN ENTRANCE TO FORMER PROVING GROUND COMPLETED
IRST STAGE OF RECLAIMING THE PROVING GROUND FINISHED
OGISTIC OFFICE COMPLEX STARTS TO CLAIM THE FREEWAY SPACE
IRST STAGE OF WORKERS HOUSING NEIGBORHOOD COMPLETED



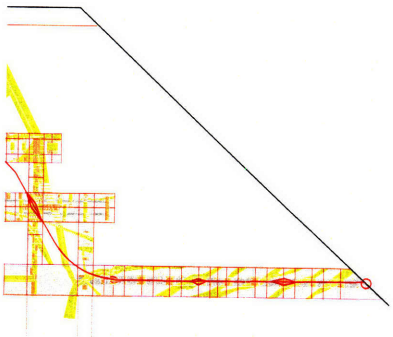
URBANIZATION REACHES THE LIMIT OF FORMER PROVING GROUND
NATURE COLOMIZATION OF THE FUTURE DEVELOPMENT BEGINS
SEVERAL GREEN OPEN SPACES ARE OUTLINED



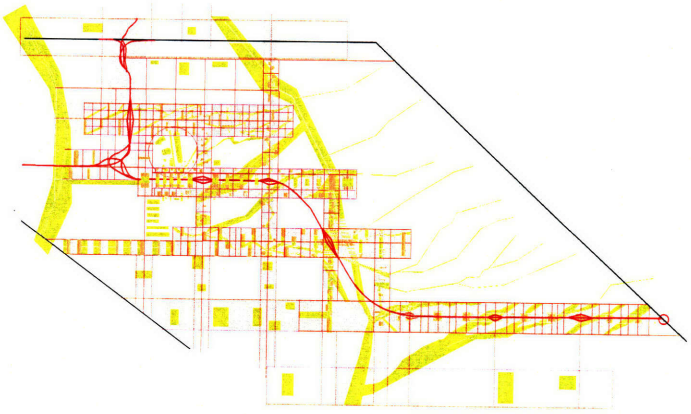
NATURE COLONIZATION WITHIN THE BAND COMPLETED



FURTHER PARCELING OF THE FIRST STAGE HOUSING BELT AND LOGISTIC BELT
PARK CITY FULLY BUILT



SION BETWEEN FOUR BELTS BEGINS
.CES STARTS TO INTEGRATE AS A UNIFIED ENTITY ALONG THE CANAL
)PEN SPACES ARE OUTLINED



FUTURE APPLICATION OF THE BANDS

Fig. 4.16. Phasing of the belts. Tien-Yun Lee, 2008. 123

Chapter 5. Conclusion

Towards the Hybrid Realm of Being and Nothingness

Given the setbacks of modernism, the newly burgeoned landscape urbanism discipline seems to offer a panacea of avoiding rigidity and dogma, meanwhile provide a new possibility for the uncertainty and indeterminacy. However, it still remains vague regarding the crystallization of theory base and predictable limits when dealing with the urban issues. Can landscape finally become the salvation of urbanism? Can urbanism finally flatten its meaning and complexity to the new hybrid? Can we finally control the uncontrollable, and eventually stage the uncertainty of contemporary metropolis?

Landscape urbanism critiques modernism by denying the oversimplification and applying the broader consideration of larger ecological, economic, social, culture, and political situations. The central thesis of this discipline inclines to find the in-between possibilities beyond architecture and ecology solution: it ends up with the opposite of concrete form and towards a flexible open structure. Therefore, how to bring this open structure into being in the meantime avoiding dictating rules and too-free nothingness becomes critical when discussing the potential and promise of landscape urbanism.

This open structure, will serve as a framework of triggering the new freedom and democracy of the ordinary life of contemporary metropolis. The point will be how to find the potential ground and strategic points of the critical complex rather than offering an overwhelmingly congested overall plan.

The structure is aimed to be a flexible and changeable scaffold of the new public need. It is composed of control and free spaces that regulate the social need of the metropolis.

Rather than vagueness, it has limits and locus in terms of indeterminacy and uncertainty.

It is public structure.

Staging of the Uncertainty: Public Structure

Three aspects of public structure constitute the discussion of contemporary landscape urbanism agenda: site, scale, and program.

Site

Within the discussion of public structure, what is the appropriate site for establishing the public structure becomes crucial since the traditional notion of the term "site" is blurred and broadened to a wider meaning that has greater capacity for social connection and cultural representation. Basically three types of sites becomes the new common ground for the cross-disciplinary discussion of the public structure of landscape urbanism:

1. Post-industrial debris recovery

Being toxic, filthy, and once under valued, the post-industrial site carries the hope of redeeming the city in the contemporary context because it either occupies an enormous land or a very strategic location in the urban context while having a relatively cheap land value. It becomes the perfect ground for extraordinary imagination of use. Abandoned factories, former landfills, and waste land, now invert their roles from the former forgotten margins to memorable essence of contemporary metropolis. Although not an antidote yet, landscape provides a modest medium together with architecture for dealing with post-industrial site where architecture cannot act as a single overall solution. From social meaning, what used to prosper the city now serves as the renewal mechanism for next-stage social production: from industrial production of goods and visible assets to the cultural representation of invisible identity and environmental need.

2. Agrarian territory urbanization

Themed Suburbia, Edge City, Intermediate Ground, these sites coincidently locate on the interface of the sprawl and resistance of contemporary metropolis. At the urban fringes, they once marked the boundary of human civilization in front of the hazard environment by irrigating farmland outside the city and the core. Now they become the prepared ground for next step urbanization: They are already parceled, water sufficient, and large enough for sub-division while the original use of agriculture cost too much water and too expensive in terms of productivity of land and labor. Agriculture now proves its inefficiency of a production mode and transforms itself to the unprecedented being: tourism. The productivity now becomes the revenues from tourists rather than from crops. Farmland with resorts

now becomes the new scenery of agrarian field.

3. Nature colonization

Man in the wilderness. Urban and regional park is an implication that human has the primal desire of being in the natural environment, no matter it is man-made or not. The park is not only a intriguing mimic of mother nature; It contains the mixed purpose of leisure, culture, and nature and thus is an instrument that forges the collective image and meaning of the civics, and the complexities and wonders that fulfill the becoming of a great metropolis. Nature now no longer serves as a symbol of "the good" or "the hostile", rather, it represents a new breeding ground of human and wildlife coexistence and harmony. It is not the secular or insular mother nature any more but the colonized nature of human agency. The sublimity of the wilderness substitutes the pastoral romantic landscape and thus becomes the new democratic spaces that every species are treated and viewed equally by giving well rounded consideration. Nature is now culture.

Scale

With the rapid growth with global capitalism and urban sprawl, what used to be the measure of the city such as streets and blocks and streets now prove themselves to be obsolete. The new measure of scale is needed in dealing with the immense territory

in the era of satellite photos. Therefore, parcels become lots, blocks become patches, plans become fields, roads become corridors, and maps become surfaces. The question will be: what is the suitable size of a

landscape urbanism scale design?

When facing the immensurable territory, the tool of perception is beyond the meters and the feet. Kilometers and miles become the basic units. Beyond the scale of kilometers and miles, the space is meaningless because everything is collapsed to an extreme abstract flatness containing each own meaning. They are either too small or too big; they become either a tiny dot or massive patches.

What can be done hereby is only the diagrammatic suggestion and index, that is, the map. The endeavor of creating this map at this scale, mapping, will become the ideological graphic manipulation and the result can become extremely abstract and uncontrollable: they are either very neutral by fact or very individual by fiction. Since it is beyond human perception and immensurable, it becomes a mental map. This form is very unique in terms of shaping its characteristic and identity through the (dis)arrangement of different scale of things and thus creates new meanings. The scale becomes an important filter of information because different scale has its own definition of what is important and what is visible and how they can form together to become a matter of thing. The scale is the essential components of the sublimity.

Taking measures of the immensurable sublimity thus becomes important. In Frampton's term, it will become a matter of megashape. The very perceptible size of this megashape, will be the horizon, that is, 30 minutes of drive, 24 miles, which will be arguably a suitable size for the discussion of the public structure in landscape urbansim.[1]

Program

With the scale enlarged to a territory scale, what is the appropriate use under the scale of landscape becomes crucial. It will no longer be the simple designation of zoning, but a hybridization of programmatic functions.

1. Fixed Distribution versus Flexible Anticipation

Under a scale that is too large to design the whole thing, some components still can be outlined to imply the whole rather than a complete design. These components, anchors, and scaffolds, act as the trigger of future unpredictable activities. These kinds of event structures can be seen in the competition project for Parc de la Villette by both Bernard Tschumi and Rem Koolhaas.

2. Programmed Void

The emptiness, the left-over, the in-between, they inverse themselves from the marginal role in the traditional urban design process to the main medium of controlling tool in the landscape scale design. They become the figure rather than the ground. The Mulun-Senart competition by OMA/Rem Koolhaas best illustrates this trend.

3. Mix use (double program) and juxtaposition of programs

Considering the time factor, the shifting of fixed programs by arranging them vertically(mix use) and horizontally(parallel juxtaposition) rather than create a new

program. It is an intentional mixture that aimed to create the unpredictable activities meanwhile set up the limits of what is definable.

When facing the territory too large that we cannot do anything in detail. What we can do is, in Koolhaas's term, "irrigate the territory of potential."

What matters in the territory scale is not architecture nor landscape architecture, but the infrastructure, namely the combination and reorganization of the former both.
In a scale so large like this design, what really important is the infrastructure, the public structure, say, public spaces (fields) and what it defines and domains, the leftovers.
Therfore, the public structure becomes the Mass, the collective infrastructure.

Rather than a fixed completed work, the structure within the landscape scale lacks the central core, it is formed by polycentric centers dispersed all over the territory. It is a field full of loose patches ready for next step development rather than a predetermined organization. In Alex Wall's term, it is "a field of social instruments," a matrix of networks and nodes rather than completed system. Therefore, the public structure acts as collector and distributor that defines control space (nodes) and free spaces (surfaces) and in the end triggers the liberation of uncertainty.

The Public Structure as the New Public

As the new critical issue such as global capitalism, regional ecological crisis, and unpredictable political shift emerged, we can no longer use the physical solution claiming a prototype to suit everywhere in the world to apply to the contemporary metropolis—We are in the era that there is no cosmopolitan-ideal plan. As Koolhass mentioned, " (Atlanta) shifted from center to periphery so quickly and so completely that the center/edge opposition is no longer the point, There is no center, therefore no periphery."[2] There is no mass and void, fullness or emptiness, but a higher sociologically-defined plane that embraces them. We are in facing a time that there is no either-or, but both.

What we can still do, in this fluid and changeable context of the uncertainty, is the definition of the critical mass, that is, the most important joints and anchors of massive and collective nodes which constitutes the fields of social life of the civic, that is, the public realm, the meaningful public spaces. The task of the designers will be how to find these strategic points and how to outline them, define them, and finally give them a meaningful newness. It is not easy in that there is so much overwhelming information in the contemporary city life and everything could be possible but also vulnerable, not to mention the massive structure that provides the social interaction of everyday life such as transfer stations, public libraries, interstate highways, shopping centers, and large urban parks.

Public structure, based on the manipulation of the large-scale artifacts, proposes a solution with a larger envelope that embraces the discipline from ecology, capital, politics, economy, society, planning, architecture, landscape. Therefore, designers not only act as a beautifiers of the society, rather, they

become the system builder. As Tomas Hughes once mentions,

"system builders preside(d) over technological projects from concept and preliminary design through research, development, and deployment. In order to preside over projects, system builders needed to cross disciplinary and functional boundaries—for example, to become involved in funding and political stage-setting. Instead of focusing upon individual artifacts, system builders direct their attention to the interfaces, interconnections, among system components."[3]

In this sense, urbanism can arguably be predicted and produced only through the finding of the critical points of the system and network but it doesn't mean to simplify the urban meaning to some simple doctrines, rather, it suggest the total consideration of how a simple act can do to push the urban potential to the limit. It is minimalism and reductivism in someway, but with the fully research and understanding of the urban context as a prerequisite and then filter the points of what is the most important thing and what is not. These strategic points are the very essence of public structure, which legitimate the indefinable to meaningful fields, and thus constitute the public realm. However, it doesn't mean that the individual object is not important, rather, it means that the relationship between and beyond the objects become much more critical—the webs, the networks, and the meshes. It is the meaningful context behind the object that makes urbanism happen.

In sum, it is the publicness, the collective life, the mass desire that matter in the discussion of urbanism. Landscape, as a public structure that regulates the urban system, provides a framework that stages the new ground for design practice in urban context. The notion of landscape as urbanism triggers the debate of how to bring new forms and theories into being based on the research and understanding

of the public network. It provides a platform that different discipline has a chance to integrate and be integrated into a larger massive and collective perspective. The new urban reality such as performance-based, research-oriented, logistic-focused, and networked characteristics all inevitably formulate themselves as the framework of the new public realm.[4]

That is the public structure, which makes landscape urbanism happen.

Notes

1. James Corner, *Taking Measures across the American Landscape* (New Haven: Yale University Press, 1996), 56.
2. Rem Koolhaas and Bruce Mau, *S, M, L, XL* (New YorkL Monacelli Press, 1995), 836.
3. Tomas Huges, *Rescuing Prometheus: Four Monumental Projects that Change the Modern World* (New York: Vintage Books, 1998), 7.
4. Chris Reed, "Public Work Practice," *Landscape Urbanism Reader* (New York: Princeton Architectural Press), 283.

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