

The City of Aetheria

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in Architecture

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ABSTRACT

Winston Churchill said “We shape our buildings; thereafter they shape us.” And this holds true for our cities as well. The intent of this thesis is to develop an understanding of the origins of the city, historic theories of planning, Utopian proposals, the current state of the city, and what the future the city may hold.

The City of Aetheria is a world created via poetic imagination, the sublime product of mental activity; as a study intent is to discover the fundamental principles of the city, making explicit the nature and significance of fundamental concepts of urban design theories and utopian ideals while demonstrating the elements of urban form and the effects of urban process through history. Incorporating historical archetypes and typologies of architectural form; the design of the City of Aetheria was an investigational tool to study the Image, Form and Elements of the city.

Dedication

To my parents James H. and Jacqueline D. Huck and my grandmother Ellen D. Huck, who sacrificed their own comfort in order to provide the finest education available. Thanks to their efforts the Author is a Professional Architect as well as life-long student of history, philosophy, art, science and technology.

To my thesis committee; Hans C. Rott, Steve Thompson, and H. Scott Gartner, for teaching me how to think instead of what to think.

To all my teachers including Donna Dunay, Bob Dunay, Gene Edger, Humberto Rodriguez-Camilloni, Ellen Braaten, Tom Regan, and a long list of other teachers and friends for providing me the foundation that this work was built upon.

To my Sifu Khan Loo for his wisdom and friendship, teaching me peace and harmony of mind, body and spirit

Special thanks to Olivio and Lucy Ferrari for showing me Europe.

There are no words sufficient to express my gratitude.

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INTRODUCTION

The City of Aetheria is the manifestation of a dream, a memory; nowhere and everywhere, eternal and ephemeral, substance and shadow, ancient and modern. The city of Aetheria is the archetype; pure, perfect, transcendent of space and time, the Form from which all cities are patterned. A synthesis of Utopias, Ideal Cities and urban design theories, the city diagrams the complexity of the urban environment to create a modular system of components. The archetype of 'the city' is itself composed of the institutions; the temple, the agora, the citadel and the house, and public spaces; the street, the piazza, the park each an archetype in its own right.

The City of Aetheria has at the heart an ancient citadel and fortress surrounded by a canal and inner harbor, a medieval city surrounds the fortress, once surrounded by a bastioned wall, another canal lies just beyond, the outer harbor and open space are bordered by a modern metropolis envelopes this historic center and extends into infinity.

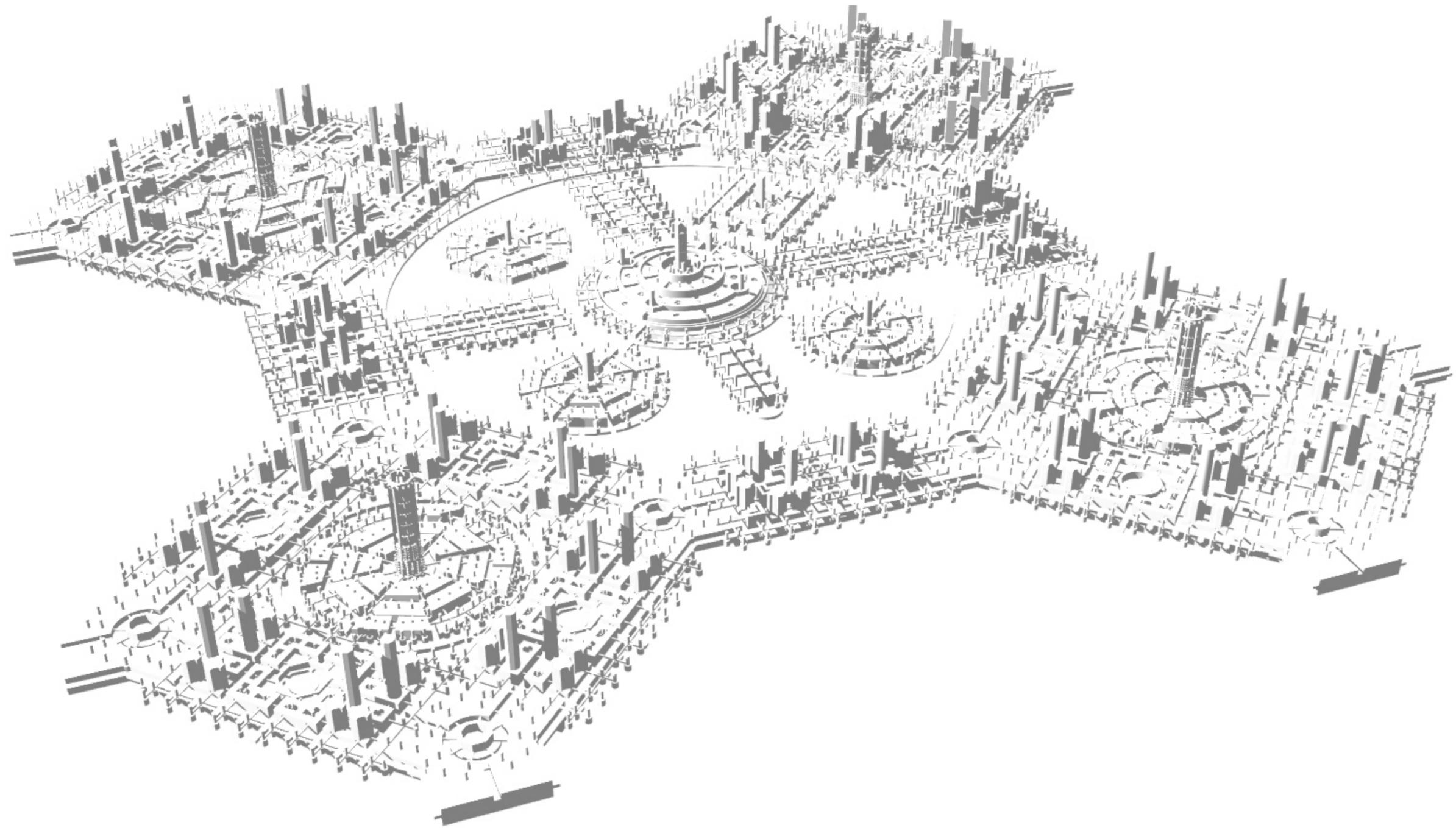
Each city is a phenomenon, a unique occurrence, a temporal portrayal of 'the city' influenced by events, environment, and character. A city exists in time and over time, it is experienced by the observer as events and it is an artifact of the memories and traditions layer overtime one upon the other each of these becoming the archetypes of a city.

Plato believed that archetypes were pure mental forms that were imprinted in the soul before it was born into the world. His archetypes were collective in the sense that they embodied the fundamental characteristics of a thing. The essence of a thing, the unchanging and unchangeable nature of something which is necessary to its being the thing it is; its necessary properties.

The psychologist Carl Jung considered archetypes, what he called '*primordial images*' to be innate, universal prototypes for ideas that are used to interpret observations. In '*Man and His Symbols*' Jung states; "*The term 'archetype' is often misunderstood as meaning certain definite mythological images or motifs. But these are nothing more than conscious representations; it would be absurd to assume that such variable representations could be inherited. The archetype is a tendency to form such representations of a motif - representations that can vary a great deal in detail without losing their basic pattern.*"

Why Aetheria? According to Greek mythology, Aether was one of the primordial deities, the first-born elementals. Aether was the personification of the upper air. In *Timaeus*, Plato while describing air states that “*there is the most translucent kind which is called by the name of Aether.*” He believed Aether to be the pure upper air that the gods breathe, as opposed to the normal air breathed by mortals. Aether however was not an *archai*, what Plato called the elements: earth, water, air and fire. Plato believed the elements to be geometric forms known as the platonic solids. Earth was the cube, Water was an icosahedron, Air was an octahedron and fire was a tetrahedron.

Aristotle disagreed with Plato and added Aether to the system of the four classical elements of Ionian philosophy as the "fifth element" or quintessence. The classical elements were considered the simplest essential parts of which everything consists. Aristotle believed that the four terrestrial classical elements were subject to change and naturally moved linearly. Aether however, according to Aristotle, had none of the qualities the terrestrial classical elements but was located in the celestial regions and heavenly bodies. Aether was neither hot nor cold, neither wet nor dry. Incapable of motion of quality or motion of quantity, Aether was only capable of local motion. Aether naturally moved in circles, and had no contrary, or unnatural, motion. Aristotle postulated that fire, earth, air, and water were earthly and corruptible. However Aether being celestial was an unchangeable, heavenly substance.



The City of Aetheria

Eudoxia

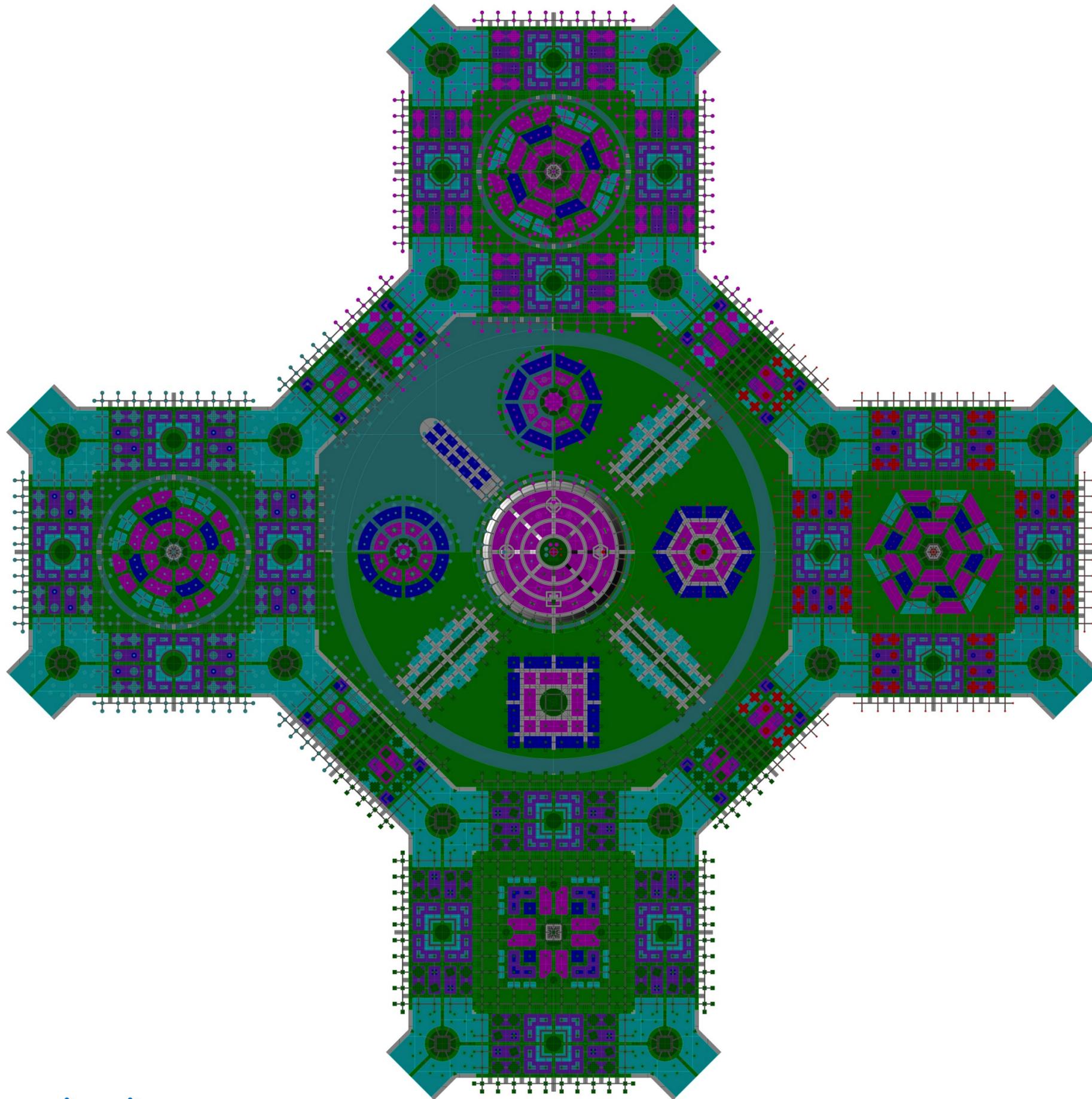
“In Eudoxia, which spreads both upward and down with winding alleys, steps, dead ends, hovels, a carpet is preserved in which you can observe the city’s true form. At first glance nothing seems to resemble Eudoxia less than the design of that carpet, laid out in symmetrical motives whose pattern are repeated along straight and circular lines, inter woven with brilliantly colored spires, in a repetition that can be followed throughout the whole woof. But if you pause to examine it carefully, you become convinced that each place in the carpet corresponds to a place in the city are included in the design, arranged according to their true relationship, which escapes your eye distracted by bustle, the throngs, the shoving. All of Eudoxia’s confusion, the mules braying, and the lampblack stains, the fish smell is what is evident in the incomplete perspective you grasp; but the carpet proves that there is a point from which the city shows its true proportions, the geometrical scheme implicit in its every, tiniest detail.

It is easy to get lost in Eudoxia: but when you concentrate and stare at the carpet, you recognize the street you were seeking in a crimson or indigo or magenta thread which, in a wide loop, brings you to the purple enclosure that is your real destination. Every inhabitant of Eudoxia compares the carpet’s immobile order with his own image of the city, an anguish of his own, and each can find, concealed among the arabesques, an answer, the story of his life, the twist of fate.

An oracle was questioned about the mysterious bond between two objects so dissimilar as the carpet and the city. One of the two objects - the oracle replied – has the form the gods gave the starry sky and the orbits in which the worlds revolve; the other is an approximate reflection, like every human creation.

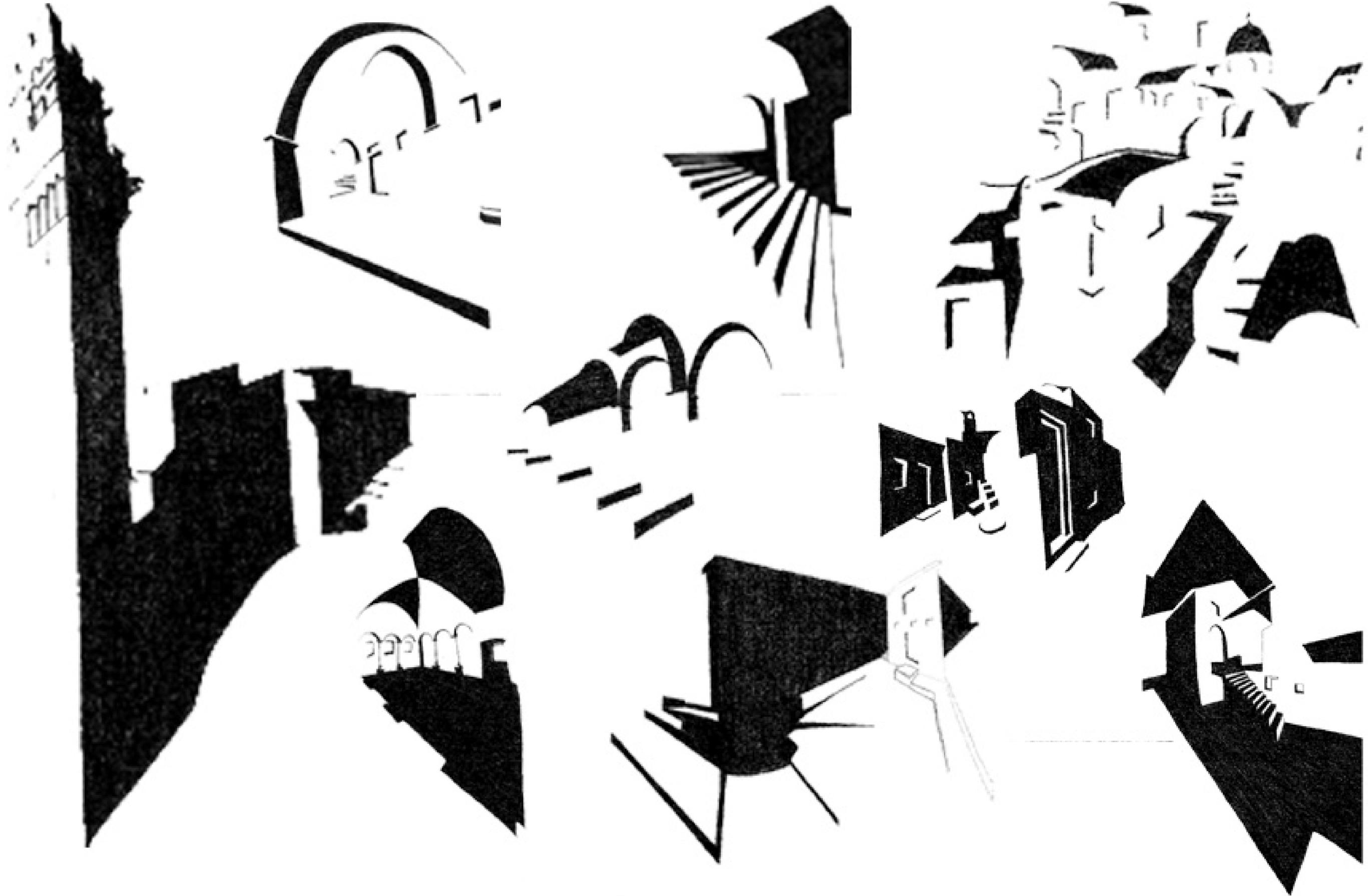
For some time the augurs had been sure that the carpet’s harmonious pattern was the divine origin. The oracle was interpreted in this sense, arousing no controversy. But you could, similarly, come to the opposite conclusion: that the true map of the universe is the city of Eudoxia, just as it is, a stain that spreads out shapelessly, with crooked streets, houses that crumble one upon the other amid clouds of dust, fires, screams in the darkness”

Invisible Cities, Italo Calvino



Inspiration

The City of Aetheria



Europe Sketches

The City of Aetheria

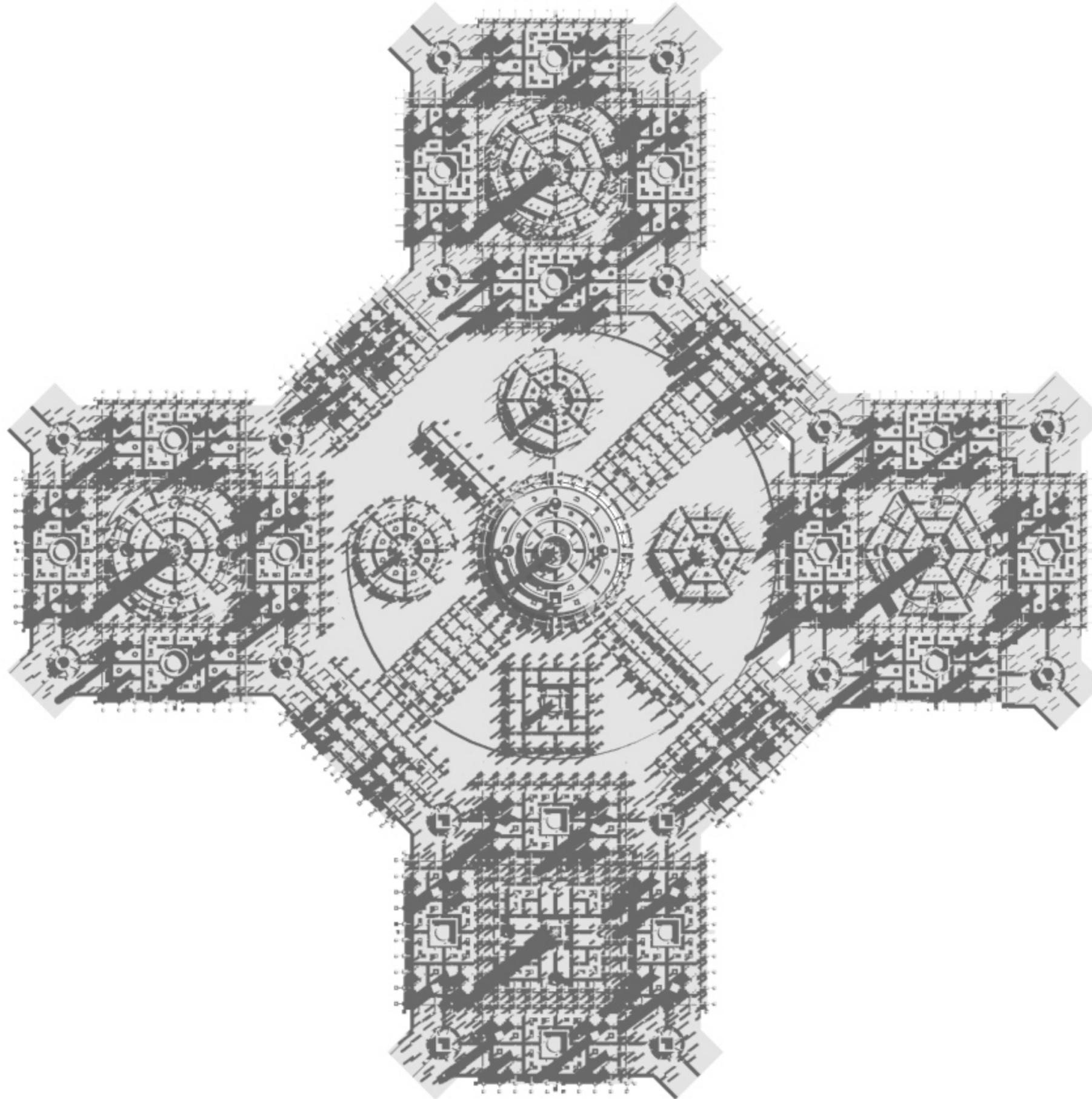
The City as Artifact

“Cities are amalgams of buildings and people. They are inhabited settings from which daily rituals – the mundane and the extraordinary, the random and the staged – derive their validity. In the urban artifact and its mutations are condensed continuities of time and place. The city is the ultimate memorial of our struggles and glories: it is where the pride of the past is set on display.

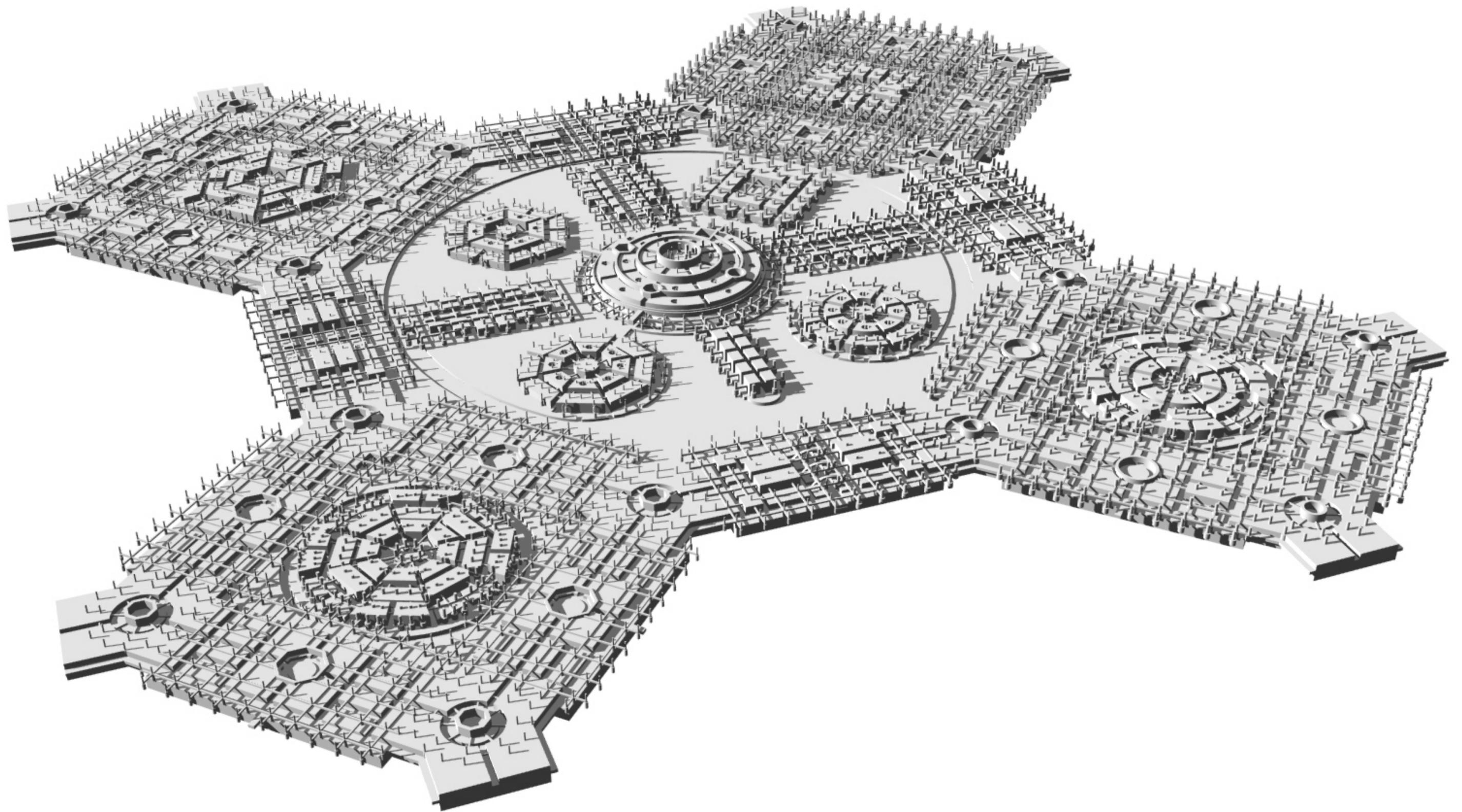
Sometimes cities are laid out by fiat, as perfect shapes and for premeditated ends. They may aim to reflect a cosmic rule or an ideal society, be cast as a machine for war, or have no higher purpose than to generate profit for the founder. A myth of propitiousness and high density may come to surround the act of founding. Or this act may be nothing more than a routinized and repetitive event. But whether born under divine guidance or the speculative urge, the pattern will dry up, and even die, unless people forge within it a special, self-sustaining life that can survive adversity and the turns of fortune.”

Spiro Kostof, *The City Shaped*

The City of Aetheria

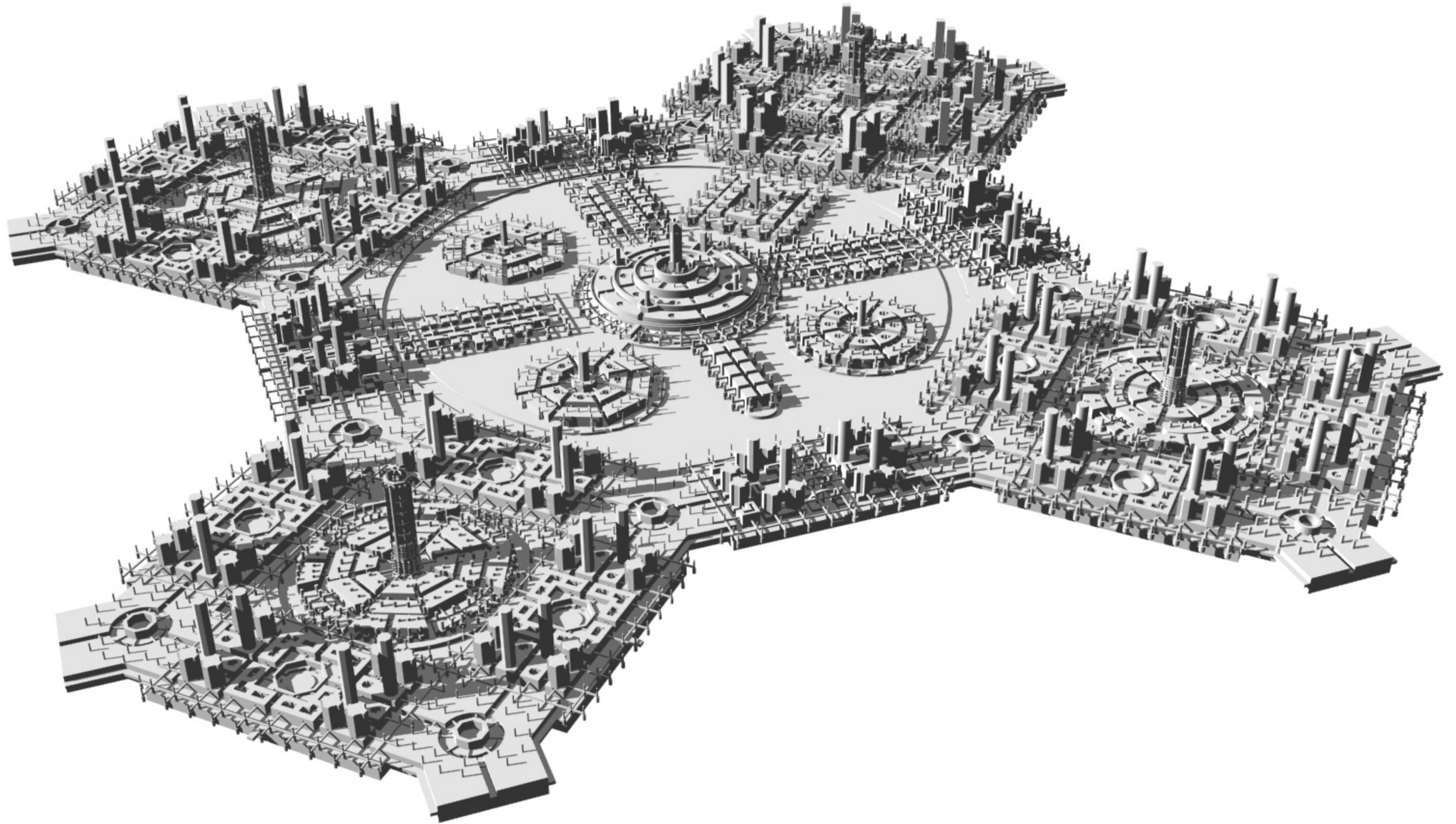


Satellite View



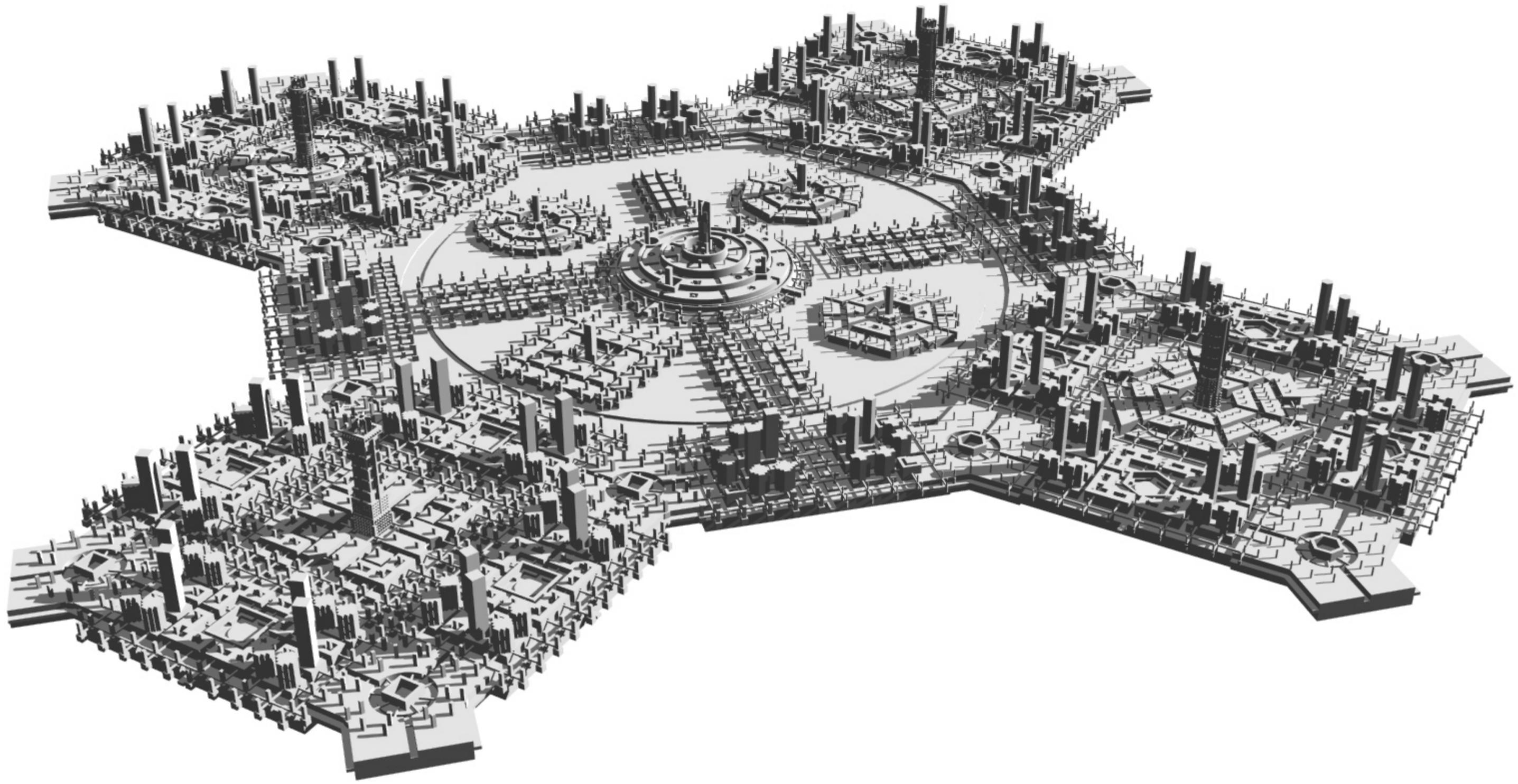
Plinth Network

The City of Aetheria



Birdseye View

The City of Aetheria



Birdseye View

The City of Aetheria

The Urban Skyline

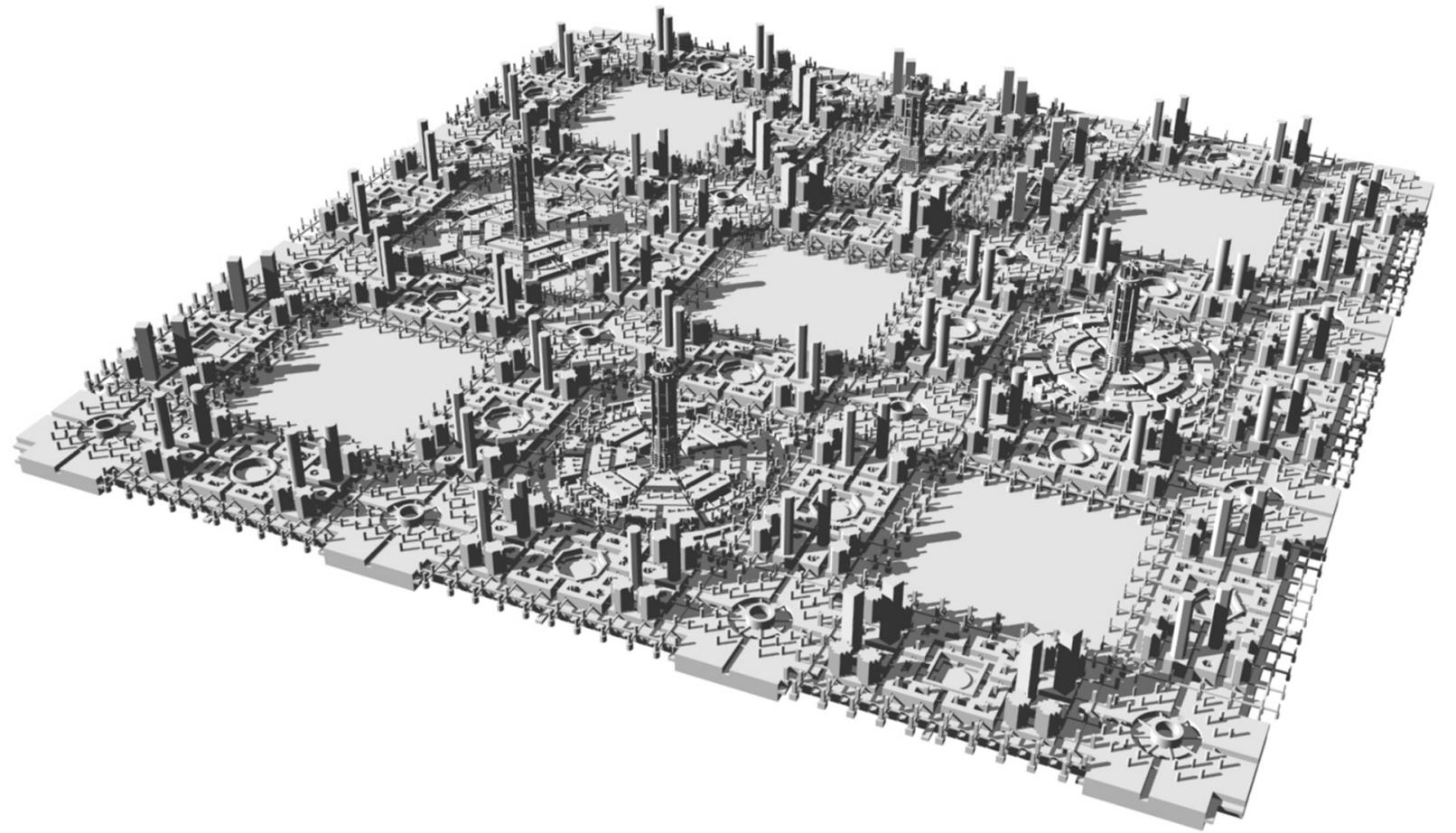
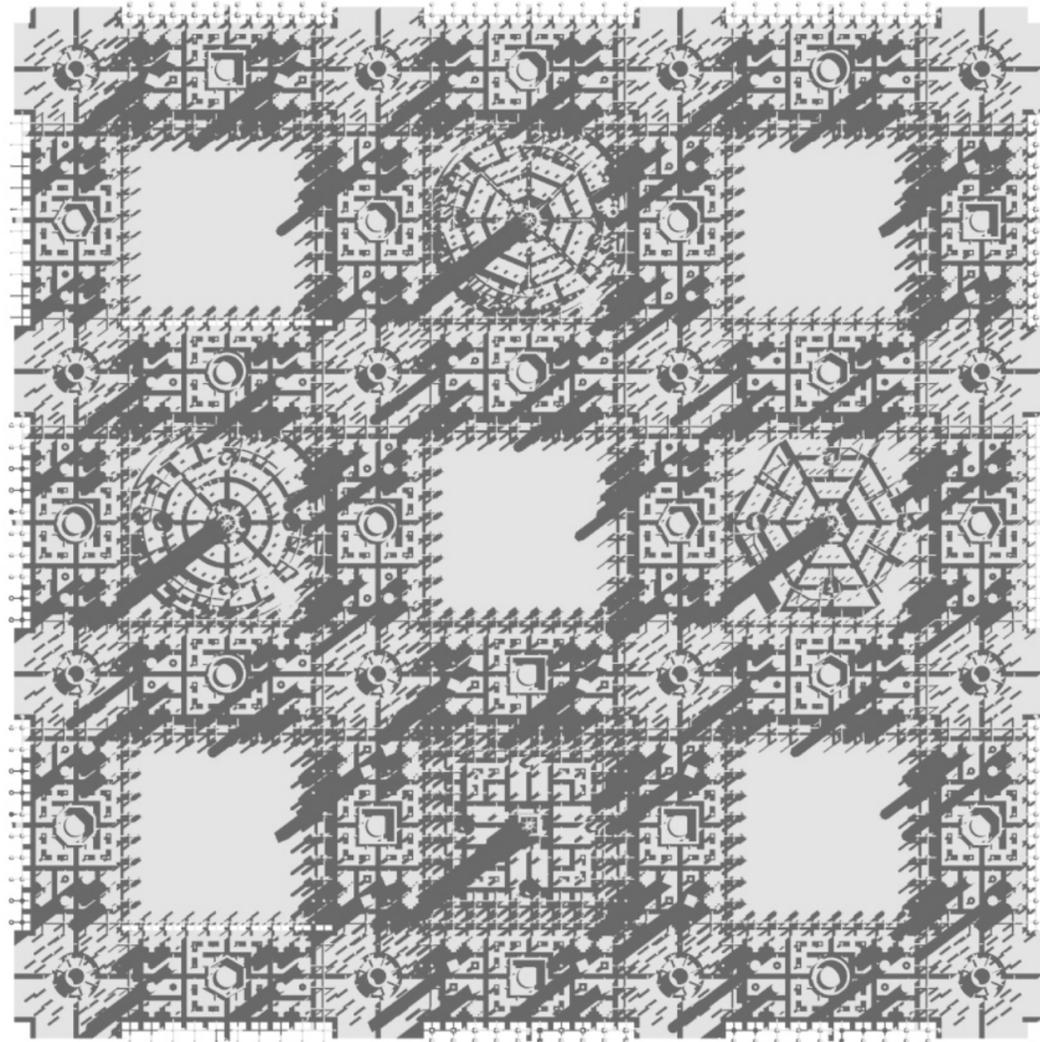
“Skylines are urban signatures. They are the shorthand of urban identity, and the chance for urban flourish. Cities of all descriptions and periods raise aloft distinctive landmarks, to celebrate faith and power and special achievement. These landmarks focus city forms and highlight city portraits. The presentation itself is contrived. It is chiefly meant for an external audience. The artist composes the urban skyline with the pilgrim, the official visitor, the common tourist in mind. This image changes slowly and deliberately. Contrast like that of Canaletto’s London and the city today were a long time in the making. Radical transformations – the thrust of factory smokestacks or corporate towers – signify cultural upheavals. When the towered railway terminal and its hotel lifts up its silhouette in emulation of the urban cathedral, we know that the old values are reduced or overtopped. When the city center ends up as an aggregate of tall office buildings, we recognize that the city image has succumbed to the advertising urges of private enterprise. The skyline, in the end, is a negotiated symbol. What stands out as the city’s official silhouette was given license to do so.”

Spiro Kostof, The City Shaped



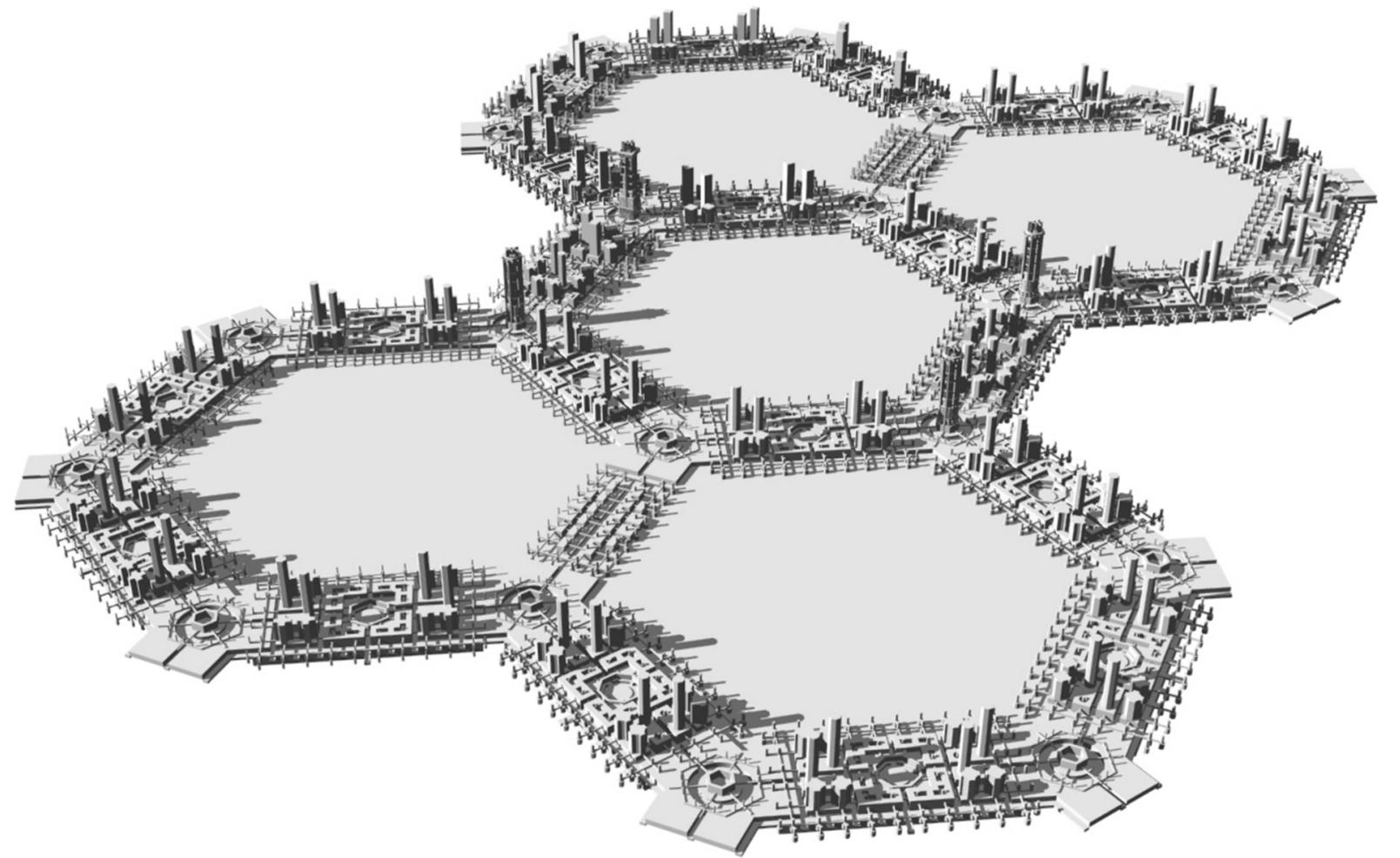
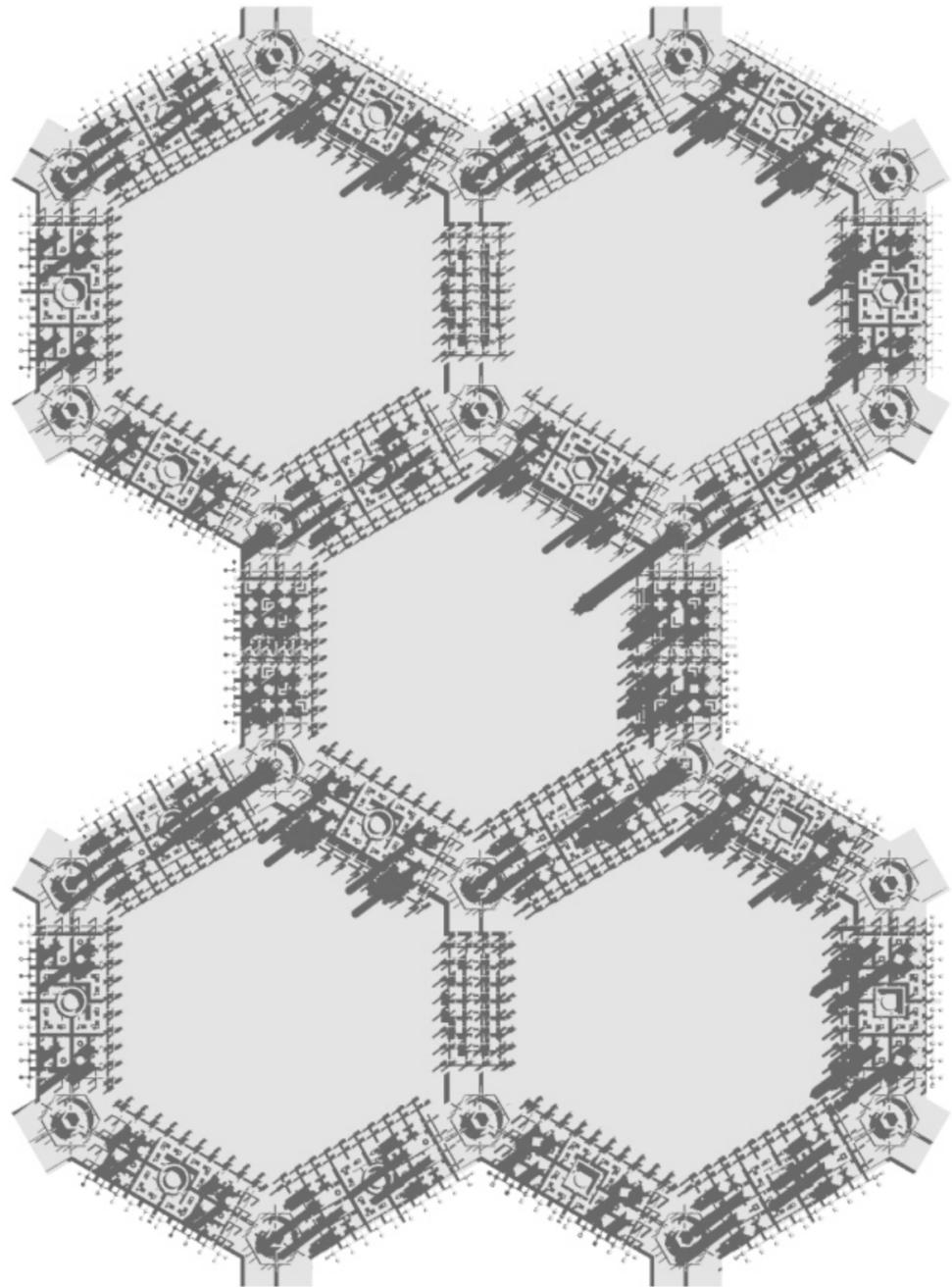
The Urban Skyline

The City of Aetheria



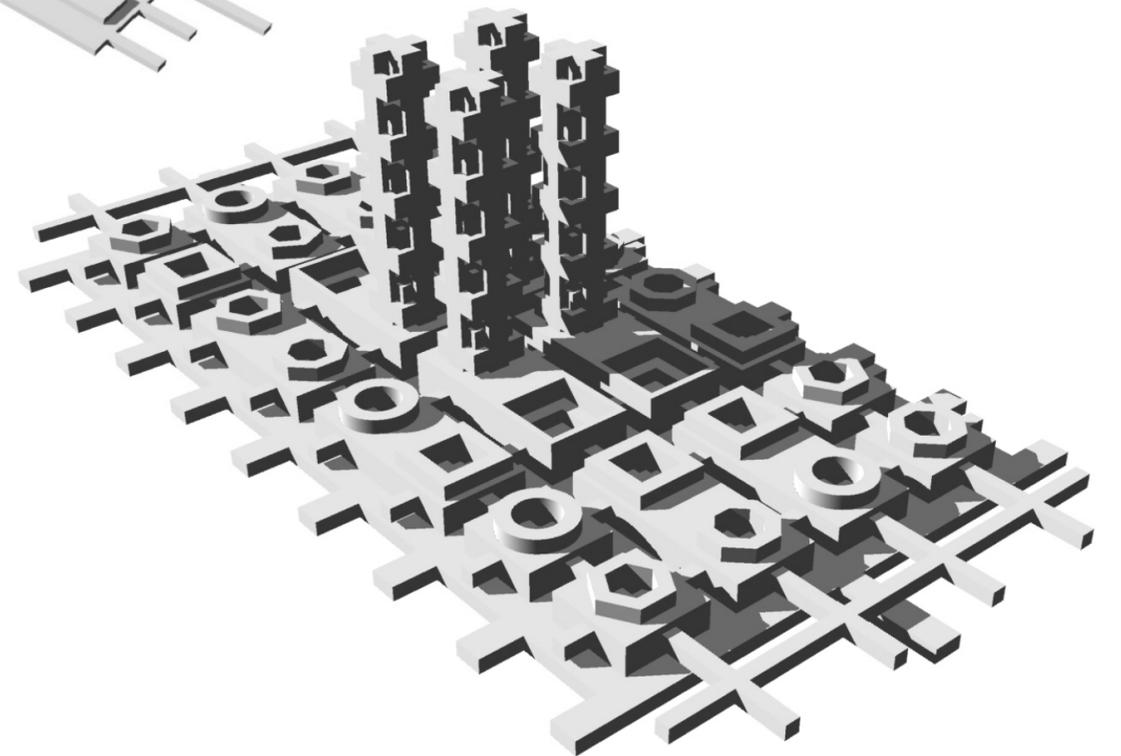
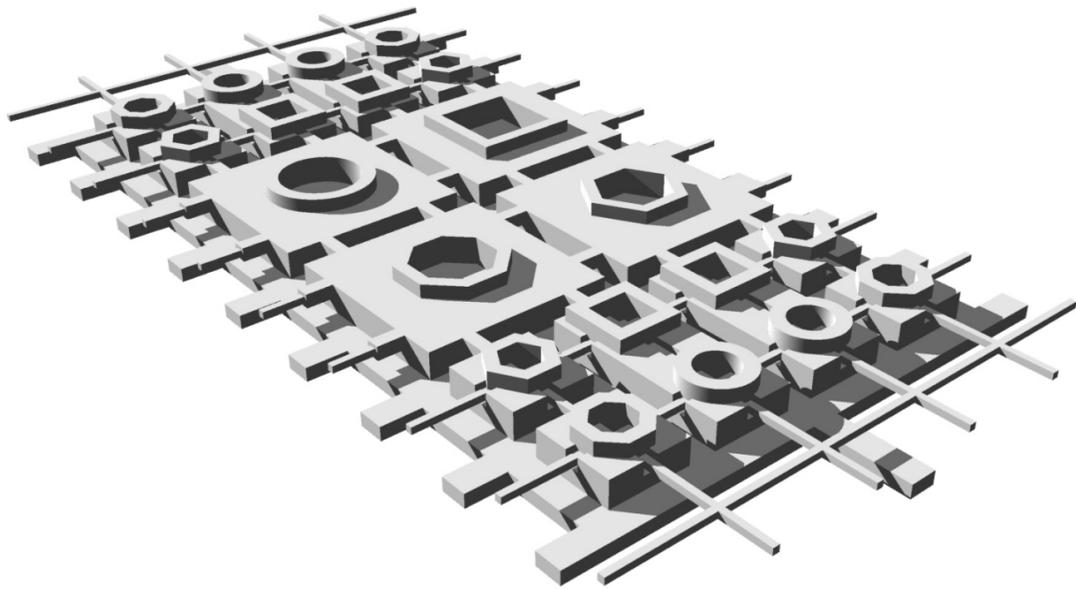
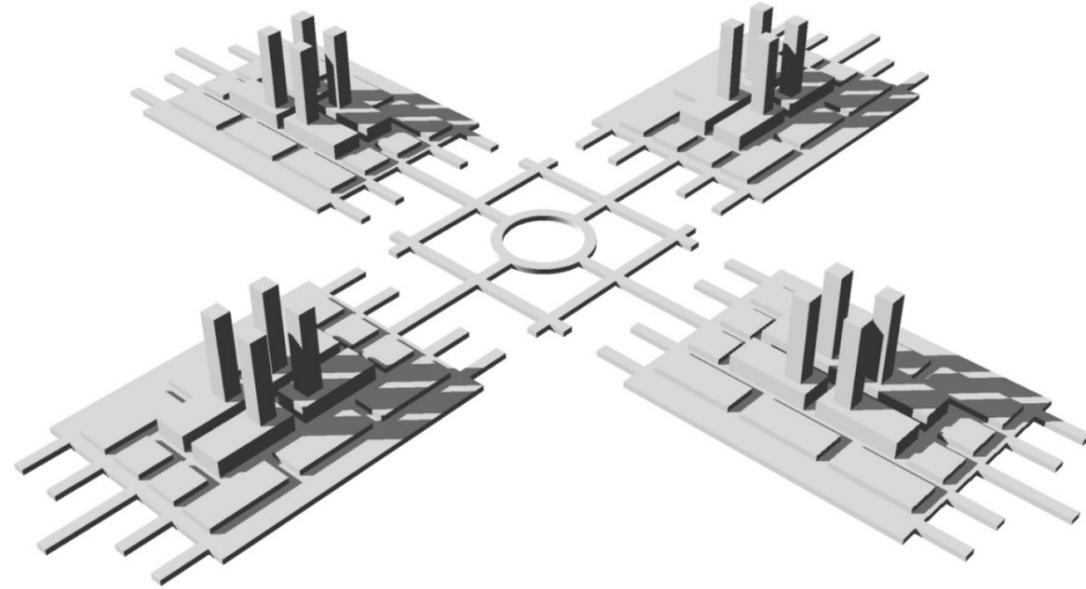
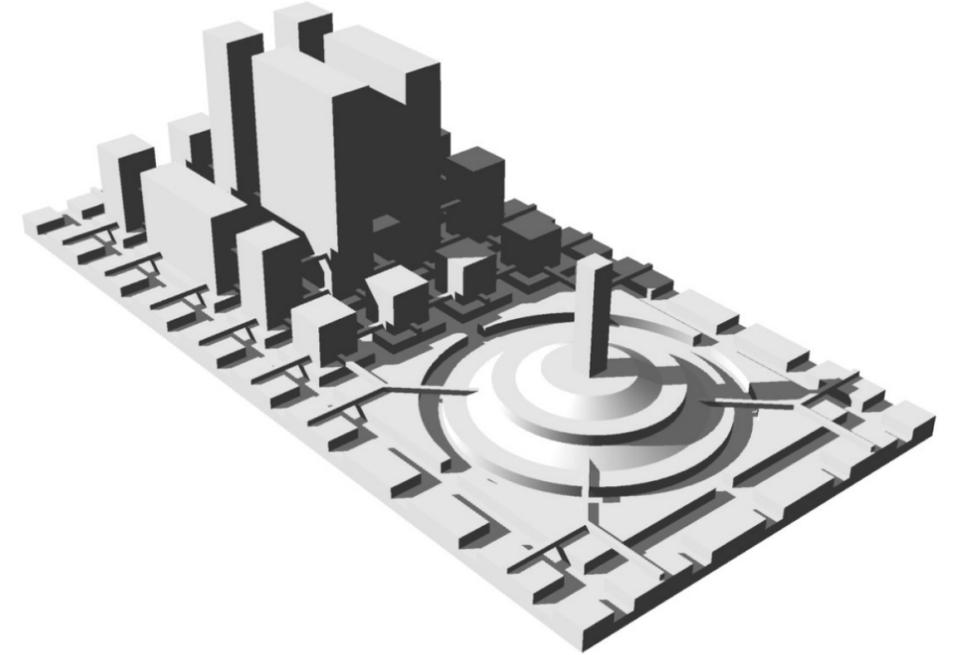
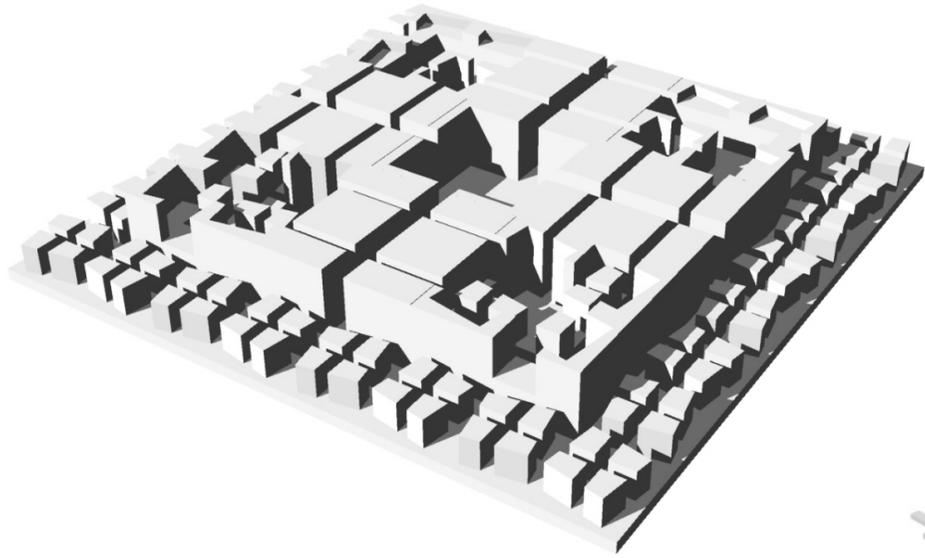
Alternate Layout I

The City of Aetheria



Alternate Layout II

The City of Aetheria



District Studies

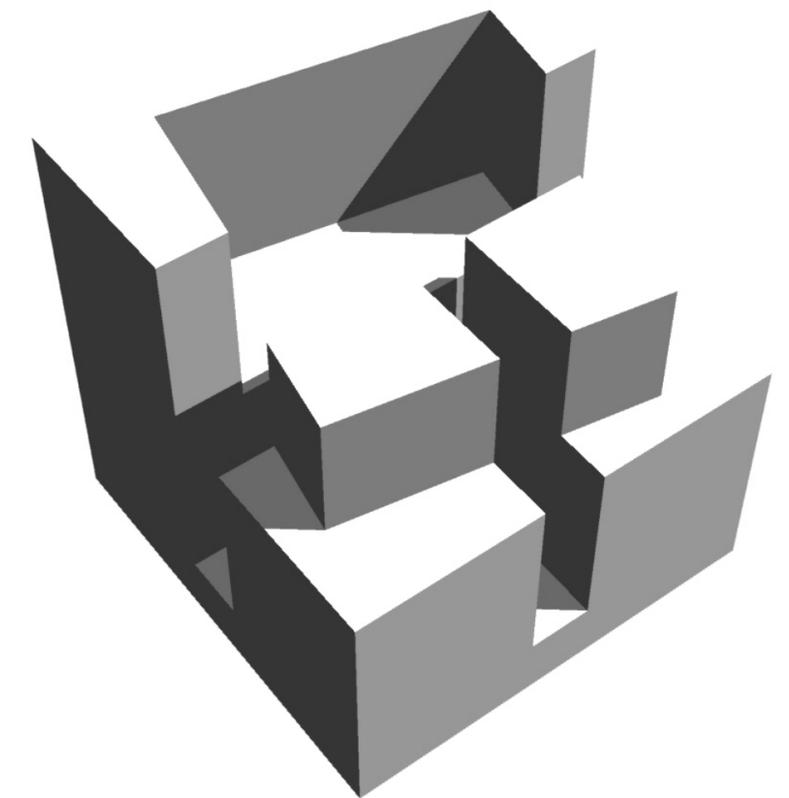
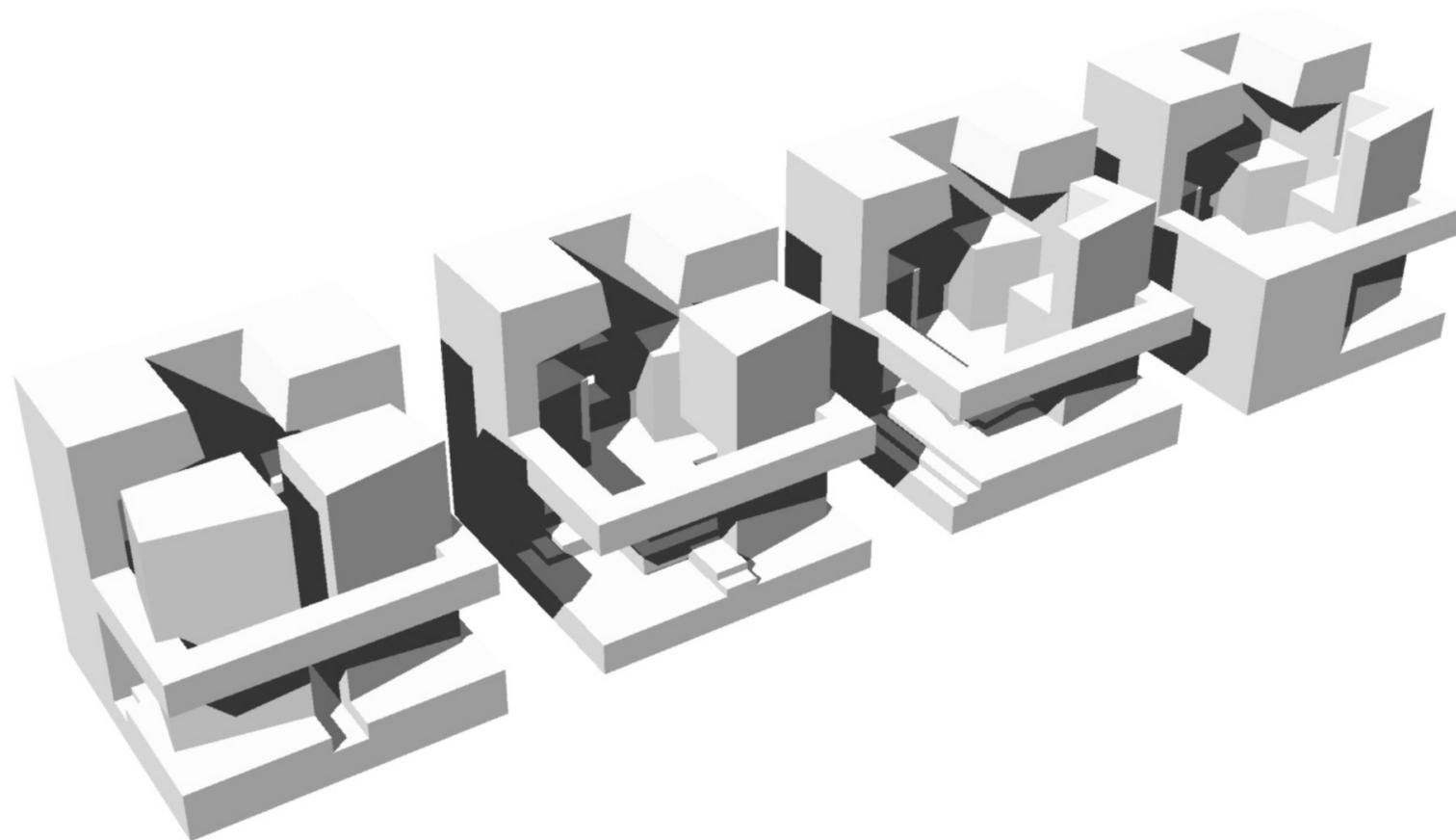
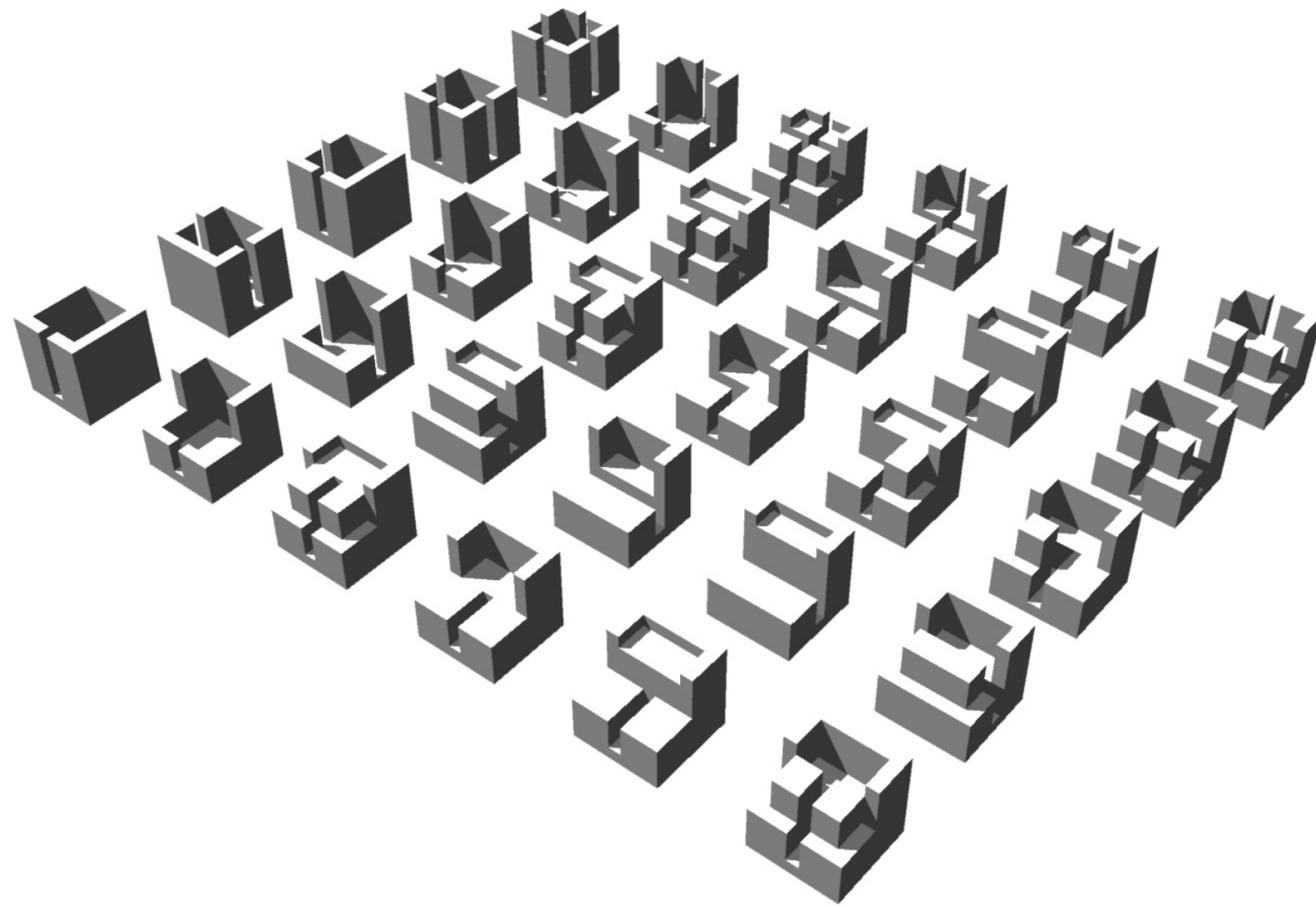
The City of Aetheria

The Archetype

The archetype is an original pattern or model from which all things of the same kind are copied or on which they are based; a model or first form; prototype.

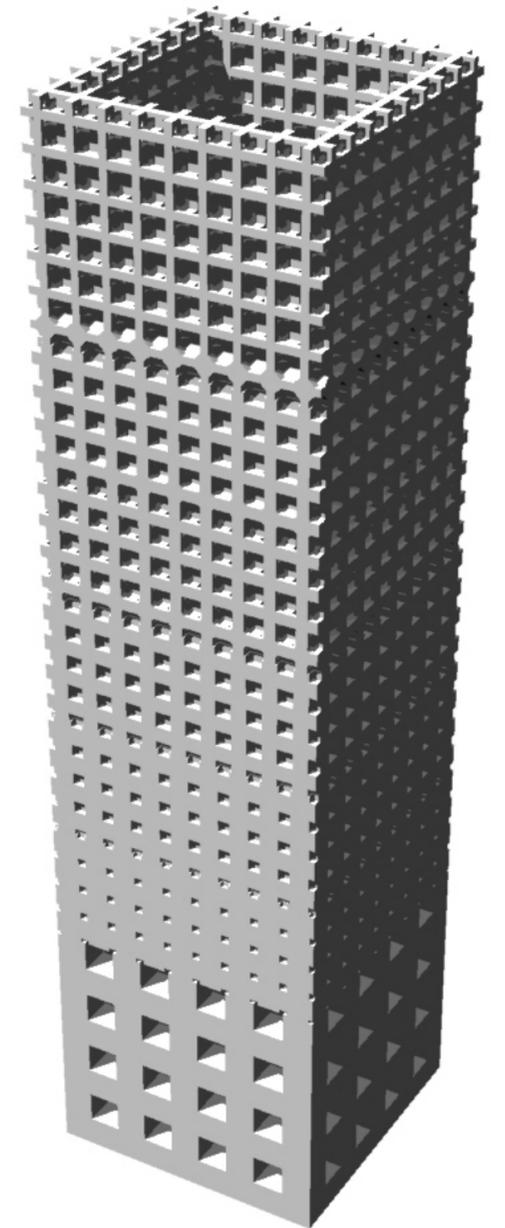
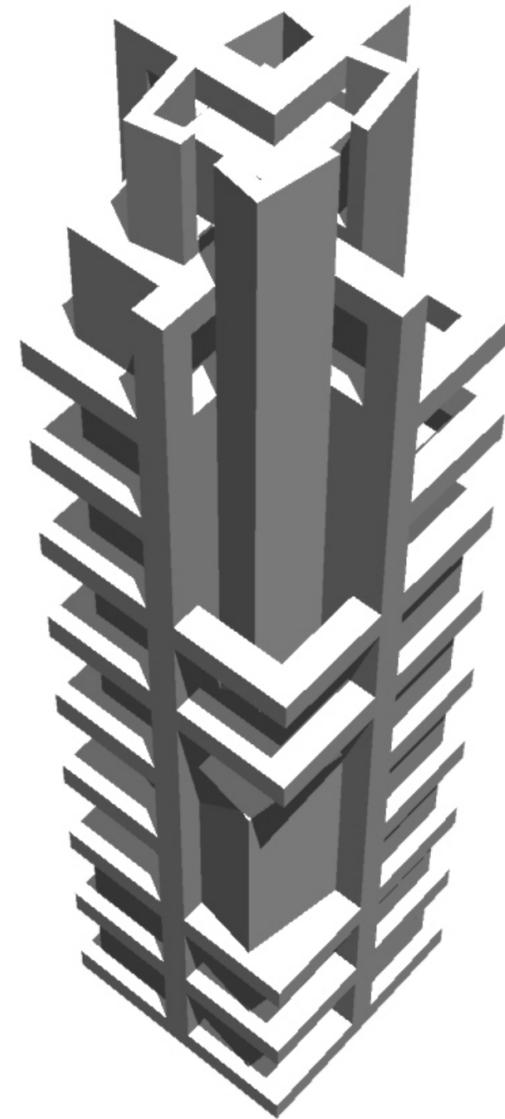
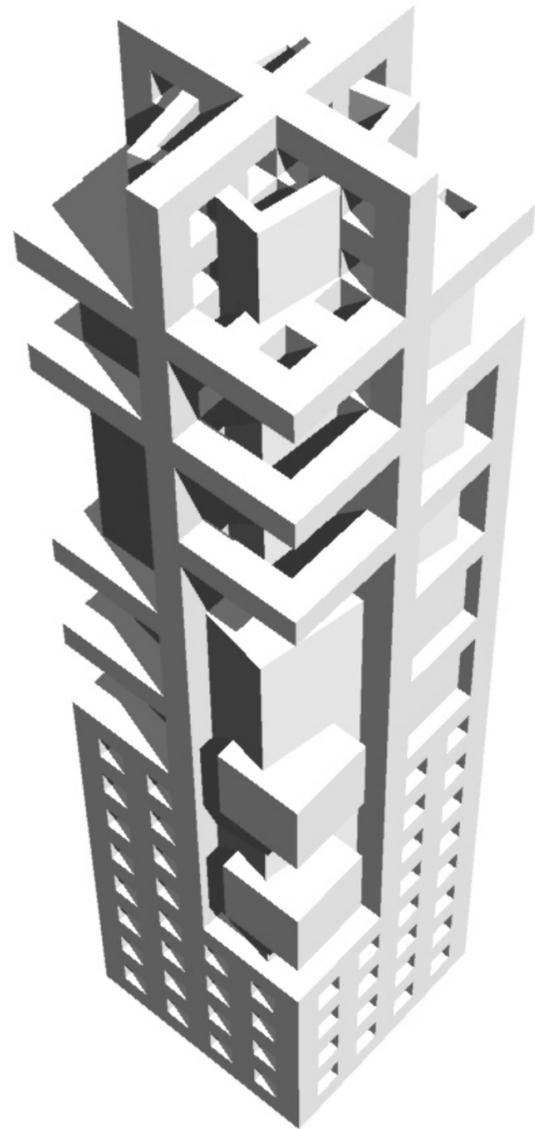
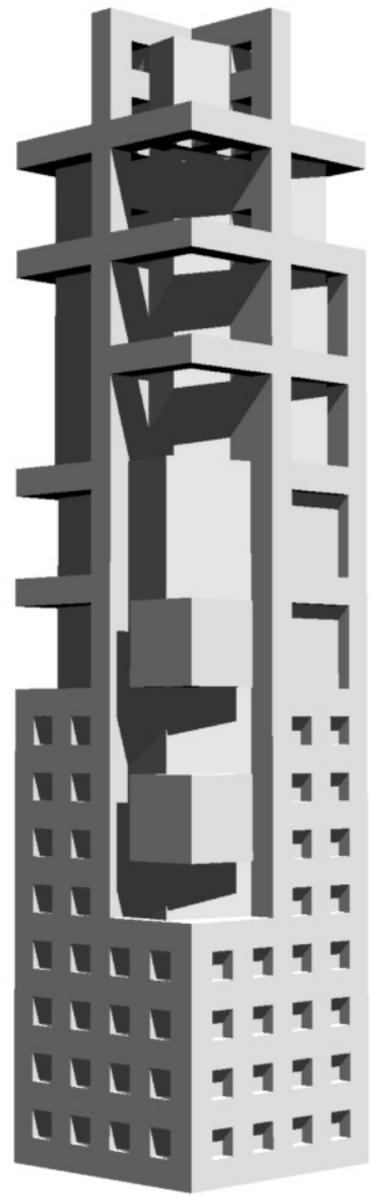
In Jungian psychology, an inherited pattern of thought or symbolic image that is derived from the past collective experience of humanity and is present in the unconscious of the individual.

Also called the *imago*.



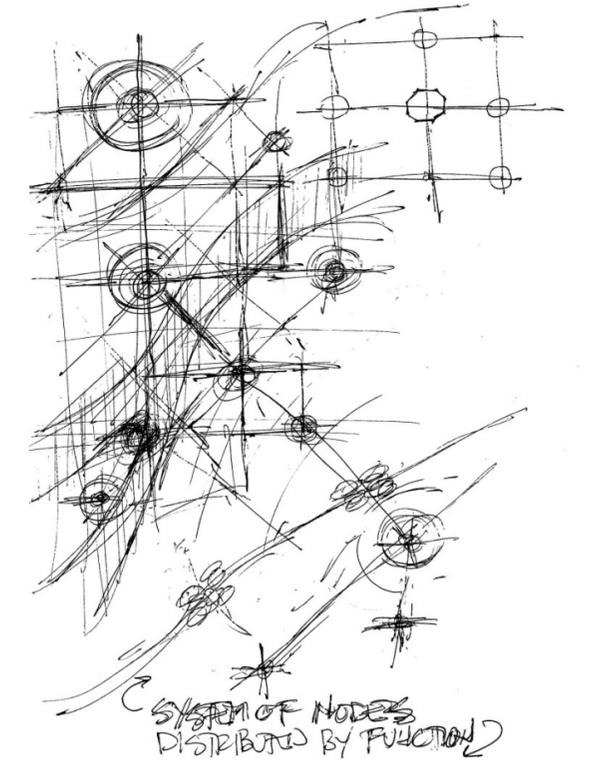
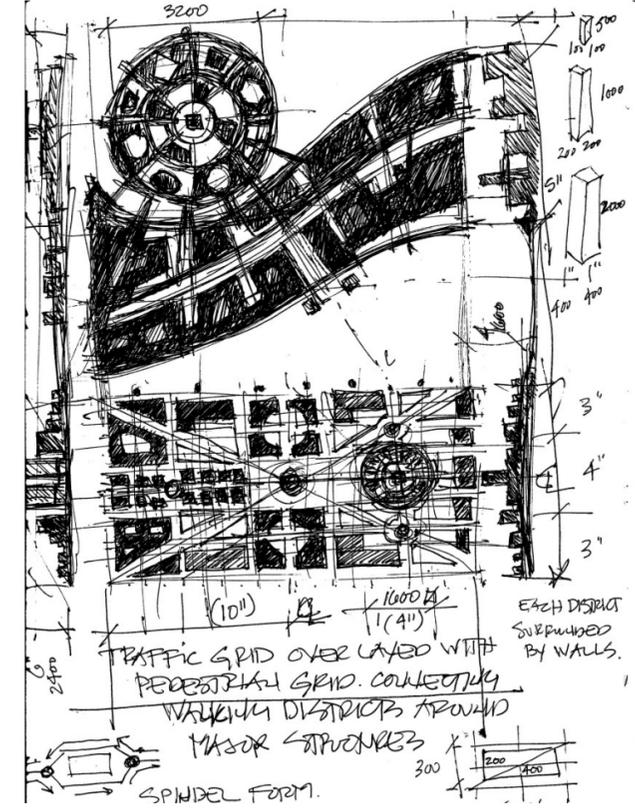
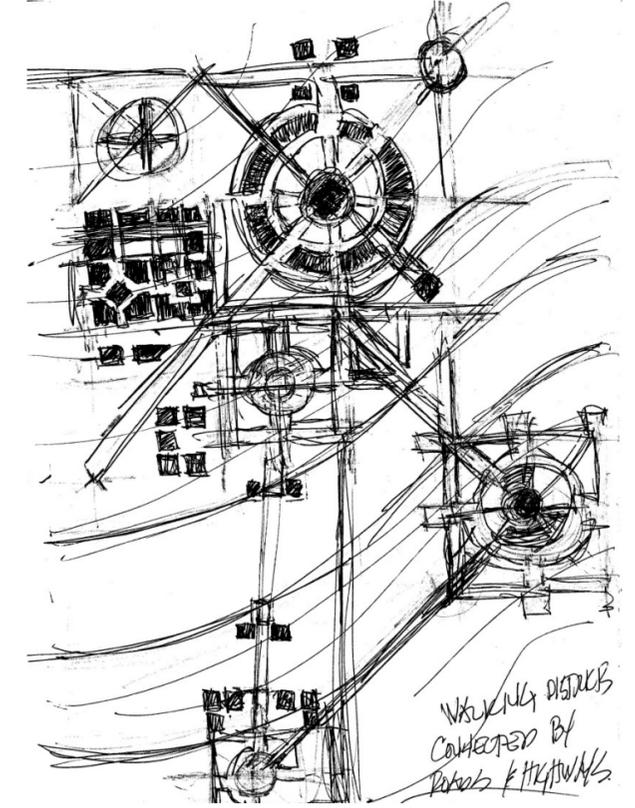
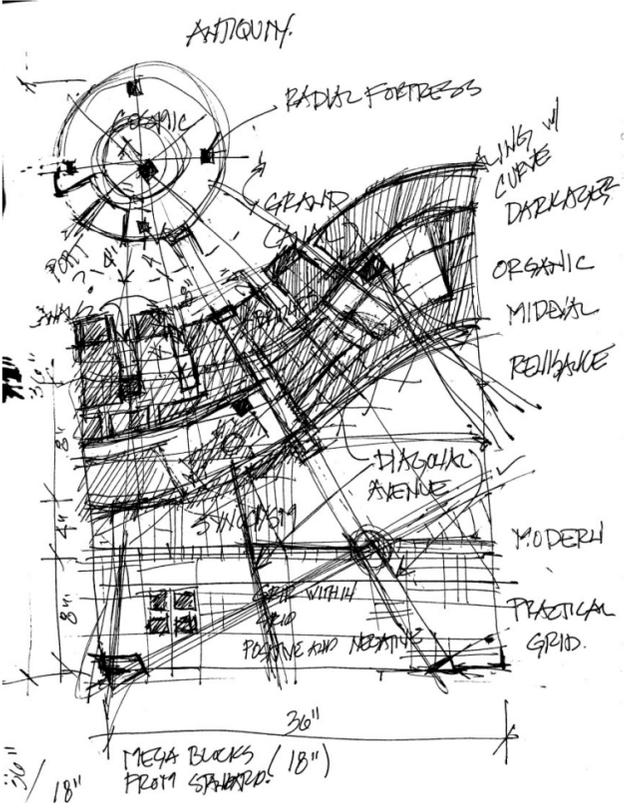
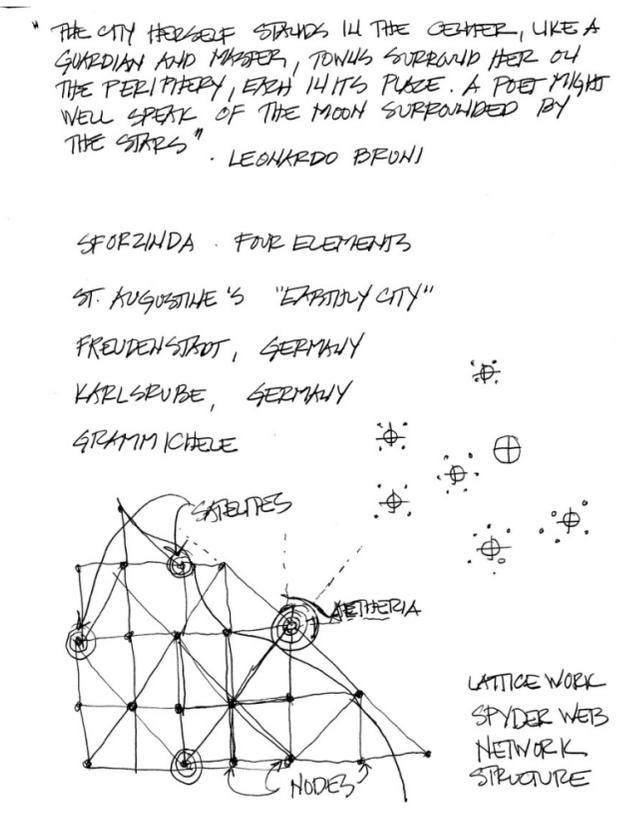
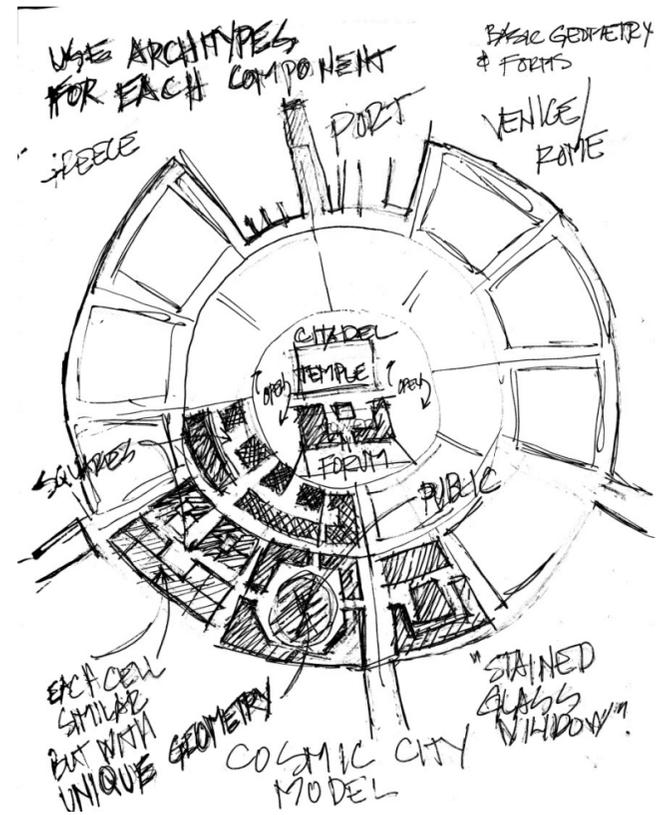
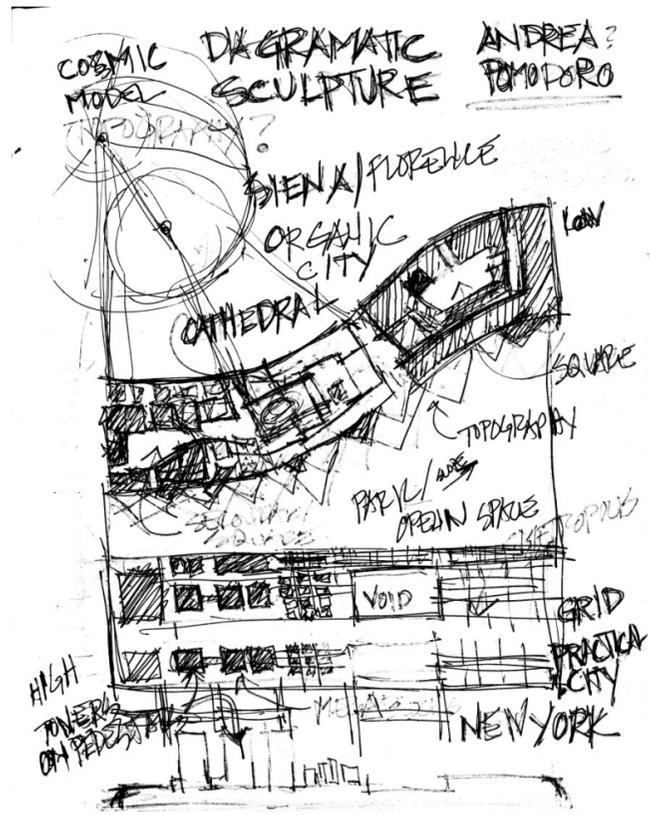
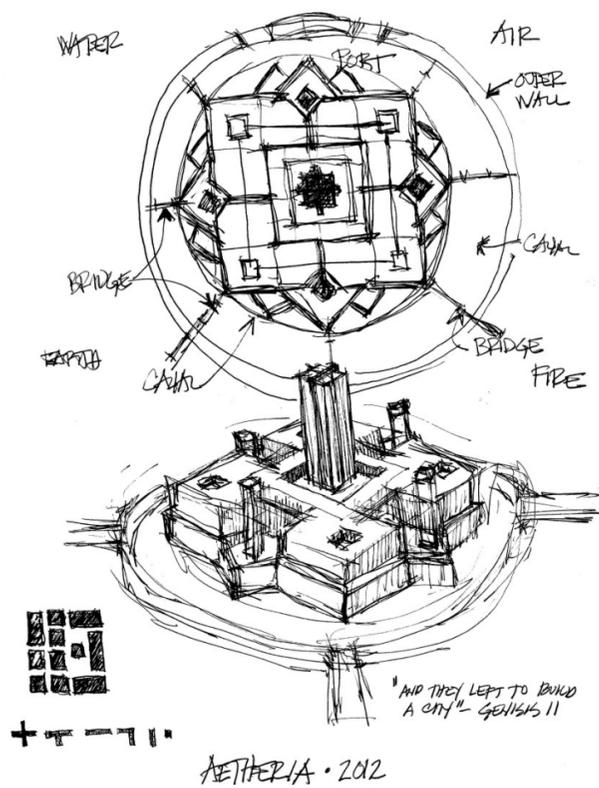
The Archetype

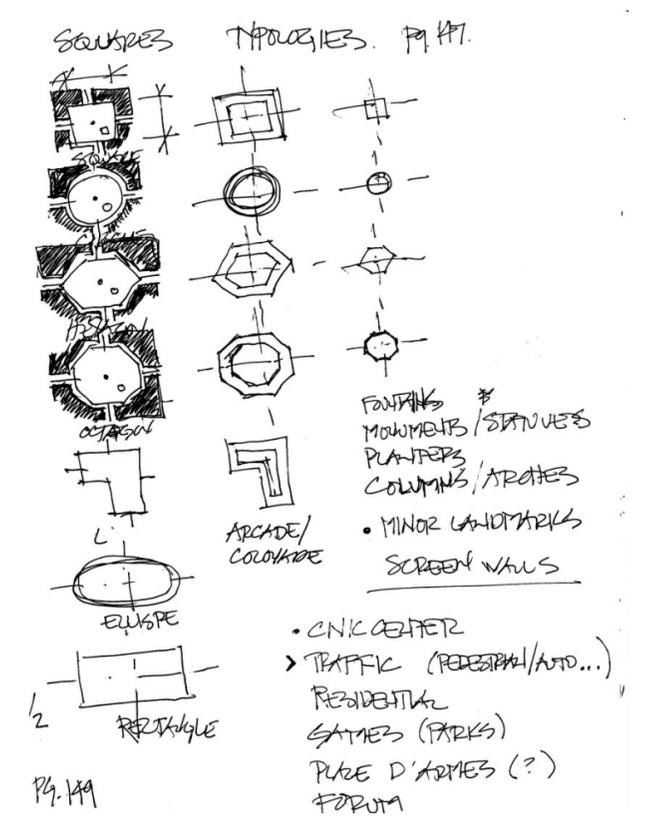
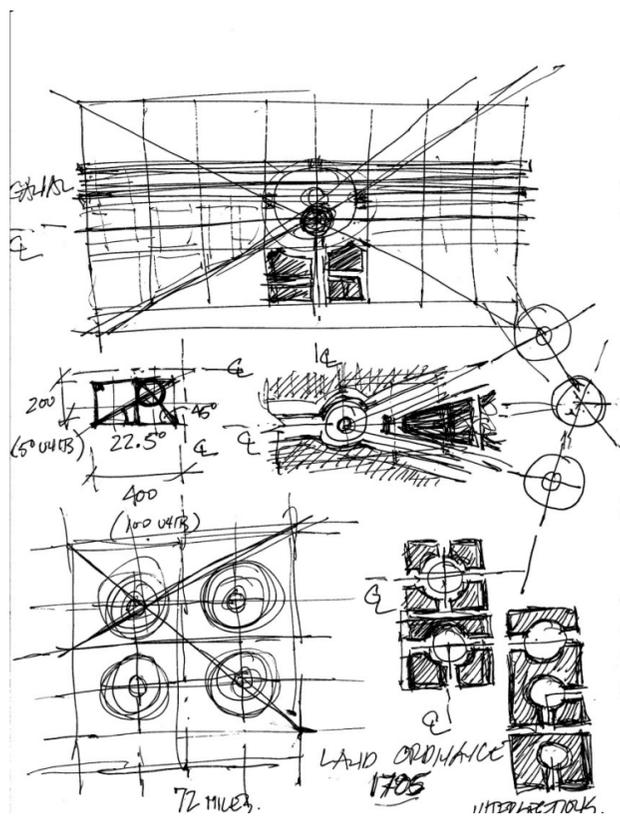
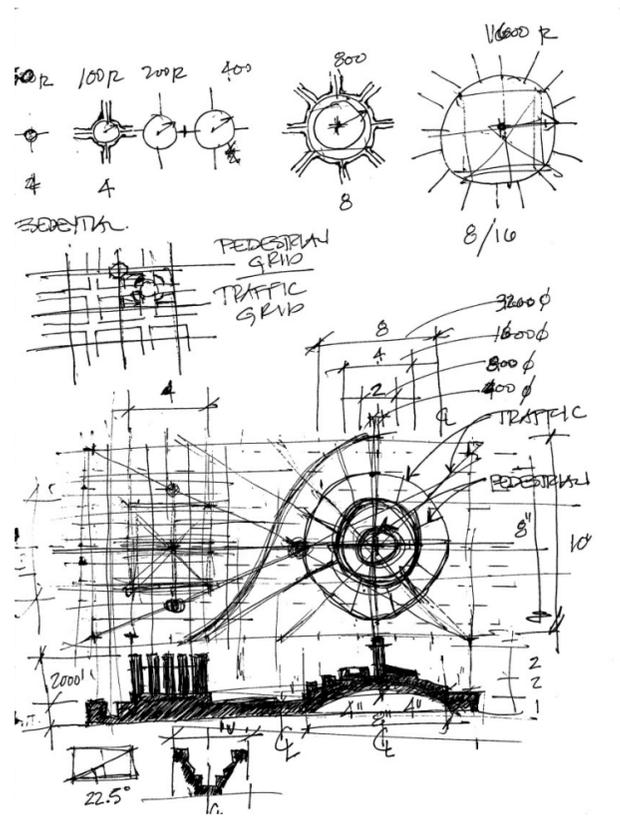
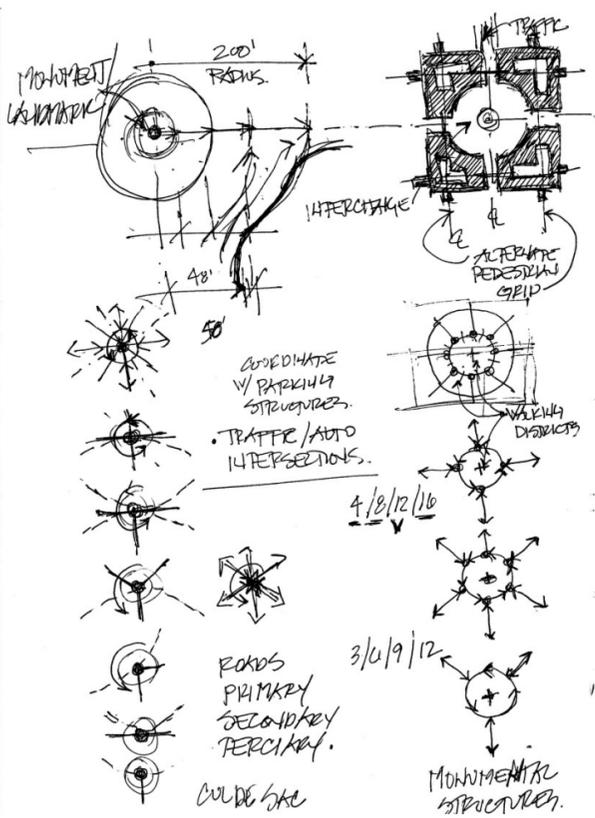
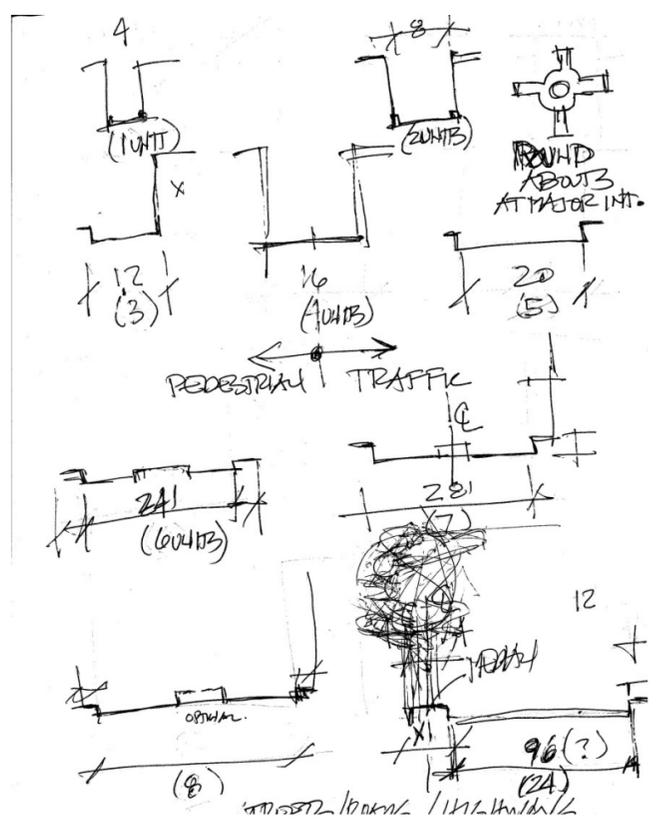
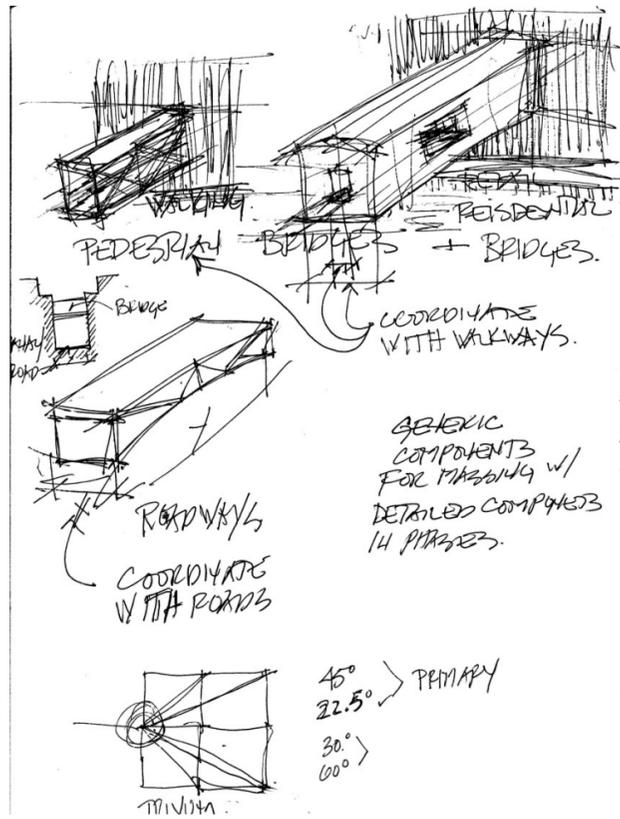
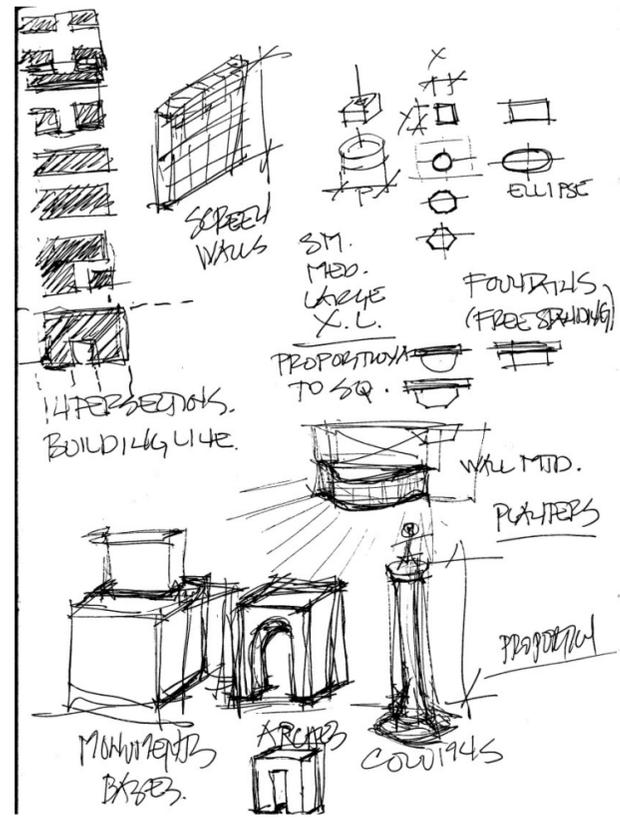
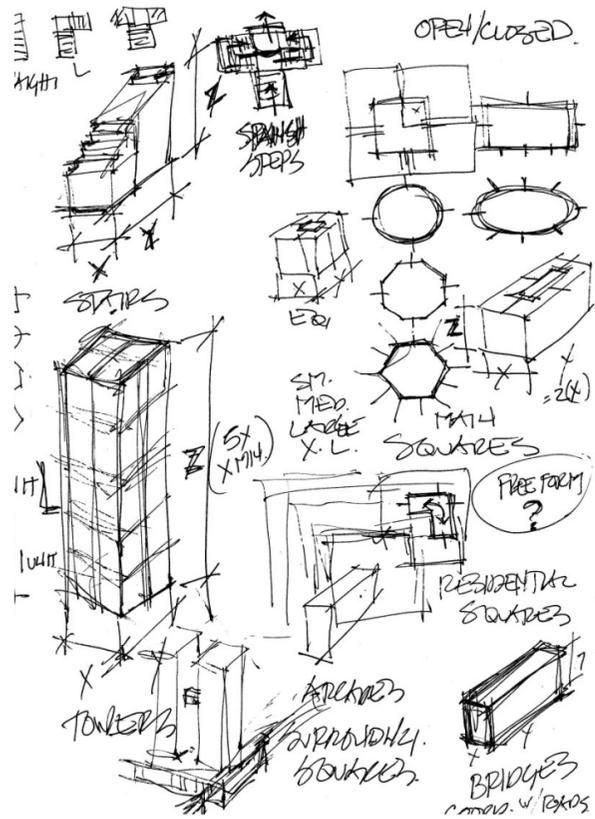
The City of Aetheria



Tower Studies

The City of Aetheria





THE MODULAR SYSTEM OF DESIGN

By analyzing historical examples of cities and deconstructing them into their primary and secondary elements, a modular system of urban archetypes was created as a method for the design of cities and urban infill. The system is composed of the primary archetypes of the Urban Institutions; Streets, Buildings and Public Spaces. And the secondary elements of Markers and Monuments; Triumphal Arches, Commemorative Columns, Statues, and Fountains. Creating a hierarchical organization where each component of the system is reduced into finer components.

This system of archetypes may be arranged in a variety of configurations to create different urban typologies. Each modular component is autonomous allowing the modules to be both a two-dimensional planning tool and a device for the proportional design of three-dimensional vertical elements as well. The intent of the modular design is an attempt to combine the advantages of standardization with those of customization. The components are dynamic entities allowing them to undergo transformations and the introduction of custom components.

The use of a modular system has a long tradition dating back to Greco-Roman architecture; the module was utilized as a standardized unit of measurement for proportioning the elements of a building. Vitruvius wrote extensively on proportion in the Ten Books on Architecture where he stated “*Proportion is a coorespondence among the measures and the members of the entire work, and of the whole to a certain part selected as a standard.*”¹ In the 20th century the architect Le Corbusier created the Modulor, a system of harmony and proportion that became the focus of his design theories. Later architects would use modular design to create buildings consisting of universal parts that were manufactured and then shipped to the site where they could be assembled into a variety of arrangements.

THE ORIGIN OF THE CITY

The origin of the city is lost to the sands of time, what purpose the founders of the first city might have had we cannot say. Cities have become so ubiquitous in the modern world that it is difficult to imagine a time without them. Cities were no doubt an evolution of the settlements from the Neolithic revolution, when early humans transitioned from nomadic hunter gathers into farmers, as agriculture and the domestication of animals came to dominate. Christian Norberg-Schulz, in *The Concept of Dwelling*, identifies four modes of dwelling, beginning with the “*settlement*” where the first delineation takes place but there is still a close relationship with nature. Over time these early villages would evolve as the specialization of labor such as Priest, Craftsman, and Soldiers necessary for the city to exist developed. When settling is accomplished, other modes of dwelling which concern basic forms of human togetherness, come into play. “*The settlement functions as a place of encounter, where men may exchange products, ideas and sentiments. From ancient times urban space has been the stage where human meeting takes place*”² This mode is identified as “*collective dwelling*” with *collective being used in the original sense of gathering or assembly*”³

The first cities may have been at holy shrines as many ancient cities are based on the *Cosmic Model*,⁴ mankind’s attempt to interpret the universe and the gods. A recent discovery of Gobelictepe near the border of Turkey and Syrian would suggest that this earliest of Stone Age settlements developed as a religious shrine, the oldest yet discovered, it shows a level of sophistication not thought possible at the time.

Others hold to the theory promoted by Jane Jacobs in *The Economy of Cities* where, “*cities are presumed to have developed as nodal markets; agricultural intensification then followed to feed the city.*”⁵ As Kostof noted, “*The self-regulating market, it turns out may have been the exception and not the rule. What is more, local markets, even when they existed, did not always develop into cities, and neither by the way did fairs, those quintessential centers of long-distance trade, common belief to the contrary notwithstanding.*”⁶

Or perhaps the first cities had a more practical purpose of protection or military conquest and political stability, but when we look at this alternatives we see, “*Much the*

*same problem arises with military and religious theories: the town as an agent of defense and domination, and the town as a holy place. To be sure, concentration of settlements for purposes of defense may have generated cities....Then again the reverse may be true, that once you have a concentration of people, you might need sophisticated defense. And shrines do not always produce cities, though there is no doubting the great importance of cults and a priestly hierarchy in the matrix of cities everywhere.”*⁷

More likely would be the development of settlements for a variety of reasons specific to the location, culture and technological development of a society. As Paul Wheatley argued; *“It is doubtful if a single, autonomous, causative factor will ever be identified in the nexus of social, economic and political transformations which resulted in the emergence of urban form...whatever structural changes in social organization were introduced by commerce, warfare or technology, they need to be validated by some instrument of authority if they were to achieve institutionalized permanence.”*⁸

Sjoberg described the city as, *“a mechanism by which a society’s rulers can consolidate and maintain their power.”* The spread of cities into non-urbanized areas had to do with *“the consolidation or extension of a political apparatus be it the result of a kingdom or an empire. Military conquest and political stability, more so than trade, create the need for cities. A conquering force requires administrative and military centers in order to control the newly won lands.”*⁹

*“Cities, even those attributed to spontaneous processes inherent to a region, are never entirely processional events: at some level, city-making always entails an act of will on the part of a leader or a collective. To explain cities as the result of purely “natural” causes – accidents of geography or regional inevitabilities – is to indulge in a species of physical determinism incompatible with human affairs.”*¹⁰

Regardless of their origins early cities would have developed into centers for trade, the Greeks called these *Apoike* for colony or “away home.” And most cities would eventually include aspects of religious, military and economic factors with emphasis being placed on a certain component based on the culture and time period of a cities origin and historic events that gave form to the city over time. Having identified the forces that shaped the early settlements we can identify the possible origins of individual cities in order to understand the origin of the city itself. This leads us to question what

are those things that are common to all cities are. What are the archetypes that constitute the city? What is a City?

WHAT IS A CITY?

What is a City? L. Wirth observed that a city is, “*a relatively large, dense, and permanent settlement of socially heterogeneous individuals.*”¹¹ While Louis Mumford defined a city as a “*point of maximum concentration for the power and culture of a community.*”¹² Clearly cities are more than the structures that constitute their physical structure. Cities are the arenas of human activity, the manifestation of the human desire, and the artifacts that act as depositories for society’s collective memory.

Spiro Kostof proposed the following definitions of the city:

- *Cities are places where a certain energized crowding of people takes place.*
- *Cities come in clusters. A town never exists unaccompanied by other towns.*
- *Cities are places that have some physical circumscription, whether material or symbolic.*
- *Cities are places where there is a specialized differentiation of work. (i.e. Priest, Craftsman, Soldier...).*
- *Cities are places favored by a source of income. (i.e. trade, agriculture, minerals...).*
- *Cities are places that rely on written records.*
- *Cities are places that are intimately engaged with their countryside.*
- *Cities are places distinguished by some kind of Monumental definition. (Public Buildings, Landmarks, Memorials...)*
- *Cities are places made up of buildings and people.*
- *“City forms, their actual function, and the ideas and values that people attach to them make up a single phenomenon.” Kevin Lynch¹³*

When we examine the nature of cities we see the physical structure is defined by the relationship of the institutions created by the social and political nature of the city. Each city is unique due to the social and political systems and the historic events that influenced their development. *“With in the settlement we find buildings which make the common values of the inhabitants manifest”*¹⁴ The infrastructure and institutions compose the area of public or common interest intersecting with the semi-private arena of business and private residential institutions. *“Evidentially these buildings allow the actions of common consent to take place, but moreover they have to give concrete presence to the meaning of these actions as a way of life or a mode of being-in-the-world.*

*When we stand in front of a public building, it should offer the promise of an explanation of how things are by gathering and ordering the multifarious meeting of the urbs into a synthetic image or figure. And when we enter, the promise ought to be fulfilled by a space which appears as a meaningful microcosmos. The public building, thus as imago mundi, but always “as something,” as “church” as “city hall,” as “theater.” as “museum,” as “school.” In other words the building is not an abstract symbol, but partakes in daily life, which it relates to what is timeless and common. In the church a general understanding of world and life is made present, in the city hall the organization of society, in the theater life as it is lived, in the museum the memories of mankind, and in the school our existence as knowledge and advice”*¹⁵

We see this in Jungian psychology where an inherited pattern or symbolic image is derived from the collective experience of humanity and is present in the unconscious of the individual. *Also called imago it is a collectively inherited unconscious idea, pattern of thought, or image universally present in individual psyches.* These collective memories are conveyed via the physical structures of the city as well as events such as festival. So then what is a city? A city is an artifact of the past, a stage in the present and a dream of the future.

“The most enduring feature of the city is its physical build, which remains with remarkable persistence, gathering increments that are responsive to the most recent economic demand and reflective of the latest stylistic vogue, but conserving evidence of past urban culture for present and future generations....urban society changes more than any other human grouping, economic innovation comes most rapidly and boldly in cities.

Immigration aims first at the urban core forcing upon cities the critical role of acculturating refugees from many countryside, and the winds of intellectual advance blow strong in cities...¹⁶

UTOPIAS AND IDEAL CITIES

Utopias and Ideal Cities have been contemplated since antiquity with Plato's Republic and Atlantis being the earliest examples of a Utopia. First coined by Sir Thomas More in 1516 for his book *Utopia*, the word comes from the Greek: οὐ ("not") and τόπος ("place") and means "no place". In his *Utopia* More describes a fictional island society in the Atlantic Ocean possessing a perfect socio-politico-legal system. More's purpose is unclear with some believing that he was attempting to create a blueprint for an ideal society and other that believe the book was intended as a satire of English society. Today the term is used to describe both intentional communities that attempt to create an ideal society, and fictional societies portrayed in literature and film.



Figure 1
Woodcut by Ambrosius Holbein
for a 1518 edition of *Utopia*.

“A utopia does not have to be a city. Utopias are no-wheres. They are outside specificities of place and state, and vague about the kind of physicality their design

codifies. Ideal cities exist in context. They are often intended to clarify the standing of a ruler in relation to his subjects and a wider circle of contemporaries, and they are dependent for their effectiveness on being fixed in place within a larger geographical frame and a prior cultural landscape....Utopias on the other hand, may be antidotes to nothing more precise than the prevailing wickedness and injustice of humanity at large.”¹⁷

Although philosophers often incorporate a city to represent a conceptualized ideal state such as Plato’s Atlantis, Augustine’s City of God or Thomas More’s Amaurot, the capital of Utopia, the design of these cities is usually simplistic. *“Their understanding of the actual workings of cities is exceedingly innocent: from cities they learn nothing at all, borrowing only the diagrammatic rudiments of urban design, which means almost always ideal schemes like circles or centered squares, to accompany the tidy system of their moral philosophies.”¹⁸*

In an attempt to realize the ideal city numerous designs were proposed by both architects and philosophers. While ideal cities were often designed with more practical considerations such as defense or traffic but they also incorporated utopian concepts.

The pre-Classical and Classical periods have several examples of planned cities, though most tended to develop organically. Designed cities were characteristic of Egyptian civilizations in the third millennium BC. Many regard the Greek philosopher Hippodamus as the first town planner and ‘inventor’ of the orthogonal urban form. Aristotle called him ‘the father of city planning’ and tells us that Hippodamus described the elements that define a city including the residents divided into three specialized classes Craftsmen, Farmer, Soldier. Initially the land was distributed among the founding citizens or reserved for Sacred, public or private use. *These settlements were of two types, the Katochiai, Greek for military settlement and the Kleruchia, Greek for Offspring of the Mother city. The Romans would later develop this concept into the Coloniae (colony) from colo, coletge to farm, colonus for farmer.*¹⁹

The Romans were among the most proficient builders employing a regular orthogonal structure in the design of their cities. Optimized for strategic defense the basic plan consisted of a central forum with city services, surrounded by a compact, rectilinear grid of streets, and wrapped in a wall for defense. The streets of equal width and length

were laid out at right angles, in the form of a square grid. Two larger main streets the decumanus maximus running east-west and the cardo maximus running north-south intersected at the forum at the center of the grid.

Vitruvius describes both Greek and Roman planning techniques dealing with aspects such as choosing the location for a new city, locating and testing water, and the relationship of the site to the Cosmos. In addition Vitruvius documents the laying out of the various elements of the city such as Temples, The Forum and the Basilica, Theaters, Baths, The Palaestra and Housing. Vitruvius also addresses such issues as Harbors, Breakwaters and Shipyards for port cities.

Having rediscovered Vitruvius the Ideal City was an invention of the Renaissance which could be credited to Alberti, one of the earliest examples of the ideal city was Filarete's Sforzinda. The art from this period often depicts ideal cities such as "The Ideal City" by Fra Carnevale. During the Renaissance we see the development of ideal cities as fortresses which often took a star shaped form designed to resist cannon fire. This is apparent in the design of Renaissance fortress with bastioned walls that reached their pinnacle at Palma Nova, Italy. Eventually the advancement of military technology would render the bastioned walls useless but the underlying geometric precision would continue to influence the design of cities.

*"In Renaissance ideal planning, the spokes linked the center with the gates, and the center hosted important buildings like the church and the palace. But the center of these military polygons is empty and unpaved. At times of siege the commander would station himself there in a tower or raised platform that afforded an unimpeded view of the bastions."*²⁰

The principals of Vitruvius and Alberti were codified in the "Laws of the Indies" a compilation of various decrees of the Spanish crown beginning with the Laws of Burgos and the New Laws. The Laws of the Indies were exported to the Spanish colonies and provided guidance for the establishment of military towns known as presidios, mission town and civilian settlements known as pueblos. The guide contained direction on locating settlements and buildings within settlements.

The Laws of the Indies would eventually influence the development of North America in particular the Land ordinance of 1785. The Land Ordinance of 1785 was

adopted on May 20, 1785, while still under the Articles of Confederation. Originally proposed by Thomas Jefferson it was intended to create an agrarian Nation by developing the Western Territories into privately owned farmsteads. These farmsteads were intended to be self-sufficient farms that would form self-governing townships and these would eventually form additional states. Historian and Geographer J.B. Jackson has described the ordinance as being “*a blueprint for an agrarian equalitarian society.*”²¹

Then during the Enlightenment the rulers of Europe undertook ambitious projects to remake their capital cities even constructing entirely new cities to display the grandeur of the regime. Other combined the philosophical ideals of a utopian vision with the practical considerations of industrial productions sometimes classified as "utopian socialist" such as Ledoux's La Saline de Chaux or The L'Enfant plan for Washington DC. The concept of the gridiron survey introduced in the Land Ordinance also influenced the development of existing cities in the East. This is most evident in the New York Commissioners' Map of 1811. “*The old town spread loosely up Broadway from the Battery and East along Wall Street. By 1811, it still occupied only the tip of Manhattan. The Commissioners' plan of that date laid out the rest of the island in an implacable gridiron, leaving only a small area open as a park.*”²²

It was the Industrial Revolution in the late 18th century led to unprecedented growth in the population of urban centers. This was due to the migration from the countryside of excess labourers as agricultural productivity increased due to mecahnization. Seeking employment the rural populations of Europe and America migrated to industrial centers like Manchester in England or Chicago in the United States. The expansion of global trade also provided increased opportunities for entrpreneurs to facilitate the excahnge of products. But it also led to rapid and uncontrolled growth, overcrowding and unsanitary conditions in these new industrial cities.

It was the development of these industrial cities which led to the movement for urban reform and modern urban planning in the mid-19th century. During this period we see a paradigm shift with the merger of utopian visions with urban planning. In the early 19th century, several utopian ideas arose, often in response to their belief that social disruption was created and caused by the development of commercialism and capitalism. The designers wished to create communities with an egalitarian distribution of goods,

where citizens only performed work which they enjoy in the interest of the common good, leaving them with leisure time for the exploration of the arts and sciences.

The French philosopher Charles Fourier proposed utopian self-contained communities of citizens working together for the common good. Fourier designed a single massive structure that incorporated both urban and rural elements. He dubbed these building a Phalanstere. None of Fourier's designs were ever built in Europe but his publications inspired several in the United States.

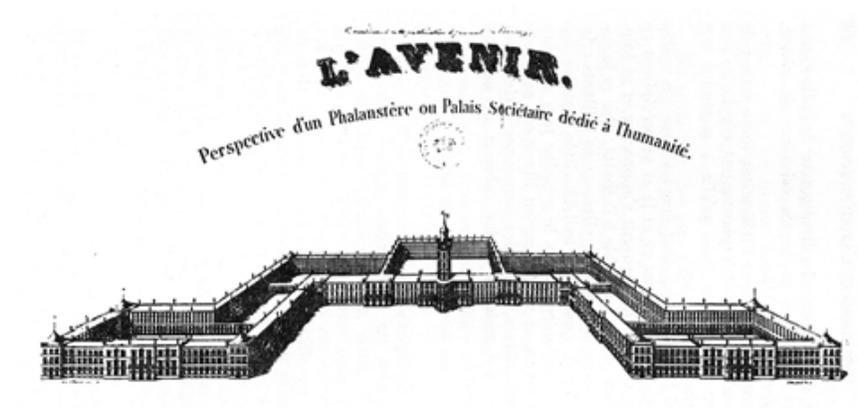


Figure 2
Perspective view of Charles Fourier's Phalanstère

The expansion of Barcelona by the engineer Ildefons Cerdà to extend into the space beyond the demolished city walls. Cerdà is credited with inventing the term 'urbanization' in his General Theory of Urbanization. Developments in transportation technology, first the train and then the automobile allowed cities to expand by facilitating commutes of longer distances. Once constrained to the city centre wealthier citizens and later the working class were able to locate to the suburbs. Eventually these suburbs would be annexed to become a part of the city.

In response to the perceived evils of urban life for the working poor, a New Liberalism developed that championed intervention on the part of the poor and disadvantaged. Around 1900, theorists began developing urban planning models to mitigate the consequences of the industrial age, by providing citizens, especially factory workers, with healthier environments.

Although not the first, Sir Ebenezer Howard was the most influential of these new urban planning theorists. The garden city movement in which Howard initiated 1898 with the publication of *The Garden City of To-morrow* would influence urban planning throughout the 20th century. Howard's garden cities were planned, self-contained communities surrounded by parks, containing proportionate and separate areas of residences, industry and agriculture. Once it reached full population, another garden city would be developed nearby. Howard envisaged a cluster of several garden cities as satellites of a central city would be linked by road and rail.

However Howard's theories would have to compete with the ideal of modernism in contrast to Howard's design the Futurist Antoino Sant'Elia proposed *La Città Nuova* (The New City). Although never built the work would inspire the 'Manifesto of Futurist Architecture' and the concepts would influence architects and urban designers for generations. The New City was a backdrop onto which the dynamism of Futurist concepts would be projected. Sant'Elia's envisioned a city where the landscape had been displaced by the city as the framework for modern life.

Le Corbusier's *Ville Contemporaine* a scheme for a "Contemporary City" for three million inhabitants in 1922 appears to be an attempt to reconcile the natural with the urban environment. The centerpiece of this plan was the group of sixty-story cruciform skyscrapers, steel-framed office buildings encased in huge curtain walls of glass. Le Corbusier also segregated pedestrian circulation from the roadways and glorifying the automobile as a means of transportation. But the structures were to be built within large, rectangular park-like green spaces.

But by the late 1960s modernism's lost favor with urban planner due to its sterile esthetic and lack of human scale which was blamed for, high crime rates, social problems and a loss of community. From the view point of traffic and radial concentricity it can be said that it provides the most efficient access to the city. Kevin Lynch described the ideal city as follows:

“There should be a single dominate center, of high density and mixed use, from which four to eight major transportation lines radiate outward. These lines would contain mass transit systems, as well as the main highways. Secondary centers are disposed at intervals along these lines, and the more intensive use either cluster around these sub

centers, or string along the major lines. Less intensive uses occupy bands farther back from the main radials, and open green wedges take up the remaining space between the fingers of development. At intervals outward from the main center, there are concentric highways, which link the fingers together, but which are free of adjacent development except where they intersect the fingers themselves.” ²³

And then there was Paolo Soleri who designed Arcosanti based on his theories presented in *Arcology: City in the Image of Man* the project intends to provide a model demonstrating Soleri's concepts. Under construction since 1970 the project remains active today. Soleri proposed mega structures intended to maximize human interaction and provide access to shared infrastructure and services. A forerunner of sustainable design the project was intended to conserve water and reduce sewage environmental pollution. In addition Soleri hoped to minimize the use of energy, raw materials and land. It also fostered interaction with the surrounding natural environment by the residents.

To understand the phenomenon of Utopias and Ideal Cities we will now look at a selection of various proposals, both built and unbuilt, beginning naturally with Plato's Atlantis. Each of the design chosen for examination contained elements that altered the paradigm of urban planning and design and many still influence modern theories of urban design.

Plato's Atlantis

Prior to Sir Thomas More's *Utopia*, Plato had written of the legendary island of Atlantis, originally introduced in the *Timaeus*, it was described as a naval power that conquered many parts of Western Europe and Africa. *"Now in this island of Atlantis there was a great and wonderful empire which had rule over the whole island and several others, and over parts of the continent, and, furthermore, the men of Atlantis had subjected the parts of Libya within the columns of Heracles as far as Egypt, and of Europe as far as Tyrrhenia."*²⁴

Later in his *Critias* Plato goes into greater detail on the founding of the city its physical structure. He also provided a detailed account of the founding of the city by Poseidon, the establishment of the ten kings, the ceremony of the bulls and the golden tablets. *"And beginning from the sea they bored a canal of three hundred feet in width and one hundred feet in depth and fifty stadia in length, which they carried through to the outermost zone, making a passage from the sea up to this, which became a harbour, and leaving an opening sufficient to enable the largest vessels to find ingress. Moreover, they divided at the bridges the zones of land which parted the zones of sea, leaving room for a single trireme to pass out of one zone into another, and they covered over the channels so as to leave a way underneath for the ships; for the banks were raised considerably above the water."*

*The stone which was used in the work they quarried from underneath the centre island, and from underneath the zones, on the outer as well as the inner side. One kind was white, another black, and a third red, and as they quarried, they at the same time hollowed out double docks, having roofs formed out of the native rock. Some of their buildings were simple, but in others they put together different stones, varying the colour to please the eye, and to be a natural source of delight."*²⁵

Plato went on to describe the temples fountains, aqueducts, docks, gardens and guardhouses of the Citadel. He also provided a detailed account of the nature and arrangement of the rest of the land and a canal system that surrounded the city.



Figure 3
Plato's Atlantis - Lee Krystek

It is possible that that Atlantis was an actual place; but it was more likely a device for describing a Utopian society similar to Plato's earlier work the *Republic*. In fact the first recorded Utopian proposal is Plato's *Republic*, which proposes a categorization of citizens into a rigid class structure of "golden," "silver," "bronze" and "iron" socioeconomic classes. The golden citizens are trained in a rigorous 50-year long educational program to be benign oligarchs, the "philosopher-kings." The wisdom of these rulers will supposedly eliminate poverty and deprivation through the fair distribution of resources. The educational program for the rulers is the central notion of the proposal. It has few laws, no lawyers and rarely sends its citizens to war, being pacifist that would hire mercenaries from among its war-prone neighbors. These writings would spur a long tradition of Utopian writings and later mostly failed experiments in Utopian communities and nations.

Filarete's Sforzinda

Designed for and named after Francesco Sforza, tyrant of Milan, the design lasted from 1457 to 1464, but the city was never built. The design is a bizarre combination of philosophy and mysticism, consistent with fifteenth century notions concerning the talismanic power of geometry and the crucial importance of astrology. The designer Filarete described the city in his *Trattato di Architettura* and also provided pragmatic advice on materials, construction, and fortifications, and notes on how to create celestial harmony within the design of Sforzinda.

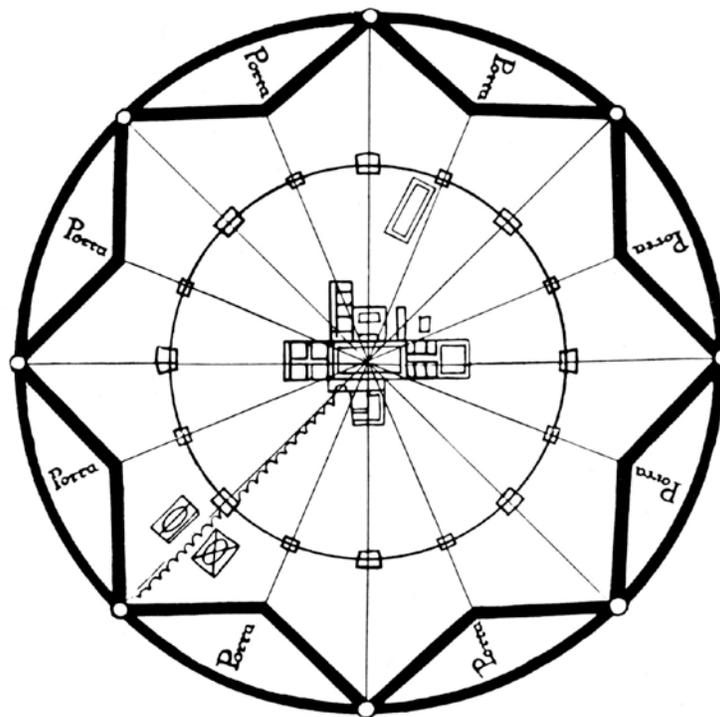


Figure 4
Plan der Idealstadt Sforzinda, 1457

“The basic form was an eight point star derived by superimposing two quadrangles in such a way that their angles are equidistant. This particular figure is in fact an ancient magic sign, and it was sometimes used in Renaissance as a diagram that interlocked the four elements and the four Aristotelian qualities – dryness, humidity, cold

and heat. Filarete's expressed interest in magic and astrology makes extra-urban links of this sort possible.

In the fully developed scheme of Sforzinda, the gates were fitted in the inner angles of the star, and the towers in the outer angles. There was a formal town center with a main open space, and sixteen subsidiary squares throughout the city for markets and churches. There were to be separate schools for boys and girls, and a ten-story House of Vice and Virtue, a bit like the Coliseum, with a brothel on the ground floor, lecture rooms, and an Academy of Learning higher up. Filarete's interest in this subject was live. He himself tells us that he had made a thorough study of representations of the Virtues and Vices, and it has been suggested that the radial design of his city might have profited from medieval diagrams of St. Augustine's Earthly city, where the circular shape is divided into compartments each of which contains a Virtue and the corresponding Vice, or even the allegory of the uncertainties of Fortune shown in the Middle Ages as a spoked wheel. This first Renaissance radial city then might not be quite as free of medievalism as we like to pretend.”²⁶

The city was inscribed within a perfect circular moat with a canal provided for the transport of cargo on alternating streets. The canal system also connected with the river, and therefore the outside world, allowing for the import and export of goods. Filarete's ideal plan was meant to reflect on society – where a perfect city form would be the image of a perfect society, an idea that was typical of the humanist views prevalent during the Renaissance

Scamozzi's Palmanova

The radial scheme reached its apex at Palmanova where it was utilized by military engineers to create protective fortification where “*strategic considerations outweighed all others.*”²⁷ Constructed by the Venetian Republic during 16th century, Palmanova is a citadel designed following the renaissance principles of an ideal city planning by Vincenzo Scamozzi. “*In Renaissance ideal planning, the spokes linked the center with the gates, and the center hosted important buildings like the church and the palace. But the center of these military polygons is empty and unpaved. At times of siege the commander would station himself there in a tower or raised platform that afforded an unimpeded view of the bastions.*”²⁸

Francesco di Giorgio “*was the first Renaissance architect and military engineer to articulate the ways in which a radial system of streets, a bastioned periphery wall, and a public space in the center could be made to work together. He tried out variations where this central space is circular or polygonal, and where the street system has to be accommodated to a number of topographical situations. The placement of gates for the coming and going of the citizens and the defense of the bastions complicated the purely geometric resolution, as Francesco di Giorgio realized, and it is his effort to arbitrate in his design between the needs of the inhabitants and the needs of the artillery that makes him critical to the increasingly sophisticated experiments of the next century, as bastioned defenses took the place of the simple curtain walls of the past.*”²⁹

The citadel of Palmanova is a masterpiece of strategic design, inside the fortifications a ring road is fronted by barracks assigned to mercenary troops, parade grounds and arms depots. At the center a hexagonal piazza was surrounded by housing for the Venetian officers and soldiers whose loyalty was beyond reproach. The six radial rods leading to the piazza could be barricaded to create a fortress within a fortress if the outer walls were breached. Between the inner and outer circuits was a civilian zone with eight additional radial streets and six smaller piazzas. The fortification was a star shaped with bastioned wall between the points of the star; ramparts protruded allowing the points to defend each other. The ramparts were often planted with trees to obscure the edge of the city from enemy forces. The trees also had the added benefit of strengthening the

ramparts against artillery during a siege Surrounded by a moat the original design of the town had just three entry gates corresponding to the three main land routes.

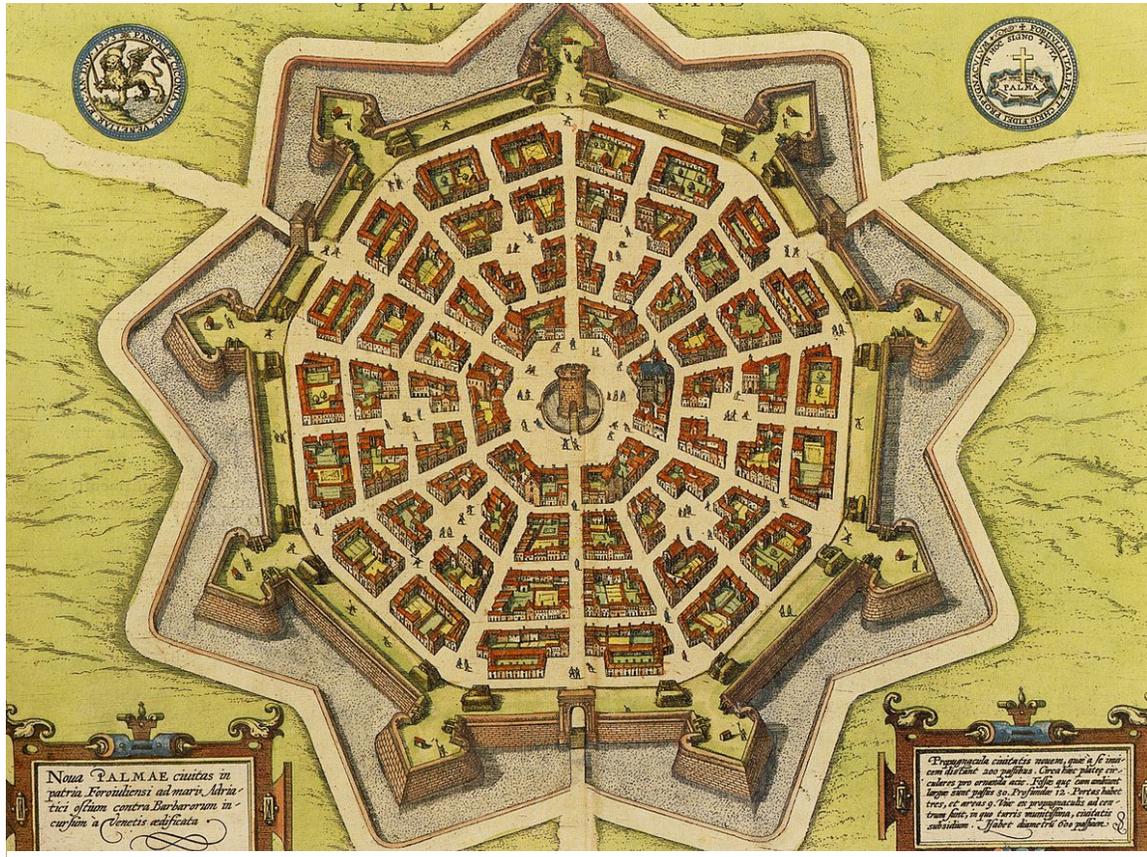


Figure 5
Map of Palmanova

The value of Palmanova was soon diminished by advances in military technology as Kostof observed, “*Within a matter of decades after the inception of Palmanova, military techniques had advanced beyond the point when bastions were the dominate feature of the defensive system. Past this line of primary defense spread a panoply of outer works – semi-independent units like pincers, lunettes and ravelins, as well as even more distant forts – which isolated towns more and more from the surrounding countryside.*”³⁰ Over time as military technologies developed the majority of cities transformed their defenses into boulevards.

Ledoux's La Salines de Chaux

“The first ideal city of the industrial era, and certainly the most fascinating, is La Saline de Chaux between the villages of Arc and Senans near Besancon in eastern France.”³¹ Considered Ledoux's masterpiece Salines de Chaux, was a salt works constructed for the King of France from 1775 to 1778. The initial building work was conceived as the first phase of a large and grandiose scheme for a new ideal city. It was closed in 1790 due to the instability caused by the French Revolution, leaving Ledoux's design unfinished.

“The original scheme for the town was a full oval defined by a tree-lined ringroad which was connected to the center by radiating avenues. Ledoux wanted the form to be ‘pure like that which the sun describes its course’. Public and private buildings extended beyond this ring on all sides.”³²

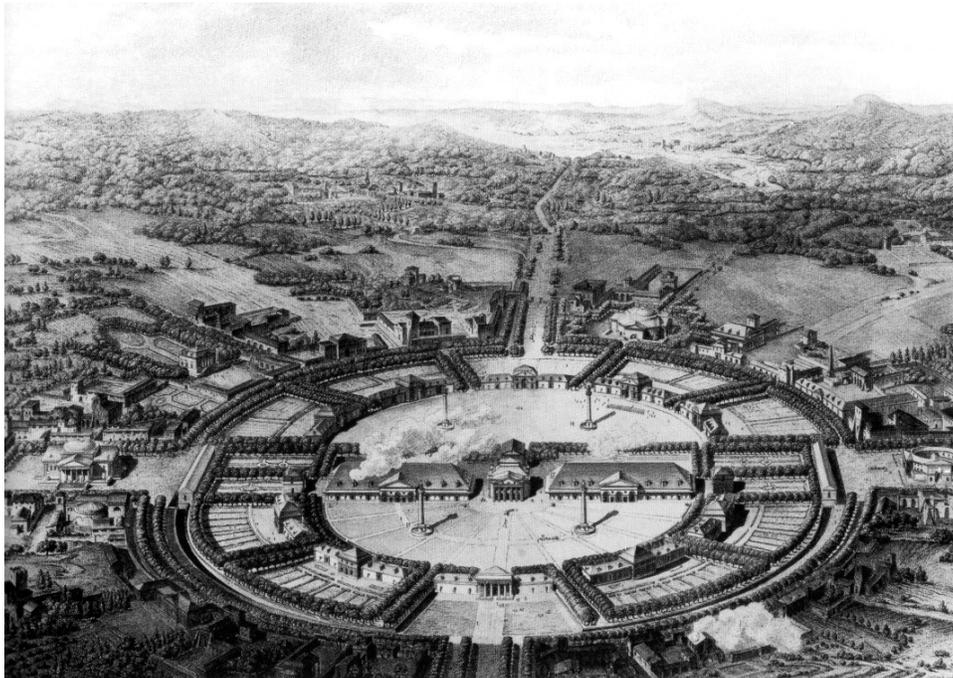


Figure 6
Projet pour la ville nouvelle de Chaux, autour de la saline royale d'Arc-et-Senans

“Ledoux took part in the reformist idealism of the second half of the 18th century, and he understands that architecture has to respond to the deep changes that were taking place from a new social and moral point of view. He sees himself as a philosophical architect, as Etienne-Louis Boullée, who was a contemporary of his did, too. One should bear in mind that this book is written from 1775 to 1804. It is the ending of the Enlightenment (1715-1789), the United States Independence takes place in 1775, and the beginning of the French Revolution and the Declaration of the Rights of Man and of the Citizen happened in 1789.”³³

“Ledoux’s design for Chaux with its perimeter belt of playing fields may well represent the first actual use of greenbelt in a new town”³⁴ Influenced by the Physiocratic theories of economic management the design “reflects the new paradigm of utility and management as the basis of the emerging eighteenth-century metropolis,”³⁵ Ledoux wrote: “Build temples to social virtue; support your ideas on the basis of a universal pact which challenges the qualities of the whole race to serve the well-being of all.”³⁶

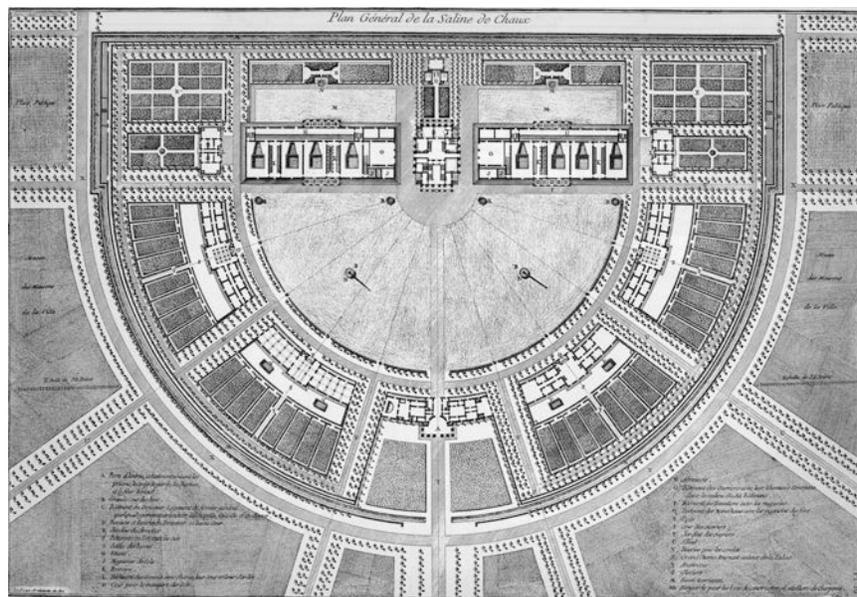


Figure 7
Plan de la Saline de Chaux, 1774

The design “conceived as a “ville sociale” with the work of the community at the center of the symbolic plan,”³⁷ similar to the design of earlier ideal cities. Reminiscent of Plato’s Republic, Ledoux envisioned a population divided into three classes, the ruling class composed of the governor and his officers, skilled employees such as clerical staff and the workers.

“The general character of is that of a garden city, in spite of the basically formal disposition. Ledoux wished to symbolize a new kind of reconciliation between man and nature, created by man’s purposive labour, and he wrote, ‘It is the work of people that tends to bring to fruition all the seeds that nature, in its unspoken contract with man, has promised to make fertile.’”³⁸

Ledoux described the design “The intersecting line of the highest diameter crosses the Loue River, some very large prairies, the city, the forest, the Doubs river, the Geneva channel, and the Helvetian fields; to the left, the Mosa, the Mosela, the Rhin, the Antwerp harbor, and the North Seas carry until the Siberian deserts the early fruits, so desired by our trading and our crafts. O, inexhaustible source of richness! You are the product of all the others, thanks to you the natural recognition of the nations becomes more vivid, thanks to you fortunes become regular, and empires grow and reach their highest splendors.

The minor diameter aligns the streets of Arc and Senans, the forges of Roche, paper factories and chandleries; what an activity! Some polish steel, chisel copper, or blown glass; others melt the glittering metal which maintains nations’ rights³⁹

The entrance to the compound is a Doric portico, believed to have been inspired by the temples at Paestum. Inside, a cavernous hall, decorated with concrete ornamentation representing the elementary forces of nature. Quarters for the guards, a prison and a bakery where adjacent to the entry which opened into a vast semicircular open air space that is surrounded by ten buildings, arranged on the arc of a semicircle. On the arc was the cooper's forge, the blacksmith, the carpenter and the wheelwright, with housing for the workers in these structures with additional housing dispersed around the facility. At the centre is the house of the director, which also contained a chapel. The director’s house was flanked by two processing buildings where a gigantic stove burned wood day and night.

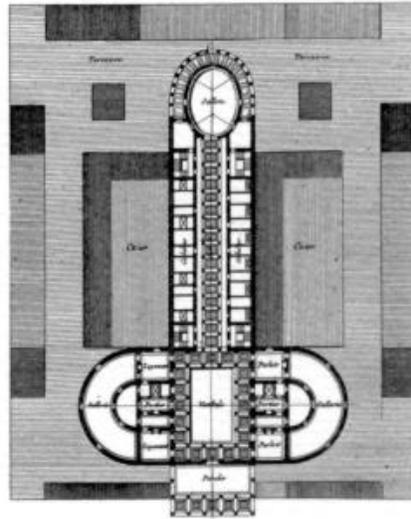


Figure 8
Oikema ou projet de maison de plaisir, 1804

In addition provide several unique institutions such as the *Pacifere*, a place similar to a court of law where residents would settle disputes peacefully and “*the Oikema or house of sexual instruction in the form of a phallus*”⁴⁰

“*In all building Ledoux aimed at expressing the function by means of ‘architecture parlant.’*”⁴¹ Where the architecture of the buildings, in their plans or elevations, creates an image that suggests their functions.

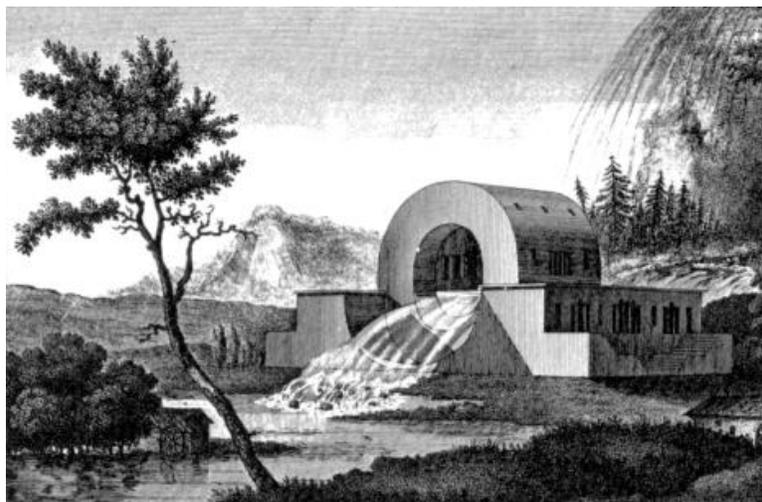


Figure 9
Maison de surveillants de la source de la Loue, 1804

L'Enfant's Washington DC

Appointed in 1791 to design a new capital by President George Washington L'Enfant presented his first design in March of the same year. The plan indicated a grid of streets laid-out along east-west and north-south axis with diagonal avenues crossing the grid to provide vistas. The diagonal avenues intersected with the grid at circles and rectangular plazas to provide open space for parks and monuments. One of these avenues created a symbolic link between the President residence and the capital building. In addition L'Enfant provided a grand avenue that would eventually become the National Mall. The original design also included a canal that was intended to pass the presidents house and empty into the Potomac River.

L'Enfant's plan for Washington DC is the culmination of Baroque urban design the result of the experiments carried out on European capital cities. L'Enfant studied the maps of cities such as Paris, St. Petersburg on the Neva, and Karlsruhe in Germany. Perhaps most important was to L'Enfant was Versailles where he had spent time as a child. But the tradition of creating vistas and “*magnificent distances*” dates back to Hellenistic Greece and ancient Rome or even further to early Egypt. L'Enfant created his design based on the principles and characteristics of Baroque design a process which he described as follows:

“Having determined some principal point to which I wished to make the other subordinate, I made the distribution regular with ever street at right angles, North and South, East and West, and afterwards opened some in different directions, as avenues to and from every principal place, wishing thereby not merely to contrast with the general regularity, nor to afford a great variety of sites with pleasant prospects, which will be obtained from the advantageous ground over which these avenues are chiefly directed, but principally to connect each part of the city, if I may so express it, by making the real distance less from place to place, by giving to them [the principal points?] reciprocity of sight, and by making them thus seemingly connected, promote a rapid settlement over the whole extent, rendering those even of the most remote parts an addition to the principal, which without the help of these, were any such settlement attempted, it would be languid, and lost in the extent, and become detrimental to the establishment.”⁴²



Figure 10
Plan of the City of Washington, March 1792

L'Enfant's work incorporated the following principles and characteristics of the Baroque:

- a. *A total, grand spacious urban ensemble pinned on focal points distributed throughout the city.*
- b. *These focal points suitably plotted in relation to the drama of the typography, and linked with each other by swift, sweeping lines of communication.*
- c. *A concern with the landscaping of the major streets – “these avenues I made broad” L'Enfant writes, “so as to admit of their being planted with trees.”*
- d. *The creation of vistas.*
- e. *Public spaces as settings for monuments.*
- f. *Dramatic effects, as with waterfalls and the like.*
- g. *All of this superimposed on a closer-grained fabric of daily, local life.*⁴³

*“The advantages of this school of planning, as L'Enfant sees them are expeditious and even settlement of the new city, smooth traffic flow, and visual interest.”*⁴⁴

Unfortunately L'Enfant ran afoul of the commissioner appointed to supervise the design and construction of the new capital and was dismissed by Washington in 1792. The remainder of the work was performed by Andrew Ellicott who had been conducting the survey work. Ellicott with the assistance of his brother Benjamin made numerous revisions despite the protest of L'Enfant. However the credit for the design clearly belongs to the genius of L'Enfant.

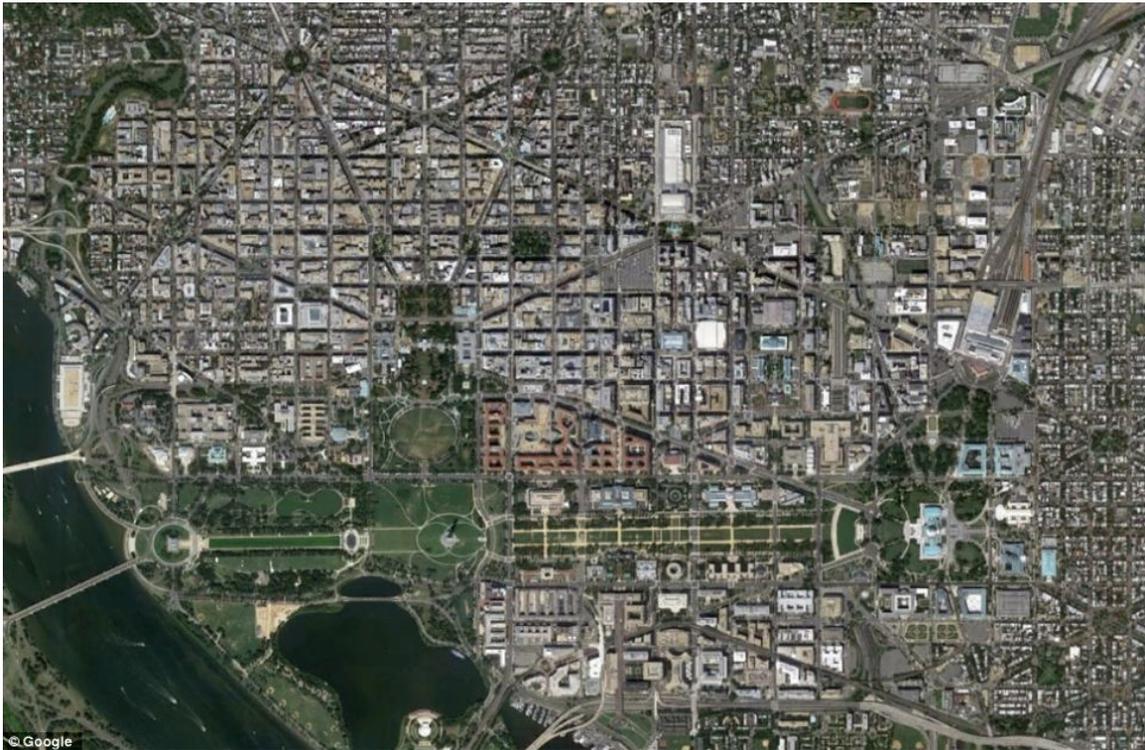


Figure 11
Satellite view of Washington DC

Ildefons Cerdà's Eixample

Ildefons Cerdà, engineer and urban planner, he was the designer of the 19th-century extension of Barcelona called the *Eixample*. Intended as a remedy to the crowding and unsanitary conditions created by an influx of population due to the Industrial Revolution the design focused primarily on; the need for sunlight, natural lighting and ventilation in homes, the need for greenery in people's surroundings, the need for effective waste disposal including good sewerage, and the need for seamless movement of people, goods, energy, and information.

Cerdà had clearly been influenced by L'Enfant's design for Washington DC and the social upheaval of the proceeding decades including the humanist philosophers and utopian dreamers of the French Revolution. He hoped to provide an example for an "egalitarian" city that would balance the urban with the rural as he clearly states in his *Teoria General "Ruralize the urban, urbanize the rural"*⁴⁵

Prior to undertaking the design Cerdà had conducted an analysis, the first of its kind, of the living conditions of the working class in the existing city." Cerdà's study, Published in 1856 "*Monografia de la clase obrera*, concluded that the existing city was "miserly" in size and unsuited to "the new civilization "marked by the use of steam to power industry and land and sea transport."⁴⁶

Cerdà would expand upon his ideas in 1867 with the publication of *Teoría General de la Urbanización* that provided a detailed systematic approach to modern city planning. "One major feature of his proposals, which earned him an outstanding place in the history of urban planning, was his quest for coherence to reconcile the contradictory needs of a complex agglomeration."⁴⁷

Cerdà's designs utilize a network approach, the street layout and grid plan were optimized to accommodate pedestrians, carriages, horse-drawn trams, urban railway lines, gas supply and large-capacity sewers to prevent frequent floods, without neglecting public and private gardens and other key amenities. "Cerdà left the old city of Barcelona intact, and spread an unvarying grid across more than 10 square miles of flat land outside the medieval city walls. The streets were all of equal width, 20 meters (66feet) and the square blocks had cut-off corners of a length that matched this street width. The

buildings were also to be locked into this proportional relationship, being uniformly as high as the street was wide. To Cerdà, the square block “is clear and genuine expression... of mathematical equality, which is equality of rights of interest, of justice itself.

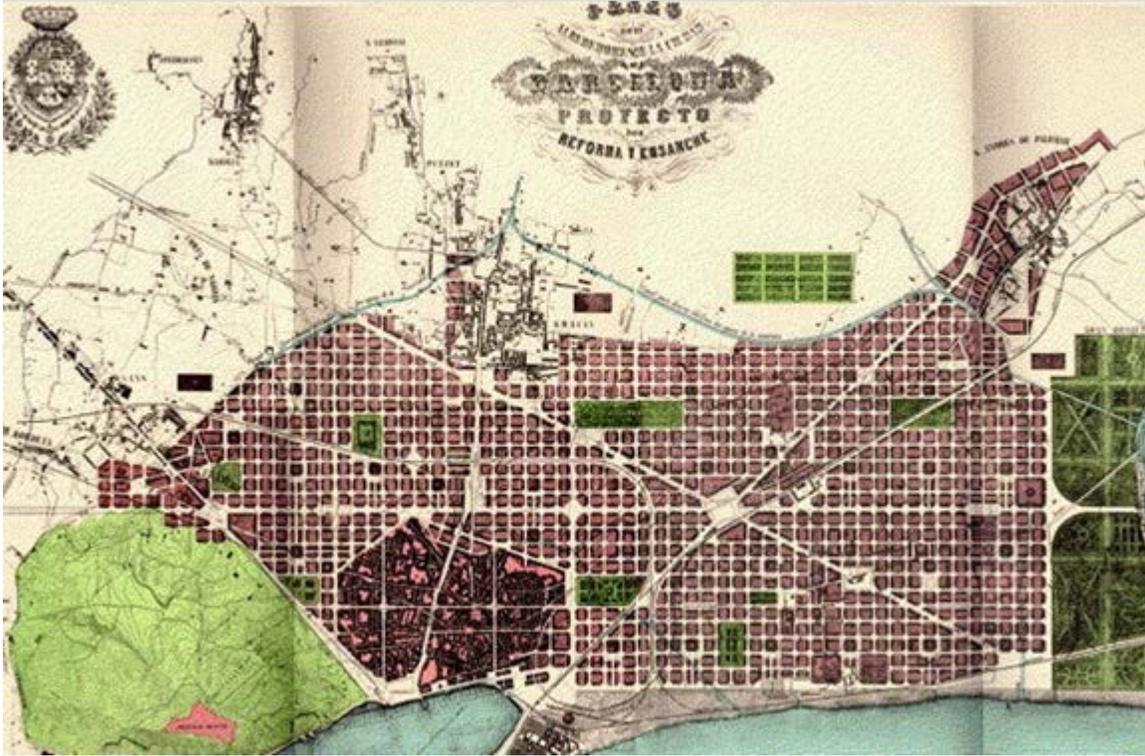


Figure 12
Plano de Barcelona, 1850

The stupefying regularity of this plan was relieved only by a few diagonal boulevards that formed a harsh “X” across the grid. But the monotony was deceptive. Most blocks were to be built up on only two sides, and not always the same two, the unbuilt remainder of each block was to be landscaped. These provisions made possible a kaleidoscopic variation of building and open space, from large quadrangles to linear arrangements of slab blocks prophetic of Modernism.”⁴⁸

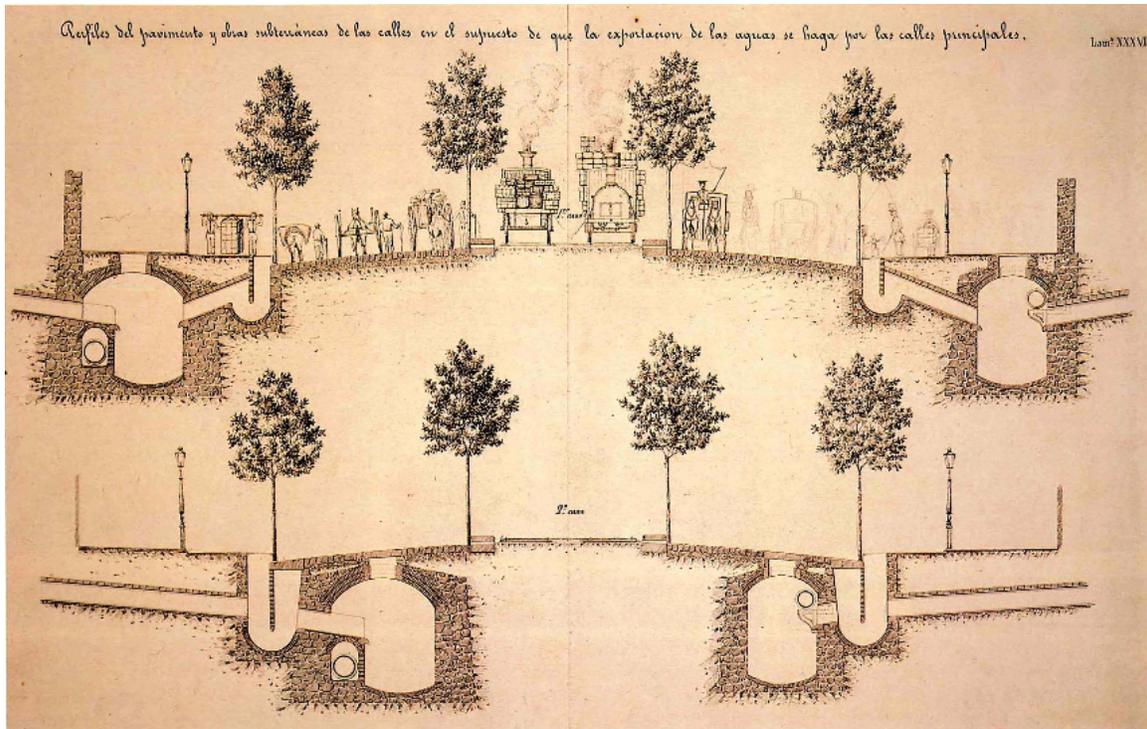


Figure 13
Street section from a "Plan Cerdà" project. 1859

The thoroughfares or *vies* were the public space of the city where he provided for the utility networks such as water, sewer and gas as well as the streets and trolleys. While the square blocks or *intervies* were the private space where row of housing surrounded inner courtyards provided for sunlight and ventilation. The blocks were chamfered on each corner to facilitate the flow of traffic. Both *vies* and *intervies* were to be landscaped with several large parks provide for recreation were spread throughout the design. In addition Cerdà also distributed community services such as hospitals, schools and markets to provide easy access of the residents. The latest technical innovations were incorporated in his designs, but he also invented remarkable new concepts of his own, including a logical system of land readjustment that was essential to the success of his project, and produced a thorough statistical analysis of working-class conditions at the time.

Ebenezer Howard's Garden Cities of To-Morrow

At the turn of the 20th century the paradigm of cities was transformed from the industrial cities to an era urban planning models to mitigate the consequences of the industrial age, by providing citizens, especially factory workers, with healthier environments. *“The most important urban projects from the nineteenth century are based on this general image of an open space at the same time that they seek a solution to the social problems created by the urban squalor and urban sprawl. The Spanish engineer Soria y Mata planned a linear city around Madrid (1882), which is based on the idea of an open, but ordered linear growth, and on a new active interrelationship between settlement and nature. He made his intention known: “The medieval idea of the walled city ought to be replaced by the idea of the open and rural city.”*⁴⁹

*The basic problem for settlements in the industrial age was how to combine openness and flexibility with a meaningful spatial order. To achieve this, the pioneers of modern city planning aimed at a new interpretation of the fundamental concept of place (centre), path (linear continuity), and domain (zoning). The general image of the garden city stems from the dream of a return to nature and a natural kind of life, originally represented by the landscape garden..*⁵⁰

One of first major urban planning theorist of this new paradigm was Sir Ebenezer Howard, who initiated the garden city movement in 1898 Howard's garden cities were planned as self-contained communities In his *Garden Cities of To-Morrow: A Peaceful Path to Social Reform*, Ebenezer Howard promoted the Dispersal Diagram, *“illustrating correct principle of a city's growth- open country ever near at hand, and rapid communication between off-shoots”*⁵¹ Howard's diagram indicated small circular cities on a concentric pattern with six radial boulevards extending from the centre surrounded by open spaces and public parks, containing proportionate and separate areas of residences, industry and agriculture. Howard's garden cities were planned for a population of 32,000 people on a 6,000 acres site. Each garden city was to be self-sufficient and when it reached full population, another garden city would be developed nearby. These garden cities would cluster like satellites around a central city of with a population of 50,000 people, linked by road and rail.

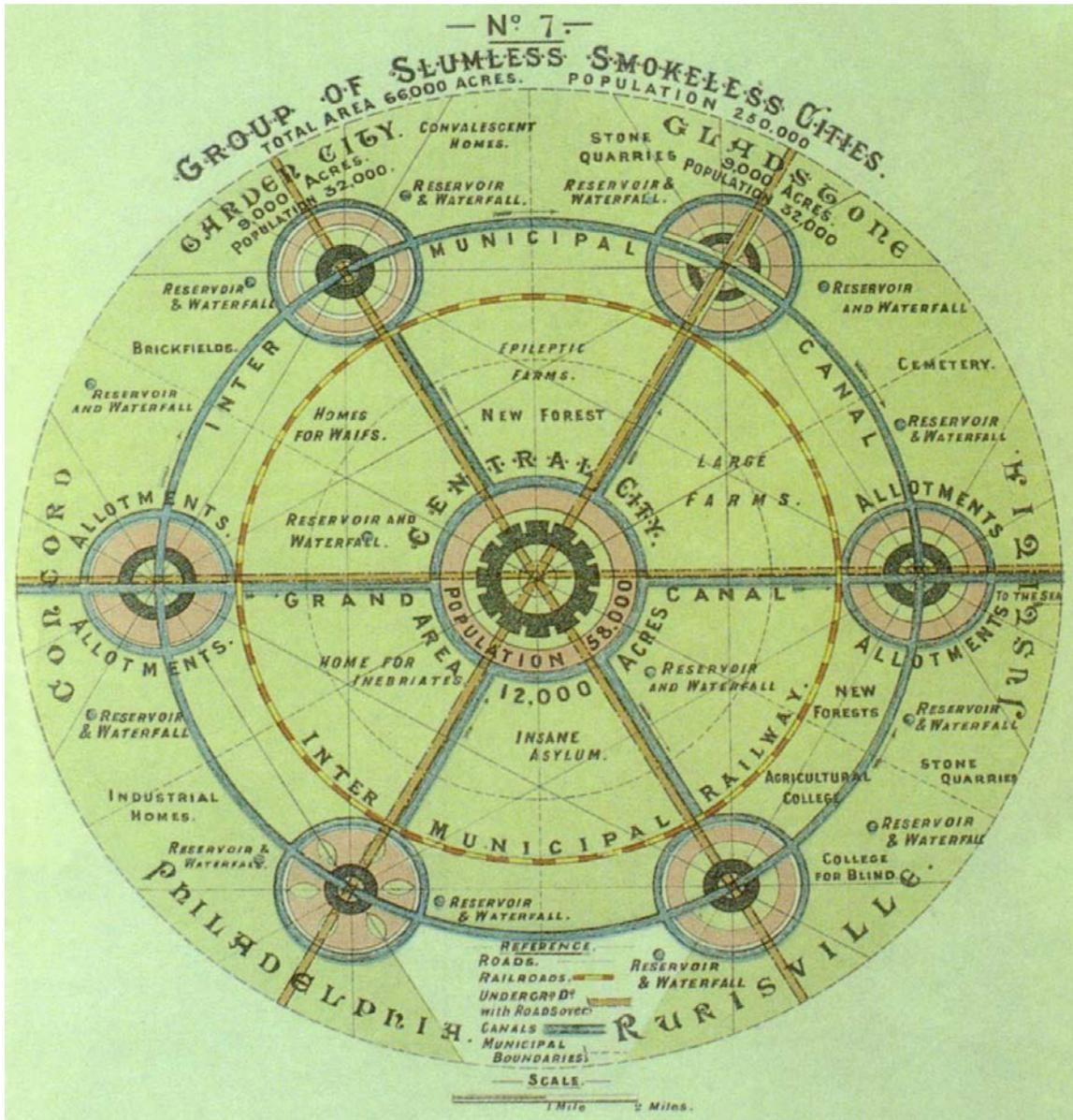


Figure 14
The Garden City of To-Morrow

In *Garden Cities of To-Morrow, A Peaceful Path to Social Reform* Ebenezer Howard introduced his concepts of a remedy to the congestion of the modern city. “Howard’s solution was this: a limited company would acquire a tract of land in the country big enough for a community of 30,000. Private speculation being thereby

*eliminated, buildings would be spread out and open space liberally provided for. The community would always be kept small, so the countryside would be within reach of everyone. The town would have its own industries and business and a ring of farms. The benefits of town and country would be combined. To limit the size of the town, one would circumscribe it within an unassailable greenbelt. The Garden City would have 'all the advantages of the most active and energetic town life with all the beauty and delight of the country.' Olmsted had said much the same thing earlier about the picturesque suburbs he was designing. Howard and his followers, however, combatively stressed the Garden Cities were not suburbs dependent on an old city but self-reliant communities with their own pool of resident jobs and their own apparatus of administration, culture and services."*⁵²

*"Howard squarely approached the problem of giving the open city identity and structure, introducing ideas of zoning, differentiated street systems and urban centre. The latter he conceived as a central park containing town hall, theater, concert hall, library, museum and hospital."*⁵³

Antonio Sant'Elia's La Città Nuova

“In 1914 two young architects, Antonio Sant' Elia and Mario Chiattonne, exhibited in Milan drawings and plans for a “New City”.⁵⁴ Although La Città Nuova (The New City) was never built their work would inspire the ‘Manifesto of Futurist Architecture’ and the concepts would influence architects and urban designers for generations. The New City was a backdrop onto which the dynamism of Futurist concepts would be projected.

“We must invent and rebuild the Futurist city: it must be like an immense, tumultuous, lively, noble work site, dynamic in all its parts; and the Futurist house must be like an enormous machine...the street, which will no longer stretch like a foot-mat level with the porters’ lodges, but will descend into the earth on several levels, will receive the metropolitan traffic and will be linked, for the necessary passage from one to the other, by metal walkways and immensely fast escalators.”⁵⁵

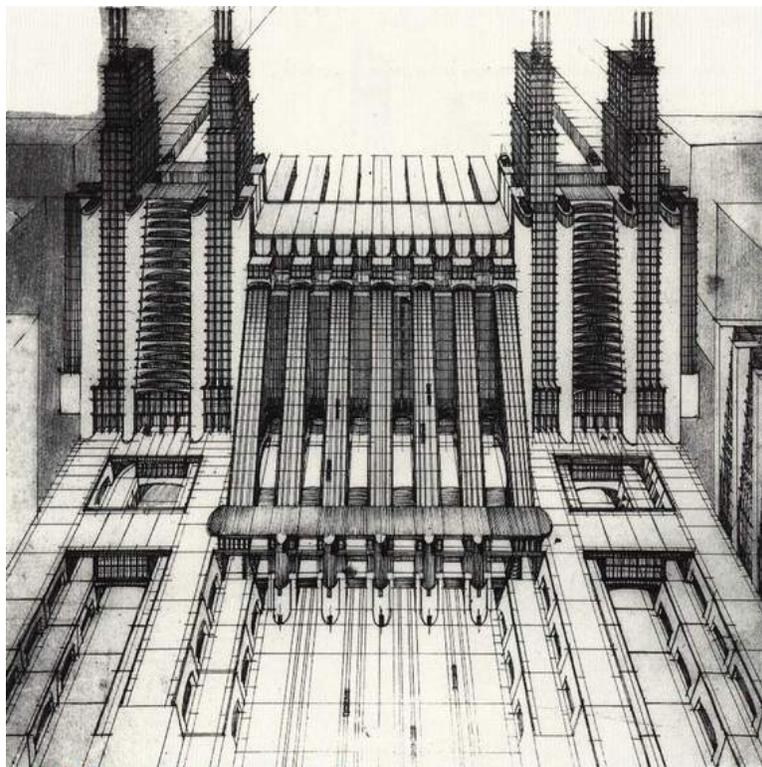


Figure 15
Air and train station with funicular cableways on three road levels

In Sant'Elia's vision the new city had displaced the landscape as the framework for modern life. *His vision was for a highly industrialized and mechanized city of the future, which he saw not as a mass of individual buildings but a vast, multi-level, interconnected and integrated urban conurbation designed around the "life" of the city. His extremely influential designs featured vast monolithic skyscraper buildings with terraces, bridges and aerial walkways that embodied the sheer excitement of modern architecture and technology.*⁵⁶ The new city was an efficient, fast-paced machine. In the new city, every aspect of life was to be rationalized and centralized into one great powerhouse of energy.



Figure 16
The power station

Striped of Baroque curves and encrustations Futurist architecture sought to reveal the essential lines of forms, As Sant'Elia stated: *“That decoration, as something imposed upon architecture, is an absurdity and that ‘the decorative value of Futurist architecture depends solely upon the original use and arrangement of the raw or bare or violently colored material’”*⁵⁷

The New City was not meant to last, and Sant'Elia postulated that; *“Each generation will have to build its own city. This constant renewal of the architectonic environment will contribute to the victory of ‘Futurism’ ...”*⁵⁸

Le Corbusier's Ville Contemporaine

Le Corbusier's project the Ville Contemporaine (Contemporary City for Three Million People), first presented at the 1922 Paris Salon d'Automne, a vast diorama. *According to the designer himself, the display shocked its audience into "a sort of stupor."*⁵⁹

A radical break from traditional planning, Le Corbusier proposed, *"great blocks... of flats opening up on every side to air and light, and looking not on the puny trees of our boulevards today, but upon greensward, sports grounds and abundant plantations of trees."* *The blocks will be lifted up on pilotis (stilts), and linked by a gridded network of elevated highways and ground level service roads. The modern street is "a new type of organism, a sort stretched out workshop... The various stories of this stretched out workshop will each have their own particular functions. The four functions aligned about the axis of the street – housing, work, recreation and traffic – must now be strictly separated. This will not allow for the enclosure of space in the conventional manner of city-making. The street, in a sense, will be separated from the buildings."*⁶⁰

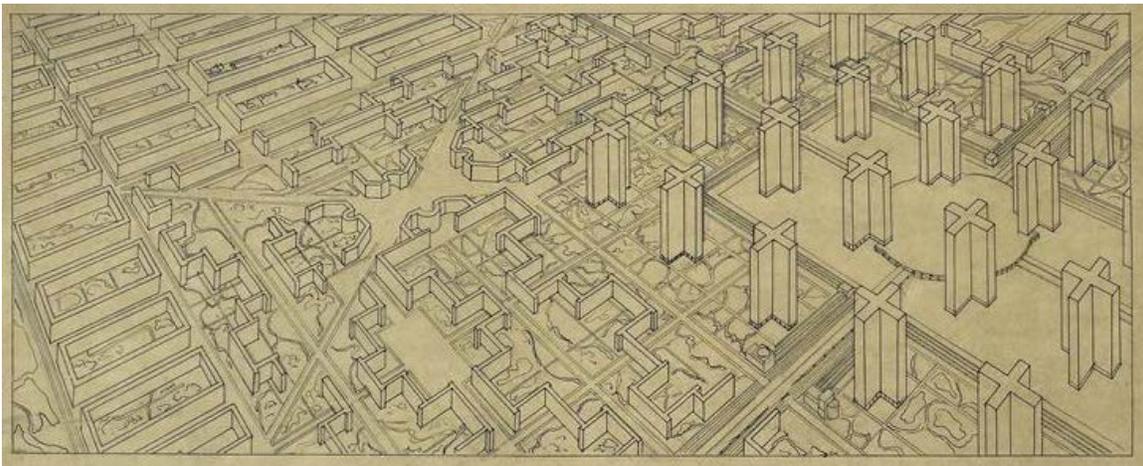


Figure 17

Ville Contemporaine

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The centerpiece of this plan was a group of sixty-story cruciform skyscrapers built on steel frames and encased in curtain walls of glass. The skyscrapers housed both offices and the flats of the most wealthy inhabitants. These skyscrapers were set within large,

rectangular park-like green spaces. At the center of the planned city was a transportation hub which housed depots for buses and trains as well as highway intersections and at the top, an airport.

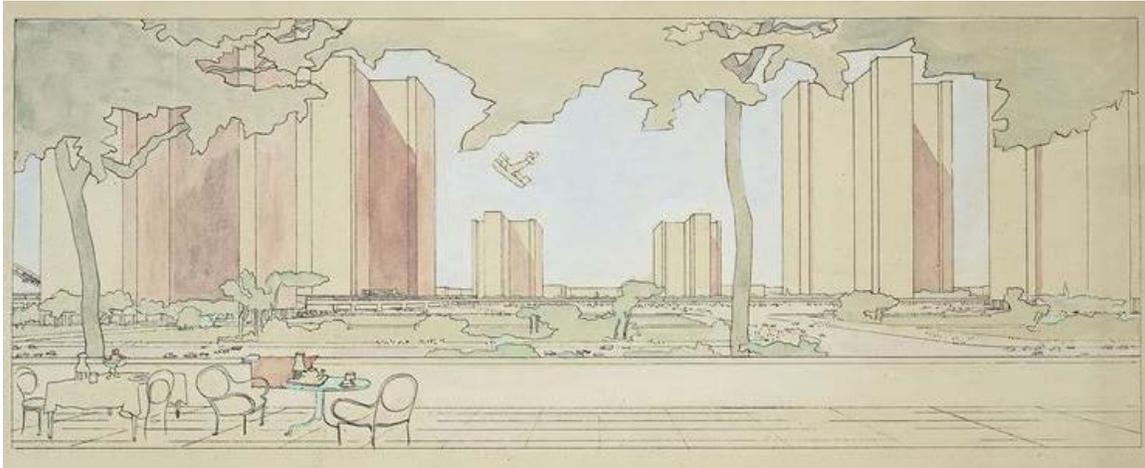


Figure 18

Ville Contemporaine

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Le Corbusier segregated the pedestrian circulation paths from the roadways, and glorified the use of the automobile as a means of transportation. As one moved out from the central skyscrapers, smaller multi-story zigzag blocks set in green space and set far back from the street housed the proletarian workers.

A Contemporary City for Three Million People had been completed in 1922 and was followed by “*Le Corbusier’s fundamental essay on town planning (Urbanisme) appeared in the Collection de l’Esprit Nouveau in 1925*”⁶¹

Now Le Corbusier drew conceptual consequences, linking axioms with events of the day in his own enthusiastic manner “*I felt very clearly that events were pressing 1922-25 – how fast everything moved.*”⁶²

In the essay Le Corbusier declares “*The town is a working tool. Changing the concept of the settlement while deeming the current typologies inefficient for the modern age. He went on to state that “A town! Is an assault upon nature. It is a human action against nature, a human organism designed for shelter and work. It is a creation.*”⁶³

*Poetry is a human act – concerted interrelationships between perceptible images. To be exact, the poetry of nature is nothing but a construction of the human spirit. The town is a powerful image that activates our spirit Why should not the town, even today, be a source of poetry?”*⁶⁴

*“Geometry is the means with which we have provided ourselves for looking around us and expressing ourselves. Geometry is the basis. It is also the material foundation for symbols signifying perfection, the divine. It brings us the lofty satisfaction of mathematics.”*⁶⁵

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Hugh Ferriss' Metropolis of Tomorrow

Originally a commissioned work for the architect Harvey Wiley Corbett of studies for possible designs to comply with the new zoning laws enacted in New York City. The new ordinances regulated and limited the mass of buildings according to a complex formula. Ferriss originally drew a series of four step-by-step perspectives demonstrating the architectural consequences of the zoning law. These four drawings would become the genesis of his 1929 book "The Metropolis of Tomorrow" illustrating his conte crayon sketches of tall buildings. Some of the sketches were theoretical studies of possible set back variations others were renderings for other architect's skyscrapers. And the most interesting portion the end of the book, a sequence of views in Manhattan what might be considered a utopian vision. Ferriss clearly saw the impact of migration on the city writing: *"Imagination sketches the rural youth who is ever rising to his dream of 'the big city' – the unformulated yet gleaming metropolis. Call it what you will: gregarious instinct or economic necessity: the prime trend, which we must deal in any formulation of the future city, is the trend towards centralization."*⁷⁰

The design is laid out as a triangle with the three distinct centers a business district, an art district and a science district each with a central structure surrounded by parkland and smaller structures with residential neighborhoods surrounding the three and merging in the area between the districts.

*"In Hugh Ferriss's The Metropolis of Tomorrow (1929 the skyscrapers are also widely spaced through the matrix is still the grid of Manhattan. Ferriss makes it clear that "while they [the tall buildings] are not all precisely equidistant, and their relation does not suggest an absolutely rectangular checkerboard scheme, yet it is obvious that they have been located according to some citywide plan." But the major economic adjustments called for and the changes in zoning practices were not forthcoming, so these projects remained on the boards."*⁷¹

Ferriss describes the relationship between the three districts and is clearly a glimpse into his utopian vision for the metropolis. Looking West from the Business district:

“It is at first glance somewhat puzzling to find that the two structures which are dedicated to arts and sciences are placed in positions as prominent as the Business center of the city ... Are we to imagine that this city is populated by human beings who value emotions and the mind with senses, and have therefore disposed their art, science and business centers in such a way that all three would participate equally in the government of the city? ... The Plan indicates, at least, that the structures to house these activities exist, and that such a threefold system of government is regarded, in this city, at least a potentiality: a potentiality which citizens, whenever so moved, could fully actualize.”⁷²

—

Frank Lloyd Wright's Broad Acre City

Originally proposed in *The Disappearing City* in 1932, Frank Lloyd Wright would spend most of his life, in drawings, books and articles, working on the concepts embodied in his utopian vision later known as Broadacre City. Broadacre City is actually the antithesis of a city designed by Wright to take advantage of a newly born suburbia, creating a decentralized network of communities. When Wright originally wrote of the disappearing city he was simply observing the migration to the suburbs which his designs were a part of creating. Wright's fundamental belief was that technology and specifically the automobile would allow for a return to nature. As he said, "*the machine, I believe – absurd as it seems now, absurd even to those who are to be the first to leave – will enable human life based squarely and fairly on the ground...*"⁷³

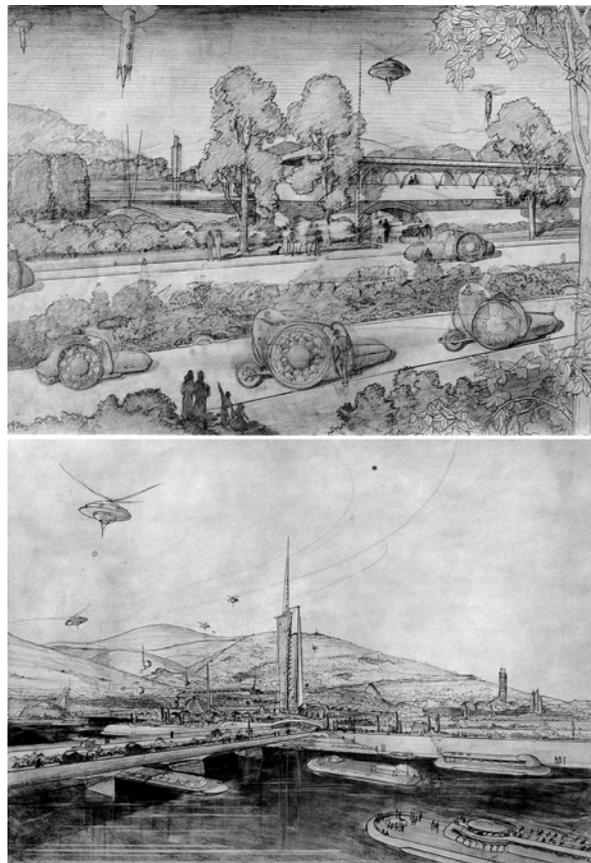


Figure 19
Broadacre City

In many ways Wright's forecast came true for a large part of the population as many Americans escaped the cities for suburbia. This trend would become even more dynamic following World War II as vast communities were developed virtually overnight. As Wright said, "*The dividing lines between town and country are even now gradually disappearing as conditions are reversing themselves.*"⁷⁴ However, the American city did not disappear but rather adapted by annexing large portions of the surrounding suburban area, contrary to Wright's prediction that, "*The country absorbs the life of the city as the city shrinks to the utilitarian purpose that now alone justifies its existence. Even that concentration for utilitarian purposes that we have just admitted may be first to go, as the result of impending decentralization of industry.*"⁷⁵

At first it might appear Wright believed that the automobile would allow Americans to return to a Jeffersonian Republican ideal. However "*Wright rejected any return to the simple life, to some bygone republic such as Jefferson's.*"⁷⁶ Wright would later expand on this by stating:

*"I do not believe in a "back to the land" movement; I think that any backward movement would be folly; but if, turning away from excess urbanization now, we can go forward with all that science has to provided us, going forward intelligently to the new free forms which must be made for the accommodation of life so that it may live more generously, more spaciouly and more fully, we shall be dealing – practically – with the problem now on our hands...Broadacre City is the country itself come alive as a truly great city."*⁷⁷

Wright having been born in 1867 in Richland Center, Wisconsin during a time of post-civil war expansion would have been influenced by this period of rapid expansion. "*The frontier mythology is central to both Wright's personality and his spatial concepts, embodied in his designs for houses in which the masonry hearth which occupied the center of the plan and its structure.*"⁷⁸ In fact "*Wright did not consider democracy to be a form of government, so much as a way of living*".⁷⁹

Wright was politically associated at the time of his proposal with the brothers Bob and Phil La Follette, who in 1934 broke away from the Republican Party to form the Progressive Party. Wright would incorporate into Broadacre City many of the Progressive ideals such as "*the right of men and women to own their homes, their farms and their*

places of employment but against corporate and absentee ownership; for the public ownership of all utilities of common necessity including the media energy supply and waste disposal, the media of communication – radio, telephone post – mass and bulk transportation, and the medium of exchange; they were for full social security, free educational and health services; for co-operative marketing of food; for the right of workers to organize as they choose.”⁸⁰

Wright’s disdain for the city can be seen when he states, “*It will soon become unnecessary to concentrate in masses for any purpose whatsoever.... Even the small town is too large. It will gradually merge into the general non-urban development. Ruralism as distinguished from urbanism is American, and truly democratic.*”⁸¹ Launched during the midst of Roosevelt’s New Deal, Wright proposed an approach to the problems of the American city and territory. *His hypothetical project for Broadacre City (1935-1950s), offered a vision of a territory-wide, middle-class commuter suburb, with elements distributed across a territorial grid, that symbolic domain of the homestead and American independence mythically hewn from nature and hostile otherness that had held for seventy years.*⁸² This vision can clearly be seen to have ties to both Jefferson’s Republican Ideals and the Progressive Ideals of the late 1930’s.

Under Wright’s plan each U.S. family would be given one acre plot of land from the Federal reserves, where the designs of Broadacre city would be realized. The cities were conceived of primarily as communities of single family residences with a few office and apartment buildings. The community was based on a four square mile module and contained both older designs and new concepts being developed by Wright. In Wright’s scheme “*palaces*”⁸³ of shopping, entertainment and culture were to be clustered in enormous buildings adjacent to motorways as regional amenities. Critics were fond of “*calling it Wright’s repository for unexecuted Architectural projects and a device for attracting attention to his unorthodox social, economic and political ideas*”.⁸⁴ In the design transportation is primarily via automobile with some accommodation made for train stations. Wright “*believed that modern industrial resources could release men from drudgery*” his concepts of technology and society can best be summarized in the following statements regarding Broadacre City:

"The three major inventions already at work building Broadacres are: 1. The motor car: general mobilization of the human being; 2. Radio, telephone and telegraph: electrical communication becoming complete; 3. Standardized machine-shop production: machine invention plus scientific discovery."

The three inherent rights of any man are: 1. His social right to a direct medium of exchange in place of gold as a commodity: some form of social credit; 2. His social right to his place on the ground as he has had it in the sun and the air: land to be held only by use and improvements; 3. His social right to the ideas by which and for which he lives: public ownership of invention and scientific discoveries that concern the life of the people."

"The only assumption made by Broadacres as ideal is that these rights will be the citizens'. So I have called it a new freedom for living in America."⁸⁵

Wright also believed that technology would allow men to return to nature and *"argued that a community that lived close to the soil could surpass the most advanced technical nations controlled by absentee ownership and finance"*. Wright called his ideas *"a new freedom for living in America"*.⁸⁶ Wright's believed the city as a manifestation of American society was wrong. He spoke of its populations as *"mobs"*, its processes of decision-making and action as *"mobocracy"*. Wright stated that *"In Broadacres, by elimination of cities and towns, the present curse of petty and minor officialdom, government, has been reduced to one minor government for each county..."⁸⁷* The similarities with Jefferson, whose disdain for cities can best be summed up by the following excerpt from Notes on the State of Virginia, *"The mobs of great cities add just so much to the support of pure government, as sores do to the strength of the human body."⁸⁸*

Wright's means of delivering his American Utopia was to leave the mechanisms that regulated the various components of the regions and their economies to distribute wealth as *"natural phenomena"* in the hands of private interests. Wright's solution was self-interest, low-government to no-government position. *"Broadacre city is also a radical document: it is a direct assault on the classical theory of the city in a way that Le Corbusier's work or the Garden City were not."* As Wright believed that *"a city is not an arrangement of roads, building and spaces it is a society in action"⁸⁹* *"Society"*

Wright said was, “*The living city*”⁹⁰ In the end Wright’s Broadacre City was never realized. A series of regional settlements connected via roads and infrastructure in Wright’s vision became the modern commuter suburb, with its shopping malls and parks, acting more like dormitories for workers. Modern suburbs recalling the Jeffersonian image, an image of independence and freedom, ideals embodied in the homestead as envisioned by Wright.

In many ways Wright’s forecast came true for a large part of the population as many Americans escaped the cities for suburbia. This trend would become even more dynamic following World War II as vast communities were developed virtually overnight.

As Wright said, “*The dividing lines between town and country are even now gradually disappearing as conditions are reversing themselves.*”⁹¹ However, the American city did not disappear but rather adapted by annexing large portions of the surrounding suburban area. Contrary to Wright’s prediction that, “*The country absorbs the life of the city as the city shrinks to the utilitarian purpose that now alone justifies its existence. Even that concentration for utilitarian purposes that we have just admitted may be first to go, as the result of impending decentralization of industry.*”⁹²

Paolo Soleri's Arcosanti

Arcosanti is an experimental community designed and developed by the Italian-American architect, Paolo Soleri. *an ascetic philosopher architect and the inventor of "arcologies"* ⁹³ He coined the word "arcology" to suggest an architecture responding efficiently to ecology; more precisely, it refers to Soleri's breed of the city of the future, contained within a single mega structure and aiming to maximize social benefits and minimize cost of land, energy and raw materials. ⁹⁴

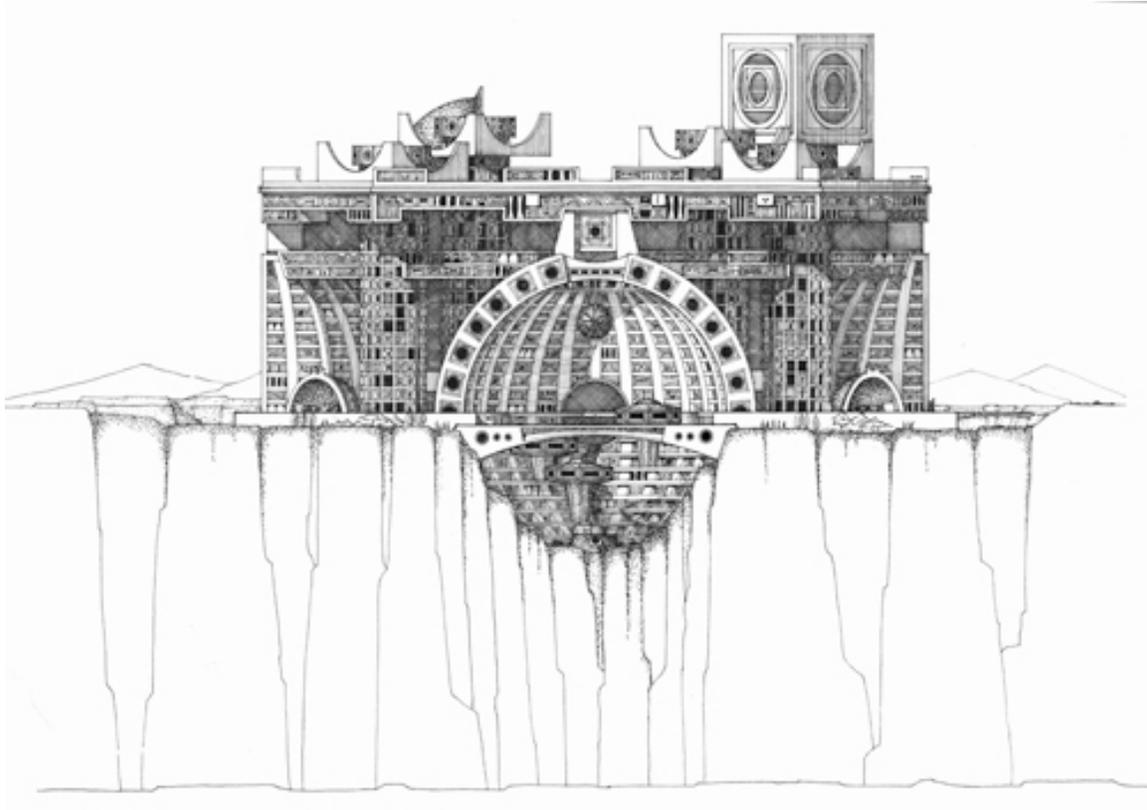


Figure 20
Arcosanti

"In nature, as an organism evolves it increases in complexity and it also becomes a more compact or miniaturized system. Similarly a city should function as a living system. Arcology, architecture and ecology as one integral process, is capable of demonstrating

*positive response to the many problems of urban civilization, population, pollution, energy and natural resource depletion, food scarcity and quality of life. Arcology recognizes the necessity of the radical reorganization of the sprawling urban landscape into dense, integrated, three-dimensional cities in order to support the complex activities that sustain human culture. The city is the necessary instrument for the evolution of humankind."*⁹⁵

Based on the concepts of arcology, Arcosanti is intended to demonstrate Soleri's concepts of urban design. Construction broke ground in 1970, and has continued at a varying pace through the present. The population varies between 50 and 150 people, based on the number of students and volunteers on the site. Ultimately, the town is planned to have 5,000 people. At present, the town is primarily an education center, with students from around the world visiting to attend workshops, classes, and continue construction thirteen major structures have been built on the site, some several stories tall.

Soleri utilized unique construction methods in the design and construction of Arcosanti, including, tilt-up concrete panels that cast in a bed of silt acquired from the surrounding area, giving the concrete a unique texture and color blends with the surrounding landscape. Panels were cast with embedded art. Most buildings are oriented southward to capture the Sun's light and heat — roof designs admit the maximum amount of sunlight in the winter and a minimal amount during the summer. The bronze-casting apse is built in the form of a quarter-sphere or semi-dome. The layout of the buildings is intricate and organic, rather than a city grid, with a goal of maximum accessibility to all elements, and a combination of increased social interaction and bonds, together with privacy for the residents.

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Appendix A

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