Diplomarbeit

# *Black Rock City*
## *An Urban Morphological Point of View*

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**Ao. Univ. Prof. Arch. Dipl.-Ing. Dr. Erich Raith**

E 260, Institute für Städtebau, Landschaftsarchitektur und Entwerfen, Fachbereich Städtebau

eingereicht an der Technischen Universität Wien - Fakultät für Architektur und Raumplanung

von

**Melinda Sara Rustad**

0426445

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# *Abstract*

Black Rock City, Nevada, is a recurring temporary city which blossoms for one week each year in Black Rock Desert within the context of the Burning Man Festival. As opposed to other festivals, Burning Man does not provide consumer services, products or performances, but rather creates a tabula rasa onto which the revelers are invited to create a week-long experimental society based on participation rather than observation. The participative quality of the society is transformative, converting it into an actual city as opposed to merely a large-scale gathering of people seeking a spectacle.

The temporal nature of the urban fabric leads to unique urban morphological processes and opportunities. This trait allows for immediate large-scale modifications to the built environment. Structural permanence is eliminated. The speed at which the city is able to adapt to its needs is much faster than that of a traditional, permanent city. It is like observing urban morphology in a time-lapse.

Although the methods of deciphering urban morphology can be somewhat speculative, many different factors may be considered, and resources drawn upon in order to establish evidence explaining why the city manifests as it does. Such factors include: socio-spatial relationships, climate, geology, geographical location, politics and power structure relationships, spatial hierarchies, view axes, fields of tension between different urban functions, and relationship between culture and nature, to name a few. Maps, observations on location, and interviews are used to gather information and form hypotheses about the condition and evolution of the urban structure. The interplay between the top down, preset urban plan and the bottom up, creative interpretation and activation of the city by its inhabitants results in a multifaceted urban structure, with urban processes occurring on many different scales.

In a world hastily altered by globalization, migration and demographic shifts, understanding the urban morphological processes of a temporary city, such as Black Rock City, could prove valuable in determining if there are any further implications for current urban issues, such as informal settlements, refugee camps, rapid urbanization processes, etc.

*Figure 1: Cover Image, Aerial Photo of Black Rock City in 2010*

# *Abstrakt*

Black Rock City benennt jene Stadt, die einmal jährlich für eine Woche im Rahmen des Burning Man Festivals im US Bundesstatt Nevada aus dem Wüstenboden wächst. Im Gegensatz zu anderen Festivals bietet Burning Man keine Konsum-orientierten Produkte, Dienstleistungen oder Aufführungen an, sondern offeriert eine Tabula Rasa, auf dem die Teilnehmer eingeladen sind, in einer experimentellen Gesellschaft zu erwachsen. Diese Gesellschaft basiert auf Partizipation anstatt auf Beobachtung. Die partizipative Qualität hebt das Ereignis von üblichen Menschen nur „ansammelnden" Festivals ab, transformiert die Gesellschaft und verwandelt sie in eine facettenreiche Stadt.

Die temporäre Erscheinungsform des Stadtgefüges führt zu einzigartigen stadtmorphologischen Prozessen und Chancen. Diese Eigenschaft ermöglicht rasche, schmerzlose großmaßstäbliche Änderungen an der gebauten Umwelt. Die strukturelle Permanenz wird aufgehoben. Die Geschwindigkeit, in der sich die Stadt an die Bedürfnisse der Bewohner anpasst, ist unvergleichbar höher als in der traditionellen permanenten Stadt. Stadtmorphologie läuft im Zeitraffer ab.

Die Methode der Stadtmorphologie greift zeitweise auf Spekulationen zurück, doch können viele verschiedene Einflussfaktoren und Ressourcen verwendet werden, um Anhaltspunkte zu etablieren, die die Form der Stadt erklären können. Beispielhafte Faktoren sind: sozial-räumliche Beziehungen, Klima, Geologie, geographische Lage, politische und machtstrukturelle Verhältnisse, räumliche Hierarchien, Blickbeziehungen, Spannungsfelder zwischen unterschiedlichen Nutzungen, Beziehung zwischen Natur und Kultur. Die Lektüre des Ortes, Karten und Interviews werden verwendet, um Information zu sammeln und Hypothesen über die Evolution der Stadtstruktur zu formulieren. Das Wechselspiel zwischen top-down vorgegebenen Stadtstrukturen und kreativer Interpretation durch die Bewohner bzw. bottom-up Aktivierungen der Stadt führt zu einem vielfältigen Stadtgefüge, worin urbane Prozesse in verschiedenen Maßstäben stattfinden.

In einer hastig durch Globalisierung und Migration veränderten Welt, erscheint es sinnvoll, Verständnis für stadtmorphologische Prozesse einer Temporärstadt, wie Black Rock City, zu erlangen. Denn dieses Verständnis kann uns zu Erkenntnissen für aktuelle nicht geplante urbane Phänomene, wie Informal Cities , Flüchtlingslager, rapide Verstädterungsprozesse etc. führen.

## *Acknowledgements*

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## Introduction

*„I will begin at the beginning. Indeed, at the mythic beginning, in 1986 on a beach in San Francisco. I say mythic, because the mythic conception of time is a little different from the historic conception. Myths hold that the essential meaning of things is to be found in their origins. In historic circumstantial reality, Burning Man has grown by virtue of hundreds of confluent streams that have poured in to engender our culture. To say the very beginning on the beach was the beginning is like saying the first trickle of water that grows into the Mississippi, the one that is farthest from the delta, is the beginning and that's not really rational, but myths aren't rational."* *(Larry Harvey, Founder of Burning Man)*[1]

Black Rock City arises in the desert of Nevada each year, blooms into a flourishing city centered around the Burning Man Festival, and then dissipates back to emptiness. In today's capitalistic market society, it is easy to assume that such an event is based upon profit margins. In fact, Black Rock City LLC (founded in 1997 by the originators) was granted nonprofit status in 2014 and is now a non-profit organization known as the Burning Man Project.[2] Black Rock City and Burning Man Festival are unique, originating not from a marketing plan, but simply from a spontaneous form of radical self-expression[3] on a beach in San Francisco in 1986, 30 years ago.

Black Rock City is a particularly fascinating subject to choose for urban morphological analysis due to its unique temporary form and lifespan. This aspect distinguishes it from other cities, begging the following questions:

– Can urban morphology occur in a temporary city?

– Does a temporary city respond morphologically differently than a traditional city, and if so how?

The relevance of these questions is evident in regard to today's swiftly changing global demographics. The following analysis seeks to use Black Rock City as a tool to address these questions. It is a resource singularly qualified for the examination of urban evolution and morphological processes within this context. As described by David Koren in his invitation to the 2007 discussion panel, Burning Man: Planning and Evolution of the Temporary City, *„As a one-week experiment in community planning, Burning Man has a lot to teach us about how we plan more permanent communities. Since event participants construct their camps and works of art on a blank piece of land within the city plan, the entire city is a real-time, high intensity laboratory in planning, design, negotiation, and community issues."* [4]



*Figure 2: Burning Man, 2014*

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## Permanence and Temporality

Although no city is truly permanent (all known structures are ever-changing and have finite lifespans), for the purpose of this thesis, traditional cities will be referred to as „permanent." Permanency and temporality are distinguished from one another by intention of termination. A permanent city, for our purposes, exists with no active intention by its citizens of removal in the future, whereas a temporary city is intended to be removed after a given period of time has passed. Intention of removal is the key characteristic which distinguishes a temporary city from a traditional city, and it is conceivable that many further factors which define the urban structure and social constructs are derived directly from this essential, guiding factor.

On a large, urban scale, historic cities exist linearly, with very few exceptions. Their development over centuries has gone through many stages, always moving forward. Each change occurs chronologically following the last, with a return to a previous stage being highly unusual. On a smaller, architectural scale, a return to older building styles, materials, or even direct copies of specific, historical elements is possible and even common. People try to retain traces of their architectural history. Replication and reinstatement of small, architectural elements are economically feasible, but large urban regressions are nearly impossible to implement. There are occasional exceptions, such as reestablishing pedestrian zones. Generally speaking, you simply cannot erase a permanent city and begin anew or even step backwards. Take, for example, an archetypal central European city. Typically, they have gone through three significant stages, as described by Cedric Price:

- Medieval cities confined within the hard boundaries of protective city walls and a very clear center based around important cultural institutions of the time, such as churches and town squares.

- Rapid urban growth outside the city walls during 17-19 centuries, the perforation of the hard boundary of the walls, and the maintainance of a clear urban center.

- The removal of city walls and the development of urban sprawl in the Modern Era, resulting in many scattered centers and mixed functions, urban agglomeration and homogenity.[5]

Price explains these three stages as an analogy to an egg. The ancient city is compared to a hardboiled egg within its shell, the city in the 17-19 century is described as a fried egg, and the modern city is compared to scrambled eggs. His analogy illustrates very clearly the linear quality of the urban development.[6] Black Rock City, being a temporary city, is quite different in this regard. Through repetition and adaptation, it is possible to return to a previous stage, if it is determined that aspects of that earlier stage were „better" than they are now.



*Figure 3: Cedric Price's analogy „The City as an Egg"*

The short life-span of the physical manifestation of Burning Man Culture, which is Black Rock City, induces a Phoenix-effect allowing each unique manifestation to improve upon the last dramatically and with decisiveness. This rapid steering of the urban structure is, in effect, an accelerated urban morphological process. Transformative processes that would take decades or centuries in a traditional, permanent city occur immediately, as if in a time-lapse. Urban adaptations are able to circumvent structural permanency. Temporality is key to deciphering the existence of the city, its structure, and the social situation present in the city. The fleeting nature of this phenomenon creates a kind of urgency in its citizens, motivating interaction, kindness, creativity, and teamwork. It is comparable to the concept of mortality, and how it acts as a motivating factor of the human condition.

The urban morphological processes of Black Rock City are unusual compared with a traditional, long standing city. It doesn't have a long history to draw upon for information as to how it developed. It hasn't existed for very long, and the urban structure is meticulously planned and redrawn each year to respond to conflicts from the previous year and to maintain aspects which had positive effects. It is continuously being pushed towards its own perfection. Instead of slowly being developed over hundreds of years and responding to the surrounding environment, Black Rock City inhabitants and planners are actively pushing to improve their city from year to year, with full awareness of the project. Due to the fleeting nature of the city, it is able to evolve at a faster pace than a traditional city, rapidly adapting to the needs of the citizens. The fastpaced changes allow for quick reactions and developments to accommodate population growth and the changing needs of the population while avoiding gentrification and social differentiation. These qualities make it well suited for urban morphological observation.

## To be a City

A city cannot exist merely through the close proximity and high density of a mass of people to one another. It requires a certain level of interaction between inhabitants, on both social and professional levels. The physical manifestation of the surrounding built structure serves as the exoskeleton supporting these functions. In her book, Raumsoziologie, Martina Löw developed a theory, asserting that social interaction creates space, which contradicts leading earlier theories which define space as a backdrop for social interaction. This model is known as the „Relational Model of Space" and it seeks to explore how social structures and interactions are spatially articulated in the physical world.[7]

Cities exist only through the active participation of its citizens. Black Rock City, although it is only a temporary structure, is no exception to this rule. It is exactly this insight and the implementation of this concept which sets Black Rock City apart from the design of any other festival. The act of participation elevates this large-scale gathering of people into an actual city by allowing individual participants to define their own diverse roles within a wide range of different functions. Diversity results in cohesion and the resulting quality is transformative, converting Black Rock City into an actual city as opposed to a mere agglomeration of people who want to see a spectacle.

As with any city, it did not appear in its full form immediately, but rather grew from each year to the next, increasing in both population and size, becoming structurally more defined and organized, and refining its infrastructure to better accomodate the needs of its citizens. As it grew, the need for a stricter organizational urban structure grew as well, and so urban planning measures were also implemented. The perpetual interplay between direct urban planning measures based on the evolving societal needs, and organic urban developments precipitated the current format of Black Rock City and continue to shape the city today.

Cities often form around places with strong meaning such as a church, cloister, castle, military camp, etc.[8] It is interesting to note that the founders of the event never intended to build a city. The city formed organically around an event loaded with unintentional psychological significance (which also organically evolved out of a spontaneous gesture) and an object of meaning, namely the statue of the Man.

Larry Harvey describes the first occurance of the Burn as an impulsive action, through which he was able to grasp several new concepts, especially concerning the effect of this object of meaning on the local public. He calls the Man a „primal attractor" portraying the way strangers were instantly captivated by what was happening that evening on the beach. He continues by explaining that this was an immediate experience, devoid of any kind of preimposed dogma, which invited the participants to infuse it with their own, individual, spiritual content.[9] Thus, it became emotionally accessible to people from all different walks of life with varied cutural, religious (or non-religious), economic, educational, and generational (etc.) backgrounds. The diverse variety of people contributes to the enrichment of the culture, which strengthens the city socially.

From the beginning, Black Rock City (a new, extremely fast-growing, and temporary phenomenon) has been subjected to a more rigorous planning agenda than a typical city, but that doesn't negate the fact that many kinds of processes of urban change are active here as well.
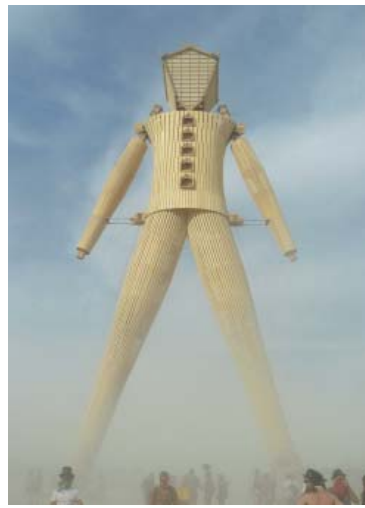


*Figure 4: David Best's Temple, Black Rock City, 2012*     *Figure 5: The Man in a rising dust storm, 2014*     *Figure 6: Cathedral in Orvietto (place of meaning)*

## Urban Morphology

Urban morphology is a field of urban studies which deals specifically with deciphering the root causes of the establishment and transformation of a city, and why its structure appears as it does. Many invisible, yet observable, aspects contribute to the physical expression of the city. One crucial tool for the study of urban morphology is „Spaziergangswissenschaft," which is a term coined by Lucius Burckhardt. It translates roughly as „Strollology," or the „science of strolling." It refers to the method of study, which involves physically moving through a city or landscape in order to critically observe the structural networks and spatial relationships first-hand.[10] By connecting observations from „the stroll" with knowledge and other facts about the location and history of the city, it is possible to piece together a story about the urban structure.

This line of study focuses on the network of components in a city, including constructive elements and their spatial relationships with each other, spatial patterns and topography, as opposed to analyzing architectural constructions themselves.[11] No two cities were ever identical, which tells us that the formation of different cities must each be based on a unique set of circumstances. This implies that there is a basic underlying logic to each urban structure, which can be explained by identifying and exploring these parameters.[12]

Consider a game of chess: No two games ever played out identically and there is infinite creativity in each gameplay, but the game is only possible within a certain framework of rules. Without a system of rules and standards there would be chaos and a game would be nonsensical. Analogous to chess, the formation of each unique city is not the result of coincidence and chaos, but an expression which occurs within a framework of rules and laws. This field of research sets out to determine what these rules are, and how they tie in to the city's form. [13]

The elements comprising the study of urban morphology overlap with a sampling from various other disciplines under the broader umbrella of urban studies such as urban history, urban development, and urban planning, among many others. [14] Urban morphology is interdisciplinary: it can integrate knowledge of culture, religion, architecture, rituals, etymology, trade, history, tradition, art, as well as natural laws and physical circumstances, and even anthropological aspects. It is important to determine which criteria are relevant for analyzing each individual city, as the circumstances differ greatly from one another. People drive development, but there are also laws of nature (gravity, wind, sun, protection, available materials, etc.) which have an unavoidable influence on cities.

There are three well-known, primary schools of thought about urban morphology, as discussed by Roger Trancik:

- Figure-Ground Theory, which examines abstract two-dimensional depictions of cities as seen from above, in order to determine the correlation between architecturally constructive land coverage (solid black „figures") and voids in between (empty white spaces). These images are known as Figure-Ground Diagrams.

- Linkage Theory, which observes the connections between lines on the ground such as streets, footpaths, and other linear spaces which connect different regions of the city.

- Place Theory, which focuses on the urban manifestation of human habitude and functionality.[15]

All of these schools of thought and their strategies may be implemented when making urban morphological observations.

Generally, urban morphology considers cities and settlements to be products of involuntary reflection, which develop over generations.[16] This view is quite relevant when regarding age-old cities with anonymous architectural and urban origins. It does, however, indicate that the study of the urban morphology of newer cities is less relevant, as we are more aware of their causes and the decision-making processes which accompanied the urban development. While it is true that urban morphological processes generally occur over long stretches of time (and it might be more fascinating to analyze a more ancient city as the processes and information achieve more depth and complexity with time), actually these processes are active from the very beginning and they do not freeze. It is difficult to see directly, similar to trying to watch a tree grow with your naked eye, but these processes are perpetually occuring around us.

It follows that the „naturally, organically grown historic city" is a myth:[17] Even in historic cities, every change and development in the built environment is founded on a series of both anonymous and official decisions, made for various reasons, based on various factors, occuring on all different scales, and carried out by a multitude of individuals and groups. If you observe the urban fabric closely, it is evident that its form is always well-founded and carefully steered by human intervention.

Applying the principles and strategies associated with urban morphology to a temporary city is even more unusual. A short urban life span appears to point to a shallow pool of historical source material, but this is not necessarily the case. It is important to remember that although the city's history is short, its continual destruction and reiteration gives rise to a much denser set of urban-architectural changes, which offsets its shorter lifespan.

People are instinctively habitual. When a temporary city returns again the following year, people automatically recreate familiar urban patterns, unless there is a very clear reason for change. Habit and repetition provide continuity, while shifting circumstances require alterations. This means that all changes in a temporary city, small and large alike, are clearly based on shifting criteria and circumstances. There is distinct overlap between the strategies used for studying urban morphology in an ancient city as well as a young and/or temporary one.
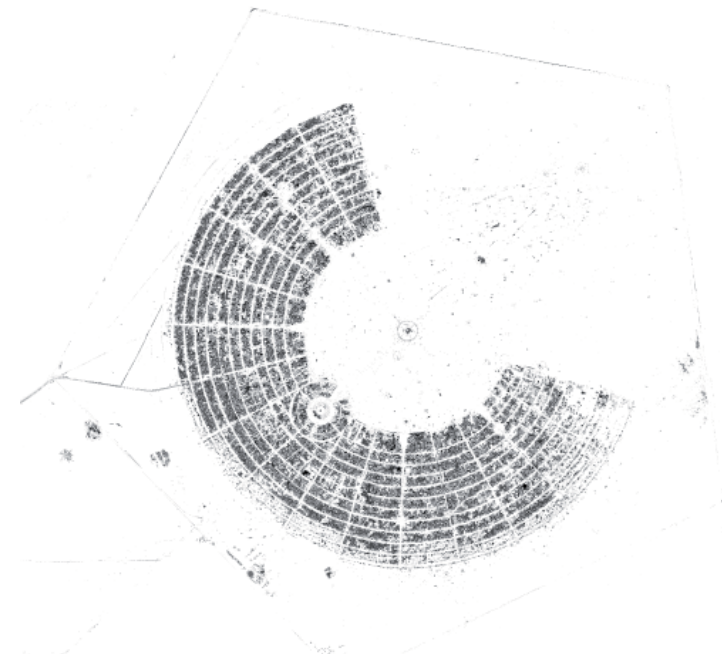


*Figure 7: Figure-Ground Diagram of Black Rock City*

## Methodology

As the history of Burning Man is as yet a short one, extensive written material on the subject does not exist, particularly for the early years. Those first years are shrouded in myth, as described by Larry Harvey, the initiator of the event in 1986, above. They exist mostly in the form of storytelling. For many years, before the event had enough steam to develop into a solid city, the event itself was „underground" and almost completely unknown. In recent years it has been becoming increasingly popular as the media has been reporting on it ever more frequently. Although it is now well-known in the mainstream culture, it cannot be considered culturally mainstream.

As with any event of spontaneous origin, the happening in San Francisco in 1986 was not initially documented, since it was unplanned and its value had not been predetermined. Documentation happened after-the-fact, when the act had been repeated and determined to be of value. Therefore, documentation of its origin and early years is strictly based on recollection, oral accounts, and storytelling generated by the founders of Black Rock City LLC, which is available as an online resource.

The material for this thesis derives from the retelling of those stories in formal and informal interviews, and discussion panels, as well as written textual material, digital/online resources (the Black Rock City community continues to exist and communicate digitally for the remaining 51 weeks of the year), articles, plans, drawings, and photographs from various years dating back to 1992 (some merely conceptual), and first hand experience and observation at Black Rock City in 2014.

Using these sources, social, political, and physical aspects contributing to the evolution of Black Rock City were inferred and their relevance in reference to the aforementioned questions was determined.

## Structure

This thesis begins with a chapter on background information which will give a detailed description of the urban form of the city today, and roughly explore the formal and informal rules and principles of the city, the conditions of the land and environment, social setting, and the guiding concepts behind Black Rock City, thereby setting the stage for further details and analysis.

A chapter detailing the history of the event will follow, including challenges and the most notable features of yearly developments. A series of yearly conceptual city maps (provided by the Burning Man Project) will be included in this chapter to illustrate the developments and changes which took place each year.

This will be followed by a larger section which delves more deeply into individual themes and topics in order to explore the details of how a certain aspect can directly induce urban morphological processes.

A concluding summary will wrap up the thesis, touching on the explored themes, drawing connections between them, and determining the value of Black Rock City as a basis for urban morphological study.

Finally, this work explores future prospects of how the insights of this anaylsis can uniquely be implemented in other projects and fields.

# Background

*"Burning Man is a very different place and not for the faint of heart. It is full of extremes. Heat and cold, wind and dust, rain and weather. There is no food to buy, no water to buy, no trash cans to take your trash, no regular bathroom, only portable plastic toilets, no showers, no driving any car or vehicles once you are there, everything is a long walk or bike ride away, no cell service, the ground is an alkaline dust that is so fine and light it permeates everything. Your skin is chapped and dry in a few minutes. You cannot walk barefoot for very long or your skin cracks and you bleed, getting infected. Most people there go through some sort of cathartic experience after a few days with little sleep and the harsh conditions. There are no bugs or insects as there is no food for them to eat. No birds or other animals there for the same reason. The person coming needs to plan and be completely self reliant." - Bill Szieff, Burning Man veteran* [18]

Burning Man has evolved into a week-long art festival focused on creating a community, culture, and a functioning city. The location of the Burning Man Festival in the middle of the harsh Black Rock Desert is not the result of coincidence. In the course of its development and growth, the event was expressly moved from San Francisco to this location in 1990 in order to regulate the revelers, requiring them to possess a certain determination and level of self-sufficiency. This initial change was the first step towards sculpting the principles of the community to influence community development.

The relocation to the desert seems counterintuitive: A permanent city's location would usually be determined by existential and life-giving factors such as the presence of a trustworthy water source, the presence of useful resources, a reasonable climate, accessibility, demand for labor, etc. Black Rock City does exactly the opposite, the founders having selected its location primarily for the inhospitable nature and isolation. Because it is impermanent, people do not have to rely on the land and location to fulfill their needs, and can do so in other ways by preparing their materials and supplies in advance and trucking them in to the desert. Once there, however, they do have to rely on themselves and their preparations, which reinforces the quality intended by the community standards.

Black Rock City inhabitants, of course, maintain a permanent residence elsewhere in what they refer to as „The Default World." This means that life in Black Rock City is auxiliary to normal life and diverges from people's normal responsibilities, lifestyles and habits. Being impermanent means that it is possible to be released from the longterm functional necessities of life.

Black Rock City is, essentially, the organized agglomeration of people who come together to partake in the Burning Man Festival each year in the Black Rock Desert. Today, 30 years after the event's mythic beginning in San Francisco, the event draws about 65,000-70,000 people. Over the years, as it grew in population and physical size, many changes (both societal and physical) and adaptations had to be made in order to safely and effectively accomodate so many individuals, conform to regulations imposed by the state of Nevada as well as the Federal Bureau of Land Management (BLM), and cultivate the cultural standards of the city.

## A Description of Today's City

By now, the current urban format is iconic. It is designed to be a city and to work like a city, with streets, roads, and addresses. It consists of many clear urban-structural elements, which are familiar to people.

Today's city has a **radial/concentric format**, in which the Man marks the physical center point and main pillar of orientation. Each radial street of the concentric city is oriented towards the Man. It was designed so that the entire city can be surveyed and constructed within one week from one single point.[19] All radial streets frame the sculpture. View axes from each radial street point towards the Man, creating visual relationships and spatial continuity throughout the city to this symbolic figure, analogous to church steeples as points of orientation in central European cities. For easy orientation and navigation, the radial streets are based on a clock, with the Temple at 12:00, the Man at the center,

and Center Camp at 6:00. The concentric streets are renamed each year according to the event's theme, but the names always follow an alphabetical pattern, with „A" being the first street after the Esplanade.

A radial/concentric city format is essentially hierarchical, even if the goal is social equality. It can lead to the development of „prime real estate" in more central locations, which is a topic that will be addressed in depth in later chapters. A grid format would be much more egalitarian, as it does not establish a singular focus point.[20]

The dense, urban part of the city runs from 2:00 to 10:00, according to the clock system. At the top of the clock, from 10:00 to 2:00, there is an empty section which opens behind the man towards the **Temple**, which stands alone outwards towards the desert. The empty section of
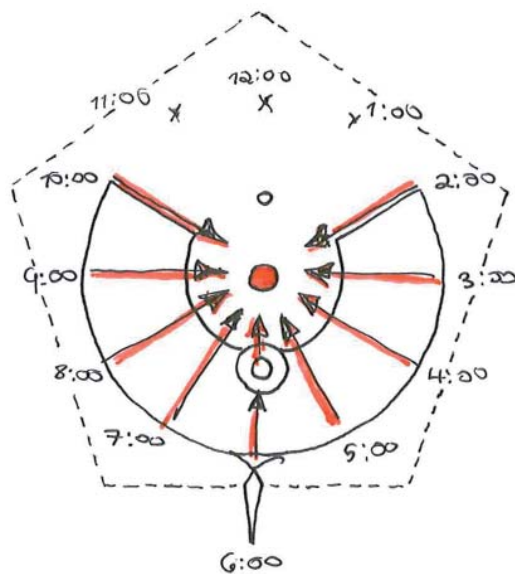


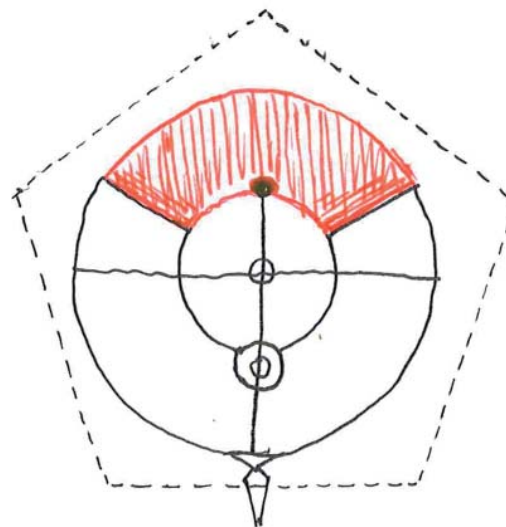*Figure 8: Radial/concentric urban format*
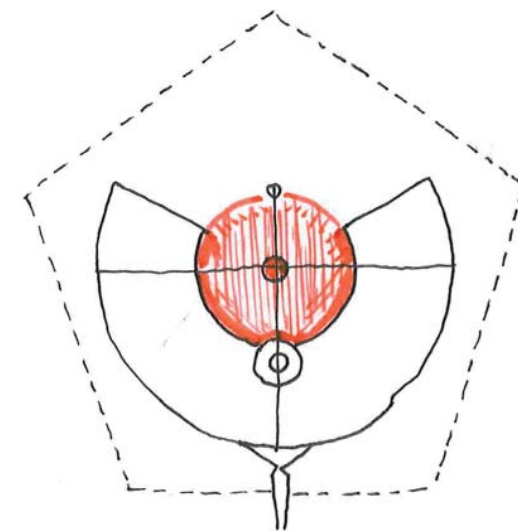
*Figure 9: The Temple and the deep playa*

*Figure 10: The central playa*

clock (or **deep playa**) demonstrates the sheer scale of the Man against the desert falling away to the back.[21] It also serves to create isolation for the more spiritual aspects of the city, embodied by the Temple. The Temple is purposely set apart from the rest of the urban frame work, sitting approximately at the point where 12:00 would intersect with the Esplanade, if it was a complete circle.

From the **Esplanade** (innermost street) inward towards the Man, there is a central, open void surrounding the Man (or **central playa**) about 1.5 kilometers in diameter which is not a part of the dense urban fabric and has been reserved for artwork and celebratory social interaction. The center is much too large to be considered a square or a plaza. It is on a scale which sets it apart from the urban fabric, with the Esplanade acting as a long urban facade, and as a barrier between the open void

and the constructed urban space. Although this area is technically the center of the city, it simultaneously feels like it is the outside of the city, as if the city has been inverted.

In the place where 6:00 and „A" would intersect, lies the midpoint of **Center Camp**, which is a smaller, concentric neighborhood implanted onto the front and center edge of the esplanade, about a half a kilometer in diameter. It is the true functional center of the constructed city, where the most important city functions and services are located. There are additional **plazas** located at 3:00 and 9:00 with other major functions. Towards the outer rings of the city, there are five more smaller plazas distributed evenly between 3:00 and 9:00. These plazas serve to subdivide the city into a recognizable rhythm of neighborhoods. The city is truly quite large, and these elements break up the uniform structure
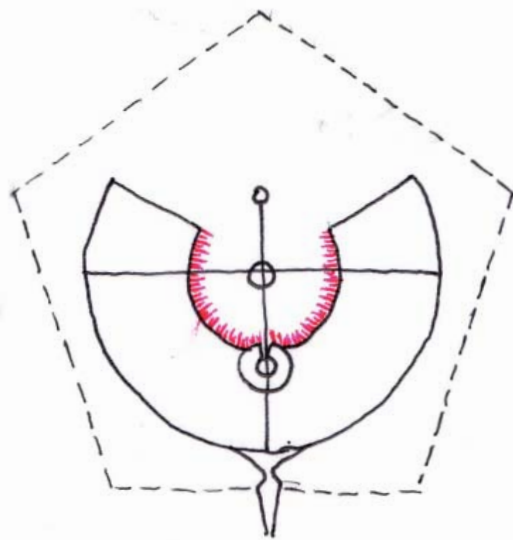


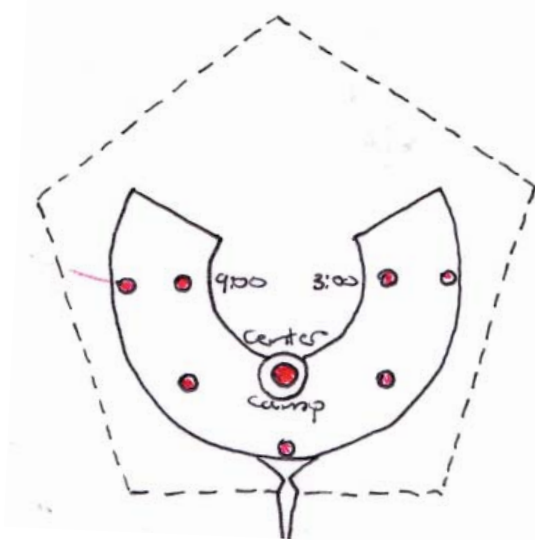*Figure 11: The Esplanade and urban facade*
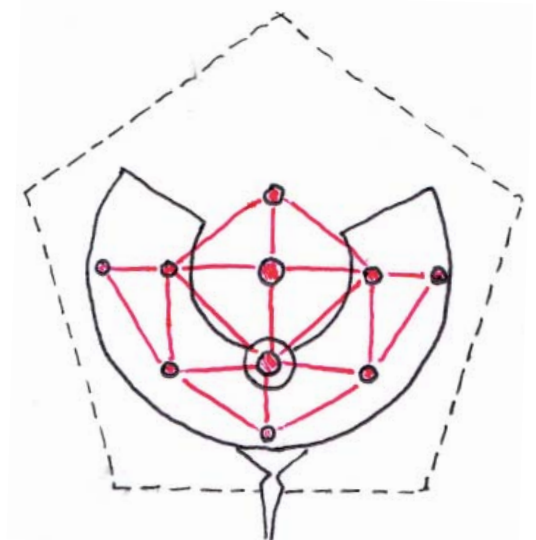


*Figure 12: Center Camp and plazas*



*Figure 13: Central Place Theory in BRC*

of the constructed city area into a more human scale. They increase the feeling of livability experienced by the citizens.

The even distribution of plazas throughout the city echoes **Christaller's Central Place Theory (**CPT). Central Place Theory suggests that towns of the same size are roughly equidistant, assuming that there is a flat isotropic surface, an evenly distributed population, and evenly distributed resources. Although we are discussing neighborhoods within a city, and not separate towns, the same holds true in Black Rock City. The functions and services offered fall into two categories: basic services are „low order" and are found in „low order settlements" and specialized services are „high order" and are found in „high order settlements." A certain area will have fewer high order areas, and more low order areas, which are arranged based on a threshhold of minimum population needed to require certain services. There are fewer high order areas, and more low order areas within a given area.[22] Within this system, Center Camp is the „high-order" Central Place, with the plazas acting as „low order" satellite centers.

The plazas (and the more complex theme camps) also call the Ottoman „**mahalle**" structure to mind. A mahalle is a typical, Ottoman urban unit within a hierarchical system of spatial structures within a city. It is often translated as „neighborhood" „quarter" or „district" and refers to a sub-center of courtyard houses grouped together within a city for proximity to certain functions and community stability. In a mahalle, the hierarchy is very evident when observing the network of streets.[23] *(See Figures 11. and 12.)*
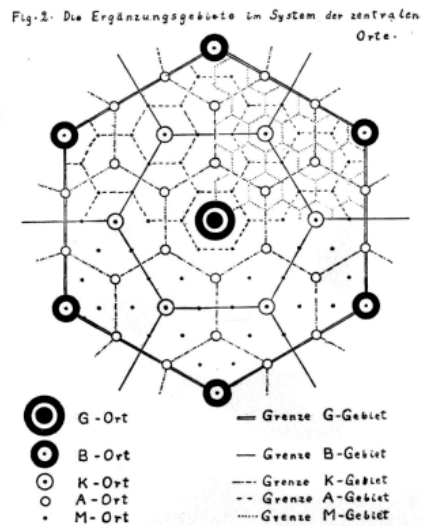


*Figure 14: Christaller's Central Place Theory*



*Figure 15: District Schematic*



*Figure 16: Mahalle Schematic*

The inner ends of all radial streets which originate from a plaza or from Center Camp widen towards the central area of the city. These widenings resemble **key holes**.[24] When looking at the inner urban facade along the Esplanade from a distance, the entrance points of the radial streets are generally difficult to spot. The key hole structure accentuates the more important entry points. They serve to perforate the barrier of the seemingly closed urban facade and draw people in to the city, while also providing a view shed to the Man down important radial streets. Additionally, this form mirrors the main shape of the city, which widens out towards the desert.

The **primary axis** of the city runs from 6:00 to 12:00, with a chain of relatively equidistant focal points aligned along the axis. These focal points consist of the entrance to Black Rock City, Center Camp, the Man, and the Temple. It draws a line of symmetry through the city. Each of these focal points has a certain meaning for the citizens of the city. The entrance to the city symbolizes the connection to the Default World, Center Camp is the hub of daily activity and city life, the Man is an expression of celebration, and the Temple is a symbol of the sacred and spiritual aspects of the city. These focal points are ordered so that they run in a processional gradient from the profane to the sacred, ending in the vast desert expanse. The primary axis is characterized by a strong **field of tension** between Center Camp, the Man, and the Temple. The positions of these structures along the axis in relation to the urban fabric describe their meaning.

The **secondary axis** runs from 3:00 to 9:00 and consists of five main elements: Two smaller plazas towards the outside of the urban fabric,
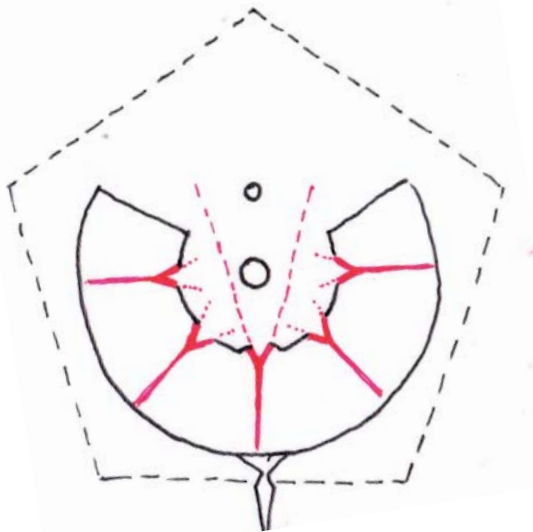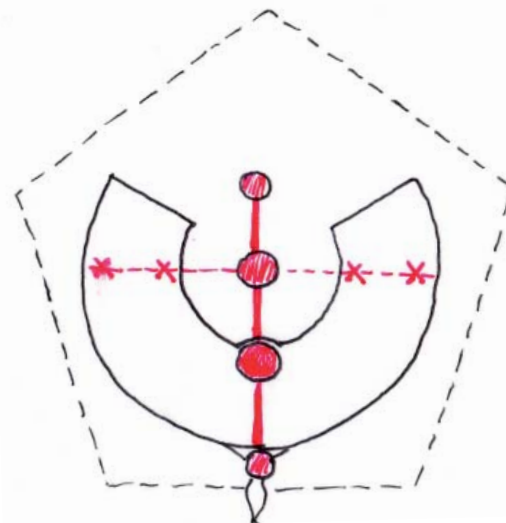


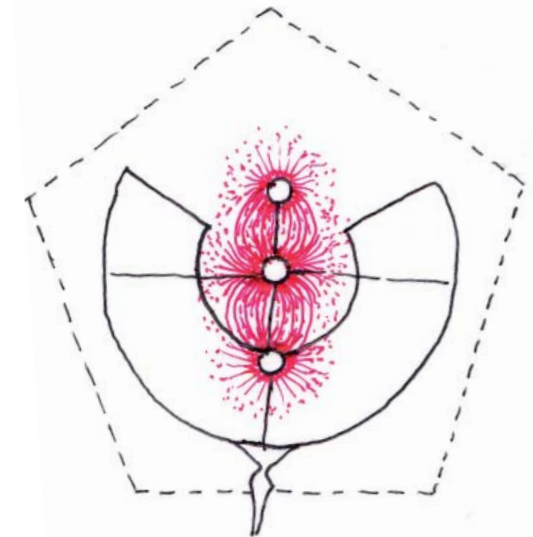*Figure 17: Portals*

*Figure 18: Primary and Secondary Axes*

*Figure 19: Field of Tension*

two larger and more important plazas towards the inside of the urban fabric, and the Man illustrating the center point. It is symmetrical, its line of symmetry is the primary axis. The focal points on this axis are arranged so that the center point is most important, and the further outward the point is, the less meaning it holds for the city.

In the open area surrounding the Man, the axes are defined by streets which continue in towards the true center of the city. Street lamps line these streets in order to highlight their location within the central void, since they are not positioned among any other architectural elements. Both axes cross at the Man, which is the center of the city, the center of the clock, the symbolic nucleus of the event, and the point from which the city is surveyed.

In fact, the current urban constellation of participants is a **reflection** of the original spontaneous act of burning the Man on Baker Beach, San Francisco in 1986. The Man was set up against the backdrop of the Pacific Ocean, facing the people. When it was set afire, people came running and automatically arranged themselves in a half circle, oriented towards the „face" or front of the Man. He was a striking spire against backdrop of the Pacific which created a dramatic, fall-away effect accentuating the relationship between culture and nature.

*„It stood there against the broad perspective of the Pacific Ocean, so it towered doubly above the horizon, and then an interesting, a crucial thing, happened. We were in public place that was radically inclusive, and it was unbounded, a promiscuous social environment, rather like Burning Man is today, and people came running on the instant to see a burning human figure (...) I want to diagram this space for you, in a sense. There was the man at the center, the cynosure of our vision, and since we were at the tide line, we, perforce, formed a semi-circle around him.*

*(...) And this is the plan of our city. (...) I described to you our experience at the tide line on the beach. Well, one day I was looking, poring over an earlier plan of the same city, very like this, and hovering over it jealously, looking at our creation. Suddenly it occurred to me that it was a perfect diagram of the beach. The man was at the center, the cynosure of all eyes. That's the group that gathered round this thing that was central to all things and felt to be in some sense encompassed by it, by our settlement, but at the same time backed by the great desert beyond. (...)* ***So, not even thinking about it and through a lot of circumstances, contingencies in this, our profane world, we have recreated the very original experience just on a much larger scale."*** *- Larry Harvey* [25]



*Figure 20: Center Camp, 2010*

## Qualities of Black Rock Desert

The unforgiving desert conditions hold meaning for the city and its inhabitants. The extreme environment of the inhospitable desert acts as a community building tool. All materials and infrastructure must be trucked in, which creates logistical difficulties, since the festival organisation itself does not provide anything and sells only ice and coffee. Challenges and difficulties cause people to come together, and the principle of self-reliance is contrasted by people's need to work together in these harsh conditions. It is logical to band together to create cooperative infrastructure.[26] This results in group camps, theme camps, and villages, which function like communal districts within the cities.

The desert here was once a large Pleistocene lake, called Lake Lahontan, which dried up about 9,000 years ago.[27] The flat expanse of the desert floor was once the floor of the lake. The alkaline mud is now dry and dusty, with a cracked mud floor. It is harsh and hostile to life. The mountains flanking the desert act like gates, and as one passes through them, one enters this boundless expanse of flat land extending for hundreds of square miles. The Black Rock Desert is the largest completely flat (no elevation change) landscape in the continental US, being formed from the settling sediment of the lake. This kind of formation is known as a „playa." The surrounding mountains form boundaries and create a dramatic, psychological dynamic, drawing one deeper into the expanse.

Another important attribute of Black Rock Desert is the dust which is very light and blows up from the ground into the air if the conditions are at all windy. The half-circle of the city opens toward the desert in the primary direction of the wind (Southwest). When the Man burns, the ash and flame blow out into the desert rather than towards the city center. However, this also means that the approaching vehicles on the gate road send dust directly into the city.



*Figure 21: Main axis towards Center Camp from the Man, 2010*



*Figure 22: Dust rising on the playa, 2010*

## Top-down vs Bottom-up

As opposed to a premediated event, which is determined in all its minutiae before it ever commences, Burning Man has developed relatively naturally and matured over 30 years to the form we currently know and recognize. As it grew, so did the planning and development processes evolve over time, rather than being largely established at the beginning (as it would be, were this a typical commercial festival). Black Rock City provides the framework for the festival, and as such it has also adapted synchronously to the festival: As changes and regulations became necessary for the community, so did the city planning committee adapt the urban layout and react to the needs of citizens. Simultaneously, as the citizens inhabit the urban fabric, they change and react to the form of the city.

The interplay between the top-down, preset urban planning measures based on evolving societal needs and the bottom-up, creative interpretation and activation of the city by its inhabitants results in a multifaceted urban structure, with urban processes occurring on many different scales. This rhythm of growth, adaptation, planning, and evolution results in a continuous cycle of alternating top-down and bottom-up processes, signifying the organic urban development which precipitated the current format of Black Rock City and continues to shape the city today.

Another way to describe some of the processes of change are the terms „stagnation phase" and „boom-phase," as described by urban morphology theorist Gianfranco Cannigia.[28] After a large scale urban development or urban change characterized by a top-down decision-making process, the city continues to adapt on a small scale, in what is known as a stagnation phase. These adaptations are „capillary mutations" which are minor, but continuous processes of change to the urban structure. During these phases, no major decisions are made,

but small adjustments and corrections are made to the last boom phase developments. These two phases alternate with one another, indicating recognizeable stages of urban growth.[29]

After the move to the desert in 1990, the initial event had very little (almost no) organizational structure, but as the city grew, so did the need for spatial-organizational measures. The city went through several boom-phase changes over the years, when the urban structure reached a critical mass. Capillary mutations occured inbetween. They are evident when observing the official urban plans put forth each year by the Burning Man Project (or in earlier years, Black Rock City LLC). Interestingly, these mutations also occured on a smaller, more anonymous scale in the theme camps and villages (equivalent to smaller communities or neighborhoods embedded in  the larger city) which grew and  changed over the years. This will be discussed further in later chapters, but it is important to note that these smaller changes were not always well-documented since they were often based on informal decisions and vague planning.

## Temporary Autonomous Zones (TAZ)

„**Temporary Autonomous Zone**" is a term coined by anarchist and poet, Hakim Bey, denoting temporary spaces which exist outside the boundaries of formal political control. Bey submits that social equality can be achieved by concentrating solely on the present moment. A TAZ is the best way to achieve that, as permanence will (in the long-term) slowly result in an increasingly (physically and socio-politically) structured system, thereby inhibiting creative impulses.[30] It is an atypical model of social revolution, which attempts to create free, autonomous territories (unknown to authorities) in the present moment. Bey refers to these stealthy, creative uprisings as „poetic terrorism."[31]

*„A T.A.Z. is a liberated area "of land, time or imagination" where one can be for something, not just against, and where new ways of being human together can be explored and experimented with. Locating itself in the cracks and fault lines in the global grid of control and alienation, a T.A.Z. is an eruption of free culture where life is experienced at maximum intensity. It should feel like an exceptional party where for a brief moment our desires are made manifest and we all become the creators of the art of everyday life."* [32]

The **Cacophony Society** of San Francisco, which was deeply involved in the early establishment of Burning Man, is known for implementing the TAZ concept. They consider themselves to be *„a randomly gathered network of individuals united in the pursuit of experiences beyond the pale of mainstream society through subversion, pranks, art, fringe explorations and meaningless madness."*[33] It was the collision of the Cacophony Society and Larry Harvey's initial events in San Francisco, which resulted in the move to the desert in 1990, and the formation of a TAZ which ultimately evolved into Burning Man and Black Rock City. John Law, the founder of the Cacophony Society was in fact one of the co-founders of Burning Man.

## Community-building through Shared Values

Another crucial, defining aspect of Burning Man (and therefore the manifestation of Black Rock City) is the guiding set of rules of conduct known as „The Ten Principles of Burning Man." This festival is unlike any other festival, set apart by its principles and goals. In fact, the Burning Man Project states its mission in the 2014 survival guide as, *„Burning Man: An Experiment in Temporary Community."* [34]

Whereas other festivals provide entertainment and refreshments to large numbers of spectators, Burning Man does not aim to have any spectators at all. These principles outline social concepts and behaviors which are expected of the participants - the key word here being „participants" as opposed to „spectators" as described in the first principle. At Black Rock City, people come together, not to observe a spectacle, but to participate in a community.

With the minute exception of ice and coffee, the community members provide their own entertainment, services and goods. The only infrastructure provided consists of a large, yet empty, detailed urban plan (including zoning, districts and neighborhoods), emergency and administrative services, services, and basic hygenic infrastructure, and three major structures: Center Camp, the Temple, and the iconic Man. It is remarkable how the interplay of these guidelines plays out on the ensuing culture, when observing how the festival unfolds.

## The 10 Principles of Burning Man

**Participation:** Our community is committed to a radically participatory ethic. We believe that transformative change, whether in the individual or in society, can occur only through the medium of deeply personal participation. We achieve being through doing. Everyone is invited to work. Everyone is invited to play. We make the world real through actions that open the heart.

**Radical Inclusion:** Anyone may be a part of Burning Man. We welcome and respect the stranger. No prerequisites exist for participation in our community.

**Gifting:** Burning Man is devoted to acts of gift giving. The value of a gift is unconditional. Gifting does not contemplate a return or an exchange for something of equal value.

**Decommodification:** In order to preserve the spirit of gifting, our community seeks to create social environments that are unmediated by commercial sponsorships, transactions, or advertising. We stand ready to protect our culture from such exploitation. We resist the substitution of consumption for participatory experience.

**Radical Self-reliance:** Burning Man encourages the individual to discover, exercise and rely on his or her inner resources.

**Radical Self-expression:** Radical self-expression arises from the unique gifts of the individual. No one other than the individual or a collaborating group can determine its content. It is offered as a gift to others. In this spirit, the giver should respect the rights and liberties of the recipient.

**Communal Effort:** Our community values creative cooperation and collaboration. We strive to produce, promote and protect social networks, public spaces, works of art, and methods of communication that support such interaction.

**Civic Responsibility:** We value civil society. Community members who organize events should assume responsibility for public welfare and endeavor to communicate civic responsibilities to participants. They must also assume responsibility for conducting events in accordance with local, state and federal laws.

**Leaving No Trace:** Our community respects the environment. We are committed to leaving no physical trace of our activities wherever we gather. We clean up after ourselves and endeavor, whenever possible, to leave such places in a better state than when we found them.

**Immediacy:** Immediate experience is, in many ways, the most important touchstone of value in our culture. We seek to overcome barriers that stand between us and a recognition of our inner selves, the reality of those around us, participation in society, and contact with a natural world exceeding human powers. No idea can substitute for this experience.[35]

*Figure 23: Art Installation at Burning Man 2014*

## History

*„The move to the Black Rock Desert represented an epochal change. Survival camping was a challenge. In a very real sense, everyone perforce was a participant. A pilgrimage was now required to reach the home of Burning Man, and he resided in a consecrated space, a place apart and separate from the ordinary world. The desert had enlarged the scope of human struggle and intensified involvement. It had restored the spirit of Burning Man and the community that had grown around it. Most importantly, beneath its sentinel presence, a city had begun to form."*[36]

Before delving into the urban morphological observations, it is important to set the historical stage. There were several important turning points in the history of Burning Man and the development of this event which truly defined new eras for the group and for the city.

Black Rock City did not abruptly appear in the desert, but grew out of a series of events over the course of 30 years to achieve its current composition. It did not begin as a large scale event centered around community building in an urban context. It is a temporary city, annually reiterated in an ever-evolving form, constantly adapting to the citizens' changing and developing needs. Nowadays, the city takes its complete form for a mere seven days each year, after which it is dismantled.



*Figure 24: Silhouette of the Man , 2010*

## Early Years in San Francisco

Burning Man began with an initial act of radical self-expression and spontaneous participation on San Francisco's Baker Beach in **1986**. Larry Harvey and Jerry James decided to build an eight foot (approximately 2.5m) wooden effigy (slightly taller than a real man to accentuate its symbolic and ephemeral quality) to burn on the summer solstice. Bonfires on Baker Beach on the summer solstice were a common phenomenon in those days, with a decades-long tradition. The only aspect of this event which was unusual was to construct the firewood into the likeness of a man. As soon as it was set alight on this sparsely populated beach, people came running to see what was happening.[37]

It was empty of meaning, as the two creative builders had no intention to prescribe any symbolism for this event, but the happening naturally invited each individual to impose their own meaning onto it. „*The rituals do not hold intention. They are rituals that people can put their own meaning into rather than mass ritualistic intention. For instance, the Man burn also holds no predefined intentions, it is the interpretation by participants which is crucial.*"[38] That year about twenty people joined in, were moved to sing, dance, hold hands, and engage in other acts of spontaneous participation. It existed as a gift and inspired its spectators to take part, one improvised a song on his guitar, another grasped the hand of the man as it burned.[39]

The tradition continued, with the Man increasing in size about ten feet (2,5m) each year. In **1988,** the event received its name, The Burning Man. By then, the Man was thirty feet tall (about nine meters) and about 200 people showed up. In this year, due to cold, gusty weather conditions the man did not fully burn. After the flames dispersed, the Man was still standing. This was the year the **Cacophony Society** discovered the Man.[40] In **1989**, the Cacophony Society covered the

event in its newsletter, *The Rough Draft*, and promoted the event. Due to the promotion, a new audience was reached and the number of attendees the following year reached over 300 people.

**1990** marked the first run-in with the police, who allowed the erection of the Man, but did not allow it to burn. The audience which had assembled to watch the burn were adamant about seeing the spectacle for which they had shown up, and riot ensued.[41] Harvey had assumed that a community had developed around the Burn and was shocked to see this disintegration. The initial group of „participants" in 1986 had become a large group of spectators who were there to consume entertainment without contributing anything to the creative process. He was immensely disappointed and disheartened, and therefore decided (with the help of the Cacophony Society) to disassemble the figure and cart it out to Black Rock Desert, Nevada.[42] This happened on Labor Day Weekend in 1990, which marked a change in the time of the event. In future years it would no longer be held on the summer solstice, but rather at the end of August.

Those who were willing to make the effort to get to the desert and to camp in these harsh conditions for a few days were welcome to follow, but those who simply wanted to simply observe the event were spatially disqualified from attending. Location was used as a factor to eliminate spectators and retain only those willing to make an effort be active participants. Ninety participants attended this first desert burn. This move to the desert was the first major step towards establishing Black Rock City.

## Move to the Desert

**1990** marked one of the major turning points for the event. This relocation was the very first iteration of Black Rock City as a community campground. People were required to deal with harsh desert conditions: fine, alkaline dust, heat, cold, dry, no water, no resources. The camp site was instinctively formed like a protective circle (circle of wagons) as orientation against the boundless emptiness.[43]

The event, now so isolated and distant from San Francisco needed to extend its time frame to allow for an overnight stay. It was extended to three days, with the Burn on the last night. There were about ninety people working together, a newly combined group, many of whom were Cacophonists creating a TAZ centered around Burning Man.[44]

By **1992** there were about 600 citizens. The first (very rough) plan was submitted to the Bureau of Land Management (BLM): It was circular with a center pavilion, two main axes (primary and secondary), with the Man ancillary to the camp. Here, the primary and secondary axes are already clearly visible, based on the cardinal directions (Larry Harvey liked the orderly symbolism of cardinal directions).[45] It was arranged with the Man to East, in the direction of the sunrise.
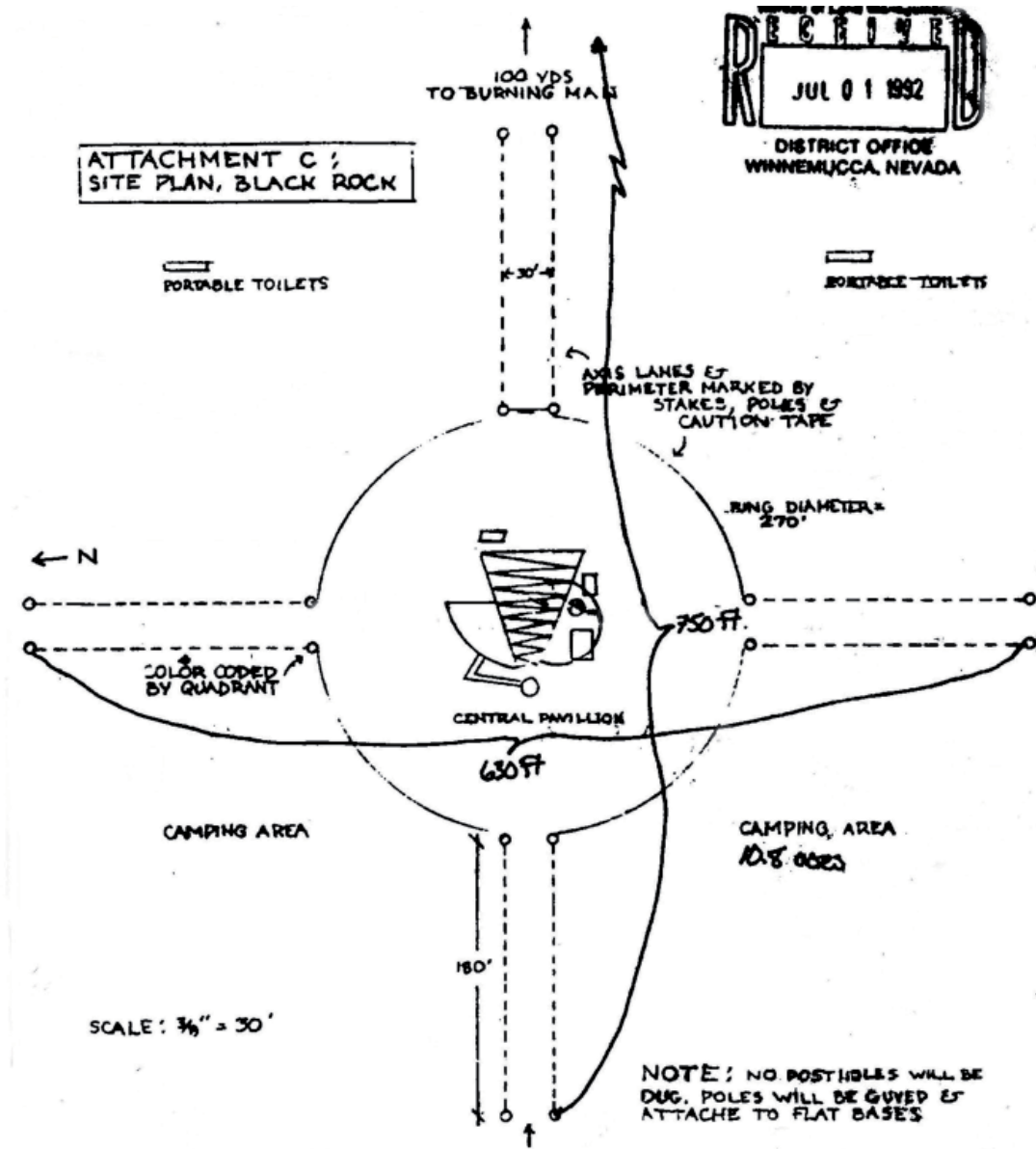


*Figure 25: Conceptual city plan for Black Rock City in 1992*

This also marked the first year of the installment of Black Rock Rangers, which was significant because it was a step towards safety organisation and top-down authority which is associated with the larger scale of urban agglomerations.[46]

In 1992 and 1993, there were a few rave camps which were set away from the city in a „satellite" of Black Rock City, marking the beginning of the development of separate districts within the city. Center Camp became a clear, defined area in the city. In 1993 the first theme camp emerged, which was „Christmas Camp." In 1994, the two main axes were highlighted by adding the lamp posts to accentuate the these important avenues. [47]

By 1995, Black Rock City was one of the most densely populated settlements in Nevada. Theme Camps were now a significant part of the urban landscape surrounding Center Camp. The first **trash fence** was errected downwind of the city, marking a sense of civic responsibility to care for the environment. At this point, Black Rock City had become visible to local and federal authorities, which also increased the need for accountability about among the citizens. [48]



*Figure 26: Raising the Man, 1990*



*Figure 27: Man with lamp posts, ancillary to camp, 1994*

## Turning Point in 1996

**1996** was a pivotal year. Before '96, there was only vague and loose planning: a general idea about the locations of the man, the campsites, and the cafe at Center Camp. There was little in the way of real planning and regulations.[49]

The city had grown to a population of 8,000 citizens. The city had been continually expanded since 1992 to make room for the population increase, without really adapting the urban plan, resulting in a sprawl in the residential areas. The 1992 had been preserved within this new, larger scale. The larger scale and increasing organization had caused some changes: an area around the Man, called „No Man's Land" was added around the Man to maintain the connection between the Man and the Center. This resulted in the emergence of the key hole shape, as larger theme camps spread along the boundaries of No Man's Land. As opposed to a circular form, this addition integrated the Man better into city, although it was not yet closely spatially related to the city.[50]

The two main axes were still clearly defined around Center Camp, which was lined with services, key extensions lined with theme camps. The first concentric road was added, called „Ring Road."[51] The residential sprawl extended boundlessly outwards. There was a strong segregation of zones within the city, with clear boundaries between different districts. In 1996 there were especially harsh desert conditions, and the city plan was not concrete enough to handle a population of 8,000 people. Chaos ensued and this ultimately resulted in injuries and even a death.[52]

It was at this point that the authorities (which had taken notice of the event in recent years with growing skepticism) barred the event from being held on public land in the following year.
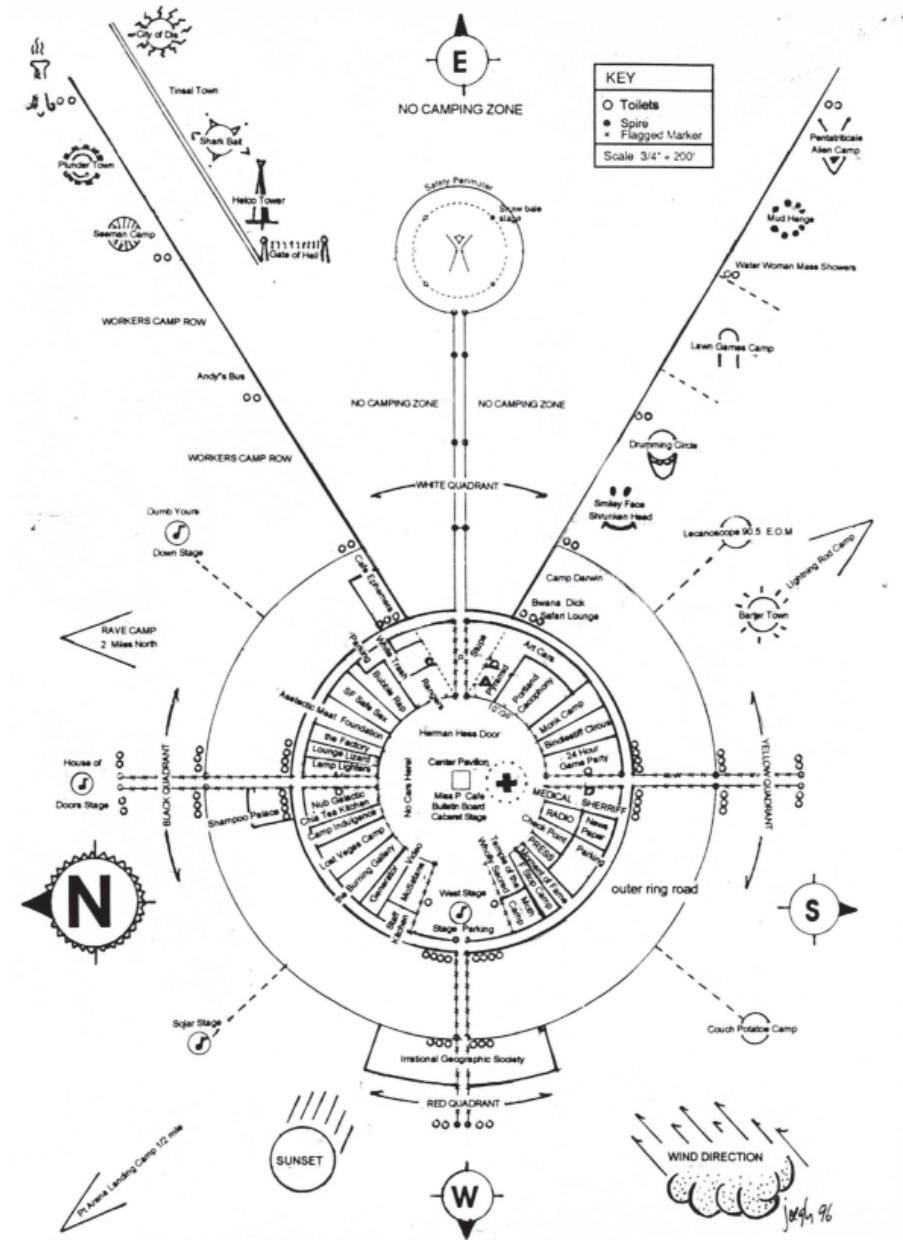


*Figure 28: 1996 map of Black Rock City*

## Hualapai Flat

In **1997**, the event was moved to Hualapai Flat on private land after being denied permits from the BLM on public land. Hualapai was very close to Black Rock Desert and also had a flat playa on which to easily organize a temporary city. This year, they were required to present a solid, urban plan conforming to local building laws. **Rod Garrett,** an urban planner and architect, became involved in order to help the city conform to the new regulations. He created the first „real" urban plan, which was based on a concentric, camp-centric system around the Man, so that it could easily be surveyed from one point. Originally, the layout was to be camp-centric (similar to previous years) with the Man on the periphery.

Near the last minute, the allotted space was relocated and the plan had to be reworked to adjust to the new constraints. *„That was when the property line survey came in. We didn't have the lake-bed property we had been promised and there was no large clearing in the brush either, as had been described. We were left with a narrow margin along the edge of the lakebed bordered with the property line on one side, and heavy brush on the other. With no more time or options the plan suddenly became very **site specific**."*[53] The layout, previously circular, was flattened out between these boundaries. The city shape was still derived from Rod's design, but was built in a rectilinear fashion due to the lack of surveying equipment.[54] The Man achieved a more central location, pushed inward by these boundaries. Only the primary axis remained prominent, and the secondary axis was stunted like a vestigial limb. In order to reduce sprawl and confusion, new subcenters were added, and the streets were given real names in order to provide navigational clarity.[55]
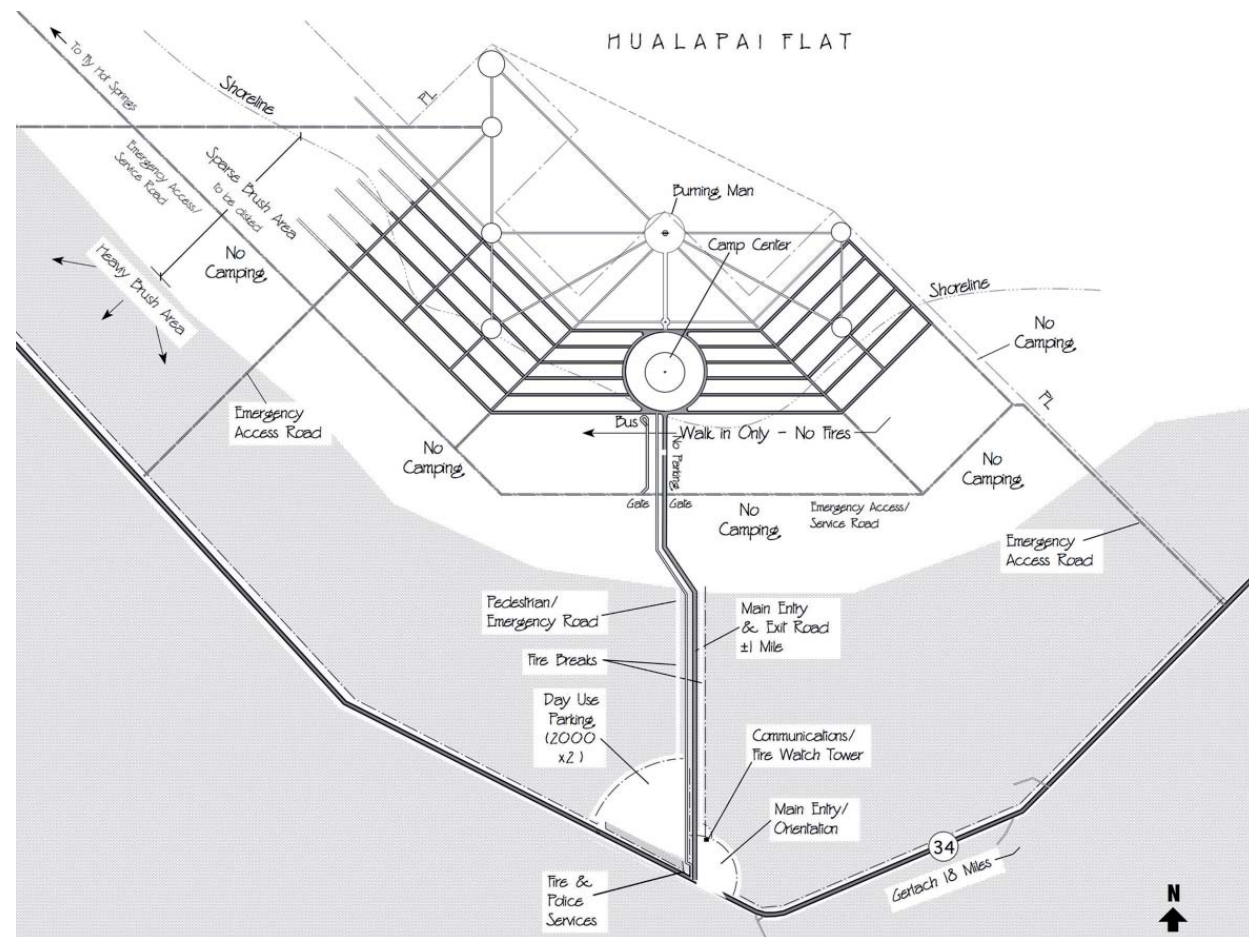


*Figure 29: 1997 map of Black Rock City*

## Return to Black Rock Desert

By **1998** there were 15,000 citizens. and the event was allowed to move back to the tabula rasa of Black Rock Desert. According to Garrett, the 1998 plan was perhaps the most critical step towards the future urban plans. It was the first official urban plan for the Black Rock Desert site and it had to be so conceptually whole, as to prevent people from misforming the city in any way. There were many factors to consider. *„The city needed to be scalable, smoothly expanding to accommodate growth. Due to the remote location, logistics were critical. Distribution of goods, circulation of people and the emergency access needed careful consideration. A familiarity with past events and urban conventions needed to be incorporated. An amount of space per person was needed to establish the city's optimal size."* [56]

The 1998 plan was heavily influenced by the flattened plan in 1997. It attempts to prevent the sprawl of 1996 (with a population that had doubled in size in 1996) by increasing population density. This time, the Man was central to the camp and the plan developed around him. He acts at the surveying point for the arc of the city - like the center of a compass. Concentric ring streets and radial streets aligned with the Man define the new urban form. [57]

The new single, primary axis was preserved, running through the Man and Center Camp. The archetypal Center Camp was preserved on the axis, with the new city sprouting around it. The urban facade towards the Man was lined by Theme Camps, marking the birth of the Esplanade. Zoning was implemented in Black Rock City, as the lots along the Esplanade were pre-assigned to certain Theme Camps. This created an urban facade and an area focusing on interactivity. As it was easier to survey the radial streets as opposed to the concentric rings, the city blocks were arranged deep and narrow. The new system of roads allowed for easy navigation and emergency access. [58]
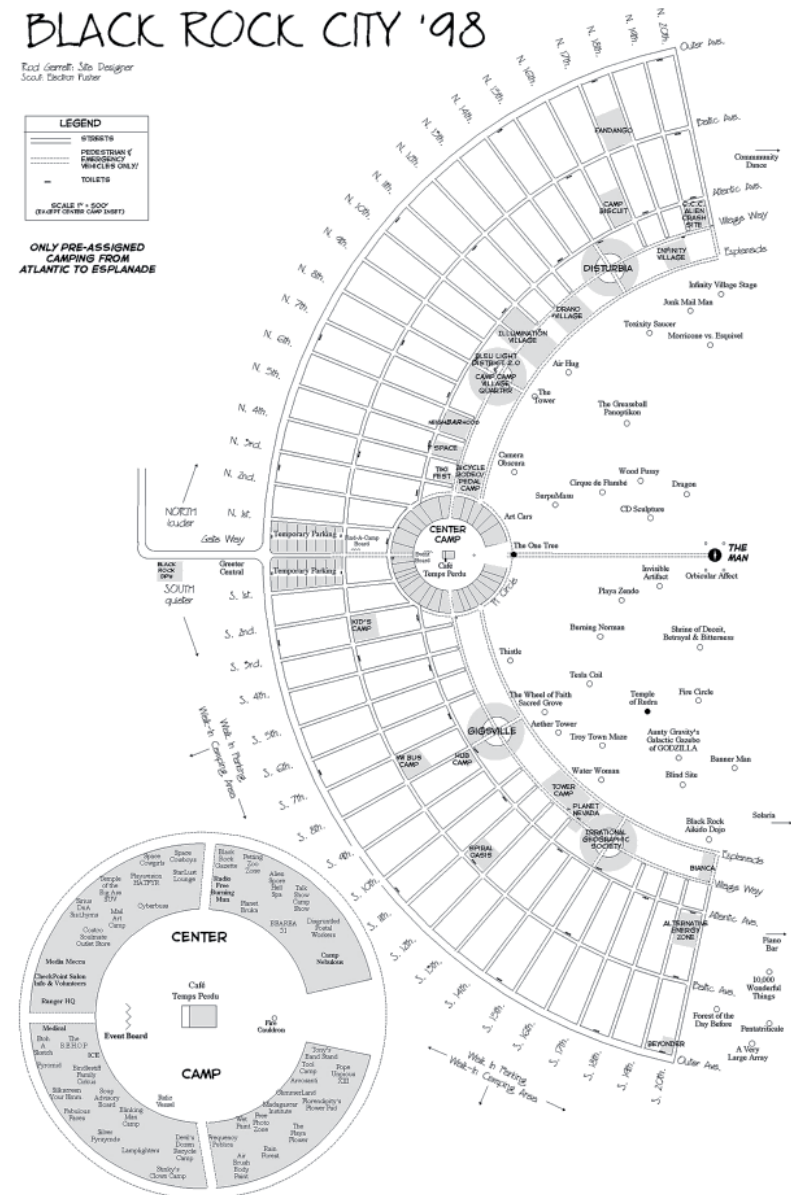


*Figure 30: 1998 map of Black Rock City*

## The Wheel of Time

In 1999, the population almost doubled, and the city arc was extended to reach from 2:00 to 10:00. The city blocks were rotated laterally, which reduced visual orientation somewhat, but allowed for better scaling for expansion and also created more frontage along the Esplanade. Annual themes were introduced, the first of which was *The Wheel of Time*. This theme was the inspiration for the **clock system** of radial streets, which were arranged in increments of 15 degrees, illustrating each half-hour segment on the clock.[59]

The Man was the center of the clock, Center Camp was 6:00, and the plazas at 3:00 and 9:00 were introduced. This aided orientation within the city. At 12:00, the most significant hour on the clock, the area „No Man's Land remained empty. Now that the city wrapped around the Man, the primary axis seemed stunted and incomplete. The secondary axis regained a position of prominence, in fact almost competing with the primary axis since the primary axis was stunted, ending centrally in the city.[60]
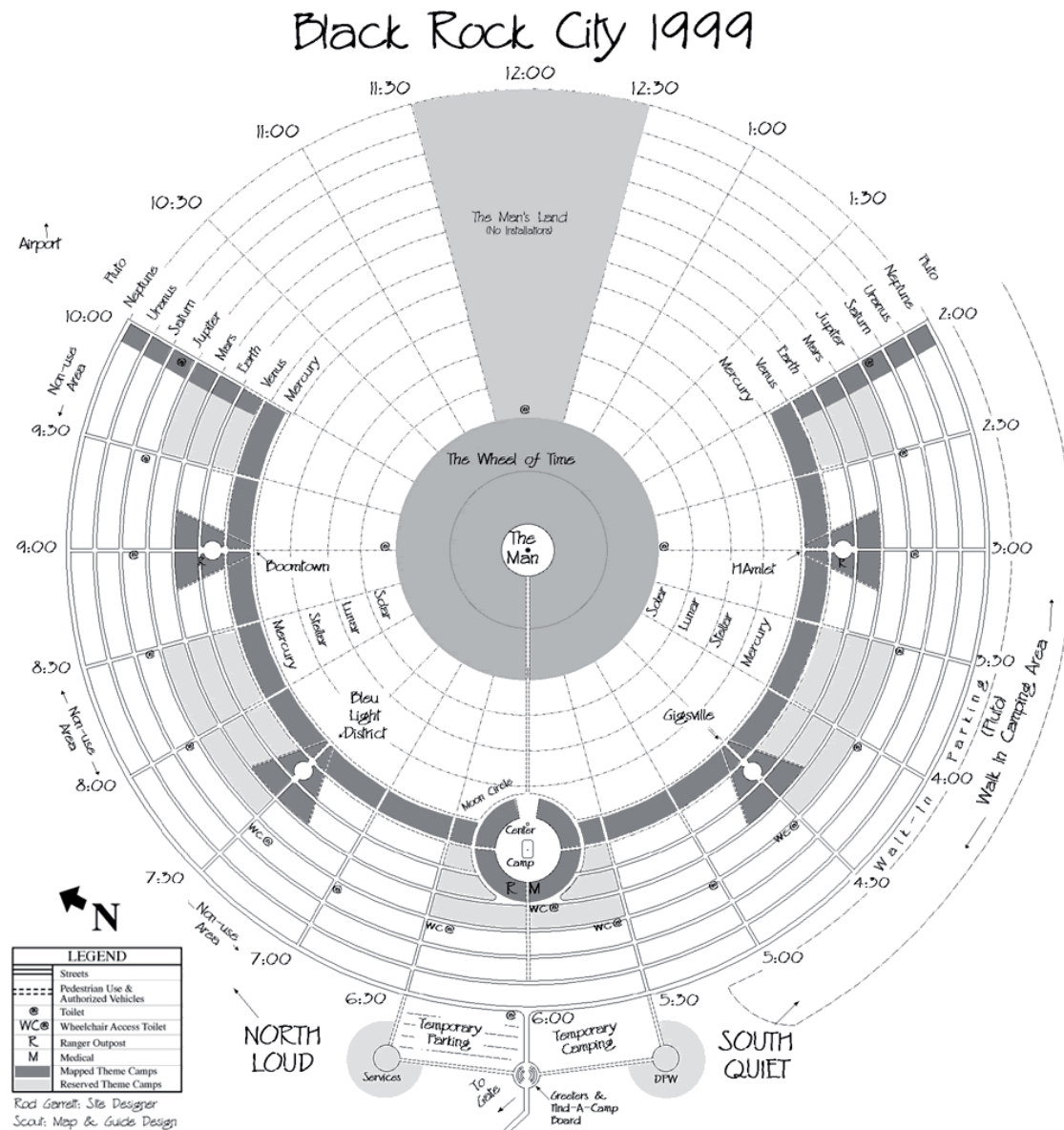


*Figure 31: map of Black Rock City in 1999*

## The Body and the Chakras

In **2000**, the event theme was *the Body*, which led to the incorporation of one very important element of Black Rock City: **the Temple**. This theme introduced the symbolism of chakras along the primary axis. The Man was defined as the Solar Plexus, the third chakra which represents sense of self, gut instinct, and life force. This allowed for the extension of the axis along chakras 4-7, culminating in the crown chakra (the chakra for spiritual connectedness) represented by the establishment of the Temple.[61]

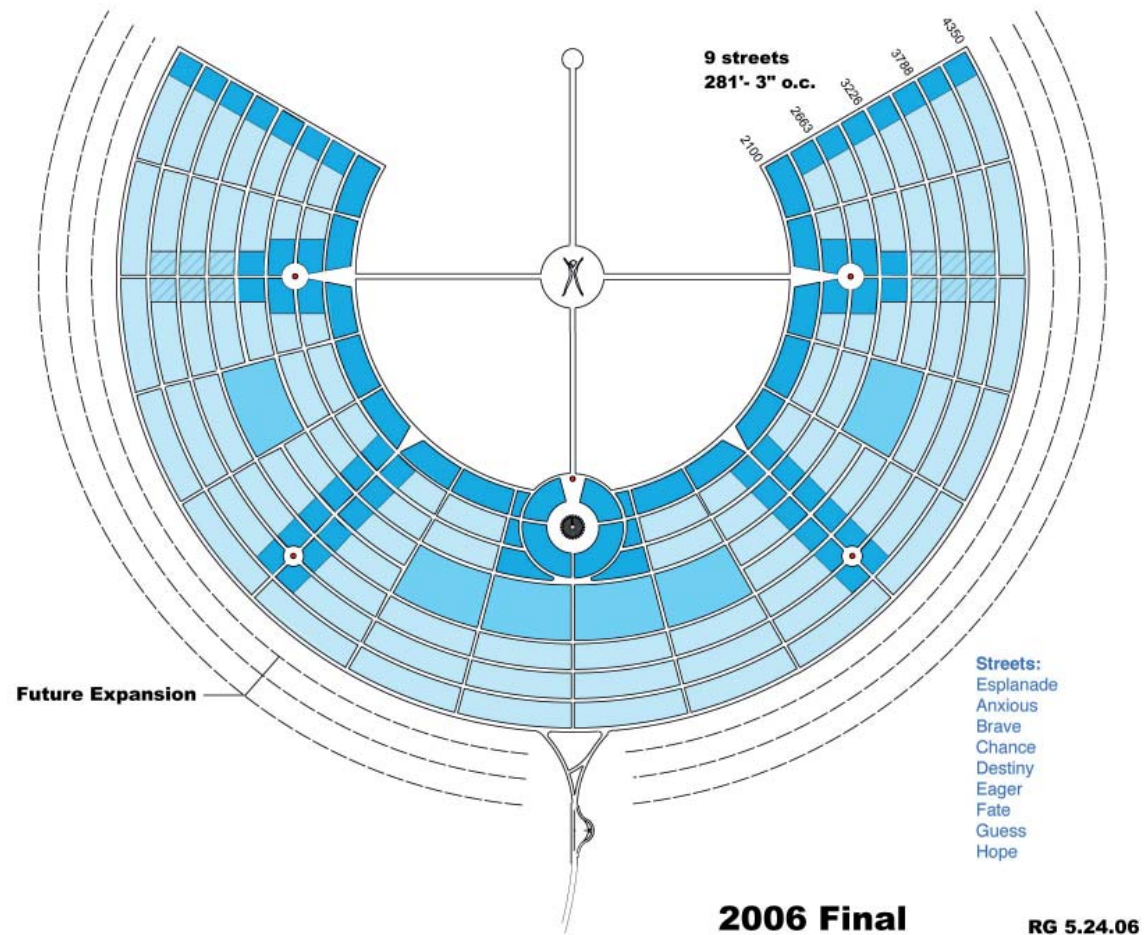The extension completed the axis within the urban plan, and reestablished its power. It also elegantly completed a symbolic progression from profane to sacred along the primary axis.
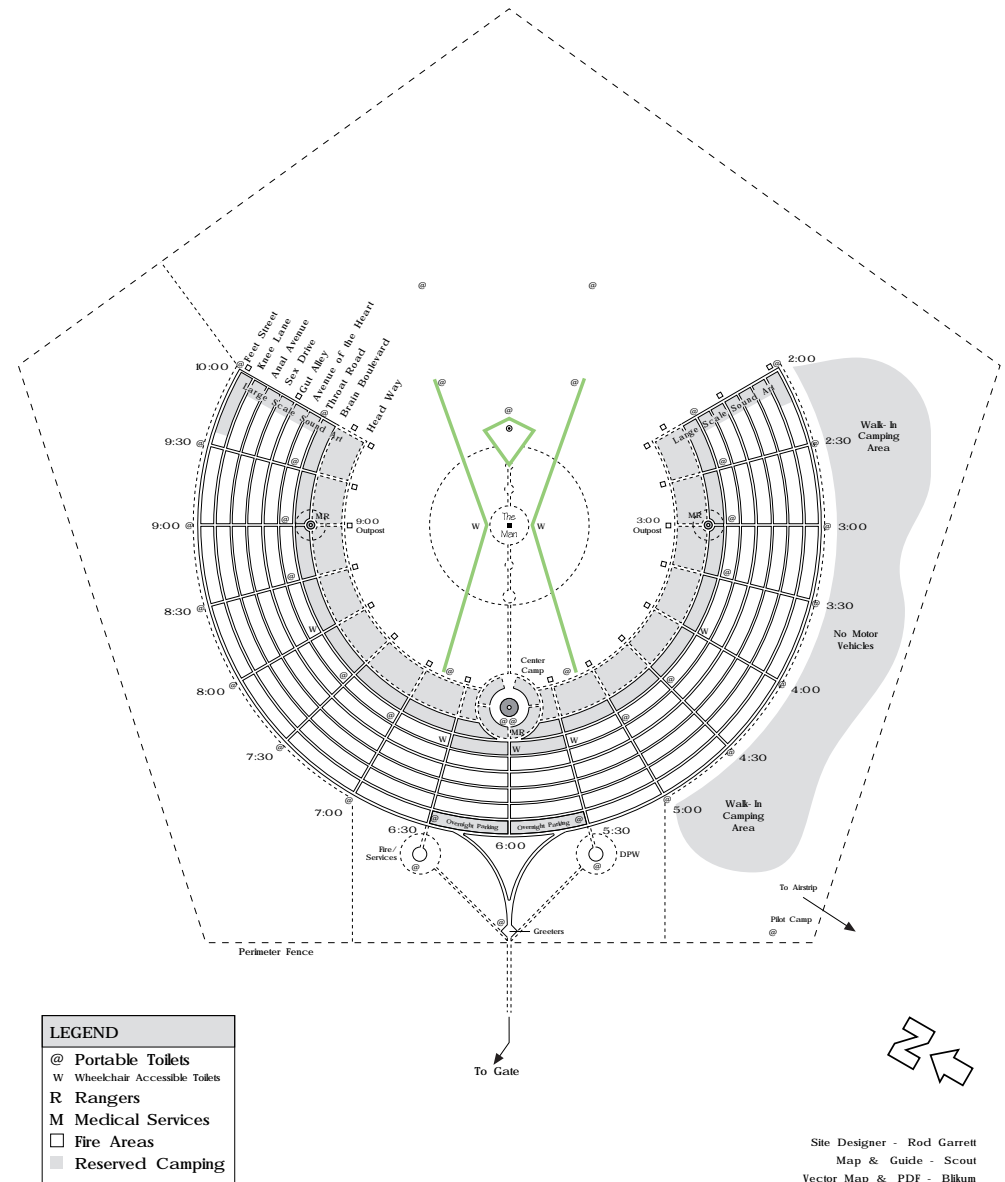


*Figure 32: map of Black Rock City in 2000*
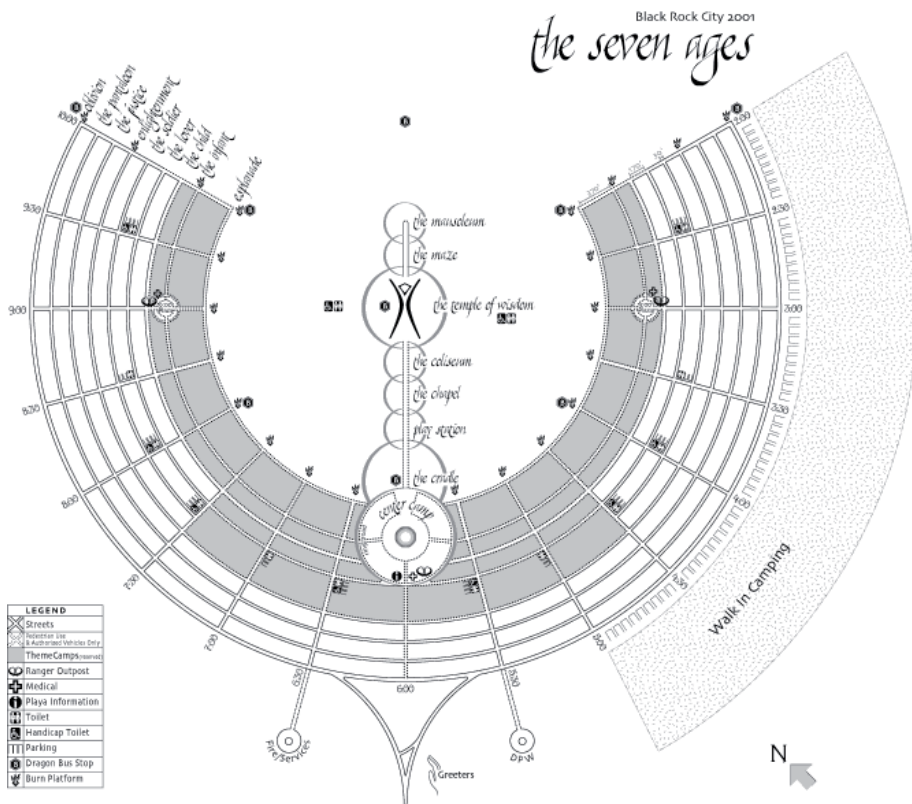
*Figure 33: map of Black Rock City in 2001*
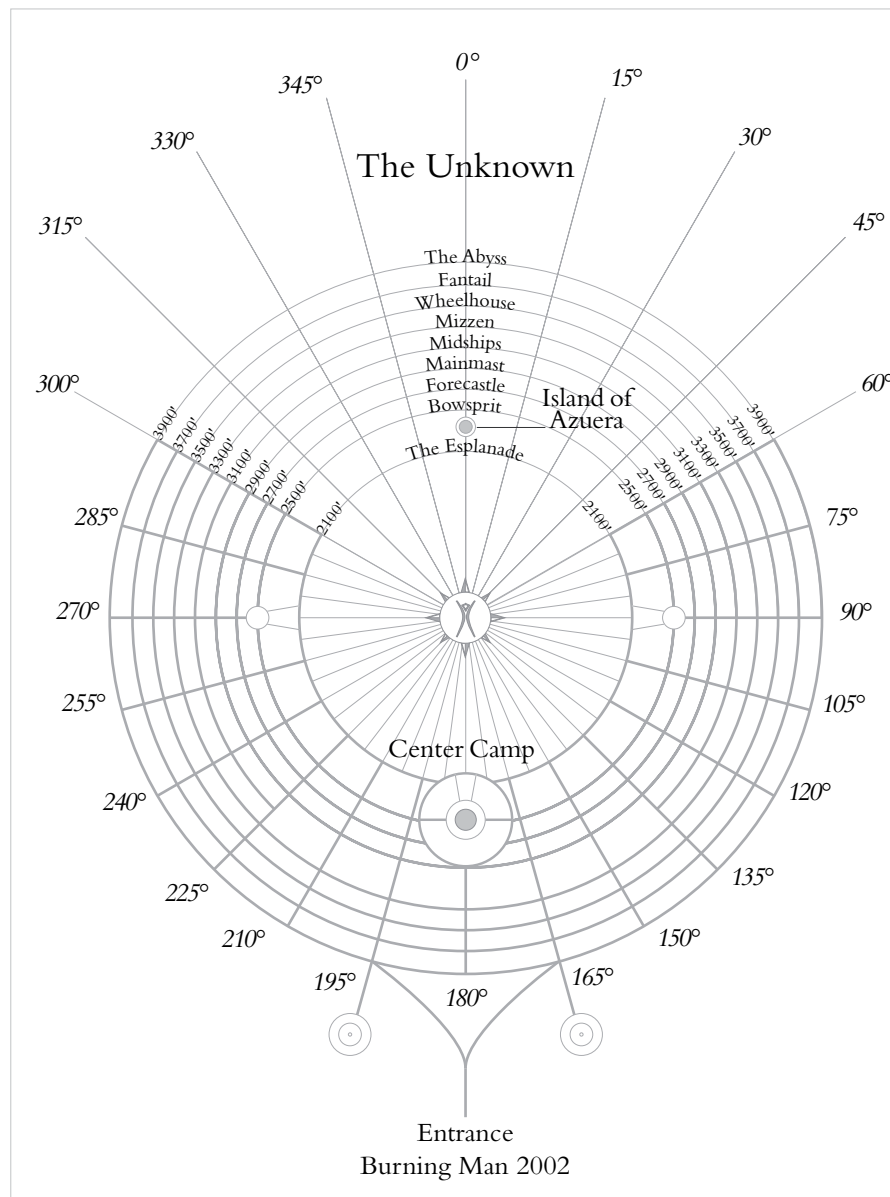


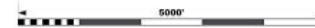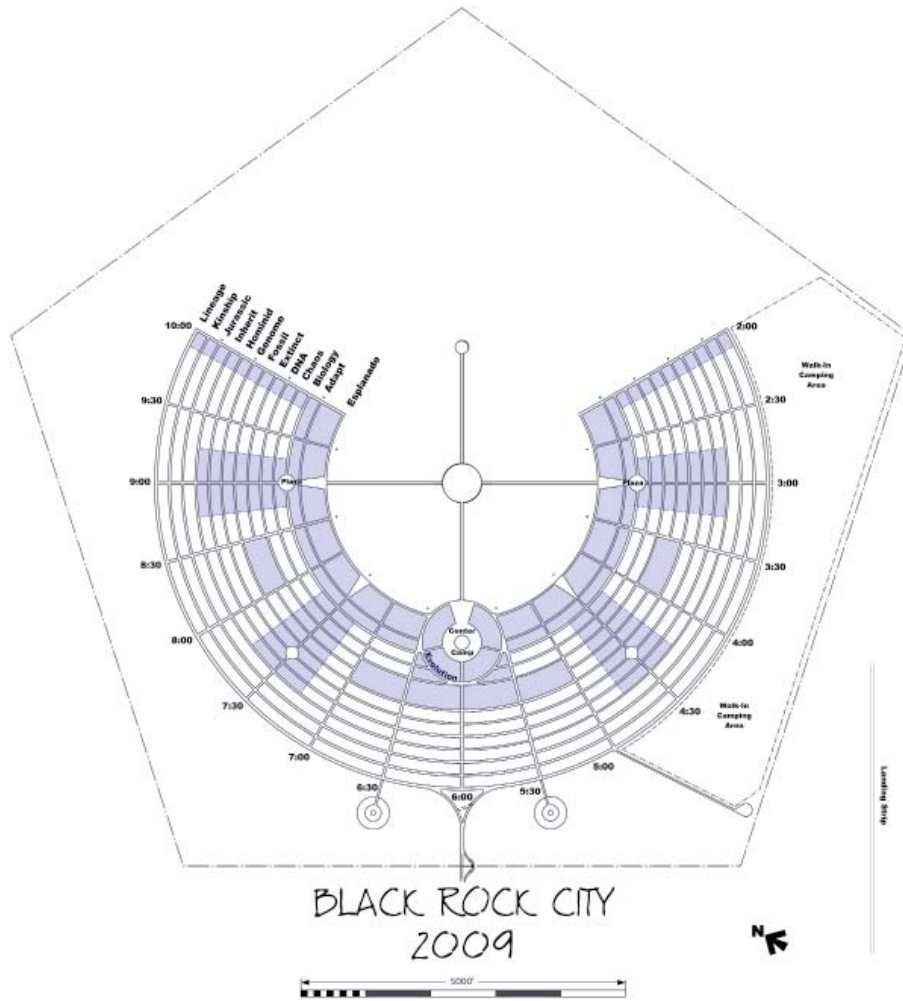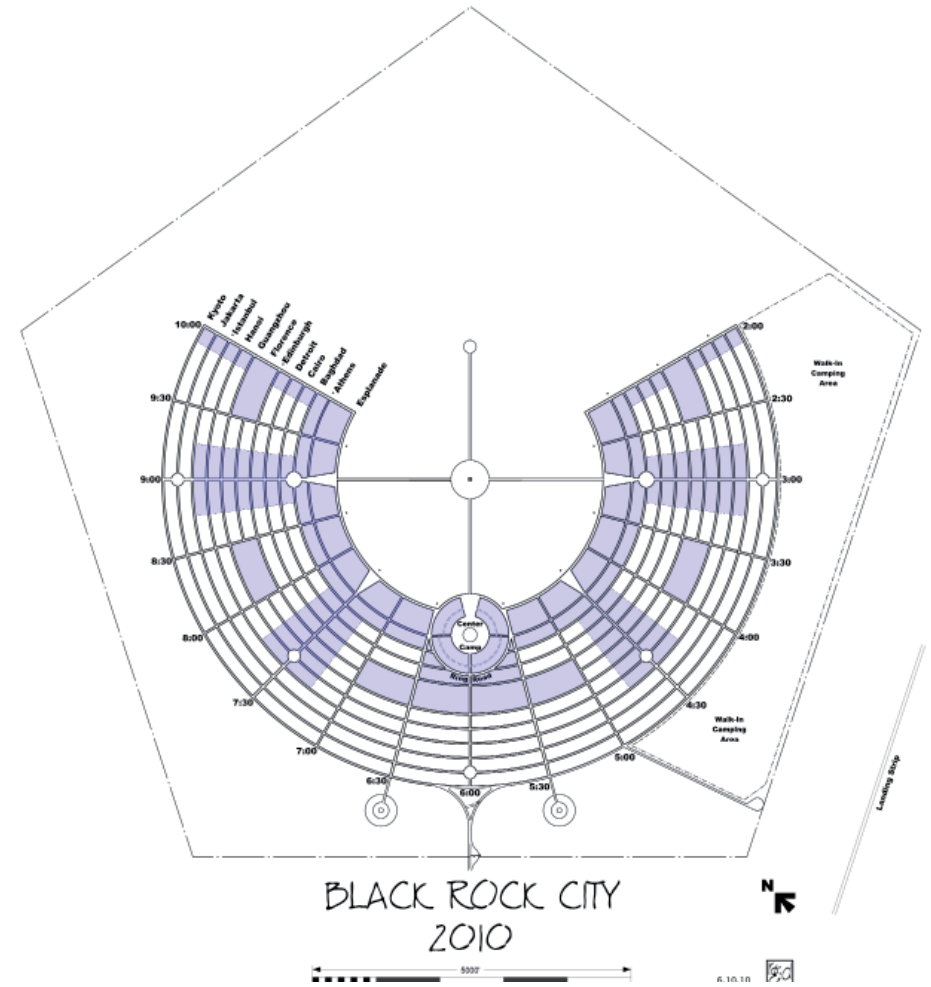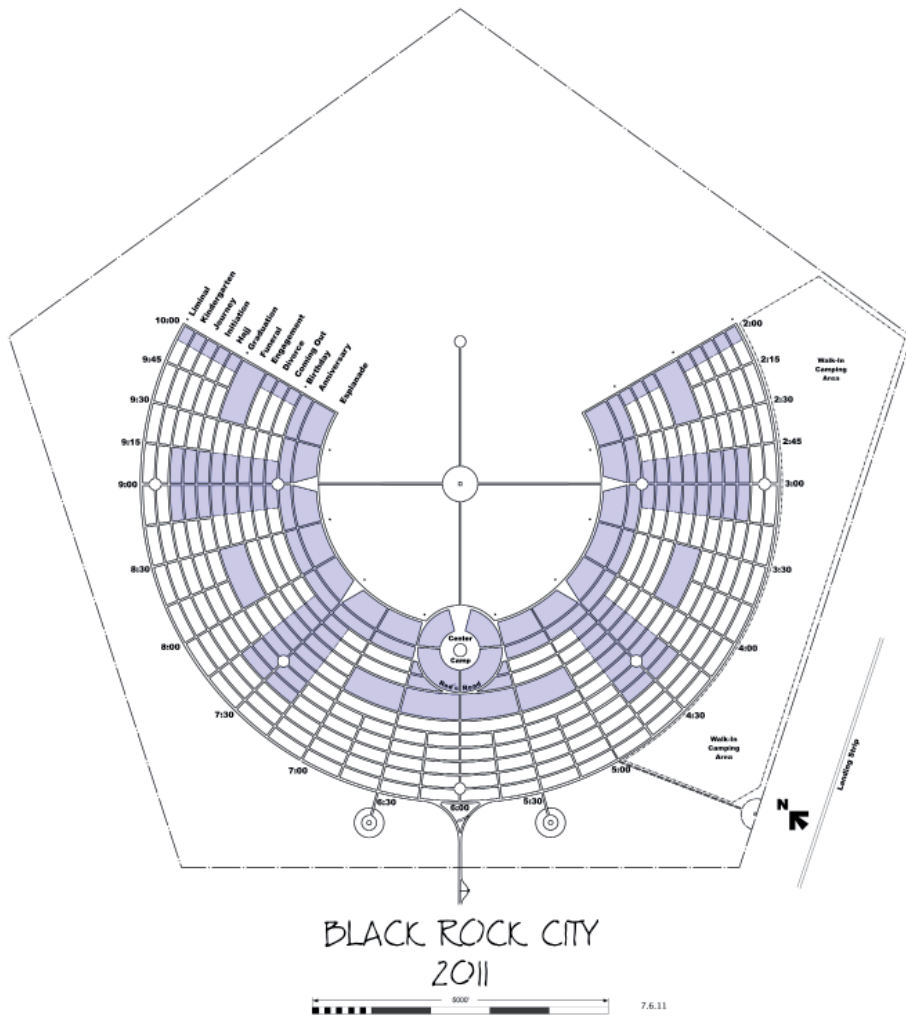*Figure 34: map of Black Rock City in 2002*

38
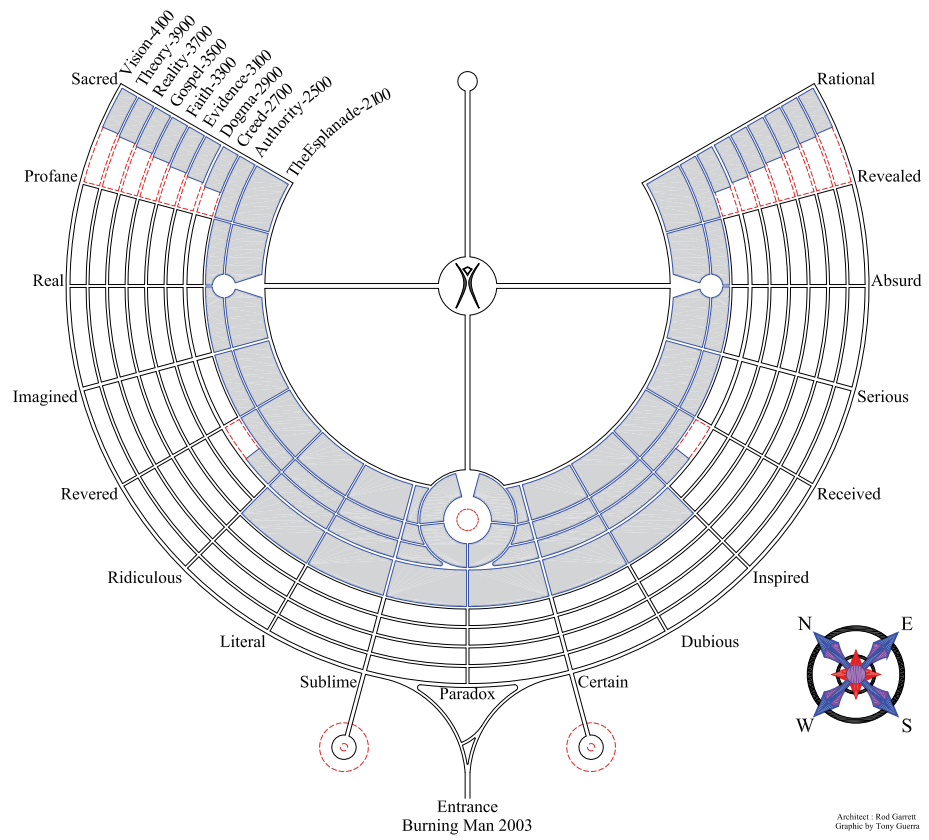
Figure 35: map of Black Rock City in 2003
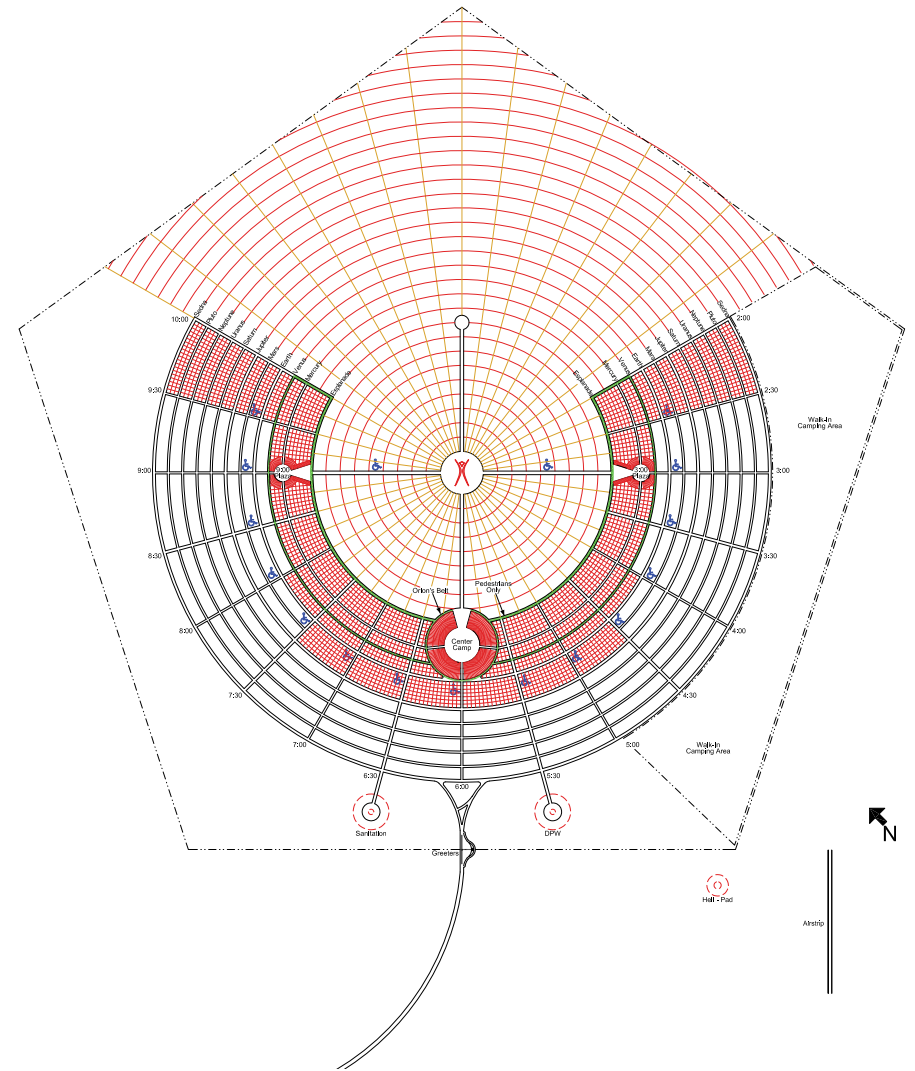


Figure 36: map of Black Rock City in 2004

39

## Order, Zoning, and Contentment

By **2005**, the city had grown to a population of 35,500. Leading up to 2005, Theme Camps thickened, and occupied a depth of several city blocks lining the Esplanade and Center Camp. This acted as a barrier between the residential areas of the city and the active center, promoting a strict hierarchy between the designated neighborhoods (theme camps and villages) and residential, individual campers in the free camping areas.[62]

In 2005, in order to combat this phenomenon and promote a more integrated city structure, the city was **rezoned**, reducing theme camps and villages to one block in depth, thereby preventing them from becoming a barrier. The remaining theme camps were organized around Center Camp, around the Plazas at 3:00 and 9:00, and lining certain radial streets. These districts extended like fingers through the residential neighborhoods, creating more mixed functionality and promoting more interaction and activity within the residential areas.[63]

This was also one of two years when the number of concentric streets was reduced, the other being 2010. In 2005, the number of rings was reduced from 11 to 9 in order to reign in another round of urban sprawl.[64]



BLACK ROCK CITY 2005
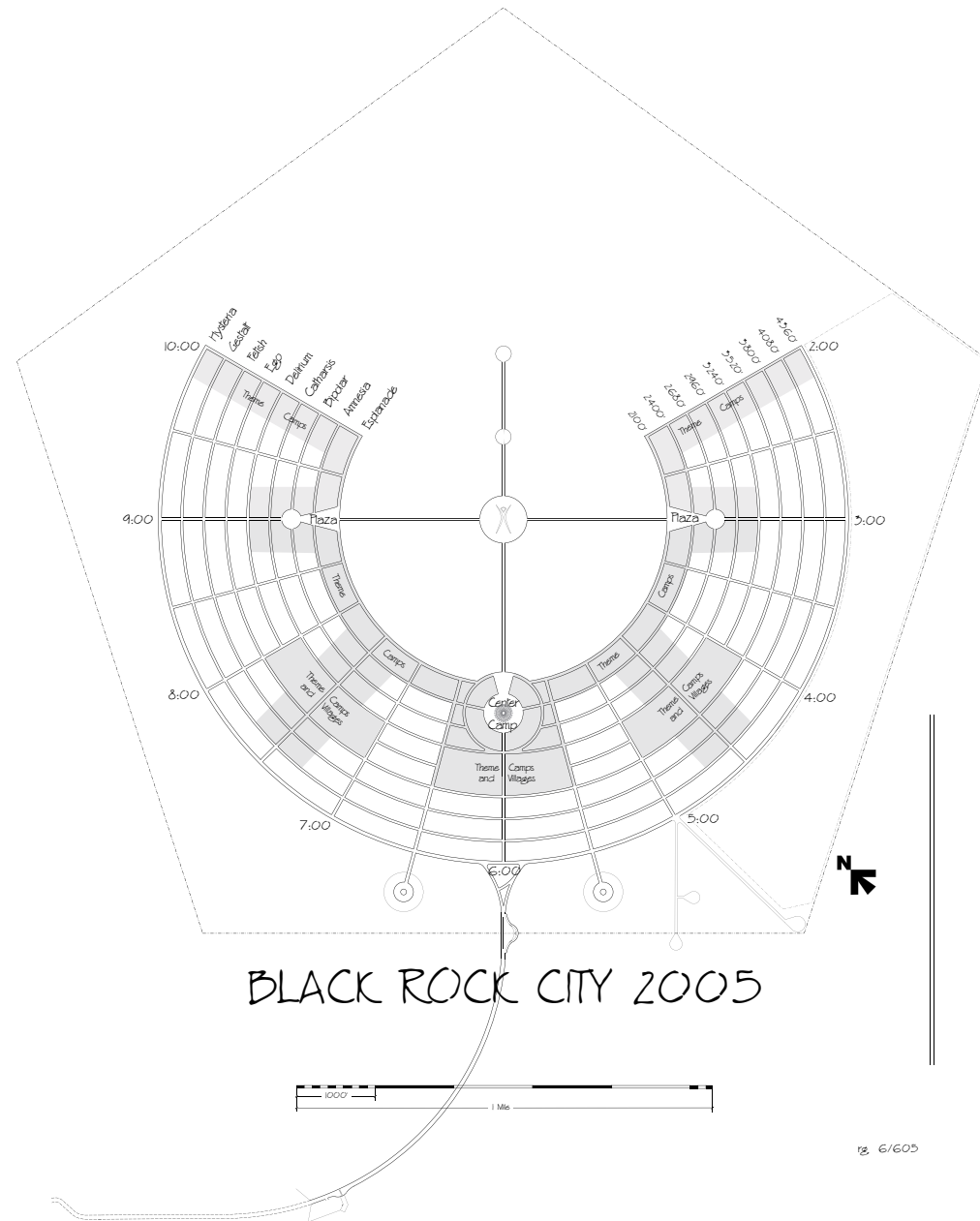
*Figure 37: map of Black Rock City in 2005*

## Present

Since **2006,** a few minor changes have been made to the city, but on the whole it remained the same. Some new key hole openings were added, opening up on the Esplanade and leading into the more important radial streets in order to encourage more connection between the Esplanade and the urban interior. The size of the city and the number rings have been adapted as population grew, expanding and contracting through trial and error processes. Throughout the years there has been minimal rezoning of theme camps and villages, but no major changes.

The city has already adapted and responded to many of its urban issues. These issues can be quickly addressed in a temporary city, and as they are addressed, the need to change slows. Today, the city can house up to 70,000 people. The planners expect that the city could still be reasonably expanded within its current concept to house up to 100,000 people, but no more than that without major changes to the plan or to the event, due to current traffic restrictions and the restraints on scalability of the current plan.[65]



*Figure 38: map of Black Rock City in 2006*

Concentric Street Names:

Esplanade
Arctic
Boreal
Coral Reef
Desert
Estuary
Fresh Water
Grassland
Habitat
Intertidal
Jungle
Kelp Forest
Landfill
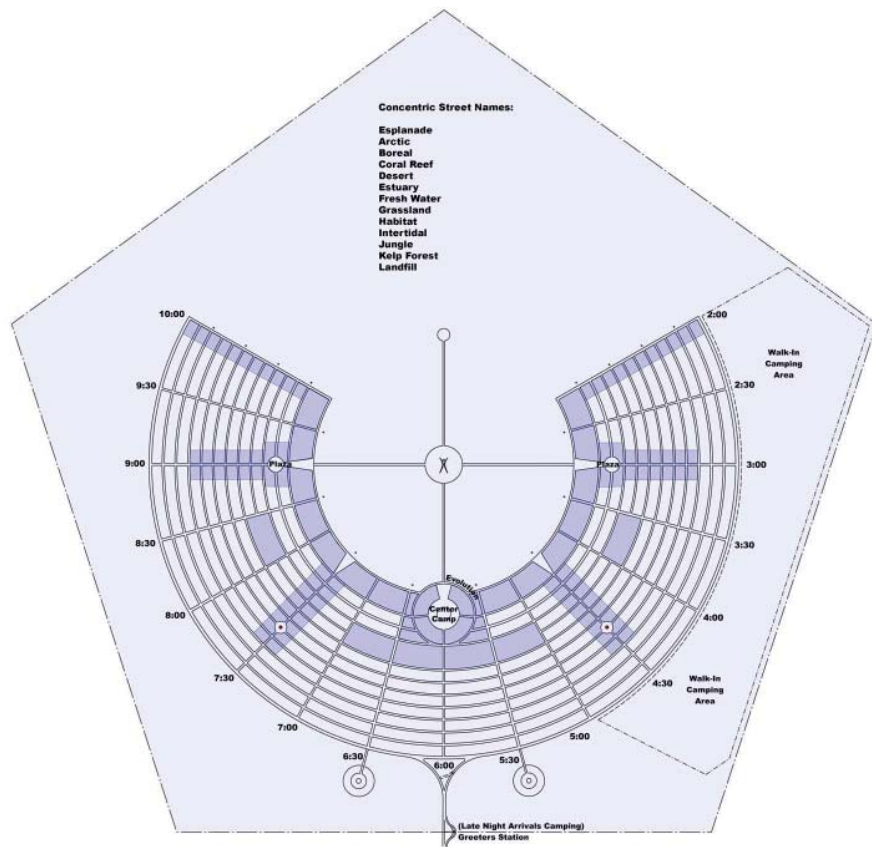
BLACK ROCK CITY 2007

1" = 1K'
rg 7.1.07
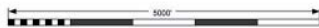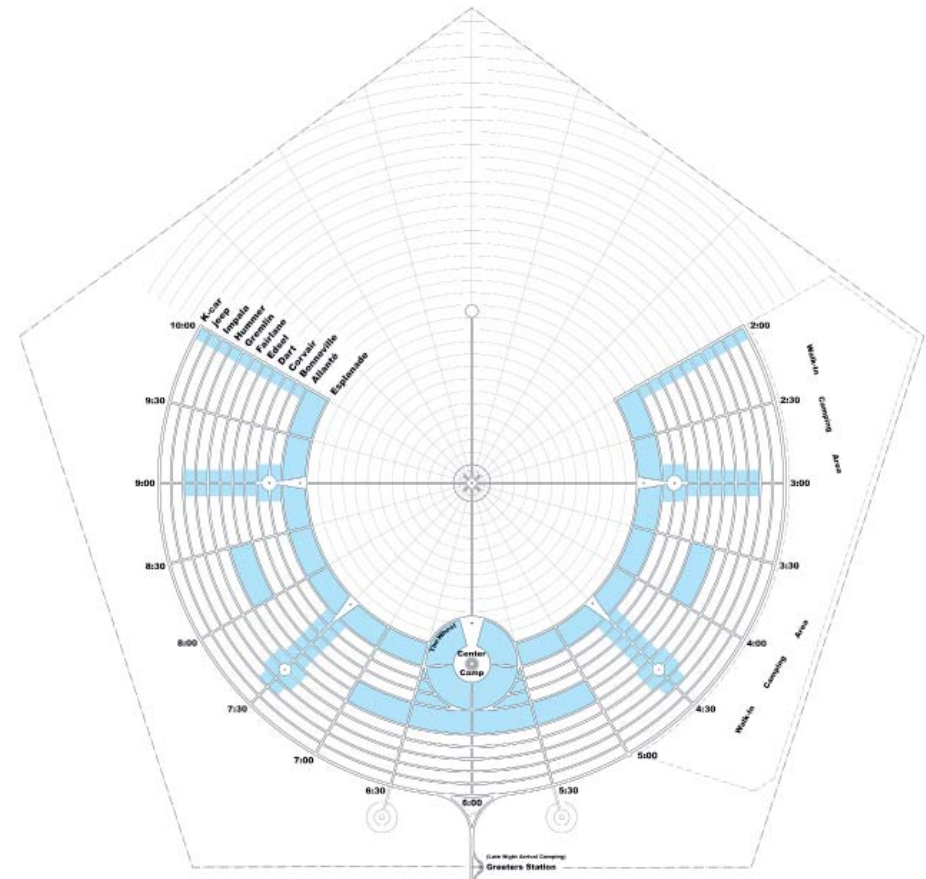
*Figure 39: map of Black Rock City in 2007*

BLACK ROCK CITY 2008

6.4.08

*Figure 40: map of Black Rock City in 2008*

*Figure 41: map of Black Rock City in 2009*



*Figure 42: map of Black Rock City in 2010*
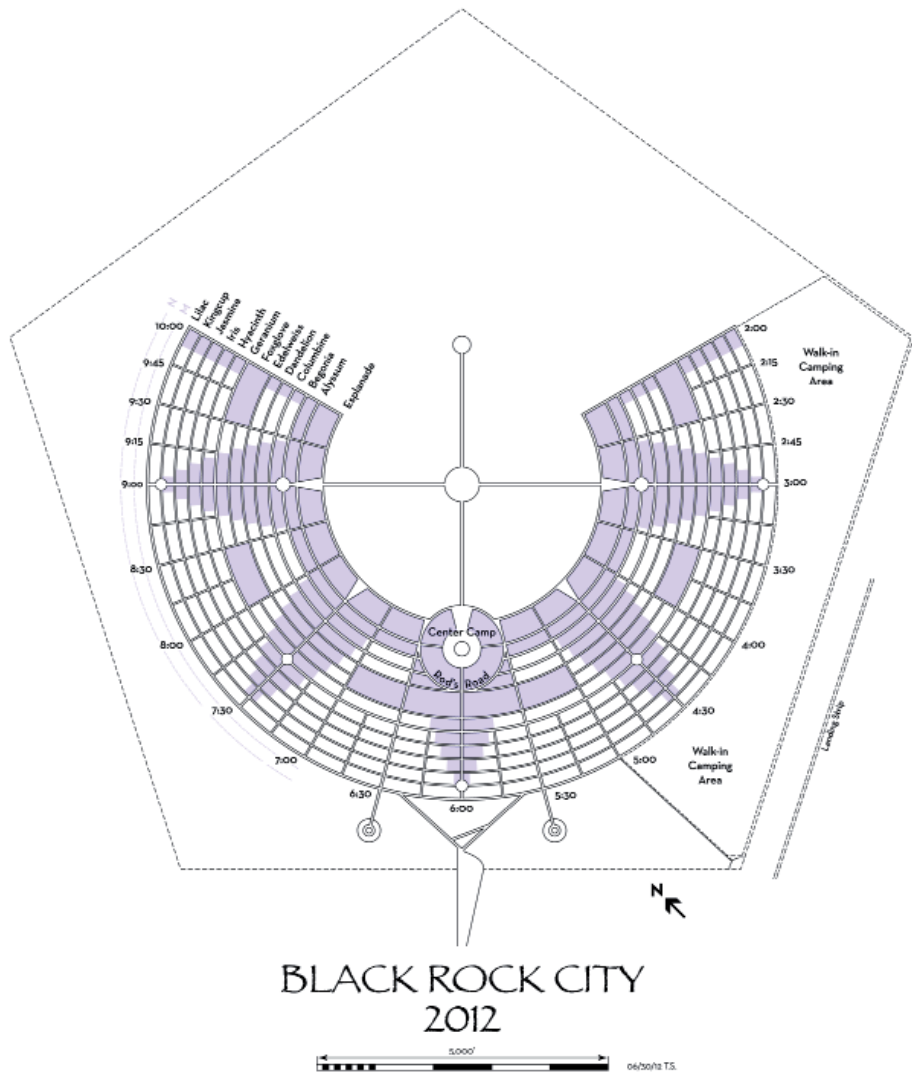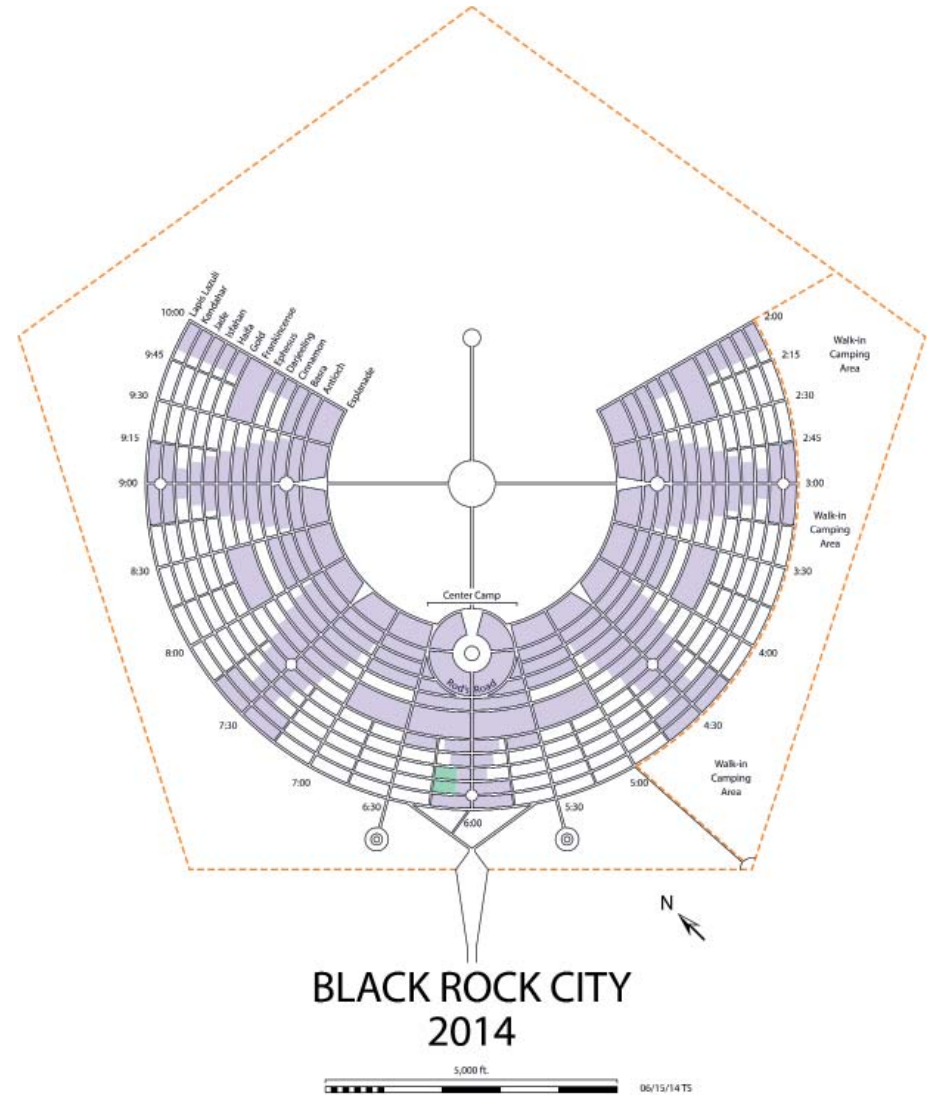
43

*Figure 43: map of Black Rock City in 2011*



*Figure 44: map of Black Rock City in 2012*
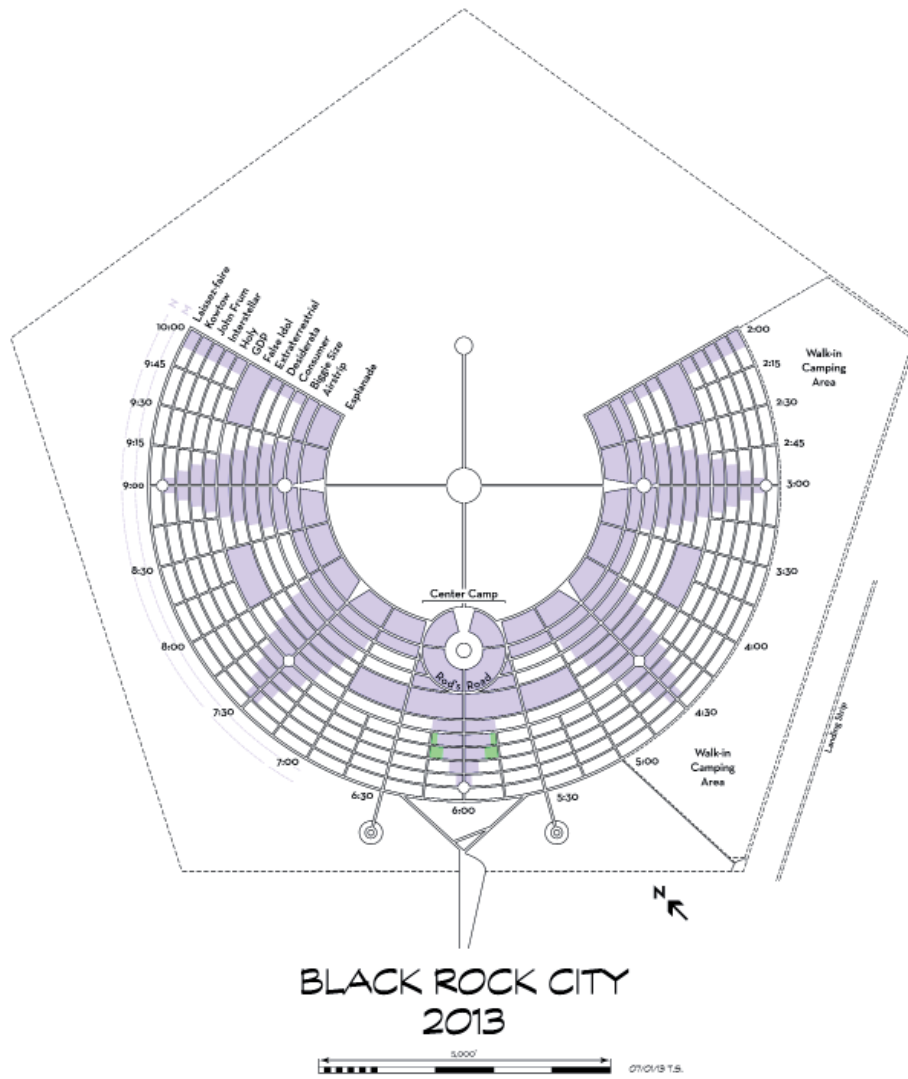
Figure 45: map of Black Rock City in 2013



Figure 46: map of Black Rock City in 2014

Black Rock City development has stabilized in later years, as is evident in the plans from 2007 onward, particularly from 2012 to 2015. The only significant changes to the large scale urban plan were tweaks to the zoning of theme camps, the addition or removal of some concentric streets, changes in the size of city blocks (both in depth and length) and changes in street-widths and plaza size.[66] These capillary mutations are documented in depth by the organization, and can be used to see correlations between urban change and psychological effects on the inhabitants. The opportunity to adjust the city so easily made it possible to closely observe correlations during the trial and error processes. It would require another paper entirely in order to fully explore the interrelationship between the two.

With a population of 70,000 people, and only a two-lane road available for ingress to and exodus from the city, people wait for about 6-12 hours to enter and leave the city at the beginning and end of the event. Without changing the duration of the event, or the method of entry and exodus, the size of the city has stabilized based on the constraints of population.[67] The stabilization of change seems to signify that the city is reaching a threshhold for this particular urban form and urban timeframe. New strategies would have to be explored in order to make new adaptions and further growth possible.

In 2015 the Burning Man Project held a competition in urban planning to search for new, inspirational concepts. The results of this competition have been published online on their website under the name „The Big Book of Ideas."[68] In 2016, the Burning Man Project purchased Fly Ranch, which is located along the edge of Hualapai flat, near where the 1997 event was held.[69] It remains to be seen how the ideas from the competition will be implemented, and how Fly Ranch will be used to enhance Burning Man culture.
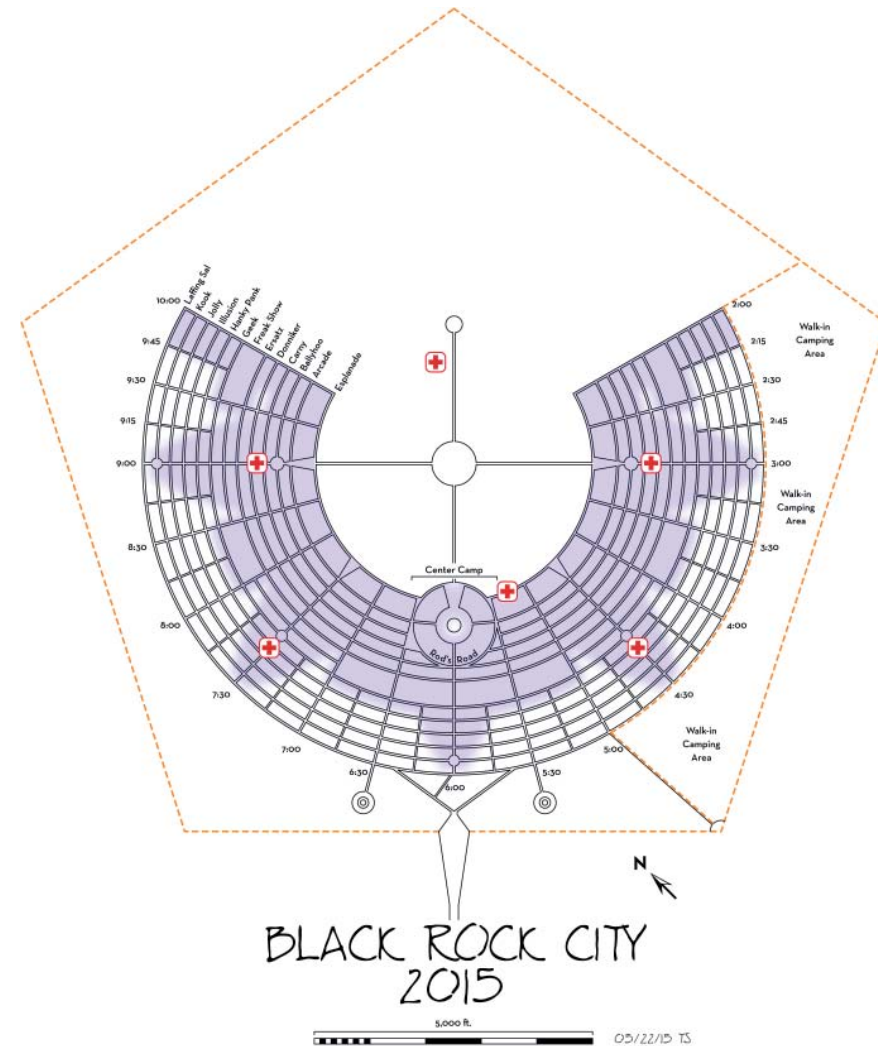


*Figure 47: map of Black Rock City in 2015*

*Figure 48: Construction at Burning Man 2012*

## Themes and Morphological Discourse

*„When I think of Black Rock City, the first thing that comes to mind is not a city, it's not art, it's not people. It's a bold „C" shape: the crisp stamp of ephemeral culture in nature. When i think of this „C" shape the first thing that comes to mind as a city is Brasilia. (...) The city planner of Brasilia, had one shot at building his city. We rebuild our city every year. This is a unique situation and it's like having an „undo button" on the scale of a city." - The Eye*[70]

Although some traditional factors for urban morphology are discernible in Black Rock City, many factors pertaining to the urban morphology of a temporary city are distinctly different from the factors related to a city with a longer life span. The set of criteria for analyzing Black Rock City is somewhat different than a permanent city, although some overlap exists.

Although some of the classically relevant factors overlap, their effects on a temporary city are vastly different than they are on a permanent city because the realm of opportunity is so much greater. A very clear example of this is the thematic section „location," which is one of the first basic factors determining the formation of a city. The formation of a permanent city is set forever in the location where it begins, but temporary city can move itself to an entirely new place at any time.

Additionally, it is important to note that the methods of categorization for these various factors are not always so clear, since the boundaries between them are sometimes blurred. There is a kind of interplay between different influences. Some aspects might be considered subcategories under the umbrella of a larger topic. Often, these subcategories could be ordered into more than one larger topic. Therefore, some factors may be mentioned more than once as they must be integrated into more than one relevant section. The fact of the matter is that none of these factors truly stand alone. They interact with one another in complex ways.

Another very unique and crucial aspect regarding the evolution of a temporary city, is that it not only moves forward, with changes occuring in the urban plan each year with each reiteration, but it can also regress and repeat. When the city develops in a way which was not beneficial, it is possible to return to an earlier form.

It is easy to see the development of the city from one year to the next, and these long-term developments most clearly parallel classic urban morphological processes. However, within the city's yearly one-week lifespan, it is also shifting and changing throughout the week as it grows and then disperses, creating an additional short-term evolution cycle *within* each year. These cycles, unique to temporary cities, parallel traditional urban developments in their own way, as the city shifts from non-existence to existence and back again.

Black Rock City also seems to attract people who are yearning for a city with clear structure and a humanized urban scale, as cities in the „Default World" are reaching the status of „mega-cities" and towns are increasingly defined by urbal sprawl. There are aspects of a search for identity, center, and community, and the city's evolution reflects this quest.

## Location

Location is an excellent example of an urban morphological criterion which is specifically different in its application to a permanent city vs. a temporary city. In a permanent city, this is a factor that is established a single time while looking for an ideal settlement spot. In a temporary city, it is much more flexible and there is room to change locations entirely if there is an issue with an older site. The location of a site, once chosen, generally affects the formation of the city, as it is an overarching factor which also carries with it all physical aspects of the surrounding the environment.

One very obvious factor related to location is topography. Topographical formations have different effects on a city, depending on what the city is trying to accomplish. For instance, is it looking for defense strategies, open space, agricultural usage, accessibility to transportation, social cohesion, or something else?

On Baker Beach, in the 1980's, the event was informally held on a stretch of beach about 100 feet wide.[71] It was located in San Francisco, which is, of course, a city in its own right. In an existing city, there are already strong pre-existing rule-sets and infrastructure. The city limits the crystallization of new and independent structures which do not conform to those pre-existing conditions.

Only after moving to the desert, did Burning Man have the opportunity to take a solid step towards forming a city of their own. Even the name „Black Rock City" is a direct reference to Black Rock Desert, which has been (with one exception) the primary location for the event.[72] The desert itself was chosen for its isolation and the magnificence of its wide, flat surface. The location epitomizes the concept „tabula rasa" and the opportunities that go along with it. In a sense, the topography of the Black Rock Desert has a strong impact on the city by not creating

any initial design restraints. The city was free to form according to its ideals, as opposed to conforming to topographical restrictions.

The precise location and relocation of the city each year in the early 90's was not well documented. „*During the early 90's Black Rock City had been deliberately hidden in the desert vastness. Participants were*
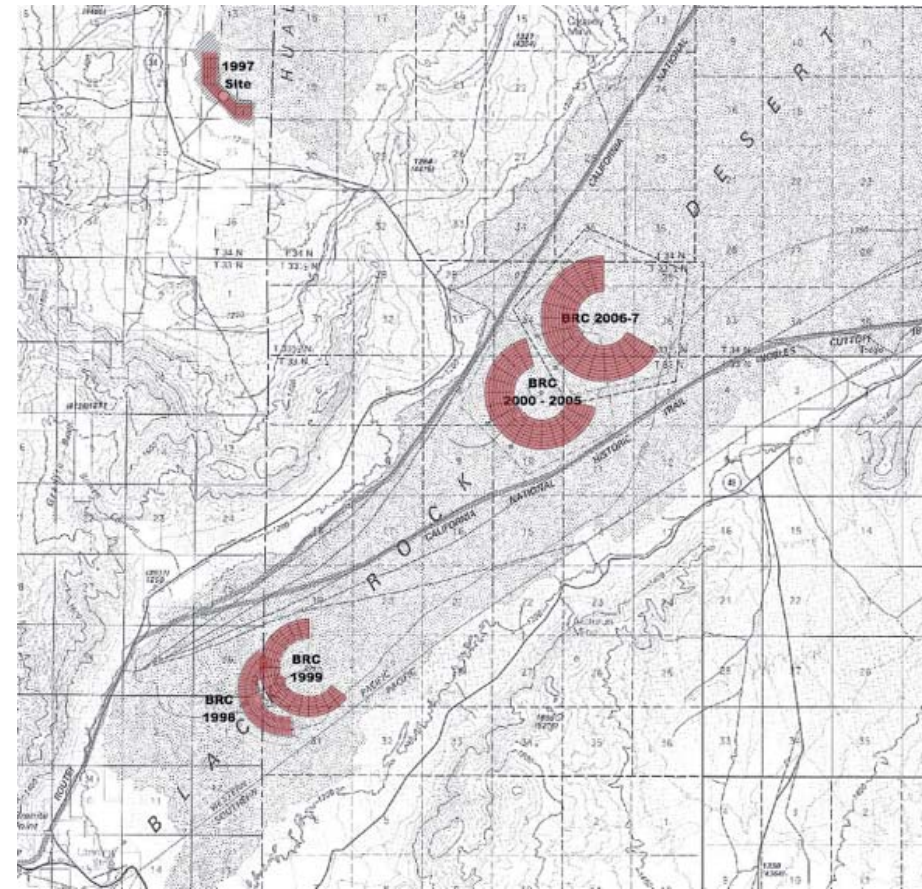


*Figure 49: Locations of Black Rock City from 1997-2007*

*directed to a station called the gate, and here they were provided with coordinates by which they might locate our settlement."*[73] Even the urban plans from 1992 and 1996 show no specific coordinates. The location was not precisely documented until 1997, when Rod Garrett became involved in the design of the city.

The chaotic circumstances in 1996 precipitated the need for clear urban planning strategies, requiring more detailed and organized plans in order to conform with the authorities which were now getting involved. The anarchic T.A.Z. was compelled to conform with laws and safety regulations, which resulted in a more civil society.

Regarding location, the events in 1996 also caused the festival to be barred from public land in 1997 and forced the event to be moved to private land on Hualapai flat, thereby changing the topographical conditions. The new site was no longer as free from constraints as the playa of Black Rock Desert, and the city was forced into site-specific planning measures in order to accomodate the new circumstances.[74] (See Figure 46)

The lot appropriated for the event was located between the shoreline of the playa at Hualapai flat and a property line. The shoreline of the playa is the area where a Pleistocene Lake ended, and although the lake itself is gone, the quality of the sediment changes and the ancient shoreline is made visible by changes in vegetation, as can be seen in the 1997 map.[75] The shoreline where the playa ends is characterized by the beginnings of vegetal growth, as the alkaline soil becomes more fertile. The property line denotes a hard socio-political boundary.

These two new constraints placed hard boundaries on the shape of the city. Where the Man was previously located outside the camping area in

the view shed to the desert in previous years, he was now pushed into a central location within the camping area. The camping area, which had been circularly organized around Center Camp, was now organized as wings extending outwards along the shoreline, flanking Center Camp.

In 1998, when the city was permitted to move back to Black Rock Desert, formal freedom returned to the city as it was now once again located on the open playa. However, Rod Garrett (the urban planner) did not regress to the earlier planning concepts from 1996 and before, but instead built upon the most recent structure of the city at Hualapai.[76]
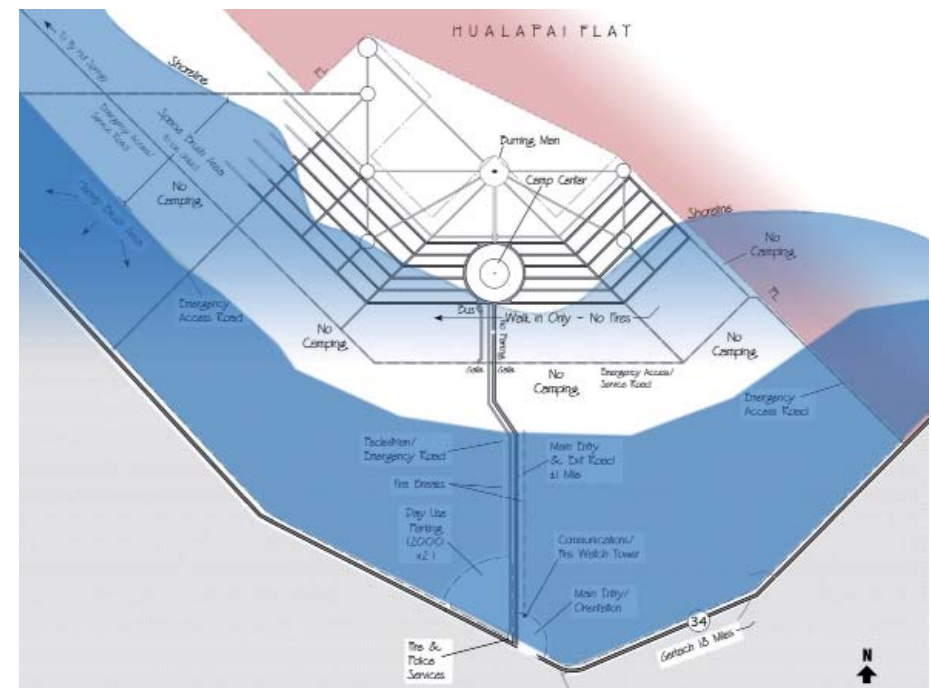


*Figure 50: 1997 plan constrained by the shoreline and property line*

The new urban concept from 1997 was basically kept, but was formally adjusted, now that there was once again complete flexibility. The new plan was once again symmetrical and the Man kept his central location between the wings of the urban structure. It was now evident that the Man, if he was to be the emotional center of the city, must also be located at the true, physical center. So, with the availability of surveying equipment and the newly rounded and curved city plan, it was clear that the city blocks and streets would be surveyed from the location of the Man.[77]

In the years following the return to Black Rock Desert, additional regulations were imposed on the event by federal authorities regarding the environmental sensitivity of the playa. In order to reduce their impact on the playa surface, the event continued to be moved around to slightly different spots on the playa (Figure 49).[78] These slight shifts in location had the same basic topographical and environmental qualities, and so despite technically changing location, the city was able to maintain its current shape. The location, from 1998 until today, was no longer a significant factor for urban transformation and any further urban changes resulted from other factors.



| 1996 | 1996-1997 | 1997 | 1998 |
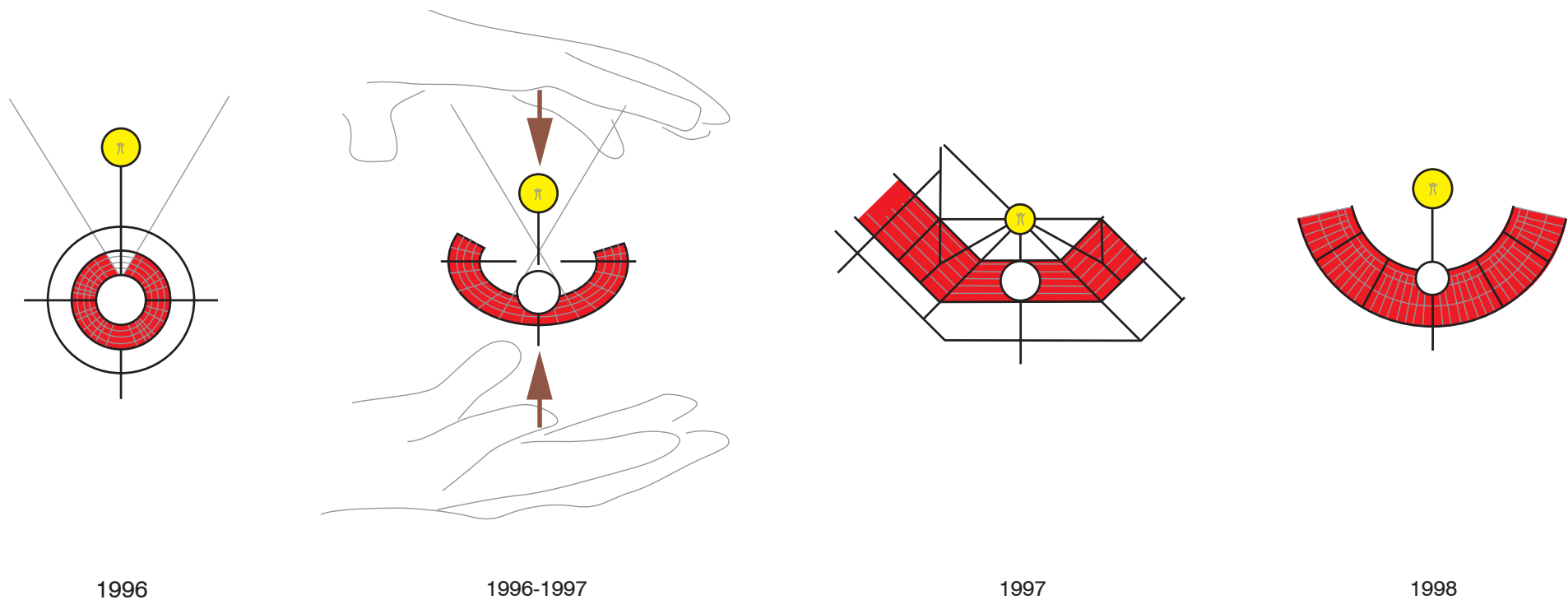
*Figure 51: Schematic of urban compression from 1996-1998*

## *Orientation and Disorientation*

Orientation is another over-arching topic with many factors which could be categorized as pertaining to orientation. Orientation can be observed from without, referencing the city's position in relation to its surroundings, or from within, referencing the positioning of different urban elements in relation to eachother. Additionally, disorientation also holds meaning and can even have a purpose within the urban fabric.

### Orientation from Without
Since the original Burn in 1986 took place on the summer solstice, solar orientation was symbolically important for the city in its early years in the desert. The 1992 layout was oriented primarily according to the cardinal directions with the main axis oriented east to west and the Man standing near the point of the sunrise on the horizon, about 100 yards away from the residential camping areas.[79]

It is evident in the 1992 layout that without much experience in Black Rock Desert, the outward orientation of the city was based on the thing which most people use to orient themselves when in the wilderness: the cardinal directions and the sun. The location of the Man to the east of the residential area in the direction of the sunrise seems to be a nod to his origins in conjunction with the summer solstice.

Before 1995, there was no opening or view shed to the Man. The camping area was turned inward on itself and the Man was peripheral.[80] Since the Man was not integrated into the urban fabric as a direct reference point, it was sufficient to keep the symbolism of the cardinal directions. In 1995, Harley Dubois, one of the key urban planners in the city, implemented a view shed connecting the Man and Center Camp visually.[81] With the addition of this view shed, the dramaturgy of the Man's position in relation to his surroundings became more important, but at this point the city was in a stagnation phase. **This orientation system remained constant until** after the event in 1996, which marked one of the radical times of change in the city.

In 1997, under the new contraints of Hualapai flat, the city's (approximate) axis of symmetry was tilted towards the Northeast in order to maintain maximal urban symmetry while keeping the Man's location in the East somewhat intact. Upon returning to Black Rock Desert, this tilted orientation was continued and cultivated with a new purpose. Once the city had been released from the arbitrary orientation of the cardinal directions (arbitrary in the sense that the cardinal directions have nothing to do with the surrounding terrain and environment), the city was able to focus on the true goal of putting the Man not only to the East, but with the backdrop of the empty desert.[82] Black Rock Desert is narrow enough that in its width, the mountains tower to either side on the Northwest or Southeast. However, the length of Black Rock Desert runs from Gerlach in the Southwest far enough to the Northeast for the flat surface to go over the horizon in some places, similar to the flatness of the ocean. The few mountains which are visible in the distance are very low and inconspicous along the horizon.

When the Man was located directly to the east of the city before 1997, the eastern mountains must have been very visible behind him. With a shift in orientation to the northeast, the playa framing the Man is much deeper. Any low fragments of mountain which are still visible on the horizon are very distant and appear very small behind the Man. Additionally, if there is any wind to raise the dust from the ground (not even a full dust storm) the distant mountains disappear behind it. The lower the horizon, the more dramatic is the contrast between the towering sculpture of the Man and the flat expanse of the desert, echoing the quality of the event on the beach in San Francisco in 1986.

From 1998 to today, the importance of the dramatic quality of the urban landmarks evidently increased and the importance of the cardinal directions decreased, in terms of the outward orientation of the city. This is likely related to the urban compression and reorientation in 1996-1998 (see Figure 51). During the major changes during the boom-phases from 1996 to 1998 and specifically when the city returned to Black Rock Desert, the urban fabric was in flux. It was a time of reassessment, and as such it was an opportune time to readjust the city's position in its surroundings in order to emphasize this aspect.

It is important to note that when a choice is made to prioritize one factor for the definition of urban orientation, other factors which also hold relevance may be sidelined. One such example of a major issue is the direction of the prevailing winds, which originate in the southwest. The wind affects how dust blows through the city. Semi-trucks, arriving traffic and other infrastructure are located to the southwest, and the winds blow churned up dust out into the city and across the playa, which is disruptive. It would be possible to shift the orientation to conform to the wind direction, but the vista to the northeast would be lost, and with it much of the chief urban concepts.[83]

**Orientation from Within**
Today, there are three distinct areas within the city which require different forms of orientation in order to effectively move about. First, within the
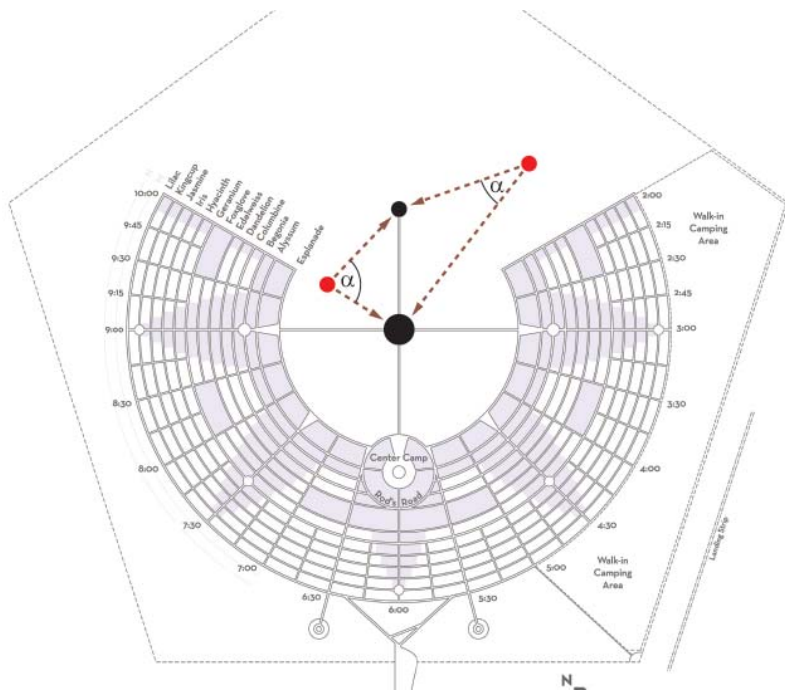


*Figure 52: Triangulation using the Man and the Temple*



*Figure 53: Street  signs at Black Rock City, 2014*

denser urban fabric, as the city grew in size, a system of street names was implemented to help provide orientation within the city. The streets consist of radial streets and concentric streets, with all radial streets pointing to the Man. The Man is the main post of orientation within the urban fabric, since he can always be used to find the center. The system of street names and street signs is also critical, with the radial streets being ordered according to a clock and the concentric streets are always alphabetically arranged, beginning with „A" right behind the Esplanade.

The second area is the empty interior located centrally around the Man. The Man still remains the central point of orientation, but the surrounding city facade and the axial and subaxial streets which extend centrally towards the Man, as well as the Temple provide further context for orientation.

Further outward towards the „deep playa" (the outward expanse of the keyhole which occurs behind the Temple), the urban facade of the Esplanade appears two dimensional, almost flat. Here, the Man and the Temple serve as elements of orientation, which can be used to approximately triangulate one's position in relation to the city. Additionally, orientation at night is much more difficult, but the Man and the Temple are well lit, as are the street lamps accenting the two axes in the central playa. Together, they can still generally be used to triangulate one's position in relation to the city from all the areas described above.



*Figure 54: Radial street at Black Rock City, 2014*



*Figure 55: Curved concentric street at Black Rock City, 2014*

When Burning Man moved to the desert in 1990, the population was approximately 90 people, and it was very simple to organize them: there was the Man on one hand, and the camping area on the other. There was no need for additional, internal orientation strategies, other than the „circled wagon" form which crystallized organically around a common center. [84]

By 1996, with 8,000 inhabitants, orientation became much more difficult. Although the city had developed some distinct urban features such as the primary and secondary axes, the Man, the view shed to the Man, and Center Camp, there was no cap on the size of camping area and no organizational strategies located there. The introduction of raves located outside the city stretched the radius of action for the city, which resulted in sprawl and caused great disorientation for the inhabitants, and contributed to the chaotic events in 1996. [85]

In 1997, as the Man was pushed inward, he gained a more prominent urban position. It was at this point, due to new regulations and oversight, that clear streets were implemented within the residential area. Subcenters (plazas) were distributed among the residential spaces to provide more orientation. It wasn't until Rod Garrett's urban plan in 1998, that the Man was truly purposefully deployed as a landmark of significance for orientation within the urban fabric.[86]

The need for orientation out on the playa and deep playa grew as the diameter of the area around the Man increased. People were spending time further away from the urban fabric. It wasn't until 2000, with the addition of David Best's Temple that it was possible to triangulate one's position in reference to the city in the open space, particularly at night. In the 2003 map, the primary axis is visible extending into the playa towards the Man for the first time.

**Disorientation**

Black Rock City is not only defined by its efforts to provide orientation for its citizens. Disorientation plays a large role in cultural (and therefore urban) development as well. Disorientation is facillitated not only through the actual building cycles and traditions of the city, but also through the conditions of the desert. In windy conditions, the fine, alkaline dust of the playa is carried into the air, in what is known as a „white-out."[87] During a white-out, it is sometimes impossible to see even five meters ahead, and movement is slowed significantly or even completely stopped until the conditions improve.

*„Black Rock City (...) is a place that seems to be very much full of more landmarks than a typical city. The most obvious of course is the man himself, his physical size growing each year, and his illumination at night make him the premiere beacon and meeting point within the city. Of course, this radically changes post-burn on Saturday, where without its most familiar landmark, orientation becomes problematic. But this is something that I think has some benefit in urban environment. By designing in a degree of temporary disorientation and offering people the opportunity to get lost within their city, you give them the tools to discover new places, new people new events and happenings, and thereby you expand the cultural depth of the city and the possible ways that people can interact with it."*[88]

**Orientation Shifts During the One-Week Cycle**

The unique, cyclical reiteration of Black Rock City is one of the hallmarks of its existence as a temporary city. Large-scale developments which build on experiences and plans from previous years are easy to observe, and associate with urban morphology. The yearly cycles themselves also have growth and decline patterns, which have a strong effect on orientation.

During the first few days, the city is still being constructed and filled in as people arrive and find their way based on the location of the Man and the street signs directíng them to the correct addresses. By Wednesday, the city is about as complete as it can get and population density is at its highest. When the urban density is at its highest and the plots lining the street blocks are packed, it is easy to find one's way, as the streets are well defined, and one learns to recognize certain structures as points of reference within the urban fabric.

However, by Thursday, the street signs begin to disappear, as there is a tradition of stealing and/or creatively replacing them as the week progresses. When the Man is burned on Saturday, the major point of reference is eliminated, and from that point on orientation becomes increasingly difficult. The disorientation during the final evenings and days of the event decelerate the movement of the city's inhabitants, fueling social interaction and celebration. That night marks the beginning of exodus as well, and by the time the sun rises, the urban landscape has changed: there are gaps where there had been structures, and the line between the streets and the city blocks begins to blur.

On Sunday evening the Temple burns and the city begins to empty out quickly. By sunrise, orientation has become increasingly difficult and by Monday, the population has significantly thinned out and without a point of reference or a clear urban structure of streets, the city lapses back into a sprawl.
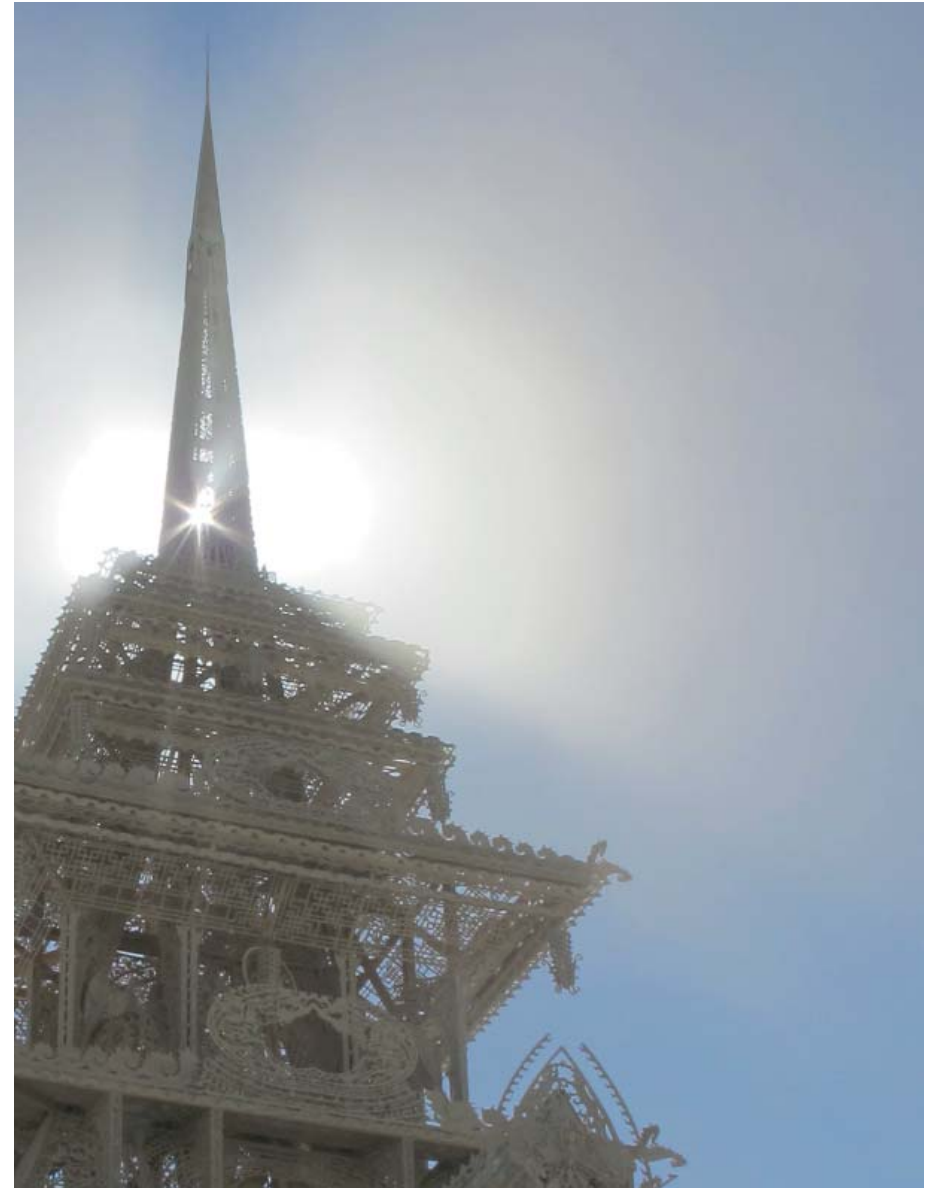


*Figure 56: Temple Spire at Burning Man, 2014*

## Repetition and Familiarity

Familiarity plays a strong role in determining how comfortable people feel in their surroundings. It is exciting to be somewhere new, but to truly feel at home there must be a certain continuity in the design of a place, particularly in a temporary city.[89] As previously discussed, temporality has great benefits in terms of structural flexibility, but to simply upend a familiar urban layout without carefully founded reasons would be nonsense. It would result in the citizens losing a feeling of ownership and belonging in their city.

One instrument that is used to reinforce familiarity, even in cases of large scale alterations to the built environment, is repetition. Repetitive urban elements which span many years can be redistributed during an urban adaptation, but nonetheless promote mental associations for the citizens returning from previous years. The reuse and repetition of a familiar form, be it physical constructions or voids, may be used to maintain familiarity and preserve the cultural aura of the growing city.

The most obvious type of repetitive element is an architectural landmark, such as the Man, the Temple, or Center Camp. These types of elements are clearly visible and stand out in the memory of the inhabitants. This thesis, however, focuses on urban structures and does not focus on architectural elements themselves. As long as these elements remain recognizable from year to year, only their placement within the urban structure is relevant.
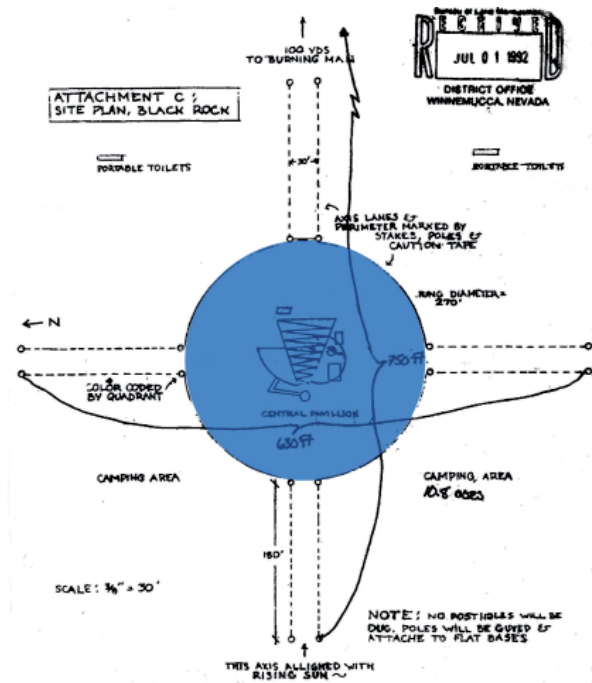


*Figure 57: Black Rock City layout with circular center, 1992*
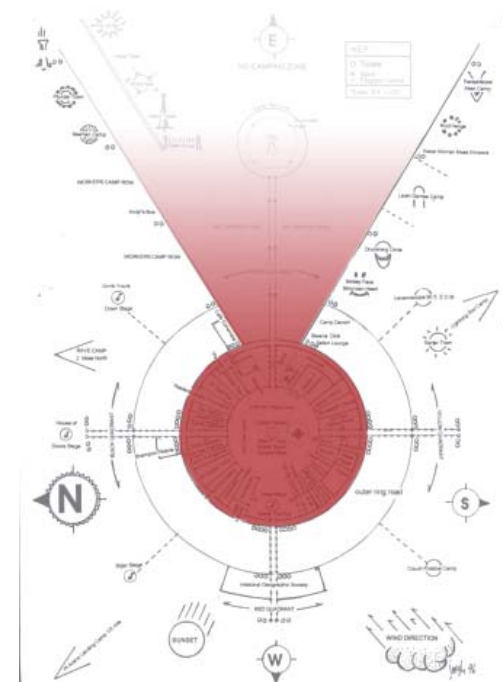


*Figure 58: Black Rock City layout with keyhole-shaped void, 1996*

The repetition of built urban patterns can result in familiarity, but the structuring of voids between the built areas spaces is equally meaningful when formulating urban spaces and providing familiar spatial structure. Particularly in Black Rock City, the urban voids are used to promote familiarity and neighborhood cohesion in an ever-changing urban environment.

**Voids: Circles and Keyholes**

Initial, informal decisions about the urban form are apparent in the plans of 1992 to 1996 and have two clear, recognizable forms: the circle and the keyhole. The circle appeared almost immediately after the city was formed, as it was instinctive to form a camp in a circular fashion, similiar to a campfire circle or circle of wagons.[90] The key hole shape was implemented in 1995, when Harley Dubois created the view shed to the Man which visually connected Center Camp and the Man. These two shapes are evident in the 1992 and 1996 plans.

After Rod Garrett got involved in 1997, these two elemental voids continued to be incorporated in the urban design. Black Rock City grew at such an exponential rate that the repetition of these elements proved increasingly necessary to subdivide the city
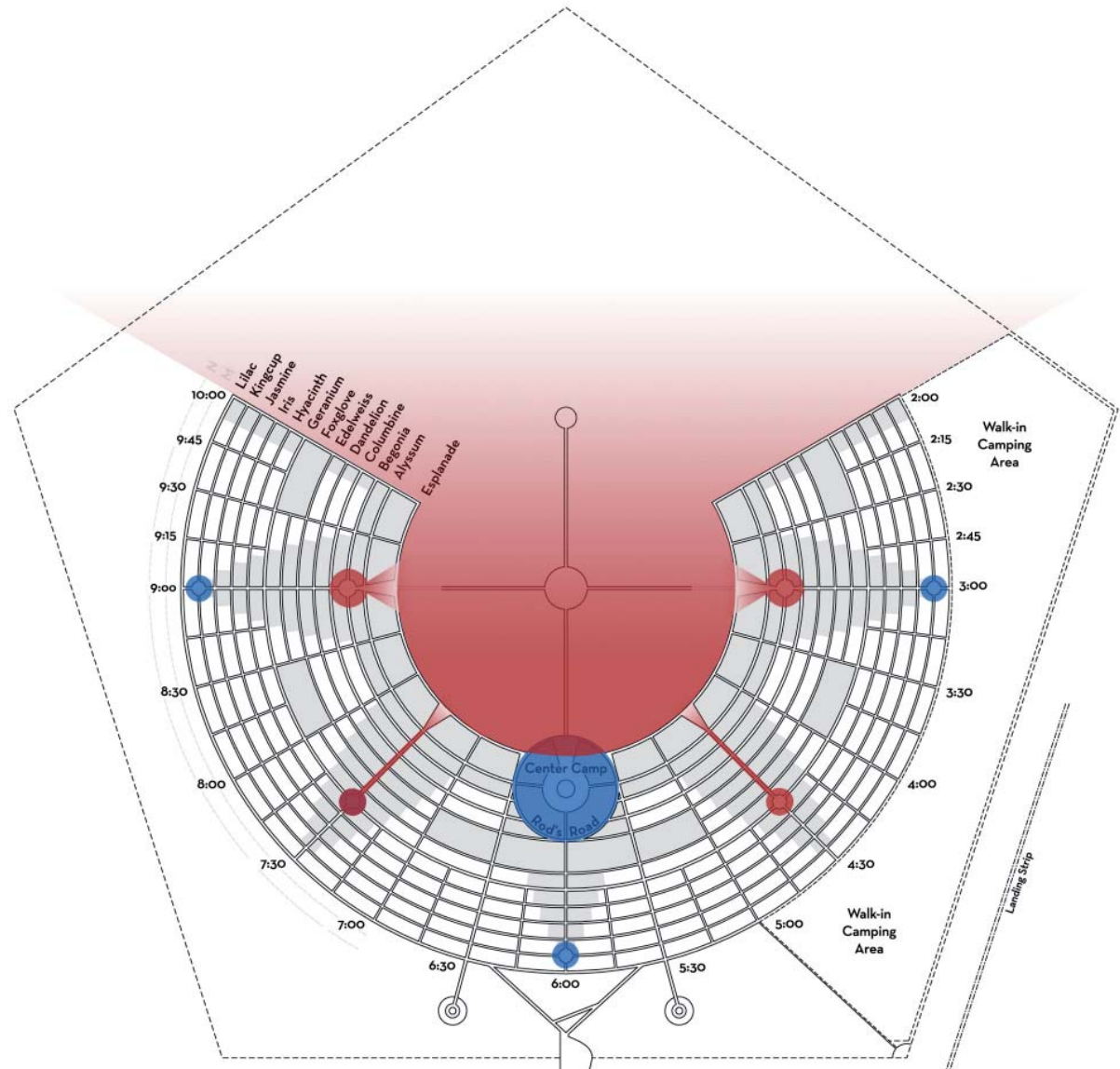


*Figure 59: Black Rock City conceptual Map, 2012, interspersed with circular and keyhole shaped voids*

*Figure 60: The evolution of keyhole and circular void repetition in Black Rock City over the years*

and create the impression of neighborhoods, with which the citizens could locally identify. The original circular shape of the plan from 1992 and the key hole shape of 1996 are evident, repeating on a small scale within the larger plan.

As the city grew, the need for more neighborhood centers also increased, and the plazas were introduced. Initially the plazas were circular constructions, but as the diameter of the playa within the arms of the city increased, Rod Garrett added portals to the more important radial streets, which reproduce the keyhole shape.[91] It is interesting to note that each portal is arranged so that it presents its own view shed to the Man from the corresponding radial street, similar to the singular view shed of 1995/1996. However, now that the Man was no longer ancillary to the city, the portals served a new, additional purpose, which was orientation from the central playa into the urban fabric: they now worked as a two-way visual orientation method. Today, they create an enhanced connection to the Man from the urban fabric, and they also create a perforation in the urban facade connecting the open playa to the urban fabric as described in the section on orientation.

The keyhole shape is also replicated as the larger layout of the city since 1999 when the urban arc was extended to since the clock hours end at 10:00 and 2:00. The playa and the deep playa, which constitute the most distinctive void in the city, also form a massive keyhole shape. Throughout the years there has been a clear development of zoning strategies within Black Rock City, which evolved in conjunction with epiphanies about the connections between different functions and zones. In addition to broad zoning regarding theme camp placement areas and free camping areas, site specific zoning of functions into cohesive districts developed in order to promote desired social patterns and communication.



*Figure 61: Black Rock City 2012 viewed from above*

## Zoning

In a permanent city, zoning and districts also develop and change their functions over the years, and this is very comparable to what happens in Black Rock City. In Black Rock City, as a temporary city, this process happens much more rapidly. Upon any realization of a zoning issue, the functions and theme camps can easily be shifted around the city, changing zoning in significant ways immediately without really evicting anyone from an area that has been rezoned.

One of the tasks of the city's organizers is to promote a balance between radical self-expression and civic responsibility. In some cases, this can be achieved through urban change.

**Sound**
Since the move to the desert, sound and music have been an integral part of Black Rock City. Music is as much an artform as sculpture or other kinds of artistic installations, and in a city focused on fostering creativity and radical self-expression, music of all kinds has a place. Sound, however, can also impede on other people's experience if it is not responsibly handled, and the need to regulate sound installations became apparent early on in the city's development. *„Different groups of inhabitants had different ways of living in Black Rock City and experiencing the event, particularly regarding sound which some view as disruptive."*[92]

The first strategy for dealing with sound was simply to place it a significant distance away from Black Rock City, as a satellite. The first rave in Black Rock City occurred in 1995, and although it was placed well outside the city's boundaries, it was upwind of the city and the flat topography allowed the sound to reverberate back into the city center. The site of the rave was too far to reach easily without a car, but driving in the dark was risky without a clearly defined road. It was also too close to the camping area to prevent the sound from disturbing people at their camps.[93]

The initial satellite sound concept was built upon incrementally the next year by moving the rave downwind (to the north, as the prevailing winds originate in the southwest) and further away, and providing a road. *„Though the previous year's issues were resolved, the distance and lack of connection with the rest of the city proved to be problematic. A breakdown of civic standards and community created chaos, ultimately resulting in serious injuries occuring to rave participants."*[94]

After the move back to Black Rock Desert in 1998, a new sound concept was created in order to try to harmonize different sets of needs. The idea was to create a "Loud" side of town, stretching from 6:00 to 8:00 and a "Quiet" side of town from 4:00 to 6:00. Theme camp placement questionaires allowed the placement team to infer the projected volume of a camp, while also allowing different camps to express where they would prefer to be. The camps were then distributed according to this information.[95]

This solution did not solve the sound problem as it was soon discovered that as you create a crescent with a void inbetween, the sound from the loud side flows across into quiet side, blowing across the open playa with the primary winds. The flatness of the topography provided no barrier for the sound as these two districts faced each other frontally.

The geology of the desert itself also played a role in carrying the sound. The playa is perched on salt-based sediment about two miles deep with a water table below and it does not absorb sound well. The hard, rock foundations of the mountains ring the playa and reflect sound back through the floor of the playa, carrying the sound from the loud to
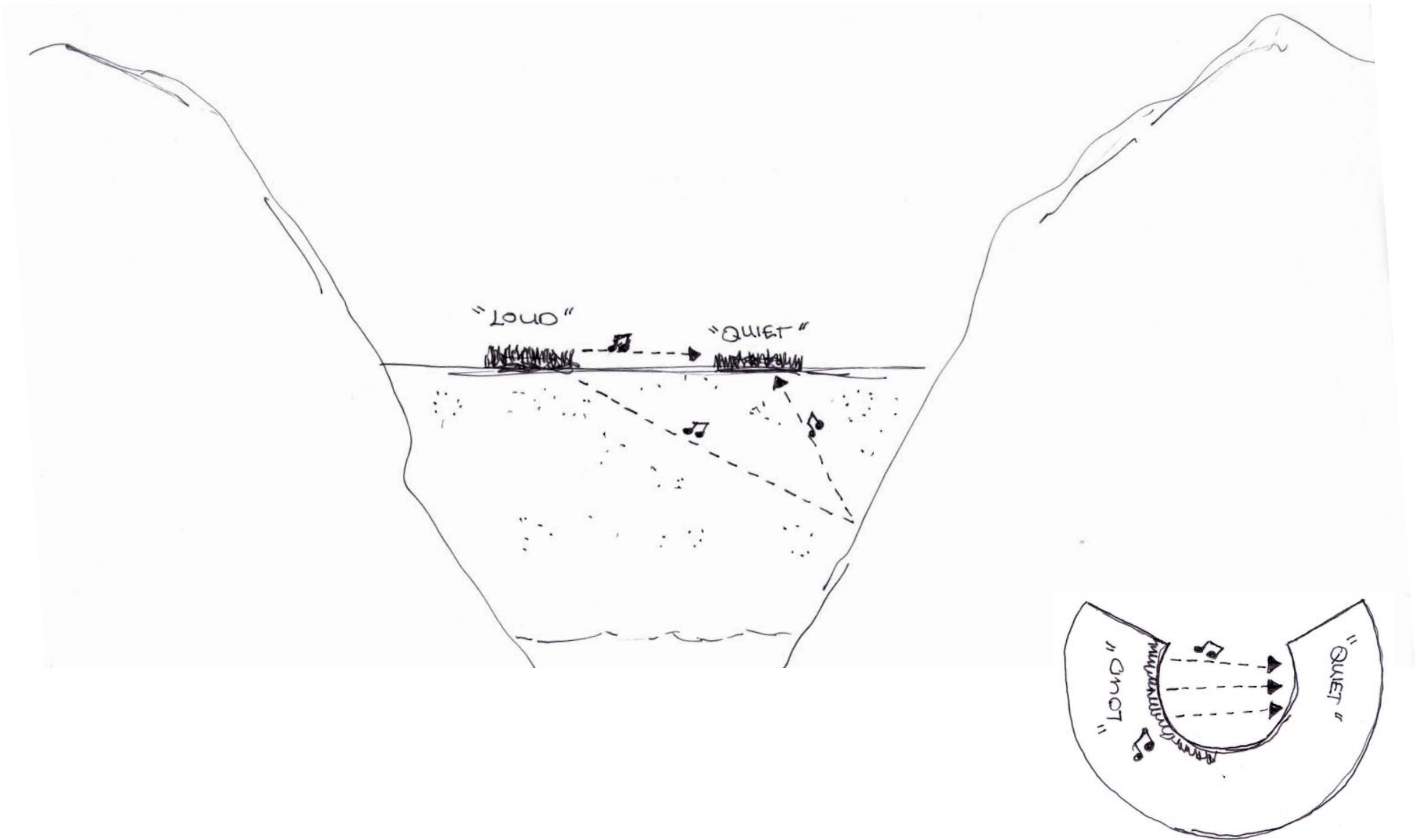
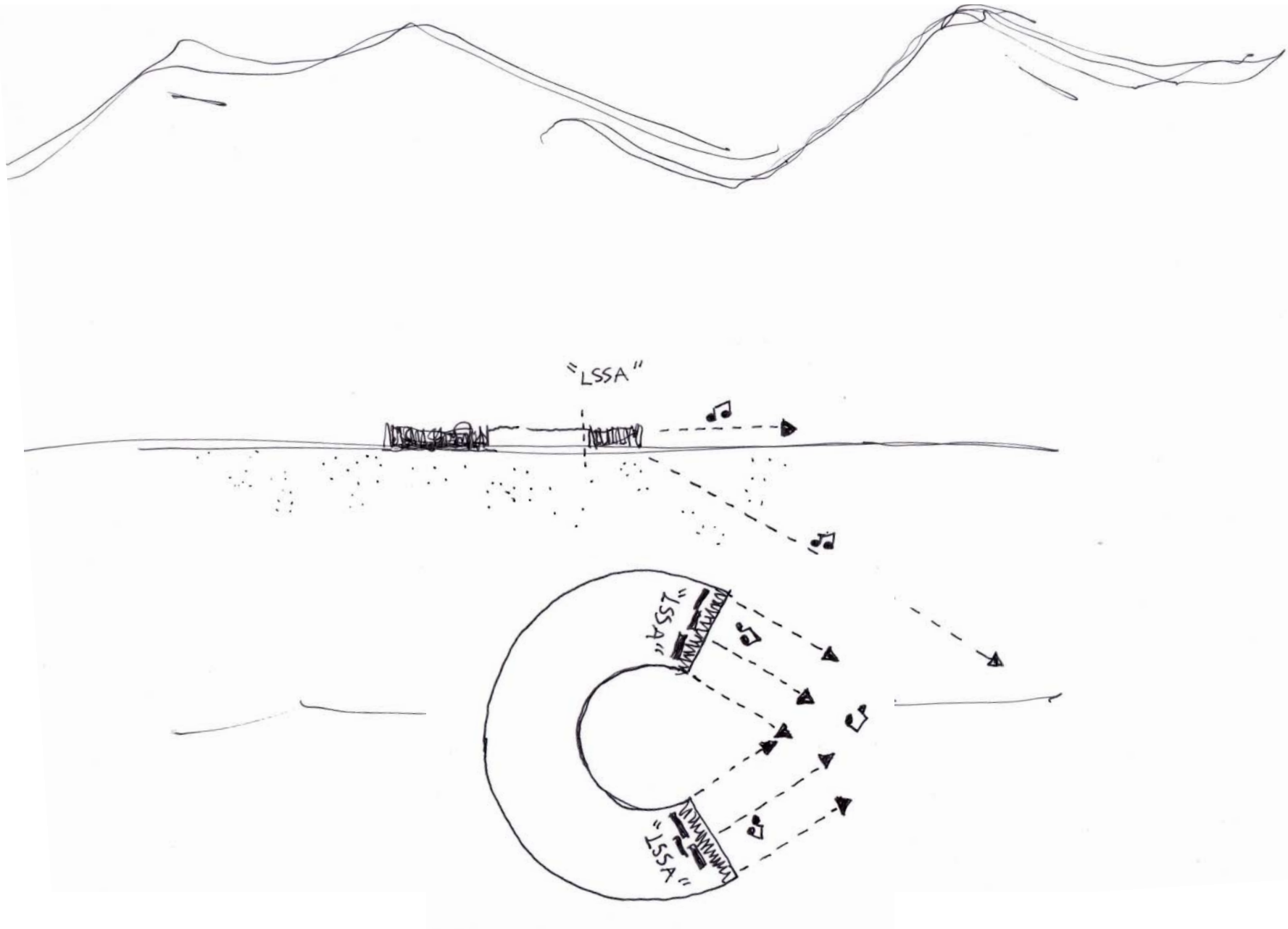*Figure 62: Schematic layout and section: „Loud" and „Quiet" sides of town*

*Figure 63: Schematic layout and section: Large Scale Sound Art (LSSA)*

quiet side of the city through the ground as well as the air. The bass in particular travels through the ground multidirectionally.[96]

In 2000, through a collaboration between ravers, drummers, Black Rock Rangers, and professional bouncers and sound engineers, a new sound concept was developed, focused on producing "Large Scale Sound Art" camps (LSSA) at 10:00 and 2:00. These locations became the „Loud" ends of the city. Trucks and containers were placed behind the camps, separating them from neighboring camps in order to baffle sound and  reflect it back out towards the desert. This constellation was successful and resulted in less conflict between the sound camps and other residents of the city, while not expelling the sound camps to an external position or banning them from the city entirely.[97]

**Kid-Friendly vs Adult-Themed Areas**
Generational diversity signifies social health in a city. As time went on and the original burners began to mature, new younger citizens were drawn into the city, as well as families with small children. A sort of self-reinforcing cycle of zoning evolved around families and children. They were organically drawn to central areas with safety infrastructure such as the ice at Artica, Black Rock Rangers, medical support, etc, all of which could generally be found near Center Camp. Eventually, around 1998, a Kid's Camp was officially zoned into the urban plan near Center Camp by the placement team led by Harley Dubois. Since then, kid-friendly Theme Camps and functions have been zoned around the area surrounding Kid's Camp (or as it is known today: Kidsville). [98]

Adult-themed or sexually explicit camps were also grouped together and relegated to 9:00. This district has also grown and evolved into a kind of „red light district" set apart from other urban functions.



*Figure 64: Child dancing on a rocket Artcar at Burning Man, 2010*

Spatial differentiation in Black Rock City is based on commonality and shared interests. *„There are neighborhoods that have been created over time and they haven't always been there. They have evolved and they have evolved for a reason (...), this doesn't happen by accident. It isn't because Harvey said so. It's because it made sense for some reason and it's about how people are living in a city and why they are living there and what their needs are."*[99]

**Hierarchical Structures**

As idealistic as a concentric city might strive to be, it is not a naturally egalitarian urban structure. People seek to be more central and they apply value to their location in reference to the center of the city. It was one of the challenges of Black Rock City to make sure that the city remained as egalitarian as possible.

By changing the depth of blocks, adding additional plazas and keyholes to bring „prime" property deeper into the urban structure, and flexibly moving interactive theme camps around, the city tried to manipulate the urban structure in order to avoid gentrification.

Another strategy was to make sure the same camps didn't maintain the same address for too many consecutive years, as this would encourage the „ownership" instinct to kick in, which (based on the principles) is inapporpriate. On the other hand, maintaining the same address for consecutive years does create familiarity for the city inhabitants, which also has value.

The newest social-hierarchical difficulties are related to the turnkey camps and the plug-and-play camps, which are dfficult to regulate. These exemplify a different and new kind of hierarchy: rather than sitting openly on prime property in view of the city inhabitants, they are tucked away in the residential areas, secluded and secret. Everyone knows they are there, but no one knows exacly where most of these very exclusive camps are. Some, however, such as Caravancicle in 2014, were completely visible and openly excluded others, even going so far as to build a fence around the camp, essentially creating a „gated community" within the urban fabric. Black Rock City LLC is currently trying to develop strategies to avoid the spread of this development from infiltrating the culture.[100]

## Theme Camps and Villages

Change takes place on many different scales in any city, from large-scale urban planning, to alterations in neighborhoods and districts, as well as specific architectural and constructive measures. This holds true for a temporary city as well. Regarding Black Rock city, it is easiest to discuss preset urban planning measures, which are well-documented in the extensive planning processes by the organisation itself. The changes in each of the villages and theme camps constituting the diverse neighborhoods in Black Rock City are more difficult to trace.

There are multitudes of theme camps and villages which receive placement in the city, and they change from year to year. In 2014, approximately 800 Theme Camps were placed. Each year, some are added, some lose placement based on a lack of civic responsibility, and some change in size and scope. Theme camps of similar philosophies group together to form villages, and their address on the playa (and therefore the shape, size, and location of the plot of land which they are allotted) is also subject to change. A comprehensive study of the
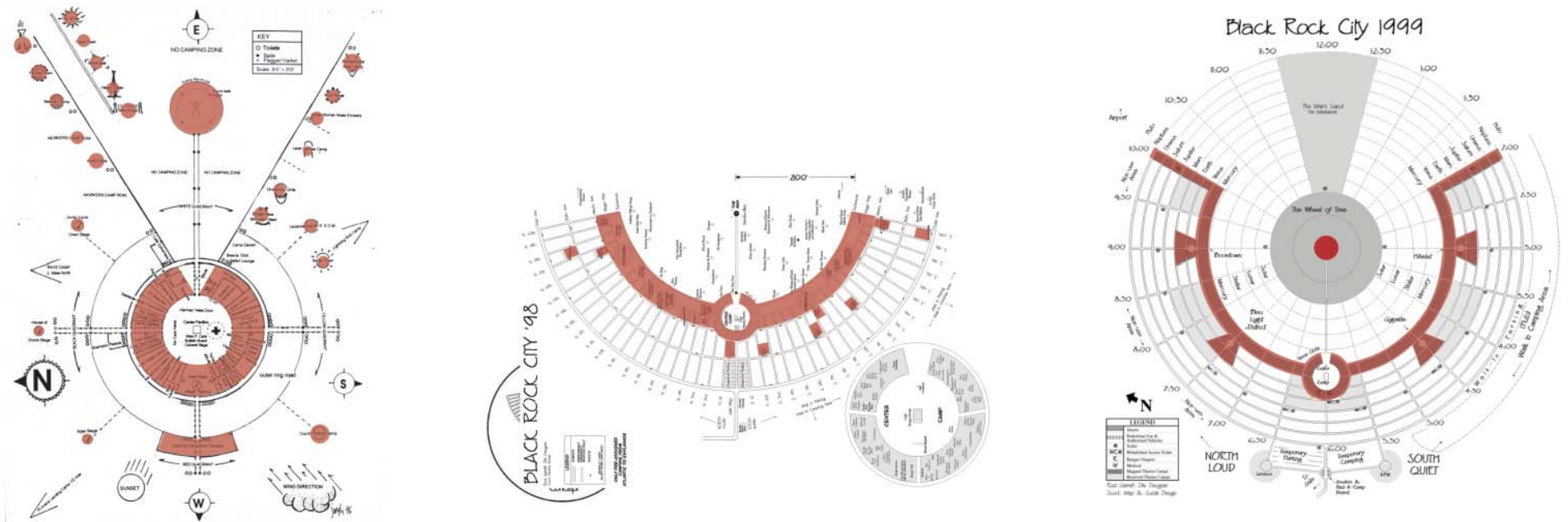


*Figure 65: Theme Camp Placement Schematic  1996, 1998, and 1999*

complete urban morphology of Theme Camps would be an extensive work in its own right.

Theme camps are a critical element which not only defines urban structure, but their incorporation into the urban framework creates space for diverse culture, creativity, and widely varied functions. The Eye, one of the creators of Disorient (a theme camp which has been returning to Black Rock City since 2001), says, *„Black Rock City is the ultimate collaboration of Burning Man. It is a mega-collaboration: a collaboration of collaborations. All those little camps come together into a grander scheme. On their website, Burning Man says Theme Camps are the interactive core of Burning Man."*[101] They are the functional heart of the city.

Interestingly, theme camp evolution is also influenced by both top-down and bottom-up processes. Theme camp placement represents the



*Figure 66: Theme Camp Placement Schematic 2004, 2006, and 2012*

intersection between the top-down interaction of the organization with the camps, and the bottom-up development of internal camp layouts by each individual group.

The placement of theme camps can be used to create harmony (as described in „Zoning") as well as to create a rhythm of activity and residential areas within the city.

## Placement Processes

The origination of theme camps in Black Rock City after the 1994 event can be credited to Harley K. Dubois, who was one of the original founders of Black Rock City, LLC, and was involved in the city from the very beginning in the 1990's. The concept of like-minded individuals camping together creatively had organically crystallized as the population expanded. In 1995, along with the implementation of the view shed to the Man (as seen in the 1996 map), 12 theme camps were placed around the Center as a way of defining roads and space. It was the introduction of theme camps which began a differentiation of functions within the city, inviting people to offer new and creative services to one another.[102] Placement, Dubois explains, *„is not about how good your art is, but rather it is about how interactive you are."*[103]

Placement evolved and there were increasing numbers of camps each year. In 1996 the camps lined the edges of the view shed of the Man as well. By 1998, with the introduction of the Esplanade, interactive camps were placed along the front of the Esplanade *„Placement was done largely to honor those creating interactive camps, to curate an experience for citizens, and to activate an area that had significance."*[104] As the number of theme camps increased, the once fine line of theme camps along the Esplanade thickened and was many blocks deep, acting as more of a barrier between organized camping zones and free



*Figure 67: Official Black Rock City Greeter Map 2014*

camping areas. This accented the hierarchy of central urban space versus peripheral urban space. In order to prevent social differentiation, and to desegregate the placed camps and the free camping areas, the city rezoned the placement of camps in 2005.[105] The new layout featured theme camps lining the Esplanade in a thin line, with other Theme Camps lining certain radial streets, and surrounding Center Camp and the plazas. Much like a typical city, this created vibrant areas of dynamic urban space reaching like fingers into the quieter, residential areas. Essentially, these measures perforated the barrier between these two areas and integrated them with one another. The radius to reach more active urban areas was shortened in all areas of the city. It was also eventually realized that amount of Esplande frontage allotted to each Theme Camp needed to be kept to a minimum in order to diversify the experience of the citizens, on what was essentially their „main street."

In order to prevent people from becoming territorial about the placement of their camps, the organization keeps the camp's placements a secret until they arrive at the playa. The theme camp organizers are only given information about the size of their plot of land until shortly before they arrive. This prevents conflict about social hierarchy. In fact, one year a placer's map was released too early, and 20% did not show for the event.[106]

The „Leave No Trace" ethic of the event is also reinforced by the placement process. Each year, following the event, a „MOOP" map is made, MOOP being  „Matter Out of Place." This map publicizes the effectiveness of each camp at cleaning up their space, using public humiliation to encourage responsible camp practices. Additionally, if a camp is very irresponsible, it will not receive placement the following year.[107]



*Figure 68: MOOP Map, 2014*

**The Evolution of Disorient**

One theme camp which is easy to observe morphologically is Disorient, which has existed in Black Rock City since 2001. The Eye, an artist and one of the originators of Disorient, says when he began contemplating the design for his camp, he viewed the urban plan as piece of artwork with three facets: „*from the inside, it was an environment, from the outside it was a sculpture or installation, and from the sky, it was a drawing.*"[108]

The theme camp had to interact with the city towards the outside on its facade, and create public spaces, while simultaneously providing private spaces for its inhabitants to withdraw. In 2002, the camp was designed as a fractal of Black Rock City, mirroring Center Camp and using containers to define the space. It was located along a flat piece of the Esplanade. In 2003, it was repositioned, and slid down the Esplanade to the corner. A corner property on Esplanade and 10:00 frames the outside corner of the city towards the playa, which has different conditions for design.[109]

The Eye explains that, „*For Disorient as a camp, extraordinary opportunity is presented to us to recast our presence every year. When do you have such an opportunity of trial and error, of designing a camp or city? (...) The yearly cycle that Burning Man has is great for reflecting and refining. (...) As a group in the desert, we still dont know what we are doing, but our understanding is improving. The important thing is, to keep asking the question and making things, not just thinking. Its a goal that is worth pursuing.*"[110]

The progression of the Disorient is the result of changes to the population within the camp, annual exploration of the issues and goals of the camp, changing interactive public offerings, changes in location, and effort to refine and build on previous designs.

Internal community infrastructure and organisation is also major factor. There is a succession of spheres of privacy within the camp from public, to semi-private, to private spaces. These threshholds are evident in the structure of most all theme camps, and even in smaller inofficial camping groups. Each camp seeks to interact with the public in some areas, while also providing a semi-private space for withdrawl for camp members to share. Drawing further into the sphere of privacy, individual campers also have their own private „home" (usually a tent or RV) located in the back or internal areas of the camp.

Disorient's camp layout has changed over the years in order to combat internal sprawl within the theme camp itself under the motto „Tighter and Brighter." This refers to the camp's goal of getting smaller rather than bigger and increasing its density.[111]

Disorient has three goals: To collaboratively create a camp which sets an example for its campers, to inspire campers to be self-reliant and create their own spaces within the camp, and to get „tighter and brighter." Each year, the team reviews the plan from the previous year and reflects on how to get closer to these goals.[112]
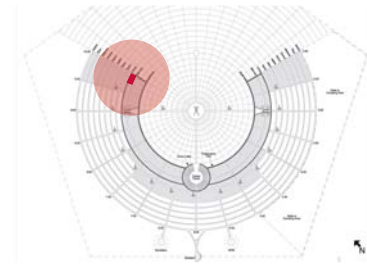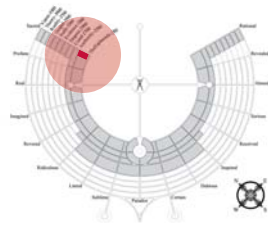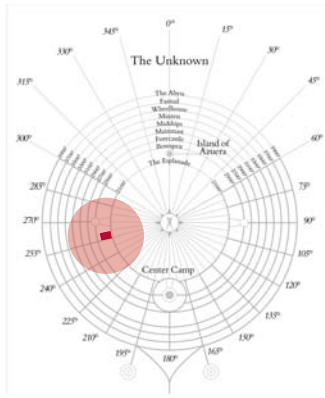
2002 „Esplanade"
255º and Esplanade

2003 „Dandelion"
10:00 and Esplanade
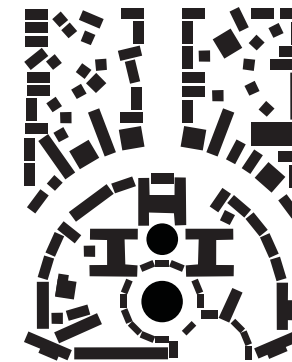
2004 „Large Sound"
10:00, between Mercury and Venus

*Figure 69: Disorient position plans and figure ground diagrams in 2002, 2003 and 2004*
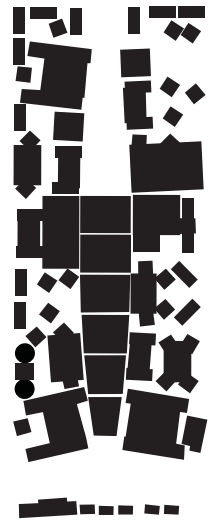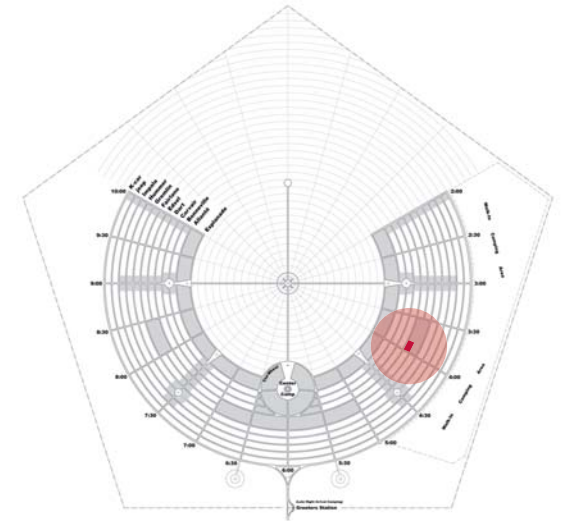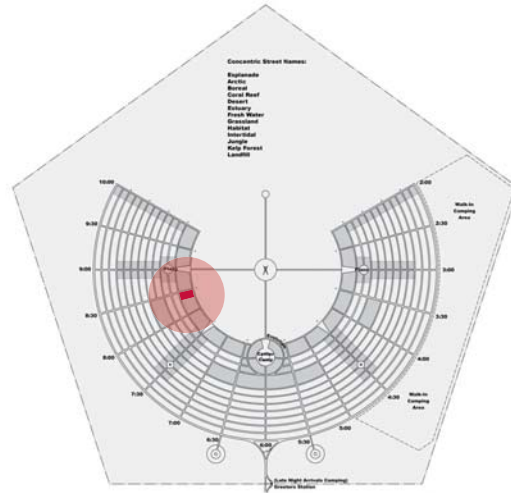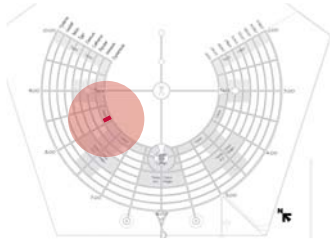
2005 „Main Street"
8:00 and Esplanade
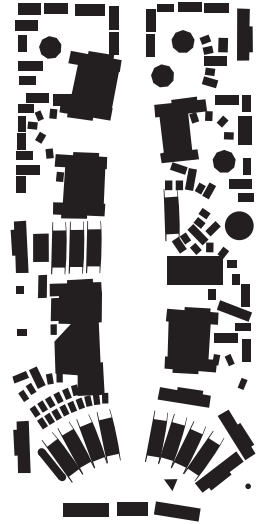
2007 „Sign on Wheels"
8:30 and Esplanade
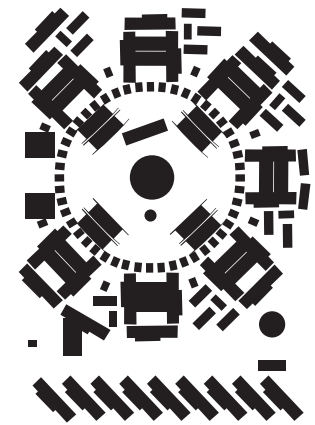
2008 „Mandala"
4:00 and Dart

Figure 70: Disorient position plans and figure ground diagrams in 2005, 2007 and 2008
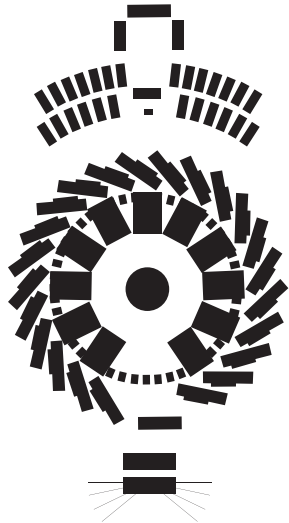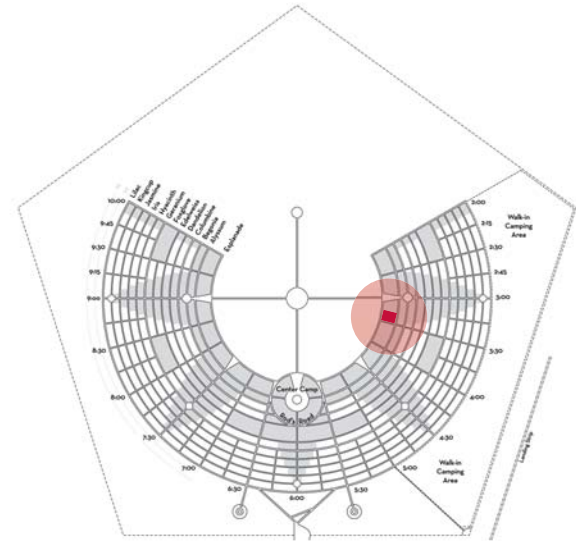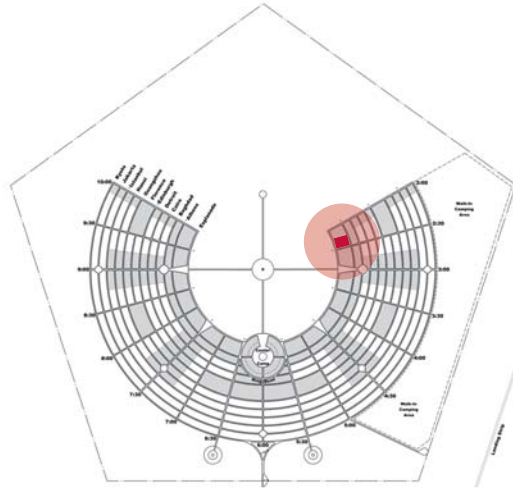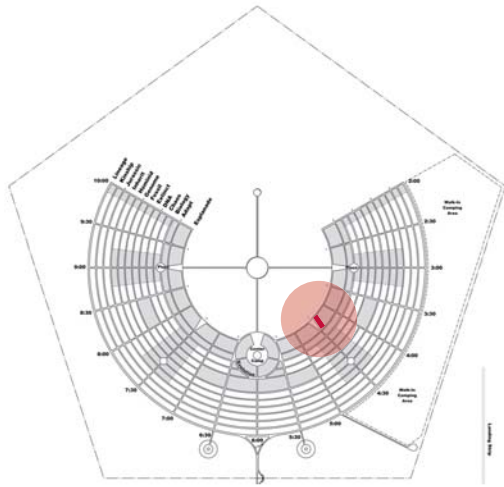
2009 „Evolver"
4:30 and Esplanade

2010 „Total Camp"
2:15 and Esplanade
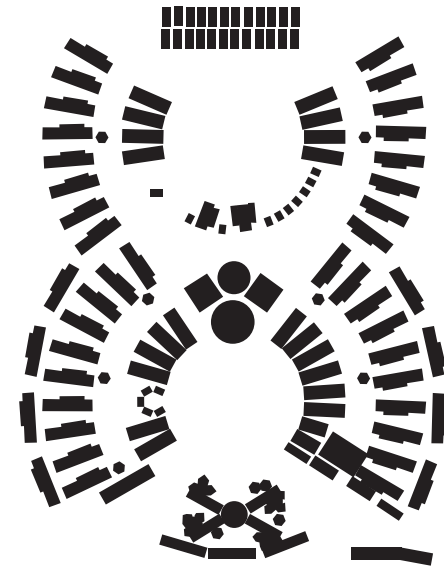
2012 „Quetzalcoatl"
3:30 and Esplanade

*Figure 71: Disorient position plans and figure ground diagrams in 2009, 2010 and 2012*
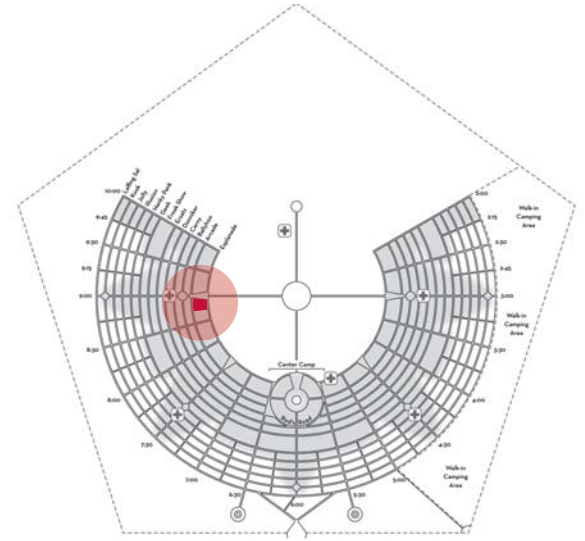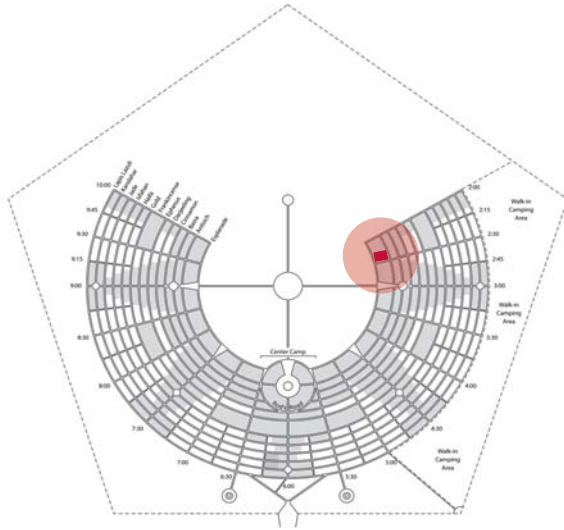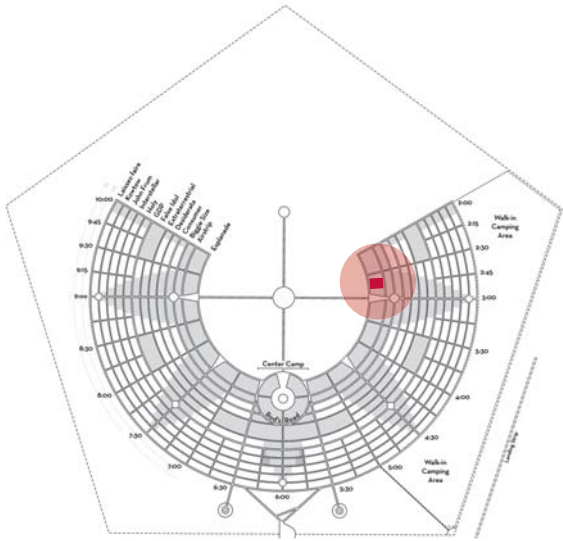
2013 „Pyramid"
2:45 and Esplanade
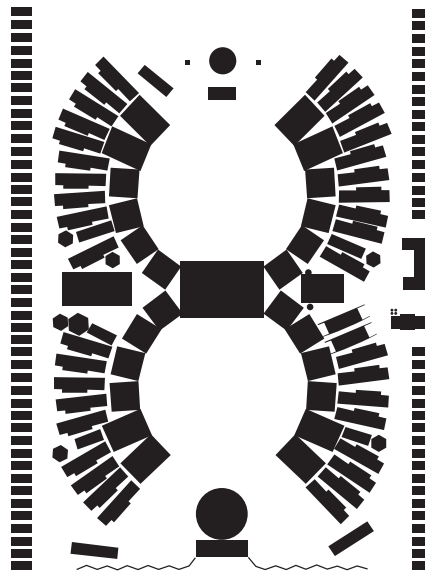
2014 „The Gold Bug"
2:15 and Esplanade
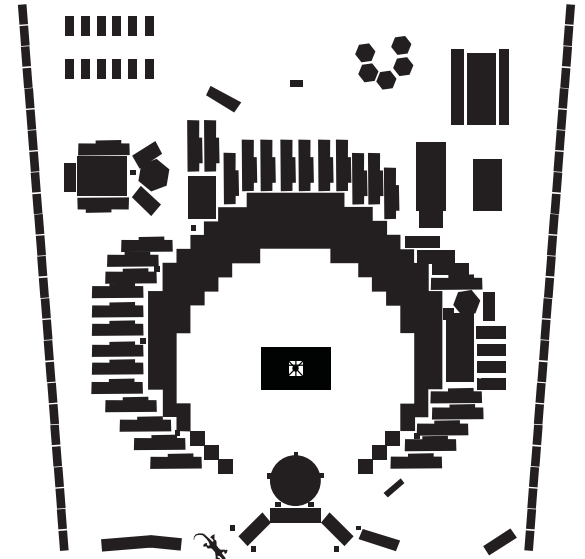
2015 „The Crescent"
8:00 and Esplanade

*Figure 72: Disorient position plans and figure ground diagrams in 2013, 2014 and 2015*

# Conclusion

*"Are we who live in the present doomed never to experience autonomy, never to stand for one moment on a bit of land ruled only by freedom?"*
*- Hakim Bey*[113]

As is evidenced by the previous pages, urban morphology can be observed occuring in Black Rock City, which exemplifies a temporary city. Measureable processes and patterns of urban change can be recognized and documented throughout the city's short history. Although the city began developing in Black Rock Desert 26 years ago, it is only active for one week each year, which truly makes it only 26 weeks old in terms of actual urban manifestation.[114] The rest of the year is used for planning and perfecting, but nonetheless this is a very short urban lifespan.

Urban morphological processes in a temporary city and a permanent city parallel each other in some ways, but they also play out differently, since there are some aspects of temporality which offer unique opportunities that are not present in a permanent city. As mentioned in the introduction, the continual destruction and renewal of the city allows for modifications to happen much more quickly and on a much more dramatic scale than in a permanent city. Immediate action can be taken to improve the city's quality or adjust to newly apparent constraints and conditions.

A temporary city is exempt from the lineal development of a traditional city, with opportunities for large scale urban regression to earlier stages, if that is deemed beneficial to the city. Additionally, changes can be observed happening in a cyclical fashion with the chronology scaled down to just each individual one week event. Each yearly lifespan of the city undergoes its own creation, adaptations, and eventual destruction. This short-term evolution carries with it its own processes of change and adaptation which are squeezed into the narrow space of one week. The short-term cycle could be compared to short-term temporary installations in a permanent city, except that it encompasses not only a temporary alteration in a part of the city, but the construction and destruction of the entire city, including all functions, buildings, and the entire urban layout. The scale of change sets it apart from any temporary installation *within* a permanent city, making even these cycles comparable to the settlement and eventual extinguishing of a permanent city as a whole.

One aspect hypothesized in the introduction to be significant for transforming an agglomeration of people into an organized city is participation. These findings confirm that idea, but they also suggest another additional driving factor: continuity. Participation is initially necessary to form a city, but continuity is necessary to define each urban iteration as being part of the *same* city, year after year. Without evidence of continuity, it could be argued that each year a new city is created, independant of any other formations and therefore its „own thing." With continuity of structure, citizenry, ideals, and urban elements, guiding themes can be drawn, connecting each iteration and demonstrating chronological cohesion. A temporary city can change at any time, move to a new location, and grow and shrink. It is the continuity of the urban structure as it changes over the years, that allows a temporary city to be considered the same city.

In Black Rock City, through urban morphological observation it is possible to see how the new structure connects to the previous ones, even during boom-phase changes which dramatically upend the outer appearance of the urban structure. There are related urban concepts and a continuous citizenry with constant social goals. There are reasons behind each urban alteration, they are not arbitrary actions.

Urban continuity is revealed through urban morphological analysis. This means that not only is a temporary city an interesting way to explore urban morphology, but urban morphology is necessary to ascertain the status of a repeating, temporary, urban structure as a city.



*Figure 73: Burning Man Expanse, 2014*

## Further Lessons

There are many further urban lessons to be learned from Black Rock City, which could not be addressed in this thesis, either for lack of space or due to diverging topics which are not centrally connected to urban morphology.

Changing demographics over the years could be traced in the Census Bureau at Black Rock City to see how changing demographics over the years cause adjustments to urban priorities. The interplay between sociological aspects and urban structure could be explored, by delving more deeply into an observation of the inhabitants themselves: who they are, how they use the city, and what it is they are seeking there.

Psychological reactions to small urban changes in city dimensions (street widths, plaza size, playa diameter, block size, etc)  would be interesting because the trial-and-error environment presents a unique opportunity to observe cause-and-effect relationships in a controlled environment. Harley Dubois used observations on contentment, aggravation, and listened to positive and negative criticism from inhabitants about how they feel in the city in order to make capillary changes over the years to these smaller factors.[115]

The myriad of urban morphological topics available for analysis runs deep. There are so many additional factors that were not included in this thesis, which could be explored more thoroughly in connection to the urban structure of Black Rock City. All of the themes discussed could also be pursued much further. However, the focus of this thesis was to use some very clear examples of urban morphological processes in Black Rock City to explore the overlap between urban evolution in temporary cities and permanent cities. Depth on important topics was more imperitive than a exhaustive list of all factors pertaining to urban morphology.

## Prospects and Potential

There are other examples of temporary cities in the world, existing either deliberately (and in this case often pertaining to ritual, religion, or cultural expression) or, more frequently, out of necessity. A temporary city born of necessity can be called into existence by a catastrophe of either natural or political causes, or economic desperation. More often than not, people in such situations are forced to live with minimal public infrastructure and have been ripped from their familiar societal fabric.

A deliberate temporary city, such as Black Rock City, does not arise from emergency circumstances, but develops thoughtfully, in such a way that the urban structure actively has a positive impact on its citizens.  It aims to create an atmosphere in which one can create and/or support culture and promote a cohesive community.  It would be beneficial to use the insights gained through the study of the interplay of social cohesion and urban structure in Black Rock City, to inform designers on how to better deal with the more desperate urban situations in refugee camps and other emergency settlements.

A deeper analysis of the current form of the urban fabric (without going into the history and development) offers many lessons about how we could plan better permanent cities and communities, as well. Hailey Fitchett, an urban planner at Gensler Architects in London who had gone to Burning Man three times before taking part in the 2007 discussion panel at AIA in New York, describes how her experience in Black Rock City improved her general understanding about  communities' needs. She saw so many urban tools which worked positively to shape society, many of which are lacking in how we are moving to develop the built world today. She implemented this new knowledge directly into her work as an urban planner and it changed the quality of the urban spaces she developed to suit the needs of the community for which she was building. She believes it improved her ability to do her job.[116]

## The Future of Black Rock City

Although the urban manifestation of Burning Man as Black Rock City is only present for one week out of the year, the community which has developed around it remains in contact during the remaining 51 weeks of the year, holding satellite events, and communicating digitally.

This model has been so successful and meaningful to people that it has inspired replications in regional festivals all over the world, such as „Nowhere" in Spain, „Africa Burn" in South Africa, and „Midburn" in Israel. All three of these have adopted the Ten Principles, as well as many of the urban strategies and structures which developed in Black Rock City.

Black Rock City is on the brink of another boom-phase of urban development, as the city approaches the optimization of the current urban format within the boundaries of the current prerequisite conditions (location, population, time frame, allotted space, etc). Since 2006, capillary mutations have occurred, but the urban structure has largely remained the same. According to Will Roger Peterson, the city is facing new issues with the continually rising population, and problems with arrival and exodus. It is expected that the city in its current form could reach a maximum population of around 100,000 by increasing urban density and adding a few more concentric rings. Demand is high, and each year tickets to the event are sold out quickly, which indicates that population has the potential to rise.[117]

The cap on population is actually defined, not by the urban structure, but by the traffic issues associated with arrival and exodus. There is only a single road approaching Black Rock Desert, with one lane in each direction.[118] One solution for the traffic issue would be to extend the event by a few days on either end, giving people the chance to arrive and leave over a longer interval, thereby reducing the number of people entering or leaving at any given time. Another solution would be to hold multiple events throughout the year, allowing people to spread out their visits and therefore reduce the population at each event.[119] This would likely not be possible on BLM land. In 2016 the Burning Man Project bought the nearby property of Fly Ranch, adjacent to Hualapai Flat. A detailed usage plan for Fly Ranch has not been laid out, but the general concept behind it will be to create a more permanent community living the Ten Principles year-round.[120]

Although the urban structure and the rules of the city have become more concrete over the years and can no longer be considered a pure „T.A.Z.", the essence of the original T.A.Z. has left an imprint. People come to Black Rock City to create things, experience things, and explore their own creative selves. The city has evolved (both in terms of zoning, and physical urban structure and spaces) in such a way that it offers space for creativity and radical expression.

In Black Rock City, one of the most distinct threads connecting the city through the years is the yearning for differentiation, creative outlets, and acceptance embodied in a culture created by the collaboration of all inhabitants. There is yearning for a city which attempts to provide a very human scale to its city structure. There is a search for meaning embedded within the urban structure in the form of modern interpretations of sacred space and celebration. There is a desire for controlled chaos, and the feeling of increased riskiness and spontaneity which can be associated with the practice of „Immediacy." There is a desire to have a space in which one can operate on kindness and giving rather than skepticism. This quest unites people of all kinds to build, and rebuild the city each year.

*Figure 74: Embrace at Sunrise, 2014*

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