



[silent] **URBANISM**

a manifesto for self-organization in the built environment

mark klimkowski

ABSTRACT

The built environment is becoming the product of a highly specialized system where the users find themselves at the mercy of a dictatorship of a remote group designers. In today's advanced world, the majority of people possess low levels of autonomy in the organization of their communities, neighborhoods, and cities. Instead, the highly specialized condition of modern civilization puts the majority of people in a situation where the decisions of others that they have little or no influence on have a great affect on their everyday lives. This produces an inability for self-organization which has translated into problems in the built environment. Low levels of autonomy can create a lack of responsibility possessed by the individual for making personal choices and actions that will affect change, it has generated restrictions for choosing alternative ways of living, and has also produced obstacles that distract innovative development. These forces have hindered the built environments ability to grow into its surroundings and consequentially, have created ineffective households, workplaces, and the overall organization of communities. Therefore, when seeking to improve the effectiveness of the built environment, there is value in re-establishing autonomy into the lives of people to grant more responsibility in the architectural and urban design process.

Vernacular communities are genuinely emergent systems. They develop from the bottom-up by the self-organization of the masses and free of a pace-making agent. This results in a more authentic community, that is specific to its unique place in the world. In more advanced cultures on the other hand, communities are typically more planned from the top-down and highly influenced by a small group of architects, engineers, planners, and politicians, who provide more generalized solutions for community organization. Although this reliant way of life allows for new conveniences, it also provides more opportunity for inaccuracy in the built environment. Low levels of autonomy can be connected with ecological problems like high degrees of energy and fossil fuel consumption, high demands for nonrenewable resources, irresponsible waste generation, and the production of toxic materials, along with problems in community development such as producing stability and opportunity in the economy. With these inefficiencies existing in the built environment complex cultures cannot be sustained.

This raises the question: in an effort to produce a more effective built environment, could it be organized in a way that more autonomy is possessed by the individual, and it is able to emerge similarly to vernacular communities? Can the effectiveness of more authentic communities be achieved by devising an architectonic solution that grants the ability for communities to grow into its surroundings? Autonomy exists in silence. Silent Urbanism is a concept where the designer's role in the fabrication of the built environment intentionally becomes more transparent. With this philosophy, more autonomy is transferred to the user and allows for an urban form that is self-organized. The thesis will focus on autonomy and its relationship to the phenomena of emergence to answer these questions and how it can pertain to the development of communities.

mark klimkowski

masters of architecture

the university of detroit mercy

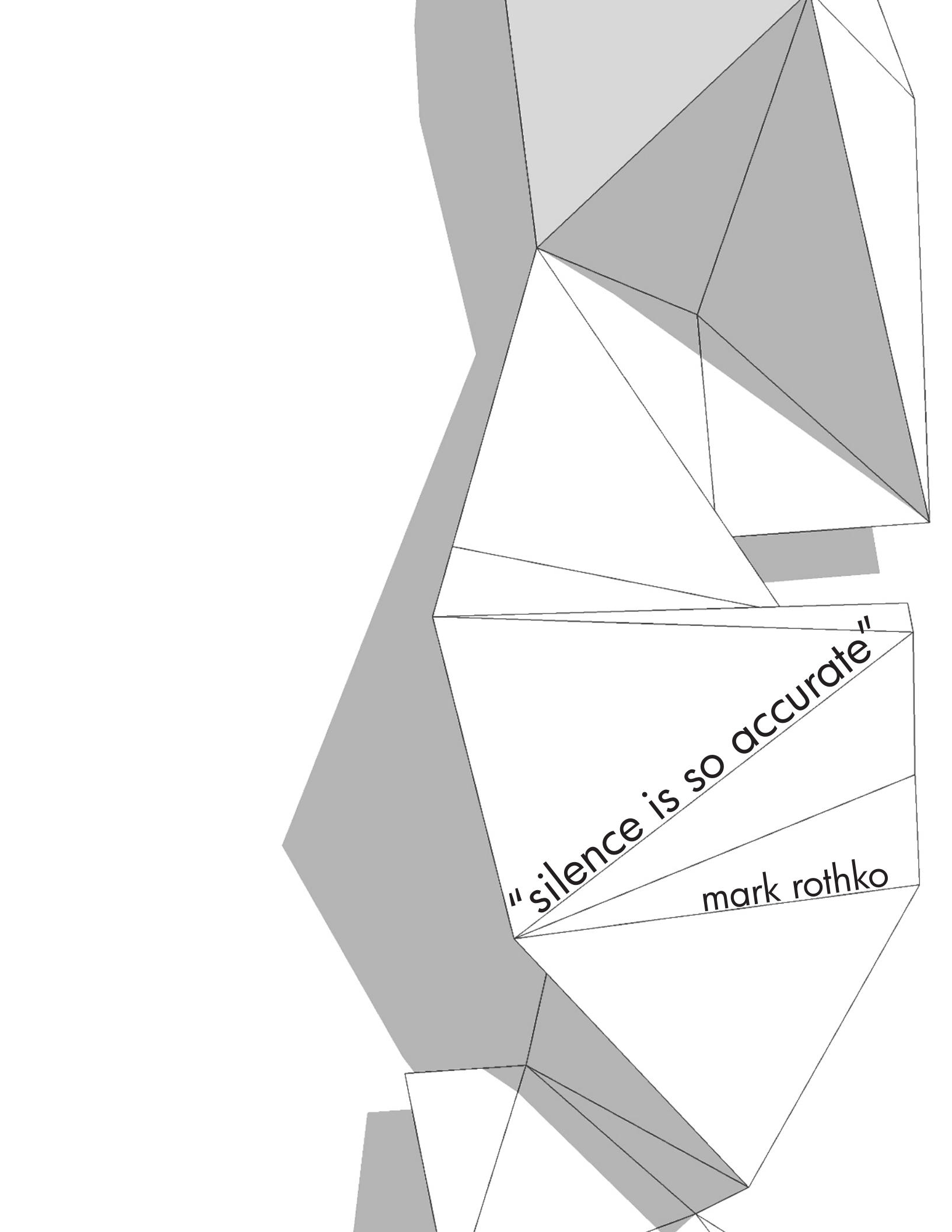
school of architecture

or 510, 511, 520, 521

noah resnick, professor

24 april 2009

introduction	4-9
the patterns of development	10
inherent progress of cultures	11-13
vernacular	13-14
high-vernacular	14-15
modernization	15-17
omniculture	17-18
reform	18-20
manifesto	20-21
defining the fundamental force	22
top-down planning vs. bottom-up growth	23-25
autonomy	25-28
the poetics of silence	28-29
re-establishing silence	30
geodesic city	34-39
method for self-sufficient construction	40-47
infrastructure for autonomy	48-61
conclusion	61-62

An abstract geometric composition featuring overlapping, irregular shapes in various shades of gray and white. The shapes are defined by thin black outlines and are arranged in a way that creates a sense of depth and movement. The overall style is minimalist and modern.

"silence is so accurate"

mark rothko

INTRODUCTION



Collage highlighting the desire line (in green) against the intended path (in gray).

The emergence of desire lines characterizes a puzzling phenomena when it comes to the manifestation of the built environment. The formation of desire lines is a process where pedestrians habitually choose the most direct route from related destinations, that over time, erodes the earth and takes the form of a manmade path. They are informal and are preferred over sidewalks or other official routes. Desire lines often contrast designed pedestrian routes in highly planned environments such as college campuses and empty lots in neighborhoods. It is rather paradoxical how these impromptu routes are unparallel with the intended routes of the designer. The way they appear as short cuts between planned paths or how they create new routes between corresponding destinations conflicts with the premeditated circulatory intentions. It is also ironic how these unplanned paths more directly express the demands of the users than the planned ones. When it comes to the layout of pathways, it is the designer's goal to create effective circulation, but the emergence of desire lines proves the complexity in achieving those goals.

The existence of desire lines may be a demonstration that the modern strategies of designers tend to produce highly ineffective results due to a difficulty in predicting how the users will behave in a space. Thus, the conditions of which desire lines occur presents a critical basis for questioning how the built environment is typically designed. With desire lines, the presence of an eminence grice in landscape architecture produces an ineffective solution for pedestrian travel. But, could it also be that a similar situation is linked to problems with ecological, economic, and cultural sustainability and the overall functioning of the built environment? If so, could the design process be transformed in way that it functions more like the emergence desire lines in order to achieve a similar type of accuracy?

The key to the effectiveness of desire lines is their ability to grow into its surroundings from the bottom-up. This opposes modern design methods that apply their interventions from the top-down. This means that the desire line is not something that first exists abstractly in theory or on paper before it is applied to reality. It is created by a consensus of individual pedestrian's empirical assessment of local conditions instead of the master planners prediction devised from a bird's eye view. Nicholas Crane discusses the properties of desire lines in his book *Two Degrees West*.

"...the imprints of foot anarchists, individuals who had trodden their own routes into the landscape, regardless of the intentions of the government, planners, and engineers. A desire path could be a short cut through waste ground, across the corner of a civic garden, or down an enchantment. They were extensions of free will, paths with passion, an alternative to the structures of railings, fences, and walls that turn individuals into apathetic automations. On desire paths you could break out, explore, feel your way across the landscape."⁽¹⁾

⁽¹⁾ Crane, Nicholas. *Two Degrees West: A Walk Around England's Meridian*. New York: The Penguin Group, 1999. pg 131

Crane's description reveals a crucial ingredient in the creation of desire lines that distinguishes them from the way the built environment is typically designed. Crane emphasizes the importance of the individual's autonomy, a factor that is often missing in professional design services. In modern civilizations, it is the specialized designer that acts as the pace making agent in the fabrication of the built environment. Their process is defined by variables of statistical data, historical references, and theoretical predictions combined to form a linear equation intended to forecast the most effective design solutions. On the other hand, desire lines develop quite differently. Instead of a single pace making agent calling the shots, it is the autonomous choices of the masses that makes design decisions. Unlike the typical design routine, a non-linear approach to a solution is utilized which have highly unpredictable outcomes and tend to grow into their surroundings over time.

The principles that create desire lines could challenge the way the built environment is designed. Instead of an approach that includes high levels of planning and a complex equating of theory and statistical data for producing neighborhoods, cities, and communities, what if the process was something more organic and undisturbed? With this strategy there would be no pace makers. The built environment would fit precisely in its surroundings because there would be no disconnect with its users due to the fact that their demands would be the direct creators portions of the built environment. Thus, the hypothesis of the thesis is that the lack of an individuals personal autonomy in the built environment has resulted in many of the inefficiencies that question sustainability in today's advanced world. By granting more autonomy to the individual in the architectural and urban design process, it will trigger an organic and dynamic system that will emerge into its immediate environment with a higher level of effectiveness than if it were to be planned before hand.

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It is easy to be suspicious of the claim that autonomy is lost with the modernization of cultures. In fact, one might suggest that people belonging to a more complex civilization may have more freedoms. In some ways this statement certainly is true. For example, with new conveniences such as the internet and the automobile, (both of which are only possible by the fashion of which modern society is organized) many people have been granted more freedoms in communication and travel. But, along with these new conveniences that have become a part of modernized cultures, they have also served as a vehicle for an overwhelming negotiation of autonomy in other aspects of life.

In complex cultures, autonomy is negotiated in several ways. One way that complex cultures can be classified is by the level of specialization that occurs. Specialization creates the potential for an uneven distribution of power based on the abilities of the individual and the importance of their niche. With this condition, politicians, bureaucrats, technicians, city planners, architects and engineers possess the power to highly influence the lives of others. Also, due to the high levels of specialization that allow for complex cultures to develop, people become less self-sufficient and must rely on others that belong to different niches of society to provide them with their needs. Along with the loss of self-sufficiency, in highly complex situations depersonalization also becomes a symptom of high levels of specialization that can create further interference. Ralph Waldo Emerson describes this condition in his essay, *The American Scholar*:

⁽²⁾ Emerson, Ralph Waldo. *The American Scholar*. New York: The Laurentian Press, 1901. pg 3-4

“...the gods in the beginning, divided man into men, that he might be more helpful for himself; just as the hand was divided into fingers, the better to answer its end...But unfortunately, this original unit, this fountain of power, has been so minutely subdivided and peddled out, that it is spilled into drops, and cannot be gathered...Man is thus metamorphosed into many things...he sinks into the farmer instead of man on the farm.”⁽²⁾

Thus, when specialization reaches a highly divided level intimate interaction becomes nearly absent. As a result, the governmental decisions of the politician, the business choices of the bureaucrat, and the design creations of technicians, city planners, architects and engineers and so on, are unable to be directly influenced on an individual basis by the majority of people. When the single person's influence on change is decreased, so is their autonomy because portions of their lives are now highly at the mercy of others.

These stipulations are clarified when comparing simple and complex cultures. Take for example, the simple American folk settlement of Hollybush, located in the Appalachian mountains of Kentucky in the late 1800's. Little specialization was present in the community due to the fact that the individual or the household could obtain their minimal needs self-sufficiently. Each family built their own homes, made their own clothes, and grew their own food to an acceptable degree of satisfaction, and therefore, there was no need to outsource for any of their needs. Now compare this condition with a culture that is more complex. One of the reasons modern cultures have reached their complex states is due to the creation of extreme levels of divided labor needed to meet higher standards of living. Because so much time is spent doing a specific task, the individual of a complex culture has to depend on others to provide them with the necessities that they do not have time to acquire themselves. Thus, where all individuals are equal in simple cultures due to self-sufficiency, autonomy is lost in complex cultures because the individual is now highly influenced by the people that provide them with their food, clothing, transportation, shelter, and other needs.

It could also be arguable that the deterioration of autonomy is an unimportant concern and that it has little influence on the effectiveness of the built environment. Under certain circumstances, some case studies have even shown that granting autonomy would result in a fragmented and unorganized built environment and thus, high levels of planning are a necessary step for attaining efficiency. It is very true that a certain degree of planning has improved the quality of the built environment. For example, zoning laws have helped prevent densely packed slum neighborhoods and have separated dirty industrial districts from residential neighborhoods in an effort to improve the quality of the built environment. It is undeniable that without zoning and other regulations, history has presented the city producing some of the worst conditions of humankind. But, it must also



Image: Log cabin in Hollybush. Martin, Charles E. *Hollybush: Folk Building and Social Change in an Appalachian Community*. Knoxville: University of Tennessee Press, 1994. pg 25

be recognized that these procedures have disrupted some of the fundamental principles that allow the most desirable aspects of city life to develop as well.

For example, Manchester England emerged as the world's first industrialized city at a highly accelerated rate. By the mid 1800's, the city of Manchester experienced a tenfold increase in its population ⁽³⁾. As a result, the growth of the city was organized by pure chaos. There was no city planners, police, health officials, or any type of local governmental structure to aid in the development of the city. The city portrayed some of the most magnificent feats of humankind along with some of its worst. Manchester was the pioneer civilization of the industrial world, but it was also a very noisy, polluted and massively overcrowded place to live. As probably the fastest and uncontrolled growing city in history, Manchester had naturally emerged into a highly sophisticated urban form, juxtaposed against a development of highly unattractive slum neighborhoods. Without a central plot or scheme planned in advance, the city was able to self-organize itself into neighborhoods based on the choices of the masses. The city took a life of its own and civilization was able to work its miracles, with neighborhoods clustering from the ground up with no dictating figures planning the city from above ⁽⁴⁾. Similar to how a desire line naturally finds the most effective routes, it was from these organically emerging neighborhoods that an organization of urban space appropriate for the industrial age had been pioneered.

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Having the freedom to develop alternative living conditions is another important reason for the individual possessing autonomy in the built environment. For example, authorities have developed infrastructure and have implemented zoning laws based on the assumption of automobile travel. This can be problematic when it comes to developing and choosing alternative modes of travel because the organization of the built environment and government intervention do not allow for alternative ways of transportation. The separation of residential from retail, commercial, and industrial areas has left the individual no alternative but to drive to all their destinations. When fossil fuels become scarce and expensive, people have no choice but to continue to purchase them because the environment they live in does not allow for substitutions. This demonstrates the ineffectiveness of top-down development. When authorities perform large scale engagements, the individuals they effect have no way to react to the unpredictable problems that they may create in the future. They are at the mercy of the pace makers.

Detaching the individual from self-government has also had negative ecological consequences. For instance, the separation has simultaneously divorced the individual from personal responsibility. This relationship is vital because of associated sustainability issues. Brenda and Robert Vale write in *The New Autonomous House*:

"An electrical system based on batteries, for example, will run out of stored power if all the lights are left on. A rainwater storage tank will be emptied if everyone wants to take a bath at once... [about conventional systems] the limits are imposed by circumstances out of sight of the occupant of the house; when someone turns up the heating, they tend not to be thinking of a possible rise in sea-level caused by the carbon dioxide emissions connected with this action... In the autonomous house, the user cannot pass the buck, Responsibility for conserving a given resource, be it water, electricity or space heat, will lie with the occupants. If they leave the taps running they will run out of water until it rains again." ⁽⁵⁾

In congruence with the examples provided in *The Autonomous House*, problems with waste generation and management also add to this claim. When the individual is not responsible for regulating where their own waste goes, they have no direct incentive for

⁽³⁾ Johnson, Steven. *Emergence: The Connected Lives of Ants, Brains, Cities, and Software*. New York: Scribner, 2001. pg 34

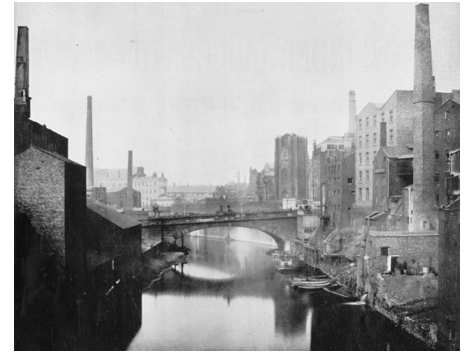


Image: Historic view of Manchester, England

⁽⁴⁾ *Ibid.* pg 38

⁽⁵⁾ Vale, Brenda and Robert Vale. *The New Autonomous House: Design and Planning for Sustainability*.

being conscious of how much waste they produce. Conversely, if people were to become responsible for managing their own waste, it would create the incentive to produce less, or only produce waste that is easily biodegradable. This concept could also be applied to energy usage and the consumption of valuable resources. A person would be much more conscience of the amount of energy they use and the rate they consume valuable resources if it was their responsibility to harvest and convert them into energy. Again, like the desire line, effectiveness could be achieved naturally through a homeostasis with the local ecology

Where autonomy is limited, innovative development can become suppressed as well. Where cultural constructions such as the economy, aesthetic trends, routines, and politics are overpowering and demand conformity, they become obstacles that are distracting to creative and unconventional ways of thinking. For example, it could be said that the potential of geodesic domes has been greatly suppressed because of similar cultural forces. Geodesic domes out perform conventional building practice on almost every level but fail to be implemented in common practice because they don't cooperate with building codes, off the shelf building materials and furnishings, and aesthetic styling, all of which are cultural constructed limitations. It could be said that if it wasn't for these obstacles, the innovation of geodesic structures would results in buildings that are more efficient.

Thus, the collective result of a built environment organized on these principals of autonomy would include an organic and adaptive form that coincides with the needs of the inhabitants and the natural order of the earth's ecology, due to the masses ability to have a constant state of innovation and improvement. Therefore, with more autonomy possessed by the individual, a higher level of effectiveness can be achieved in the built environment. In complex cultures, intensive theory and authoritarian planning are the typical approaches of the designer, but with the ideals of autonomy in mind, the designer would have more of a silent approach towards the fabrication of the built environment. This will mean that instead of this conventional top down approach, a silent method would create a bottom-up architectural or urban design solution that can accurately adjust to local conditions, people's desires, and future changes in the environment. Hence, the level of autonomy possessed by the individual is a crucial characteristic in the effectiveness of the built environment and should be sustained.

Imagine if the built environment was fabricated on similar principals as the desire line. With the designer having less influence on final outcomes (or a more silent approach), architecture would be based on growth instead of strategic planning. The built environment would be able to emerge into a form that fits perfectly inside its environment instead of

Image: Desire line on the University of Detroit Mercy campus



a designer trying to guess at what is the best solution. Because communities would be highly controlled by the demands of the masses instead of specialized designers, the results are hypothesized to offer remedies for the inaccuracies created by limited autonomy discussed earlier.

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The following chapters of the thesis will consist of multiple phases aimed at understanding architectonic methods for permitting more autonomy in the organization of the built environment along with conceptualization on the phenomenological properties that may follow. It is hard to dispute the fact that the majority of people in more primitive cultures possess higher levels of autonomy in the built environment than the typical person of more complex civilization. Thus, the first phase in this process will include an intensive study of philosophical theories as well as a deconstruction of multiple case study communities according to their principles. With the data resulting from the deconstruction process, it can then be defined diagrammatically into patterns that cultures experience in their evolution from their simple to complex states. The analytical product of the patterns of development will be used in the second phase of the thesis to define the fundamental force that will ensure the individual's personal autonomy in the organization of the built environment. Additional philosophical references will aid in the definition of this fundamental force. The third and final phase will be to re-establish and determine a mechanism for maintaining the fundamental force that will stabilize an individual's autonomy.



PHASE 1: THE PATTERNS OF DEVELOPMENT

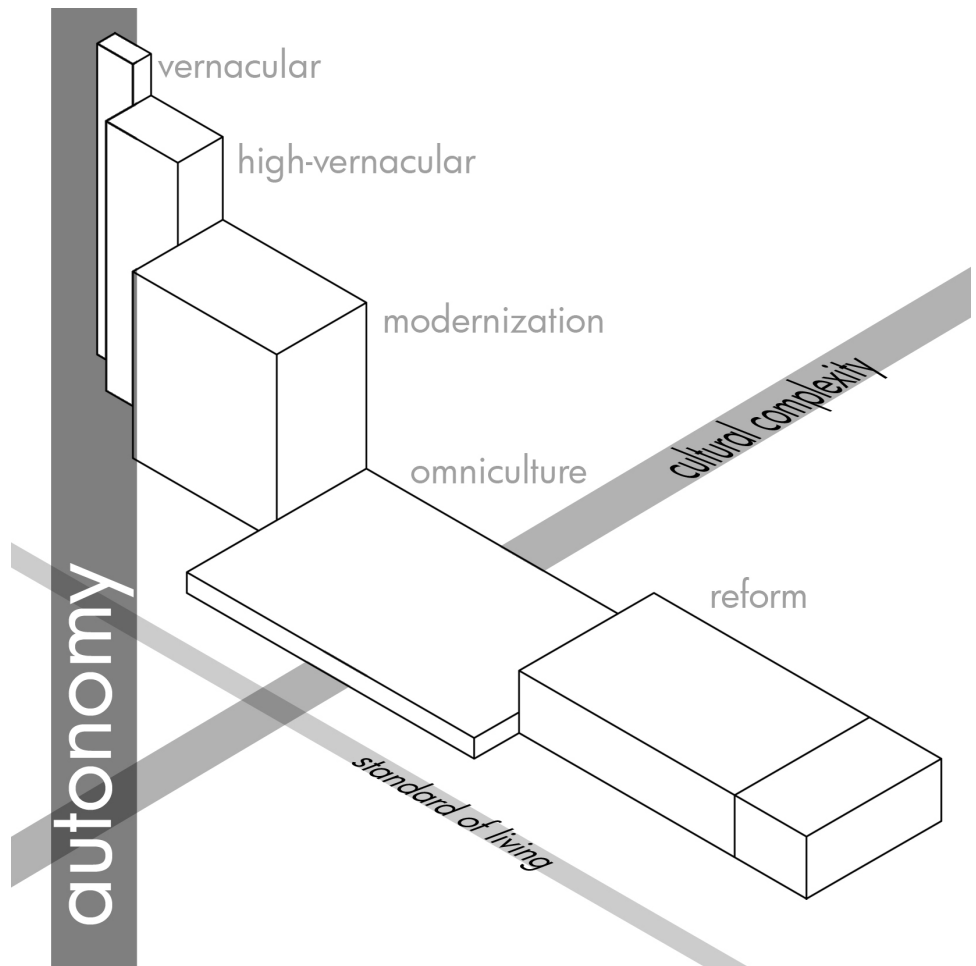


Diagram representing the patterns of development of cultures. Diagram shows the level of autonomy lowering as a culture becomes more complex due to higher standards of living.

There is a contrast in the levels of personal autonomy and the standards of living evident when comparing the individuals of a vernacular community with one that is more complex. Vernacular communities have little demands which include such things as protection from the elements, food and water, and small levels of entertainment. Consequentially, their inhabitants possessed a high level of personal autonomy because their wants and needs were manageable within the household, or through intimate exchange with neighbors. As a culture advances into more complex arrangements, the standard of living increases to a point where it is no longer manageable through these means. Under these circumstances, specialization is used as a tool to achieve a higher standard of living, and people are no longer able to be completely responsible for themselves and have to rely on others that they are not primarily related to for life's demands. Thus, in order for an individual to function in a culture with higher standards for living, some personal autonomies must be negotiated.

When viewed in retrospect, the general pattern of development that a culture experiences is a decrease in personal autonomy due to an increase of the standard of living. According to historical examples, this process is a fairly consistent arrangement for most cultures and is subject to credible documentation. This chapter will discuss this process in detail along with the improbability of effective efforts for reform from the patterns of development.

The patterns of development in cultures, as a process of deteriorating autonomy, is manifested on multiple temporal durations and through different mediums. Because of its multi-dimensional character, the situation does not ordinarily reach the conscience of the individual. By deconstructing case study communities according to supplementary philosophical, architectural, and urbanist theories, credible information on cultural development can be determined. The disassembled information allows for the data to be re-organized diagrammatically to provide an unhampered understanding of the pattern phenomenon. The following is a synopsis of this process intended to provide a new lens of which to view the development of cultures, aiding in future fabrication of the built environment. Also, as described in previous chapters, autonomy plays an important role in the effectiveness of the built environment. Therefore, the patterns of development can be a viable tool for understanding the dynamics of autonomy and how it can be effectively sustained.

THE INHERENT PROGRESS OF CULTURES

Many cultures experience a similar inherent progressional force that must be understood to guide the deconstruction process. Throughout history, progress towards convenience and quality have habitually acted as a vehicle for regulation in other aspects of life. Almost all cultures and the people that create them have an inherent perpetual drive for quality and convenience that will inevitably throw that culture into a continuously increasing state of complexity along with a congruent loss in autonomy.

The level of demand that people have for change can play different roles in the temporality of the process. In some cases, people with little demand for change have shown that quality and convenience (accompanied by regulation) are seemingly more desirable than personal autonomy when there is a gradual transaction. For example, the automobile created a new convenience, but it also required traffic laws, licensing, and tax dollars for infrastructure. Mass production and the industrial revolution promised the common individual access to the conveniences that were once only available to the upper class, but the unhealthy bi-products of factories that are required for production have created the need for new environmental laws and zoning ordinances. In a culture with a low demand for change, these new regulations are acceptable because, individually, they have had only minor effects on autonomy and are gradually applied in trade for a quality or convenience that is seemingly more attractive. But in retrospect, they holistically render the creation of a much more drastic loss in autonomy.

Under drastic circumstances, the transaction between quality and convenience with regulation is willing to be expedited. When the people of a culture or a society have reached a highly depressed state, they have shown to be more likely to give up higher levels of autonomy for more drastic changes towards promises of quality and convenience. This condition has been the catalysts for many utopian visions and attempts. The intentional community of Jonestown, established by The People's Temple, or many of the early American colonial utopian attempts have participated in this scenario. The people that were targeted by Jim Jones to join The People's Temple were the elderly, sick, homeless, jobless and/or the victims of racial discrimination. The Harmonists and their leader George Rapp, established their socialist communities in Pennsylvania and Indiana in the mid 1800's as a reaction to the religious suppression they experienced in Germany. In both cases followers were unsatisfied with their current situations and willing to give up almost all their personal freedoms and possessions in trade for the increase of quality of life promised by their leaders.

Along with differences in temporality, autonomy can be negotiated for quality and convenience through different mediums as well. The increase in a culture's technological abilities are one of the mediums that this progress takes place. As technology reaches higher levels of intelligence, it becomes more convenient to rely on it because it can bring about more efficient results. Simultaneously, these technologies are working to make culture more complex by being deeply integrated into the culture, making them a necessity and reducing alternatives. Also, new needs created by technology can increase to a point where the individual or household cannot manage themselves self-sufficiently without it. At this level, responsibility is granted to people or organizations that manage the technology which they have little or no influence over.

The automobile is an example of how technological advancement towards convenience has resulted in a loss of individual autonomy. Automobiles were introduced to create convenient travel from place to place. The popularity of this new ability caused the usage of automobiles to grow drastically, and cultures began to be defined by their existence. The built environment began to be arranged on the assumption that everyone owned an automobile and eventually was developed in such a way that the majority of people no longer lived within walking distance from their necessities. In this environment, people are unable to function without accessibility to an automobile and the individual or household no longer had the opportunity for self-reliance. The individual was no longer responsible upon themselves for acquiring their wants and needs but needed to rely on the ownership of an automobile.

An increase in political authority is another medium of which autonomy is sacrificed in the progression of cultures. Like technology, political systems are also implemented in an effort to improve convenience and quality of life. A highly organized system is required for a culture or society to function effectively. As a culture or a society increases in population, diversity, and complexity, it tends to become chaotic and disorderly, and a higher auxiliary force is needed for organizational purposes. With these government interventions, there is either a single person or a small group of people that specializes in making decisions for the rest of a society. Like the advancement of technology, these efforts also result in the yielding of personal responsibility along with a loss in personal autonomy.

Methods for zoning are an example of a system that is politically introduced to offer a higher quality of life but simultaneously resulted in a loss of autonomy. Zoning was first introduced in such industrial cities as New York, London, Paris, and Barcelona. City planners used zoning as a tool for improving the unlivable conditions of the city by separating factories and residential areas ⁽¹⁾. Eventually this concept of segregation was implemented to separate low-density housing from high-density housing and from retail and other types of commercial and institutional developments (Duany 10). Where once the organic development of the neighborhood existed from a response of people's autonomous needs, the more modern organization of the built environment is the conception of an eminence grise of architects, planners, and engineers ⁽²⁾. These laws established by governmental officials impede on the individual personal autonomy by imposing on the households freedom of choice, leaving little alternative ways for life ⁽³⁾.

⁽¹⁾Duany, Andres, Elizabeth Plater-Zyberk, and Jeff Speck. Suburban Nation: The Rise of Sprawl and the Decline of the American Dream. New York: North Point Press, 2000. pg 10

⁽²⁾ *Ibid.* pg 4

⁽³⁾ Levine, Johnson. Zoned Out: Regulation, Markets, and Choices in Transportation and Metropolitan Land Use. Washington, DC: RFF Press, 2006. pg 2

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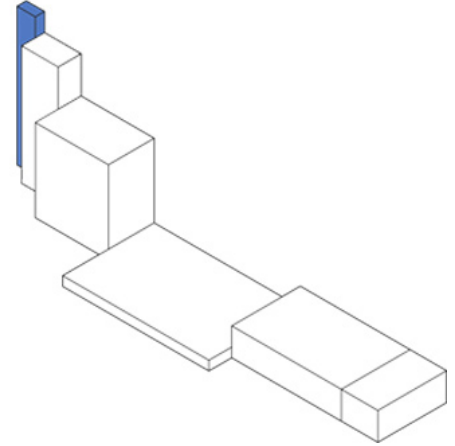
The inherent progress of cultures outlines the philosophical principals by which case study cultures will be chosen and analyzed. When deconstructed, the patterns in which these cultures inherently progress will be re-assembled into five distinct stages;

the vernacular, high vernacular, post-industrial, omniculture and reform. Each level (in that order) represents an advancement in complexity of cultures with an increase of the standard of living with a corresponding deterioration of personal autonomy possessed by the individual. Finally, the diagrams will provide an unhampered view of the development of cultures, creating new design considerations

VERNACULAR

The characteristics of vernacular communities can be represented by many of America's folk settlements. Hollybush, an Appalachian community of the late 1800's, was one of these settlements. The community was located in an isolated mountainous portion of Kentucky and grew to a prime population of 150 people on thirty farm sites spread over one square mile ⁽⁴⁾. The people that inhabited Hollybush were highly autonomous because their simple demands in life allowed them to be managed by the household or communally. The community was agrarian based and used traditional building techniques based on locally available resources and immediate environmental conditions. Farming and the utilization of local resources meant that they did not have to rely on others for the importation of building materials and food. Nearly all people lived in log houses in the level bottoms between the hills and planted corn on the hillsides ⁽⁵⁾. This fulfilled the need for food and water as well as protection from the elements. Simple entertainment needs were also able to be met individually or communally. Also, because of its isolated condition, trade, friendship, and courtship were internal activities ⁽⁴⁾ adding to their self-sufficiency.

As seen with the Hollybush case study, in a culture's vernacular stage a high level of autonomy is achieved by the individual due to low standards of living. Simple demands like food and water, decent protection from the elements, and small levels of entertainment were all that was required for a satisfactory life. Most importantly, all these desires were, for the most part, attained on the basis of the individual or household.



⁽⁴⁾ Martin, Charles E. *Hollybush: Folk Building and Social Change in an Appalachian Community*. Knoxville: University of Tennessee Press, 1994. pg 3

⁽⁵⁾ *Ibid.* pg 4



Image: Log cabin in Hollybush.
Martin, Charles E. *Hollybush: Folk Building and Social Change in an Appalachian Community*. Knoxville: University of Tennessee Press, 1994. pg 25

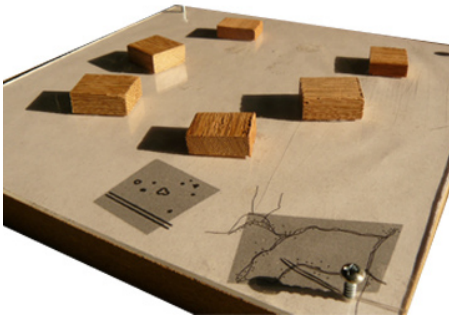


Image: Sketch model representing the simple built environment of vernacular cultures

⁽⁶⁾ Redfield, Robert and Milton Singer. "The Cultural Role of Cities." *Classic Essays on the Cultures of Cities*. Ed. Richard Sennet. New York: Apple-Century-Crofts, 1969. pg 213

This liberated the individual from reliance on others and allowed for a high degree of self-sufficiency and consequentially a high degree of autonomy. Also, where reliance on others was present, it was through the strong bonds of kinship that the cooperative activity took place. Also, the organization of the political and built environments was based on an empirical and pre-ontological understanding of tradition and community, which created organic and effective systems.

Hollybush was an egalitarian community with no types of inner form of cognizant government ⁽⁵⁾. The system of expectations that the people were apart of were basic and direct and embraced as part of their everyday lives. In Robert Redfield and Martin Singer's "The Cultural Role of Cities," they describe a vernacular community as:

"...a long established, homogeneous, isolated, and non-literate integral (self-contained) community; the folk culture is that society seen as a system of common understandings." ⁽⁶⁾

Because of the similar type simplicity described by Redfield and Singer, cognizant government was not yet required in Hollybush. Instead of an established form government creating order within the culture, a homogeneous virtue was established with a method of mutual acquaintanceship and neighborliness of which morality and the rigors and pressures of life could be addressed. In other words, government was part of everydayness and was not investigated theoretically. This tacit approach contributed to the autonomy of the individual because there was no specialized higher power making decisions for the rest of the community.

HIGH-VERNACULAR

The Buddhist city of Lhasa, located in Tibet, is an example of a high-vernacular community. Lhasa is the capital of Tibet and is often referred to as "the place of the gods" ⁽⁷⁾. Lhasa's culture is based on a long history of Buddhist traditions. It's region is the origin of Tibetan folk culture, from which it evolved into a religious and political center containing the seat of the Dalai Lama at the Potala Palace as well as many other chapels,

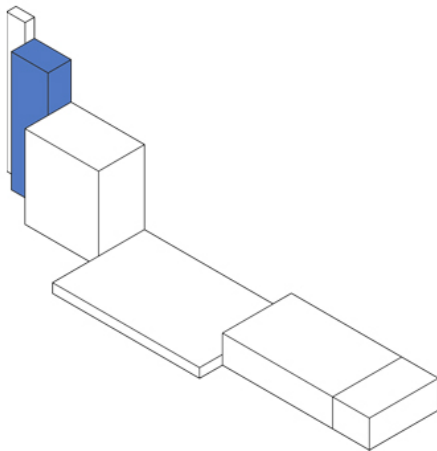


Image Right: The Potala Palace. Former seat of the Dalai Lama. Lhasa, Tibet



monasteries, shrines, and memorials ⁽⁷⁾. In Lhasa, the Dalai Lamas were the apex of Tibet's theocracy and they fostered a philosophy that survives today ⁽⁸⁾.

As vernacular communities progressed and begin to grow in population and complexity, the ability for the individual to be autonomous decreases due to a congruent increase in the standard of living. The advancement that greatly contributed to the negotiation of autonomy was the need for a more organized tradition. The high-vernacular is distinguished by the development of an abstract system based on the folk tradition. With an increase in complexity due to a progression towards efficiency, cultural organization could no longer function with the tacit approach seen in the Hollybush community. Under a more complex situation, cultures need a separate class of individuals that can take an in depth approach towards cultural organization. Like the Dalai Lama in Lhasa, this includes a system that is outlined by a higher intellectual class that defines the expectations of the culture ⁽⁹⁾. Consequentially, with the advent of this cognizant form of government, the personal autonomy of the individual is negotiated. The individual is no longer a completely sovereign entity, but is now under the control of a higher political body.

Along with the detachment of an intellectual class, labor in high-vernacular cultures is more separated as well. Autonomy will always be negotiated when the individual spends more time specializing in a single trade because the individual becomes less self-sufficient. Although, labor was more specialized in the high-vernacular phase, autonomy could still be fairly stabilized because the exchange of services was through similar types of kinship bands seen in vernacular communities. This condition can be seen in the old town district of Lhasa which still largely partakes in similar small scale intensive trade ⁽¹⁰⁾.

Also, granted that government had reached a cognizant level, its organization was still largely based on the pre-ontological virtues established in the vernacular phase of that culture. Thus, the control was seemingly marginal to most people due to the fact that the intellectual class was working with consensually pre-established ideals. Autonomy was only bargained in small portions due to the fact that the intellectual class could not accurately address the local geography and activity of villages exterior of the cultural center ⁽¹⁰⁾. Therefore, despite the loss of some autonomy due to the advent of an intellectual government, the individuals of high-vernacular communities were still able to achieve a generally high level of autonomy.

MODERNIZATION

Modernization is the third stage a culture experiences in its inherent progression. Some of the tendencies of modernization are revealed in the community of Celebration, Florida. Celebration is a community located outside of Walt Disney World in Orlando, Florida that was built by Disney Corporation. Celebration was designed with neo-traditional principals, aimed to revitalize the concepts of community into the lives of its inhabitants ⁽¹¹⁾. People moved from all over the country to experience the renaissance that the community was providing. This type of exterior growth is one of the properties that distinguishes modernization from the previous stages. When populated by people from multiple locations, diversity became an unavoidable characteristic for Celebration. Diversity manifests itself in a community with a variety of styles, preferences, and traditions. In the vernacular and high-vernacular stages where cultural views are generally homogeneous, little or no regulation is needed for community organization, but because of Celebrations higher levels of diversity, a high level of government intervention is needed to stabilize the

⁽⁷⁾ Larsen, Knud and Amund Sinding-Larsen. *The Lhasa Atlas: Traditional Tibetan Architecture and Landscape*. Boston: Shambhala, 2001. pg 11

⁽⁸⁾ *Ibid.* pg 13



Image: Sketch model representing the built environment of high-vernacular cultures with their added complexity

⁽⁹⁾ Redfield, Robert and Milton Singer. "The Cultural Role of Cities." *Classic Essays on the Cultures of Cities*. Ed. Richard Sennet. New York: Apple-Century-Crofts, 1969. pg 224

⁽¹⁰⁾ Larsen, Knud and Amund Sinding-Larsen. *The Lhasa Atlas: Traditional Tibetan Architecture and Landscape*. Boston: Shambhala, 2001. pg 18

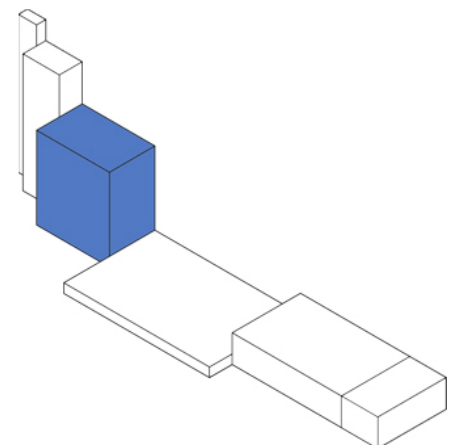




Image: Downtown Celebration, Florida.

neo-traditional intentions of the community's design. In "Urbanism as a Way of Life," Louis Wirth writes:

⁽¹¹⁾ Pollan, Michael. "Town-Building is No Mickey Mouse Operation," *New York Times* 14 December 1997. 15 Nov 2008 <<http://query.nytimes.com/gst/fullpage.html?res=9807EFDB143CF937A25751C1A961958260>>

"The bonds of kinship, of neighborliness, and the sentiments arising out of living together for generations under a common folk tradition are likely to be absent, or at least, relatively weak in an aggregate the members of which have such diverse backgrounds. Under such circumstances competition and formal control mechanisms furnish substitutes for the bonds of solidarity that are relied upon to hold a folk society together." ⁽¹²⁾

⁽¹²⁾ Wirth, Louis. "Urbanism as a Way of Life." *Classic Essays on the Cultures of Cities*. Ed. Richard Sennet. New York: Apple-Century-Crofts, 1969. pg 152

Thus, an elaborate charter is needed to control residents from deterring from the designers vision of Celebration. In order to keep property values high, any activity that detracted from the overall appearance of the Celebration is prohibited (Pollan). For example, six house styles are permitted in Celebration and any change to their exteriors requires written request and permission from Disney (Pollan). Other regulations include that visible window coverings must either be white or off white, a resident may only have one garage sale every twelve months, the parking of pick up trucks on the street is prohibited, and political signs can only remain 45 days prior to an election (Pollan). These rules are an essential ingredient for the authority of Celebration. If people were to live freely, their choices could potentially alter the aesthetics and structure that the design of the community strives to accomplish. The need for sustaining these design goals is crucial to the functioning of Celebration, and so governmental intervention is needed to protect them.



Image: Sketch model representing the built environment of modernized culture with an organizational structure that influences its shape.

Within the modernized society, there is a further increase in the standard of living due to a rise in cultural complexity. The demands of Celebration are much more intricate than Lhasa or Hollybush. The elevated needs of the more complex community include elaborate desires such as property values and a theoretical approach towards community. Also, the primary force that drives a society into this stage is the diversification of cultures within a society. The presence of a high degree of diversity in a single society requires a auxiliary governmental system to manage the collage of cultures in order to protect their needs. In contrast to the vernacular and high-vernacular cultures, where the virtues of a culture are mostly just part of their everydayness and therefore harmonious, the auxiliary government contrasts the values of these cultures and forces them to live in a way of conformity. The high contrast between everyday functions and an auxiliary government greatly decreases levels of personal autonomy because the extent of which the government can address the local geography and activity is lessened, and results in a situation where some people are forced to sacrifice their freedom of choice.

Along with diversification, the need for specialization that takes place within

the modernized society decreases an individual's autonomy as well. In contrast to the vernacular and high-vernacular stages where the effects of specialization on the autonomy were marginalized because of kinship bonds, in the modernized society these primary relationships become replaced with secondary ones do to a further increase of specialization. Instead of people being dependent on a particular person, of which they are directly in contact with, there is more dependence on large organizations ⁽¹²⁾. At this point the individual becomes dependent on another through the indirect affiliation of an organization which face to face contact is unlikely. Lewis Mumford supplements this idea in "The City in History." He writes:

"As the population of the city increased, and as the complexities of economic and political life increased in it, the implications of democracy as an exclusive system of government were likely revealed. Pure democracy requires the intimacy of face-to-face meeting, possibly only in small numbers..." ⁽¹³⁾

A highly organized system is needed in the modernized society. In order for a society to adjust to its more complex state, triggered by a diversity of cultures and a high degree of divided labor, an intricate system must be devised to establish the overall efficiency of the society. The laissez-faire approach of the vernacular and high-vernacular is not possible in the more complex post-industrial society.

OMNICULTURE

Omniculture is theoretically based on the prediction that cultures will continue to advance in such a way that autonomy will be further sacrificed as cultures become even more complex. The theory behind omnicultures include people being forced to become part of a highly organized system, where the individual possess little or no autonomy and in trade, the system provides the demands of the complex culture. Within this highly advanced culture, the individual would have no choice but to become part of the system because the standard of living is so highly developed that it would be impossible to attain it self-sufficiently.

In some ways, the characteristics of an omniculture are an elevated form of the principals that modernized societies like Celebration are based off of. In Celebration, government intervention has been used extensively to control how the complex culture meets its aesthetic and functional needs. As peoples aspirations for convenience and efficiency have directed them towards the highly regulated Celebration, the pattern is predicted to push even further into a state of even less autonomy. In this situation people must become part of a hyper organized system to acquire their wants and needs.

Many of the American colonial utopian movements of the 1800's represent the characteristics of an omniculture. The Harmonist society and their communities Harmony Pennsylvania, New Harmony Indiana, and Economy Pennsylvania, are one of the examples. The Harmonists were known for their successful business endeavors with an average per capita income ten times that of the average American ⁽¹⁴⁾. The founder and leader of the Harmonists, George Rapp, established strict regulations on his followers to ensure the homogeneity necessary for an efficient communal life style. Rapp was the spiritual leader and had organized his communes so that he could have total control. The people of the Harmonist Society bound themselves and their heirs to communal living by giving all their property to George Rapp and his society in return for church and school instruction and a supply of all the necessities of life ⁽¹⁵⁾. Under this system, the individuals

⁽¹³⁾ Mumford. Lewis. *The City in History: Its Origins, Its Transformations, and its Prospects.*
New York: Harcourt, Brace and World, Inc.
pg. 155

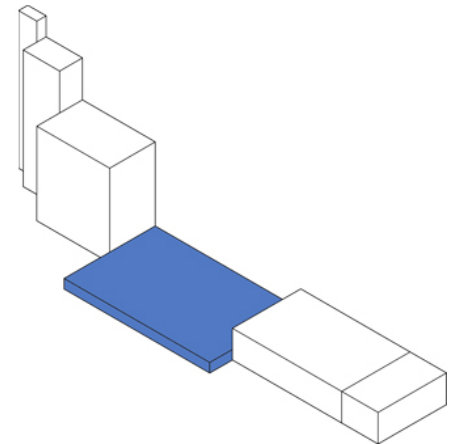
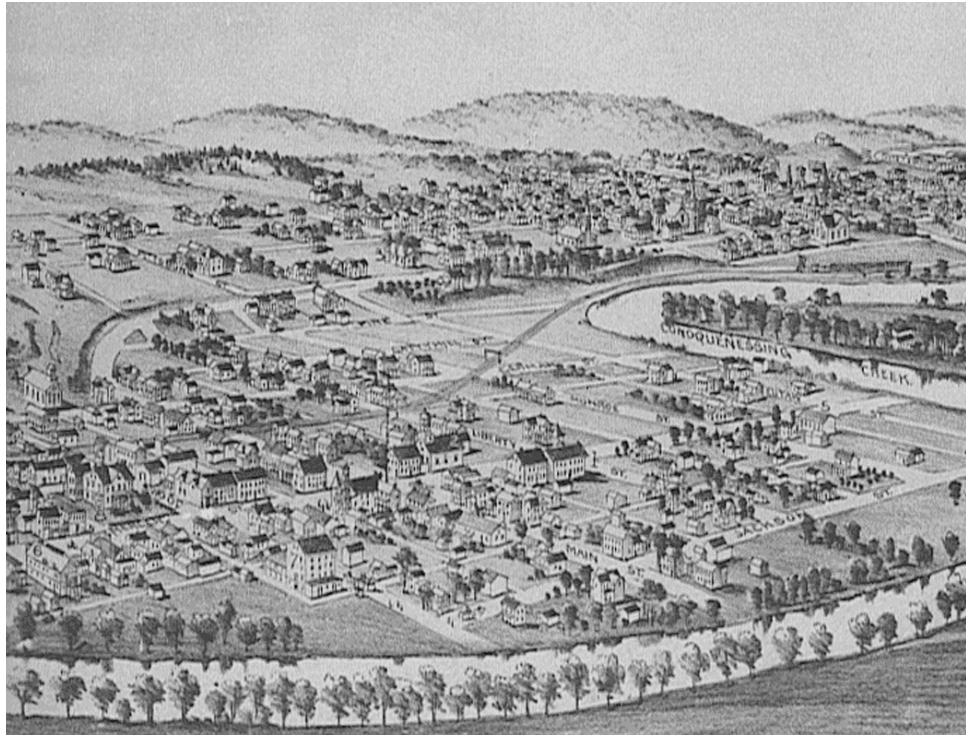


Image: Sketch model representing the built environment of an omniculture with an overpowering organizational structure creating a highly rigid form.

Image: New Harmonie, Indiana

⁽¹⁴⁾ Versluis, Arthur. "Western Esotericism and the Harmony Society." *Esoterica*. Michigan State University. 17 Nov 2008 <<http://www.esoteric.msu.edu/Versluis.html>>



⁽¹⁵⁾ Laishley, Lilan. "The Harmonists Labyrinths," *Caerdroia* 32 October 2001. pg 8-20. <<http://www.labyrinthos.net/harmonists.htm>>

gave up all personal autonomy in order to function as a single mechanism with little inefficiencies.

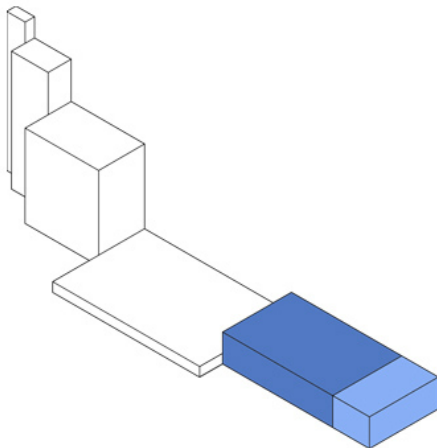
Similar systems are predicted to be established as cultures are thrown into their most complex states. Celebration, Florida has provided hints at the types of regulations and conformity needed to organize complex cultures with laws that control personal choices. Based on the patterns of past development and the habitual method of regulation for addressing increased complexity, the continued deterioration of autonomy is a likely conclusion.

REFORM

Personal autonomy cannot just simply be re-inserted into a culture after it has progressed through the patterns of development. Planned efforts of reform are an ineffective task and in order to insert more autonomy into the lives of people in a complex society, the new wants and needs that they are built upon will need to be sacrificed. Burning Man for example, is a festival where people retreat to the middle of the desert for a week to experience the freedom of self-expression and self-sufficiency. It is an experiment with more primitive ways of interaction such as a gift economy or a potlatch system. Unfortunately burning man is a romanticized retreat and only lasts for a week. It would be almost impossible and/or inconvenient to participate in it permanently.

Cultures will inevitable progress in such a way that autonomy is progressively sacrificed for quality and convenience because they are based on the inherent evolution of improving the lives of people. For example, as previously described earlier in the inherent progression of cultures, the automobile allowed for more convenient travel and zoning was implemented to create better living conditions. Because these advancements were established with positive motives and since they have been so heavily integrated into how people live their lives, it would be inhumane to regress from them. Efficiency is a more powerful force then autonomy because no culture would want to regress from things that make life easier.

Thus, attempts at neo-traditionalism render ineffective solutions. The arts and



crafts movement was an attempt at returning to pre-industrial revolution methods of wood working and construction to sustain the pride and authenticity in work lost in mass production. Inevitably, it could be considered unsuccessful because the craft only became accessible to certain classes. Handcrafted elements were more expensive when compared to the mass produced counter product and thus could not meet up to the standards of the new, more convenient method.

Therefore, the only acceptable solution in the typical development of cultures is to keep replacing the old mechanisms with new innovations, but this would only create added complexity and higher standards of living, and consequentially even less autonomy. New urbanism is the design attempt of creating a neo-traditional community to meet the new concerns of sustainable neighborhoods. Although it attempts to re-create past environments, in a more complex culture, its charters must contain more regulations to ensure the execution of neo-traditional ideals. Thus, the individual is continually thrown into a circumstance where they have to compromise efficiency for autonomy and where the simple solution of just giving more autonomy is not desired.

Inevitably, this scenario is unacceptable because of its ineffective consequences and even its ability to become self-destructive. In an environment where autonomy is continually negotiated, a tipping point is eventually reached where the common individual can no longer tolerate the increasing levels of restrictions. The result is some sort of violent revolution, where the authorities become overthrown by the masses. This scenario has manifested itself habitually in society through out history. The American Revolution, the French Revolution, the uprising against Mussolini and fascist Italy during WWII are some examples. In fiction, George Orwell also describes the circumstances in his novel "Animal Farm," with the farm animals overthrowing the humans. All these events are part of a common pattern that occurs because of extremely low level of autonomy possessed by the common citizen.

This situation is in no way foreign to the built environment, and such violent uprisings have been seen in the histories of today's cities. Although these revolutions do not include guerilla warfare, violence instead takes the form of abandonment and neglect. In modern cities, revolution took the form of "White Flight" and decentralization,



Image: Burning Man Festival. Black Rock Desert, Nevada

with inhabitants fleeing to the suburbs to escape the repression they experienced. Most importantly, much of the repression was due to the conditions of the built environment. Dense and unhealthy living conditions, stingy landlords, the demanding labor of factories, and most importantly, the individuals inability to change these conditions, eventually forced them out to the cities edge for a better way of life. Now, the pattern has made its way back around. Now it is the built environment of the suburbs that offer little freedom for choosing ways of life. The domination of the automobile has resulted in high levels of fossil fuel consumption, advanced zoning mechanisms deter density and create an inability for walkable communities, and dramatic the inclusiveness of subdivisions has killed neighborly kinships. Unfortunately, with the way the built environment is organized, a desire for any of these things cannot be achieved unless there is complete abandoned and new construction somewhere else according to the new needs.

MANIFESTO

The process of deconstructing and diagramming cultures according to comparisons in autonomy, has created new considerations for how the built environment should be developed. One consideration that is important to note is that as the stages advance more towards complexity, and a higher governing body is needed to organize the culture, the accuracy a culture possesses in order to function effectively steadily decreases. This is first seen with the advent of the intellectual class in the high-vernacular stage. This condition is described by Redfield and Singer in "The Cultural Role of Cities." They write:

"The literati of the city develop the values and world view of the local culture to a degree of generalization, abstraction and complexity incomprehensible to the ordinary villager, and in doing so leave out much of the concrete local detail of geography and village activity."⁽¹⁶⁾

⁽¹⁶⁾ Redfield, Robert and Milton Singer. "The Cultural Role of Cities." *Classic Essays on the Cultures of Cities*. Ed. Richard Sennet. New York: Apple-Century-Crofts, 1969. pg 213

In the observation made by Redfield and Singer, although it was a more convenient system to have a single organizing body in the more advanced culture, the intellectual class's are not able to fully address the diversity found in exterior villages. Inaccuracy increases as a culture moves into the modernized and omniculture stages as the cultures and societies become even more complex, and a even more authoritarian organizational system is needed. This pattern has had a big effect on one of the most troublesome issues in today's built environment. In "Suburban Nation," Andres Duany, Elizabeth Plater-Zyberk, and Jeff Speck make this occurrence evident as they list the ways that authoritarian government intervention has segued the unsustainable direction of the suburban condition.

"Far from being an evolution or historical accident, suburban sprawl, is the direct result of a number of policies that conspired powerfully to encourage urban dispersal."⁽¹⁷⁾

⁽¹⁷⁾ Duany, Andres, Elizabeth Plater-Zyberk, and Jeff Speck. *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*. New York: North Point Press, 2000. pg 4

"...Federal Housing Administration and Veterans Administration loan programs, which in the years following the Second World War, provided mortgages for over eleven million new homes."⁽¹⁸⁾

⁽¹⁸⁾ *Ibid.* pg 7

"...a 41,000-mile interstate highway program, coupled with federal and local subsidies for road improvement and the neglect of mass transit, helped make automotive commuting affordable and convenient for everyone."⁽¹⁹⁾

⁽¹⁹⁾ Duany. pg 8

"City planners widely advocated the separation of such factories from residential areas..."⁽²⁰⁾

⁽²⁰⁾ Duany. pg 10

Presently, as a reaction to such miscalculations and ineffective results, further

authoritarian interventions have been introduced with New Urbanism, LEED, and other environmentalist institutions. What they have to offer is their elaborate charters, guide books, and virtues that seek to regulate the unsustainable way of building. Unfortunately these new and up and coming interventions are nothing but a continuation of the trend of adding regulations described in *The Patterns of Development*. But with authoritarian intervention being the root of many of these calamities, does it make sense to take away even more autonomy to remedy the problem? Instead of continuing to deteriorate autonomy to address up and coming challenges for improving the built environment, autonomy should be given a higher value, and re-establishing it in some way should now be a new concern for the designer.

Additionally, the new perspective rendered by *The Patterns of Development* offers a difficult challenge when considering re-establishing autonomy. The first four stages have shown that complexity and low levels of autonomy go hand in hand and that it is inherent in a culture or society to move towards more complex ways of living. Also, as described earlier, sustaining autonomy is imperative for improving the built environment. Additionally, the conclusion that neo-traditional methods of reform are an ineffective solution for re-establishing autonomy makes it very difficult when trying to grant more autonomy into a culture or society. Since autonomy cannot just simply be re-inserted, more creative, unconventional, and authentic routes must be taken for granting autonomy into the everyday lives of people. What exists is a feedback loop that requires a revolution to break it. The way the built environment is developed must be completely re-thought.

Thus, in order to improve the effectiveness of the built environment based on an increase of personal autonomy, intervention must be accomplished in a way that is different from the conventional methods of solving problems and creating change. The typical way problems are solved in the built environment in complex cultures is through theories based on statistical data or observation which is then applied from the top-down by a single individual or a small group of people. In this case it would mean observing past cultures and very literally retrofitting their techniques into a modern setting. But, according to *The Patterns of Development*, they have shown that this is typical, “build it and they will come” approach towards design utilized by city planners, architects, engineers, and politicians in complex cultures is an ineffective approach. The early stages in *The Patterns of Development* can still aid in breaking away from this approach that cannot do any justice for the individual’s level of personal autonomy as long as the conventional approach is not continued. By simply defining and understanding the fundamental force instead of the studying the physical attributes that allowed for autonomy in simple cultures, it may be influential for developing a mechanism for improving the built environment in complex cultures. When observing the built environments of simple cultures, development came from a force with in, from the bottom-up instead of the top-down. Therefore, in complex environments a more Silent approach is required that is less about designing and more about understanding.

PHASE 2: DEFINING THE FUNDAMENTAL FORCE

(1) *Gleick, James. Chaos: Making a New Science. New York: Penguin, 1988. pg 16*

(2) *Ibid. pg 17*

In the winter of 1961, Edward Lorenz made a unique discovery about the weather. Lorenz had been performing experiments in meteorology using a computer that would simulate the weather and in an attempt to mimic a previous entry, he inserted an approximate version of the original code into the toy weather machine. What he expected was a result that corresponded to the similar input he previously entered. What he got instead was an outcome that differed greatly from the original ⁽¹⁾. With this accident, Lorenz discovered a way to view the weather that no one had previously thought of. He learned that weather was highly sensitive to initial conditions, that predicting the weather was more complex than previously thought, and that small calculated errors could be catastrophic in trying to create an accurate reading ⁽²⁾. He learned that the weather was extremely chaotic and messy which gave it instability at every point. The built environment is in some ways like the weather. Both are highly complex equations that develop according to a web of numerous variables. Where differences in temperature and moisture over all points of the globe produce unique outcomes in weather, infinite combinations in cultural, climatic, and other environmental differences drive the nature of the built environment.

(3) *Ibid. pg 15*

Before Lorenz's discovery, the way weather and other subjects of the sciences were analyzed was much different. There was the assumption that small influences could be neglected. It was thought that a small error in the input would only create a small error in the output ⁽³⁾. It was therefore adequate for complex nonlinear problems that were impossible to solve, like the weather, to be generalized as linear equations that could be easily understood. In other words, it was acceptable to disregard bits of messiness in order to create a clean surface to work on ⁽⁴⁾. This approach, along with advancements in satellite and computer technology, led to an era of great optimism in meteorology ⁽⁵⁾. Along with additional confidence in the prediction of weather, it was even believed possible for it to be controlled.

(4) *Ibid. pg 41*

(5) *Ibid. pg 18*

But, according to Lorenz's theories, this type of approach would be problematic. With the approximations made by a generalized approach, meteorologists were able to predict the weather two days in advance however, beyond that forecasts became speculative ⁽⁶⁾. As for designing weather patterns, (although it remained a theory and never a reality) Lorenz would have claimed that the weather could be changed, but its complexity would keep one from knowing if it would be for better or worse ⁽⁷⁾. It was Lorenz's weather machine that exposed the crucial inaccuracies that were linked to the generalization of non-linear equations and it was his discoveries that caused a paradigm shift in how the weather is observed.

(6) *Ibid. pg 20*

(7) *Ibid. pg 21*

The built environment is suffering from a similar scenario as the one exposed by Lorenz in meteorology. In complex cultures, the specialized designer has the ability to highly influence the effectiveness of a community through the quality of the built environment that they fabricate. City planners, architects, and engineers make it their duty to take their opinions, theories, and conceptualizations, and devise linear solutions for the most efficient buildings and neighborhoods as possible. They are the ones that control building shapes and forms, building density and the locations of building types. They even have the ability to influence the way people travel and interact with one another. Although they possess positive motives in improving the built environment, it is

apparent (from the evidence provided from the diagramming and analysis of The Patterns of Development) that their interventions have had a history of ineffective solutions. Thus, similarly to how approximations were used to analyze the quiddities of the weather has lead to inaccurate forecasts, the specialized designer's generalized approach has also suffered from unpredictable outcomes.

The apparent similarities between the weather and the built environment raises the question: is the built environment susceptible to the same type of properties discovered by Lorenz? And if so, could his revolutionary discovery be influential in rethinking the way it is developed? When conventional, generalized forms of intervention habitually create inaccurate attempts in improving the effectiveness of the built environment, a different, new, and creative, approach must be taken. The way the built environment is observed and fabricated requires a similar paradigm shift discovered by Lorenz. It needs to start being viewed as a complex system of nonlinear equations that cannot afford to be generalized by the linear approach of specialized designers.

• • •

There is a fundamental force that exists in the earliest stages of The Patterns of Development that could be used to improve the built environments of complex cultures. The analysis of The Patterns of Development has shown that in complex cultures, specialized designers have a very "vocal" role in the fabrication of the built environment when compared to more simple cultures. Under the circumstances that vocal methods have created in complex cultures, the more "silent" approach towards architectural or urban design found in simple cultures may offer more effective results. Silent Urbanism starts by stabilizing autonomy for the individual in the built environment. A silent approach towards the development of the built environment includes less intervention by an eminence grise designer. A silent approach allows for natural, instead of a dictated, growth and change. It lets the everyday choices and desires of the direct user govern the form of the built environment.

TOP-DOWN PLANNING VS. BOTTOM-UP GROWTH

Because there are no guidelines to be applied universally for nonlinear problems, they cannot be solved by a top-down approach by a single agent. Thus, scientists tend to avoid nonlinear equations because their traditional methods for solving problems are impossible. As seen in the case of weather prediction, they instead find ways to generalize nonlinear equations into a linear arrangement so that they are solvable. The specialized designer has a similar method in fabricating the built environment as the meteorologist has in predicting the weather. The equation of the built environment is made up of an infinite amount of variables that are hard to measure. Some of these variables include the place in time, the demands of the users, climatic conditions, available building materials, and other influences. The responsibility of the specialized designer is to then analyze these variables in order to make an educated guess at what the most effective design intervention would be.

Unfortunately, this top-down approach to the complexity associated with the built environment (and the sciences) has lacked precision because there simply is no educated enough guess that can be made to solve their problems. Thus, a different approach must be made towards the complexity of the built environment to ensure more effective results. The opposition to the conventional approach can be observed in situations where growth



Images: Sketch models representing the interaction between the concept of "silence" and the complexity of cultures.

is more prevalent than planning. In these situations the single pace making agent has a more silent role in the development of the built environment and masses become more vocal, causing a behavior that emerges from the bottom-up instead of being applied from the top-down.

• • •

Emergent systems have had a silent method of development that has proved to have highly effective results. Steven Johnson in his book "Emergence" defines emergence as when:

⁽⁸⁾ Johnson, Steven. *Emergence: The Connected Lives of Ants, Brains, Cities, and Software*. New York: Scribner, 2001. pg 18

"...agents residing on one scale start producing behavior that lies on one scale above them: ants create colonies; urbanites create neighborhoods; simple pattern-recognizing software learns how to recommend new books. The movement from low-level rules to higher-level sophistication is what we call emergence."⁽⁸⁾

⁽⁹⁾ *Ibid.* pg 11

In the introduction to Steven Johnson's book he refers to the organizational methods of slime cells into slime mold as an example of an emergent system. Johnson describes the discoveries of Japanese scientist, Toshiyuki Nakagaki, and how he trained a slime mold to find the shortest route towards food through a maze. What Nakagaki observed was an incredibly primitive organism with no centralized brain whatsoever, solving the puzzle of a maze with flawless precision ⁽⁹⁾. This accuracy was achieved by the interactions of the slime mold cells that give life to the slime mold. As described by Johnson, each individual cell releases a trail of pheromone as it encounters a food source. If the intensity of the pheromone reaches a certain level, the trail starts to attract other slime mold cells which in turn release their own pheromones to continue the process ⁽¹⁰⁾. The simple interactions between single slime mold cells creates an organizational system where trails of pheromone influence other cells to aggregate into the highly complex and reactive entity larger than itself in the form of a slime mold, with no pace making agents dictating movement from the top-down. What is evident in this examples is simple interactions between self-governing agents creating a larger and more complex system that grows from the bottom-up into an entity that is able to function with a high level of effectiveness. The organizational system of the slime mold is composed of a meshwork of agents, that are linked to one another. When a single agent has a reaction, it alters the behavior of all the other agents in the network ⁽¹¹⁾ and in the end, what is left is a highly complex system that cannot be mimicked or planned in advance.

⁽¹⁰⁾ *Ibid.* pg 15

⁽¹¹⁾ *Ibid.* pg 88

This type of emergence and self-organization found in slime mold is by no means unfamiliar to the built environment and is present the vernacular communities of The Patterns of Development discussed in earlier chapters. The building traditions of Hollybush and Lhasa both functioned on these principals because of the individual's higher degrees of autonomy and the simplicity of the culture, which permitted more emergent qualities of bottom-up development. For example, the majority of people of Hollybush, Lhasa and other simple folk cultures are highly autonomous when it came to building and they would choose their methods of construction as a reaction to the climate and available resources. Also, as the communities continued to grow, new buildings were built not only as a reaction to climate and resources but also on the improvement of the methods of the previously existing buildings. Thus, vernacular cultures and the organization of the built environment possessed comparable qualities of the slime mold and could perform with similar accuracy. This emergent way of building also possesses the same ability to react to mistakes or change. With the user being at the heart of design process they have the freedom to react to any changes or inaccuracies in the built environment.

But, as humankind develops into its more complex stages, with a decrease in autonomy and an increase in complexity, the emergent qualities of the built environment become repressed. The repressive characteristics are present in the cultures that would be classified under the modernization stage of The Patterns of Development. One of these characteristics that did not allow for emergence to manifest itself in complex cultures was specialization. Specialization meant that less responsibility was given to the masses in the organization of the built environment and more was given to small groups of architects, engineers, and city planners that make top-down interventions. Where the slime mold gained its effectiveness from the growth resulting from the participation of a large number of agents with an equal amount of responsibility, a system that includes high levels of planning due to specialization cannot accomplish the same accuracy in responding to its surroundings. Reaction to change or mistakes is not easy with a model for the built environment that does not driven by the masses because when there are inaccuracies in the built environment, the users are at the will of the specialists because they have no ability to create change themselves.

The concepts of emergent systems and bottom-up growth are directly related to the fundamental force of silence. As shown in the previous examples, emergence provides the basis for the bottom up-design that silence is defined upon. Silent Urbanism is focused on the user organizing agent of the built environment instead of the interventions of hierarchical professionals that results in a community that is highly reactive to place and change. Like the slime mold, Silent Urbanism would emerge according to the simple choices of the individual users to develop a similar type of precision in the built environment.

AUTONOMY

The key to emergent systems is the autonomy gained through the participation, self-organization, and self-sufficiency of the user. For example, if the slime mold was not composed of single independent agents and instead functioned based on the following of a pace making agent, they would not be able to achieve the same sophistication and accuracy. Self-sufficient agents are the instruments of emergence and consequentially Silence. Thus, in order to fully understand these concepts in regards to the built environment, the dynamics and techniques of architecture based on user participation, self-organization, and self-sufficiency must be discussed in detail.

Peter Blundell Jones, Doina Petrescu, and Jeremy Till have consolidated various essays of their own and other authors in their book, "Architecture and Participation," that describe the potential impacts of the user playing a prominent role in the design process. Their essential claim is that the modern architectural movement has drastically disconnected the user from the buildings they occupy, by the intervention of experts who's values are often at odds with the inhabitants⁽¹²⁾. For the authors, the users participation in the design process is vital in filling this gap between the world that is built and the world that is desired⁽¹²⁾.

The essay "Architecture's Public" by Giancarlo De Carlo, in the first chapter of "Architecture and Participation" describes the mechanism for failure that modern planning techniques hold:

"This failure is usually attributed to the intervention of forces opposed to the organic development of the collectivity and therefore hostile to the 'wise plans,' a credible but not an exhaustive explanation. The 'wise plans' fail, in fact, because the collectivity has no reason to

⁽¹²⁾ Jones, Peter Blundell, Doina Petrescu, and Jeremy Till. Architecture and Participation. New York: Spon Press, 2005. pg xiv

defend them. Once it did not participate in their formulation, it is perfectly within its rights not to consider them 'wise' and therefore not to support them."⁽¹³⁾

⁽¹³⁾ Carlo, Giancarlo De. "Architecture's Public." *Architecture and Participation*. Peter Blundell Jones, Doina Petrescu, and Jeremy Till. New York: Spon Press, 2005. pg. 16

⁽¹⁴⁾ *Ibid.* pg. 15

⁽¹⁵⁾ Broome, Jon. "Mass Housing Cannot be Sustained." *Architecture and Participation*. Peter Blundell Jones, Doina Petrescu, and Jeremy Till. New York: Spon Press, 2005. pg. 70

Thus, when someone creates something themselves, they believe that they have created the best solution because it is a direct reflection of their desires. Contrarily, when this responsibility is given to a different individual, inaccuracy is inevitable because they are either unable to fully predict the desires of the individual or their own values may interfere with the final outcome. De Carlo describes this scenario as buildings that are designed "for the users." Due to the inevitable mistakes that are inherent with this approach, he instead prescribes the architect to design "with the user." Designing "with the user" proposes a more democratic position and De Carlo claims that it will render results that avoid the adverse circumstances of authoritative design.⁽¹⁴⁾

Also in "Architecture and Participation," Jon Broome's essay, "Mass Housing Cannot be Sustained" discusses alternative methods of building that includes a high degree of participation by the user. Jon particularly talks about a system of building devised by Walter Segal called "The Segal Method." Walter's system is composed of readily available components and panels of standard sizes that fit within a load bearing structure of timber members which is planned on an easy to use dimensional grid⁽¹⁵⁾. The construction uses dry construction techniques of bolts and screws and no wet brick,



plaster, or concrete which allows for the ease of performing alterations ⁽¹⁵⁾. Also, walls and partitions are not load bearing, and windows and doors can be arranged in virtually any order, allowing for the users further control. Additionally, the user is able to maintain a high degree of self-sufficiency because this method does not include the reading of any technical plans or require specialized knowledge. The user can assess the building while it is under construction and determine where the sun comes from, where the views are, and other desires as they go along.

The Danish design team, N55, has experimented with user participation and autonomy with architectonic elements in many of their projects. One of these projects is the Urban Free Habitat System. The Urban Free Habitat System is a geodesic sphere structure of which the function is fully up to the interpretation of the user. The purpose of the project is described by N55:

“Traditional urban planning aims to inject cities with places for housing and culture of a predefined type. Little power is given to the residents to make decisions about their own environment. Consequently, the public space in most western cities and the urban landscape as such is dominated by concentrations of power and their commercial interests...Using such systems, people would be able to create free places to stay and meet, cook and eat, etc, where they are most needed.” ⁽¹⁶⁾

⁽¹⁶⁾ “Urban Free Habitat System.” N55. N55. 30
Dec 2008 <<http://www.n55.dk/MANUALS/URBANFREEHABITAT/urbanfreehabitat.html>>.

Image: Collage of N55’s “Urban Free Habitat System”



The user's participation is a crucial ingredient in the Urban Free Habitat System. Because the users of the system are able to play such a large role in the purpose and functioning of the built environment, they are able to directly connect with their desires. With this type of approach towards design, the gap between the world that is built and the world that is desired, as described in "Architecture and Participation," can be crossed.

Participation is an important property of Silent Urbanism. The users are the only people that can achieve a desired level of accuracy necessary in the built environment. When the user has a highly significant role in the architectural design process, the designer becomes less vocal when it comes to making decisions. Instead of an outsider having an authoritarian role in the design process, with Silent Urbanism the designer takes the back seat to the user and lets architecture and neighborhoods develop authentically according to the desires of the inhabitants.

Jon Broome describes the Segal method as having the ability of:

"...a way of building that offers choices, can accommodate individual needs and wishes, and which can also adapt as those needs change and expectations change in the future."⁽¹⁵⁾

Broome's statement becomes true for building methods that utilize the participation and self-sufficiency of the users and also reveals the importance of the user in an emergent system for the built environment. The methods of building discussed allow for high levels of autonomy, freedom, and control of the built environment by a large number of simple agents which is the key ingredient for emergent systems and their highly effective results.

THE POETICS OF SILENCE

The previous sections were a presentation of the physical properties of Silent Urbanism, but the term has a much more philosophical meaning that should be discussed as well. In John Zerzan's essay "Silence," a deeper, more poetic description of silence is offered. For Zerzan, silence is the central effect that is essential to the functioning of the natural world. When something possesses the properties of silence, it is allowed to function according to the principals of nature. Zerzan puts a high value on silence and a significance in its presence. He believes silence is the natural phenomena of the universe and the modernization of humankind is orientated away from its authenticity. Some of his more powerful quotes that describe his version of silence include:

"Silence, like darkness, is hard to come by; but mind and spirit need its sustenance."⁽¹⁶⁾

"...and we need to let this silence, as silence, speak. It still does so often, after all, speak louder than words"⁽¹⁶⁾

"Silence reaches back to presence and original community, before the symbolic compromised both silence and presence"⁽¹⁶⁾

Zerzan also includes quotes by others in his essay to help grasp the importance of his definition of silence:

"Sense opens up in silence" Jean-Luc Nancy⁽¹⁶⁾

"Silence is so accurate" Mark Rothko⁽¹⁶⁾

⁽¹⁶⁾ Zerzan, John "Silence" Green Anarchy. Dec 2007. <<http://www.greenanarchy.org/index.php?action=viewwritingdetail&writingId=666>>

Therefore, Zerzan believes that silence and its direct connection to nature is a crucial effect for maintaining an effective world and that modernizations tendencies to extinguish it should be attended to. The enlightenment of humankind has created the potential of distinguishing itself from nature by definitions of truth. Because everything in nature is naive, reality is truth and everything simply is what it is, concrete and free of abstractions. Because everything that exists in this natural order is “silent”, there is no escaping reality. On the other hand, humankind has the potential to separate truth from reality. Humankind has the ability to create “noise” which can deter itself from the natural order so that reality is not necessarily what is true. Such abstractions as nostalgia, dignity, morality, traditions, trends, and, styles all have the ability to distract humankind from the natural order. For example, a tree has the ability to extend its limbs towards the most direct exposure to the sun because of its freedom from abstract obstacles. Similarly, if the individual is also indifferent to these pressures, they would not possess any obstacles and could obtain the same type of functioning as a tree.

The dichotomy of truth present in the human condition has been clarified philosophically and architecturally in Ayn Rand’s “The Fountainhead.” In the novel, Rand depicts the struggle between truth and reality through the architectural philosophy of her character Howard Roark. Roark is a courageous architect that practices his profession strictly by his own ideals. He believes that architecture,

“...is alive, like a man. Its integrity is to follow its own truth, its one single theme, and serve its one single purpose.”⁽¹⁷⁾

⁽¹⁷⁾ Rand, Ayn. *The Fountainhead*. New York: Signet, 1953. pg 23

Thus, he despises architecture that is governed by such abstractions as dignity, tradition, and style. He believes no building should mimic or symbolize anything because no two materials are alike, no two sites are the same, and there are no identical points in time. Instead, architecture should be a product of the earth and its form should be generated by more tangible and living forces. The architecture of Roark possess the type of truth that is based on reality and is thus built similar to the way limbs grow on a tree. Roark’s architecture possess silence because in a way, he as the architect has little control over the outcome of the design. It is the materials, the site, and the needs of the user that govern the design, and not his preference in styles or what he thinks the building should stand for. Also, the biggest struggle he faces in his career is against the public’s dogma for traditional and conventional architecture in order to possess the prestige and dignity that they symbolize. These abstractions create a consensus on what architecture that is opposite of Roark’s ideals. They create a truth that is not based on natural order and reality, but based on the intangible creations of society.

Therefore, John Zerzan’s “Silence,” and Ayn Rand’s “The Fountainhead,” play a significant role in the conceptualization of a silent approach towards the built environment. The conditions described by Zerzan can account for the accuracy found in nature and Ayn Rand’s description on how it be can transferred into architecture and urban design. Humankind in its sophisticated state has gained the ability to separate itself from the natural order of its surroundings. Thus, with Silent Urbanism, the naïve designer is valuable because they are undistracted by the abstractions of cultural constructions. If humankind were to reunite with nature, it would be able participate in its effectiveness.

PHASE 3: RE-ESTABLISHING SILENCE

The properties of silence include a type of development that is uninfluenced by any hierarchical or pace making agents due to a high degree of user participation and responsibility that results in an organic form of growth. Therefore, the definition of Silent Urbanism is a way of building that emerges based on the desires of its users and according to the natural order of the surrounding environment.

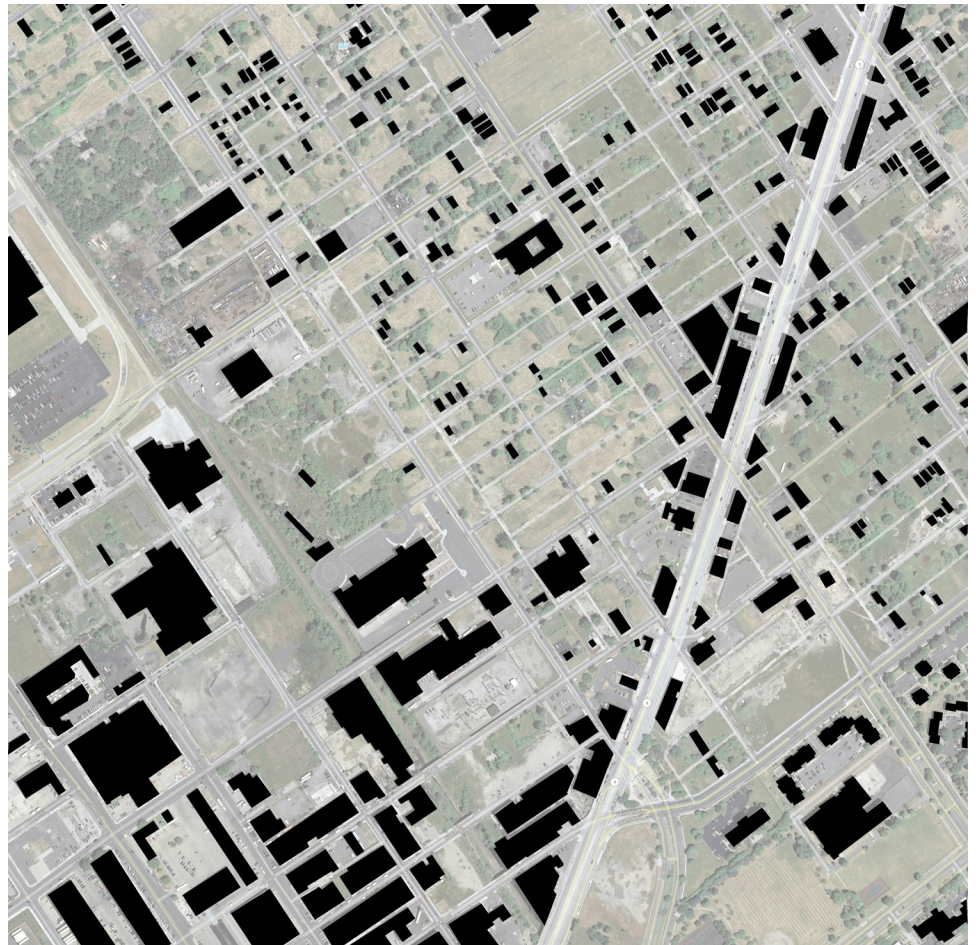
In order for a system to emerge, architecture and urban planning needs to be more of a silent procedure due to the high levels of autonomy needed for the individual agents of the system to self-organize. The problem that exists is that as cultures become more complex, there is a pattern of increased levels of regulation and authoritarianism which negotiates the autonomy of the individual. As a result, reactions to problems in the built environment are handled by professionals that work behind the scenes to provide solutions. This top-down approach utilized in specialized complex cultures is not able to predict accurate results due to the disconnection with the user.

The results of Silent Urbanism is a natural undisturbed growth of a city, community, or neighborhood. This chapter consists of architectural projects that are designed according to the ideals of Silent Urbanism. The solutions of the thesis are experiments with the role that architectonics could play in awarding more autonomy to the masses.

• • •

Before a design intervention is introduced, it is critical that a site is selected to stage its implementation. According to the concepts of Silent Urbanism where the built environment grows genuinely into its surrounding environment, site selection is a necessary step in the design process

Image: Figure/ground map of site and surrounding areas.



because each site consists of unique environmental conditions that will breed an urban form that it is specific too.

The city of Detroit, Michigan offers interesting opportunities to successfully stage the ideals of Silent Urbanism. One of the reasons for focusing on Detroit is its inability to re-emerge as a thriving city and that it could benefit from a design solution that is concentrated on creating growth. The lack of a reliable governmental system also makes Detroit an appropriate setting for a community based on self-organization. The governmentally provided services become unstable with the cities ageing and deteriorating infrastructures and the ongoing political controversies, giving added incentive for a community to be more self-sufficient.

Within the confines of Detroit, a specific site was chosen located east of downtown. The site was chosen based on the surrounding conditions that present valuable urbanistic opportunities to supplement an effective community. The site is defined by the Dequindre Cut to the west, which offers barrier free connections for the option of walkability. To the south is Gratiot Avenue, which provides the retail opportunities of a commercial strip. Eastern Market and the adjacent areas of new develop are also seen as possible resources for the community. Walking is the most self-sufficient form of transportation. Therefore the size of the community should allow access to all destinations within its borders by foot. The official borders of the community are Mack Avenue to the north, Chene Street to the east, Wilkins Street to the south, and the Dequindre Cut to the west. This gives the site a sufficient area for a walkable community with any two points on the site within a half a mile from each other.

This site will be the stage for the following architectural experiments that were designed according to Silent Urbanist theories. The first experiment is Geodesic City which focuses on further developing the parameters of Silent Urbanism. The Method for Self-sufficient Building aims to provide a building technique whose construction is manageable by the average individual or household. The third and final project is the Infrastructure for Autonomy, which intends to provide a healthy framework for communities to grow off of.



Image: Site and valuable surrounding conditions.







Image: Grossman, Joan and Tom McCourt.
"Drop City" <<http://www.dropcitydoc.com/Home.html>>

GEODESIC CITY

The emergent nature of Silent Urbanism breeds very complex and unpredictable situations. Thus, the purpose of this initial project is to help clarify the possible ambiguities of the theory needed for the introduction of a competent design proposal. Geodesic City was a theoretical exercise used for the development of future design interventions compatible to the concept of Silent Urbanism. The hypothetical community has rendered further detail in the advantages of silence as well as raised new questions and concerns associated with autonomy. The scenario created behind Geodesic City includes a negotiation between the city of Detroit and the future residents where the site becomes disconnected from city services in trade for the communities sovereignty. Under these conditions the city would no longer be responsible for providing such services as vacant land maintenance, potable water supply, electricity, gas, police and fire protection, snow removal and salting, waste management, and the like. In trade, the new community would not have to purchase the land, pay taxes, or adhere to zoning ordinances, building codes and other regulations. This gives people an incentive to move to Detroit while also reducing the area that the city is responsible for providing its services.

The intentional community, Drop City, serves as a precedent for a community that experienced high levels of autonomy. Drop City was founded by Gene Bernofsky, Joan Bernofsky, and Clark Richert near Trinidad, Colorado in 1965 and abandoned only eight years later ⁽¹⁾. Drop City was organized out of its creators determination to break art out of the confines of museums and galleries and integrate it with everyday life ⁽²⁾.

Drop City is perhaps best defined by its architecture, which consisted of a bricolage interpretation of Buckminster Fuller's geodesic domes called "Zomes" ⁽³⁾. The communities inhabitants found geodesic structures to be a highly effective method for building shelters in their self-sufficient condition. The geodesic structures were sturdy, required little resources and skill for construction, and were able to be made from found materials such as steel from the roofs of cars and salvaged lumber. This type of development is significant to communities where the inhabitants possess high levels of autonomy in the fabrication of the built environment. What can be seen in Drop City is the development of an effective building archetype specific to the needs of the user, which is the product of the self-sufficient life style of its inhabitants. Geodesic City will elaborate on this spectacle of innovation along with addressing other aspects of autonomous living.

Like Drop City, Geodesic City is a community that possesses high levels of autonomy. With no hierarchical power managing growth, a natural order takes control of the

⁽¹⁾ Sadler, Simon. "Drop City Revisited". *Journal of Architectural Education*. 2006. pg 6

⁽²⁾ Grossman, Joan and Tom McCourt. "Drop City" <<http://www.dropcitydoc.com/Home.html>>

⁽³⁾ Sadler, Simon. "Drop City Revisited". *Journal of Architectural Education*. 2006. pg 5

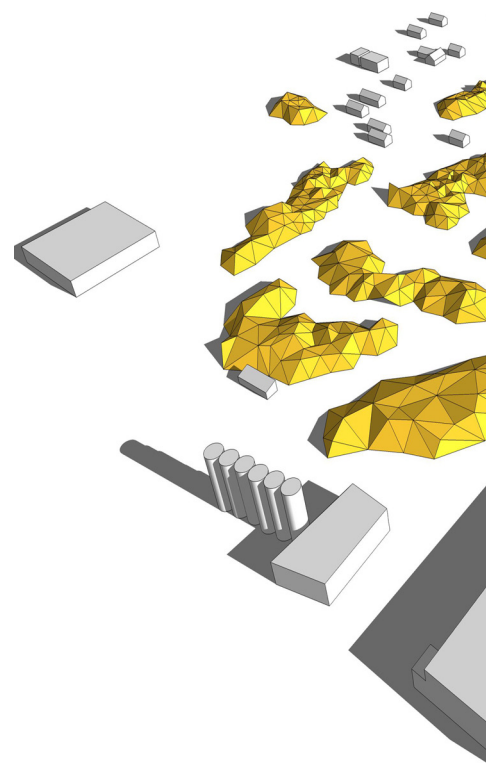
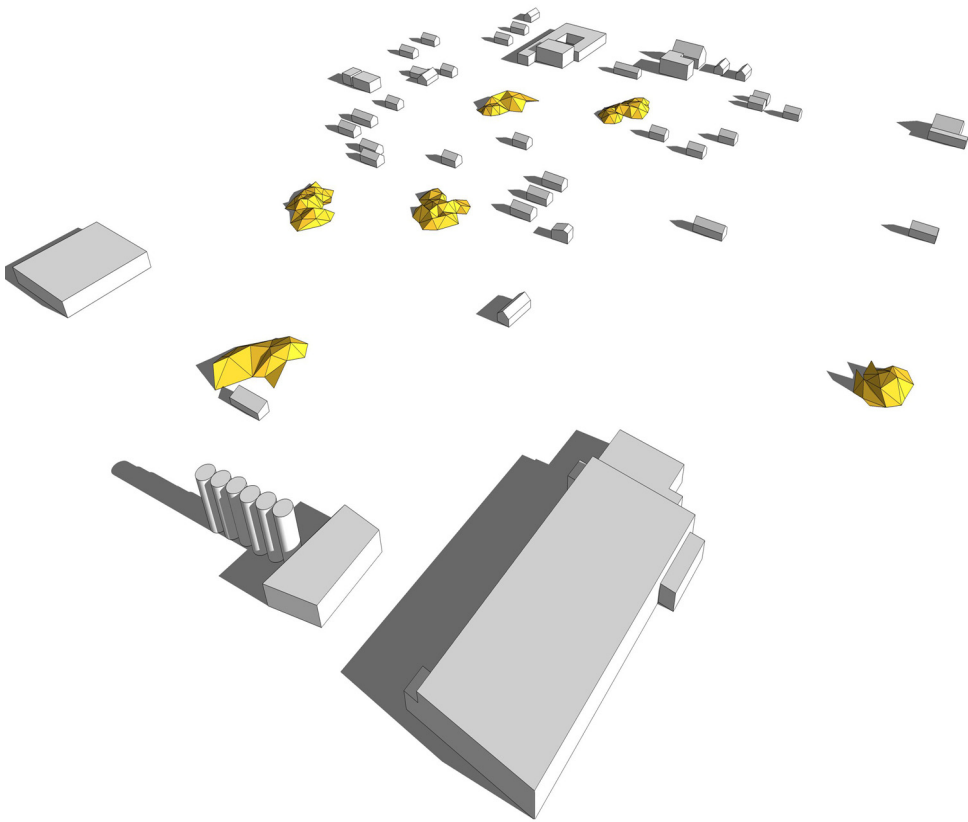
organization of the built environment instead of a specialized designer. The community is predicted to take its shape in a similar way that the desire line creates the most effective routes between destinations or how a tree extends its limbs for the most direct exposure to the sun, whose forms are both a result of organic growth instead of strategic planning. Thus, it is hypothesized that the community's autonomy includes not only independence from Detroit's municipal systems, but also an ignorance towards the obstacles and distractions of cultural constructions. This means that such abstractions as nostalgia, dignity, morality, traditions, conventions, routines, trends, and styles would not have an influence on the shape of the built environment due to the naive condition of the designers.

The Webster Dictionary definition of geodesic is "The shortest line between two points that lies in a given surface." This implies that there are no obstacles in the way of achieving the most effective course in the development of the built environment. In Geodesic City, this definition transcends itself onto three different scales. Geodesics begins at the scale of the individual with geodesic structures being the anticipated building type. Geodesic structures are a highly effective method of building. When compared to more conventional construction techniques, geodesic structures are stronger, use less materials, and can be erected by a small crew with no heavy machinery. Unfortunately, they are rarely used because building codes, off the shelf building materials, a general unfamiliarity with their assembly, and the overall peculiarity from conventional buildings, make them difficult to introduce into the built environment. But under the circumstances of Geodesic City (and Drop City) where these factors are irrelevant due to the communities independence from these culturally defined influences, there is the ability to implement the most effective way of building.

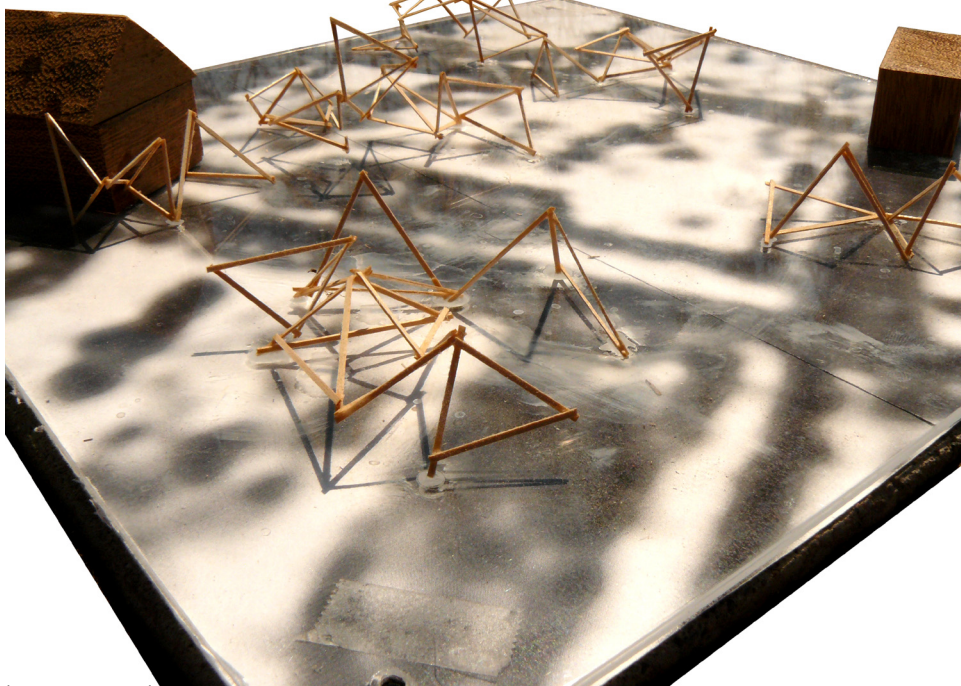
Geodesics can also manifest itself on the scale of the community. When liberated from previously established infrastructures, the grid would be challenged and more direct paths would link destinations. Geodesics can also have an impact on the regional scale. The geodesic concepts that developed out of an autonomous community have the potential to be beneficial when integrated into the rest of a culture if located in an urban context. Simon Sadler described Drop City as, " a creative laboratory for cultural and environmental praxis," ⁽¹⁾ In the cases of both Drop City and Geodesic City, since the community does not have the obstacles seen in less autonomous cultures, they are able to develop more creative, outside of the box ideas. These concepts can then be inserted and beneficial for the surrounding neighborhoods.



Geodesic City: sequence of growth



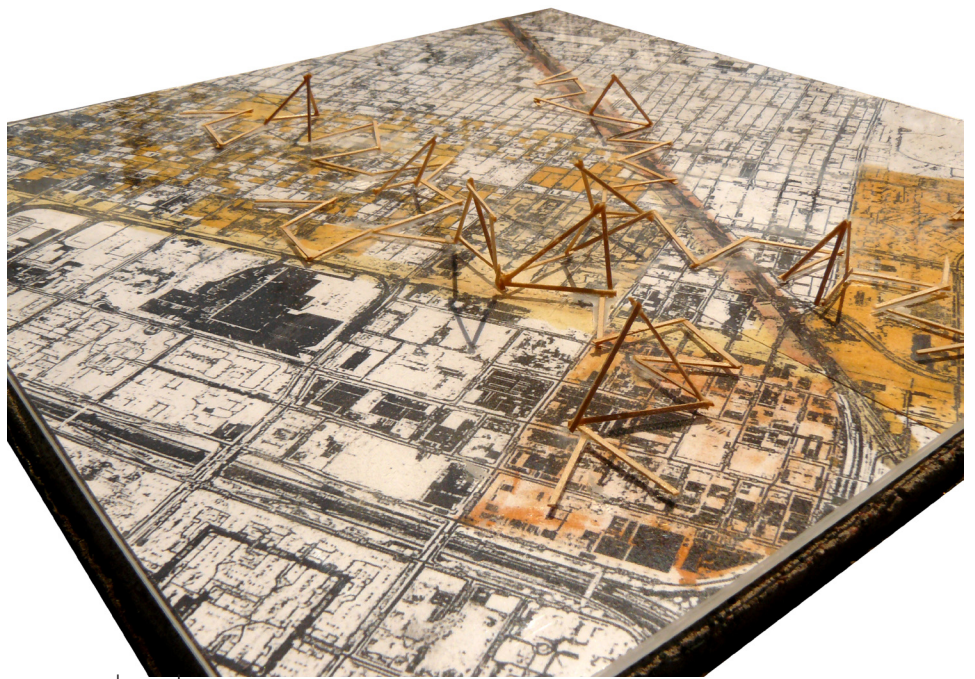
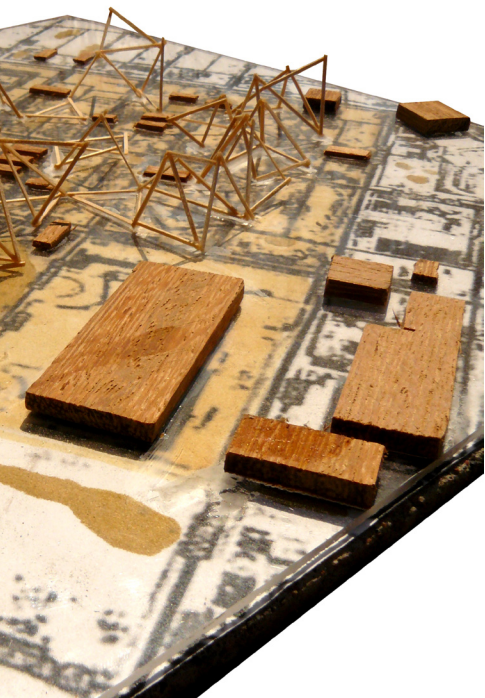
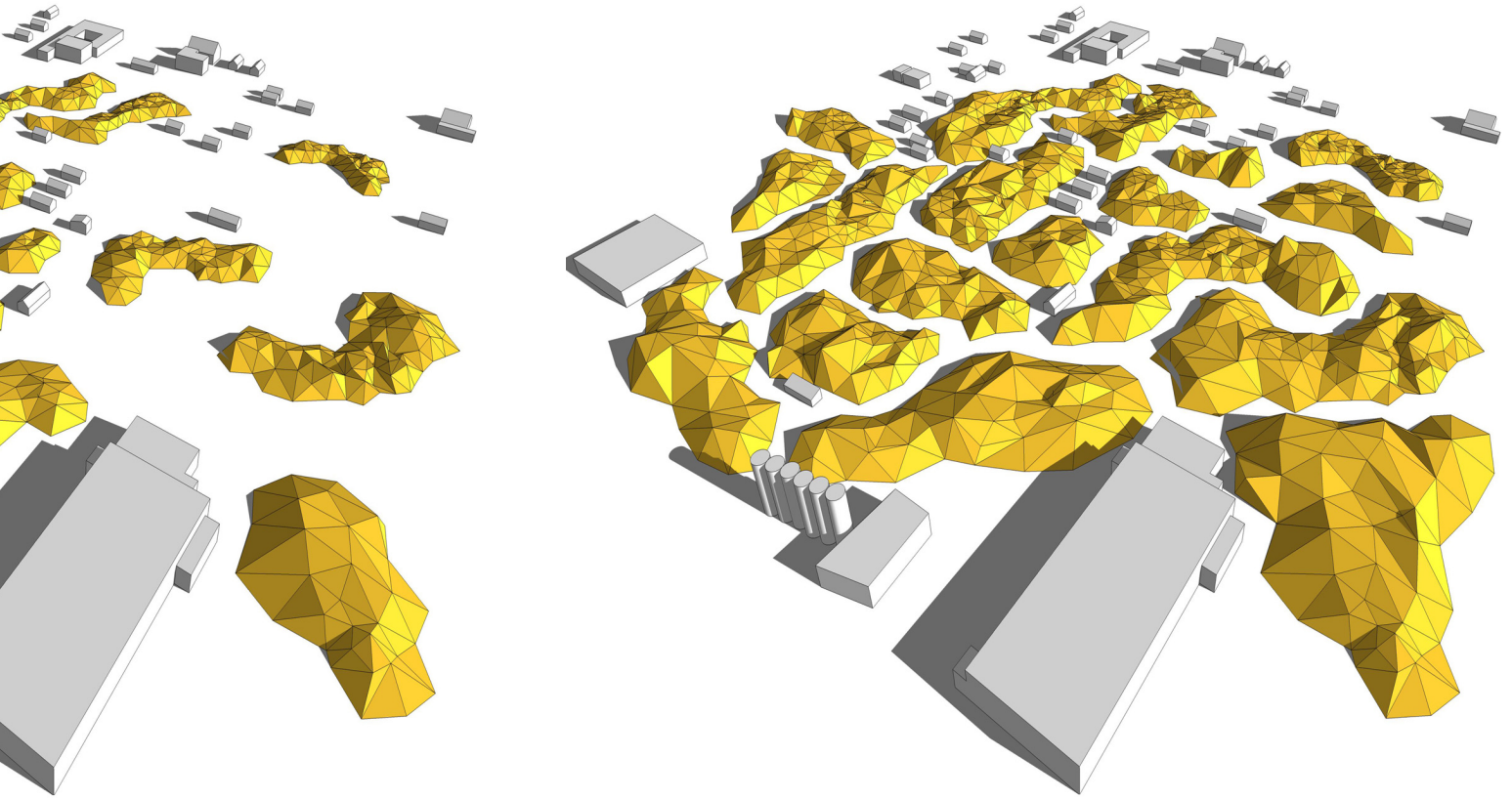
3 scales of geodesics



human scale



community scale



regional scale

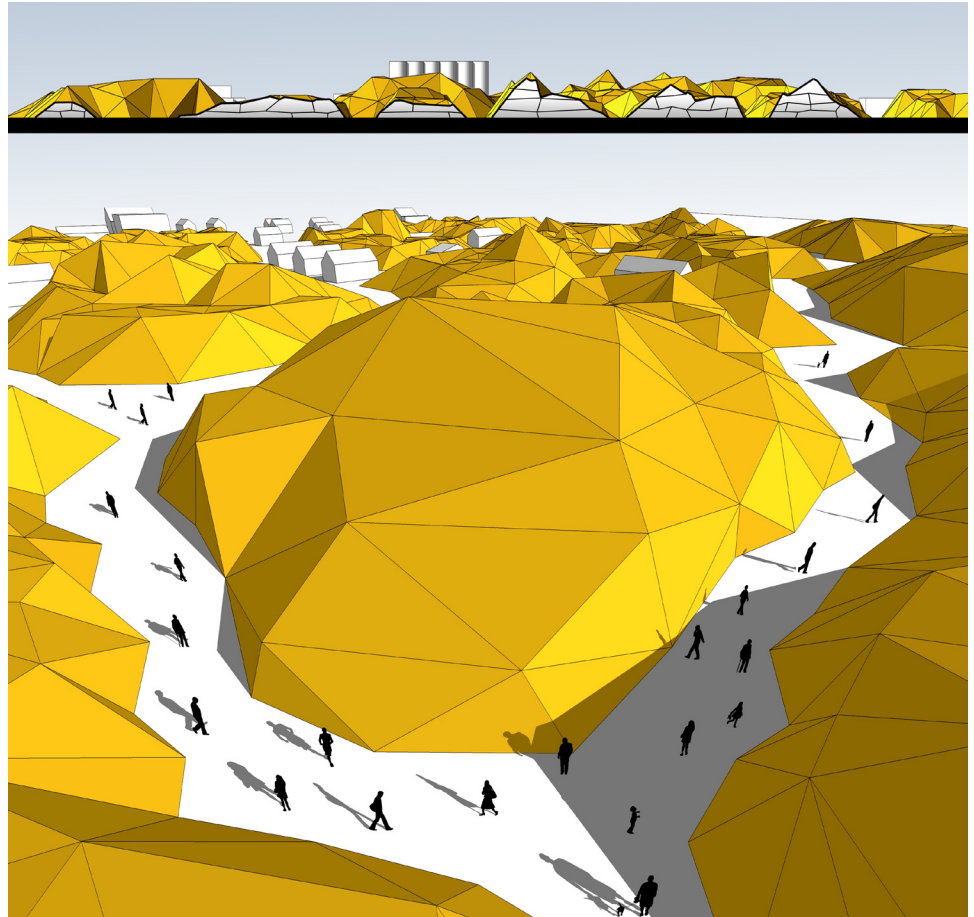


Image: Aerial view and site section of Geodesic City.

LEARNING FROM GEODESIC CITY

The typical top-down analytical and design approach (found in meteorology and architecture) is very difficult to perform when it comes to complex systems. Thus, instead of a highly planned approach towards the built environment where there is a lot of room for error, an architecture that emerges possesses higher levels of effectiveness because of its ability to grow into its surroundings. Additionally, the force that allows for bottom-up growth is the autonomous choices of the masses instead of a single pace making agent. This type of growth in the built environment has been explored in the hypothetical scenario of Geodesic City and has also been observed in actual cities that have experienced highly accelerated expansions in populations. These precedents can help to further reveal the outcomes of autonomous communities.

One of the earlier cities that experienced the effects of emergence was Manchester, England. Manchester's location among several important water ways and its booming wool industry helped to make it the first city of the industrial revolution. Between 1700 and 1850 the industrial takeoff that the city experienced bred an unprecedented form of urban organization⁽⁴⁾. The emergence of a new breed of city was triggered by an increase of population that was so drastic, that the growth could not be controlled by authorities. Therefore, the organization of the city was based more on the autonomous choices of the masses instead of the decisions of politicians, planners, architects, and engineers. The city was messy and grew out of chaos instead of being neat and derived from order.

⁽⁴⁾ Johnson, Steven. *Emergence: The Connected Lives of Ants, Brains, Cities, and Software*. New York: Scribner, 2001. pg 34

⁽⁵⁾ *Ibid.* pg 35

The Manchester's scenario is arguably the least planned and most chaotic city in the six-thousand-year history of urban settlements⁽⁵⁾, resulting in consequences that

were both positive and negative. Alexis de Tocqueville states, “from this filthy sewer pure gold flows,” and “here civilization works its miracles, and civilized man is turned back almost into a savage ⁽⁵⁾.” Manchester was noisy, polluted and massively overcrowded, but also was the pioneering city that defined the future of urban form and a way of life for industrialization ⁽⁵⁾. Friedrich Engels discusses this juxtaposition in his book, *The Condition of the Working Class in England*. He describes the streets of the working class neighborhoods as “narrow and tortuous” and the houses as “dirty and tumble-down” that are so dense that there is not an inch to spare between them. On the other hand, he also shows a fascination with how the city is organized. He is intrigued by the highly sophisticated organization of neighborhoods and how they are a result of tacit agreements between classes and not according to a overall plan ⁽⁶⁾. Thus, although the autonomous growth of Manchester created poor living conditions in the neighborhoods of the lower classes, it also resulted in an organic development of communities.

Today, similar situations exist in some of the world’s mega cities where populations are booming at an uncontrollable pace. Because of the growth frenzy, much of the migrating populations culminate in slum neighborhoods. Mumbai, India for example, is experiencing mass migrations of populations from its surrounding agricultural villages, which has resulted in the development of multiple slum neighborhoods. The biggest of these neighborhoods to develop is Dharavi. Dharavi is located in the heart of Mumbai, with a population of around one million and nearly eighteen thousand people per acre ⁽⁷⁾. Like Manchester, the community is also emergent in character. Dharavi, along with other slum neighborhoods in developing countries, are built by the residents themselves. The built environment of Dharavi experiences growth that is informal and impromptu, with no defined authority controlling development.

Like Manchester, Dharavi also has its positive and negative attributes. Dharavi is undeniably overcrowded, unhealthy, and an emblem of profound inequality, but it should also be realized that they possess unique strengths that could hold lessons for successful urban development ⁽⁸⁾. Prince Charles of England founder of The Foundation for the Built Environment praised Dharavi for its “underlying, intuitive, ‘grammar of design,’” and “the timeless quality and resilience of vernacular settlements.” He even makes the prediction that “ in a few year’s time such communities will be perceived as best equipped to face the challenges that confront us because they have built-in resilience and genuinely durable ways of living ⁽⁸⁾.” The people of slums possess an admirable enterprising spirit with their little businesses and constant upgrading of homes. Longstanding neighborhoods are tight knit when compared to many other communities of the developed world. They even constitute many of the attributes intended by such recent movements as New Urbanism like walkability, high-density, and mixed use buildings. Furthermore, their resourcefulness and reuse of materials makes them a model for ecological sustainability as well ⁽⁸⁾. Most importantly, where top-down approaches struggle to achieve many of these assets, slum neighborhoods like Dharavi accomplish them naturally with no form of outside intervention.

Thus, there is a conflict between improving standards of living while still preserving the benefits of the self-organized built environments of Manchester and Dharavi. The objectives of the following design proposals of the thesis is to preserve the richness of possibilities that result in bottom-up growth while also maintaining a higher standard of living by making it the designer’s responsibility to deter the negative results. But, instead of high levels of totalitarian planning for addressing these problems, the designers role is more silent with controlling initial conditions of which the built environment will emerge.

⁽⁶⁾ Engels, Friedrich. *The Condition of the Working Class*. London: Swan Sonnenschein & Co., 1892. pg 55

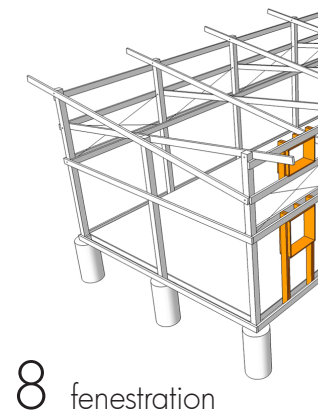
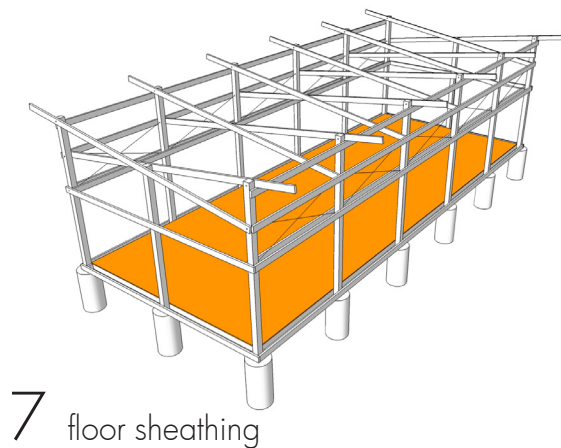
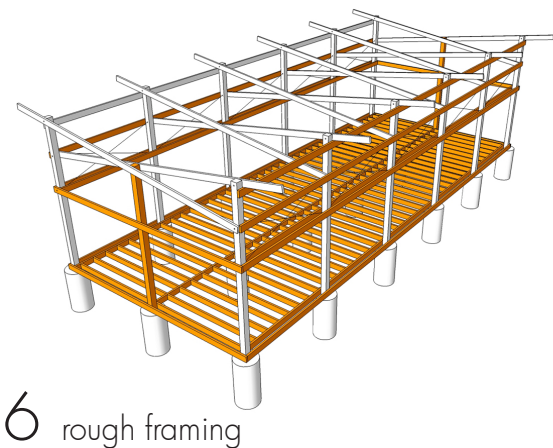
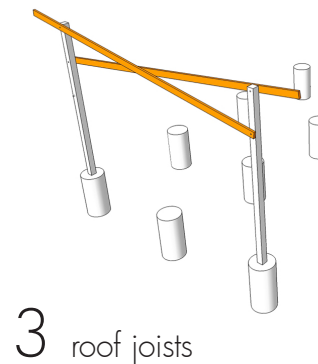
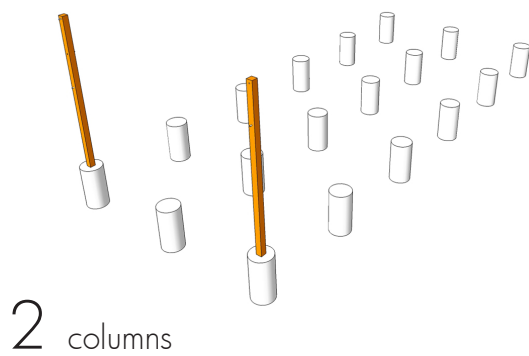
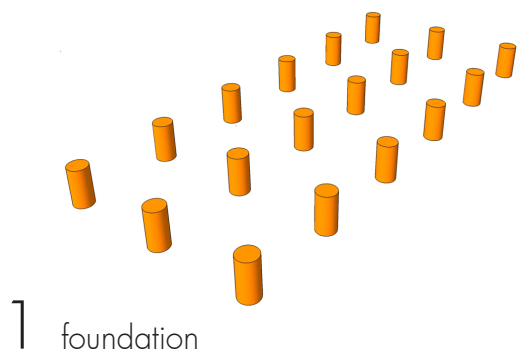
⁽⁷⁾ Jacobson, Mark. “Dharavi: Mumbai’s Shadow City”. *National Geographic*. May 2007

⁽⁸⁾ Dubrow, Rebecca Turos. “Learning From Slums”. *The Boston Globe*. 1 March 2009

METHOD FOR AUTONOMOUS BUILDING

The second experiment with Silent Urbanism is a reaction to the conditions exposed by Geodesic City. The Method for Self-sufficient Building is an attempt to seek the appropriate level of design so to provide the amenities for a quality standard of living while still granting the individual more autonomy in the development of the built environment. The system aims to achieve this objective in two different ways.

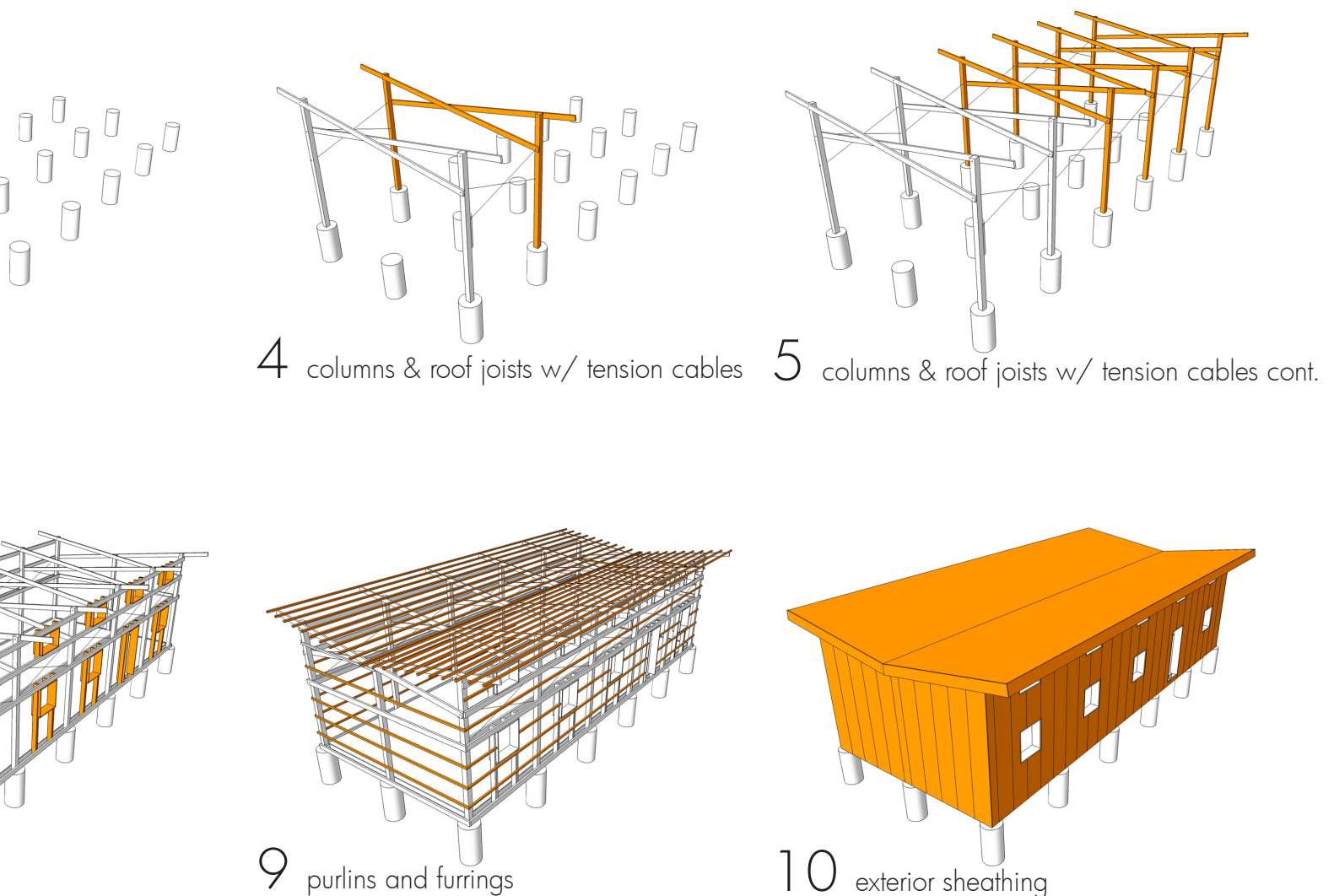
The first means of which autonomy becomes more available with this building mechanism is that it is capable of being designed and built by the average individual or household which liberates the implementation from any pace making agents. The goal of this strategy was to simplify the design and building process (see sequence at the bottom of this page). An initial influence in developing this objective was pole barn construction. Pole barn construction is a building method currently practiced that can typically be understood and built by nonprofessionals. Like pole barn construction, the Method of Self-sufficient Building utilizes a heavy timber and furring assembly. The proposed system also uses a similar column and foundation spacing. To further simplify the construction process, the systems structural members are based off of a ten foot by ten foot grid and utilize only



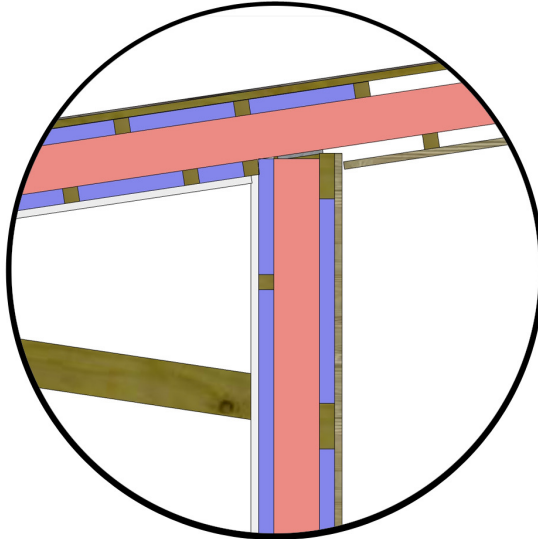
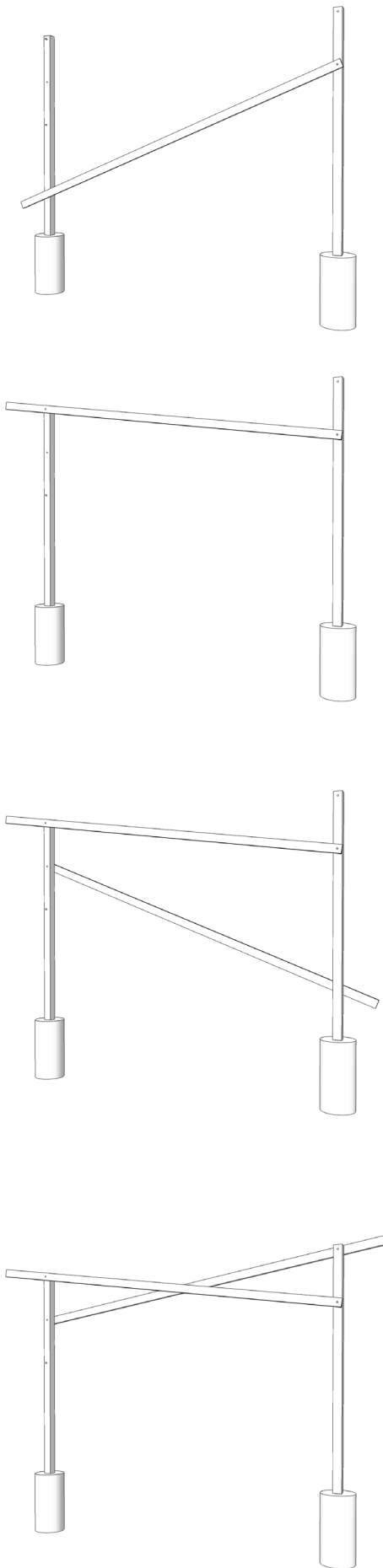
three sizes of dimensional lumber. A unique design for the roof assembly, which utilizes pivoting connections, also aims to make the method more self-sufficient (see sequence on next page). Additionally, interior partitions and fenestration are independent from the structural system, allowing them to be placed empirically and making the preparation of technical plans unnecessary.

The second way autonomy is integrated into this building mechanism is the ability to be highly independent from municipal systems. In this case the building itself is autonomous. This mechanism consists of both passive and simplified active environmental systems. The system has the ability to control how the sun and air movements penetrate the building, resulting in the ability for passive heating a cooling. The roof captures rain water which is then stored in a suspended cistern inside the building and gravity is then used to create water pressure for plumbing fixtures. Propane and wind energy also offer an energy source that is autonomous from any municipal systems.

The Method for Self-sufficient Building could be used for multiple building functions. Pages 44-47 demonstrate how the mechanism may be applied to a single family home or a small business such as a laundromat .



re-establishing silence

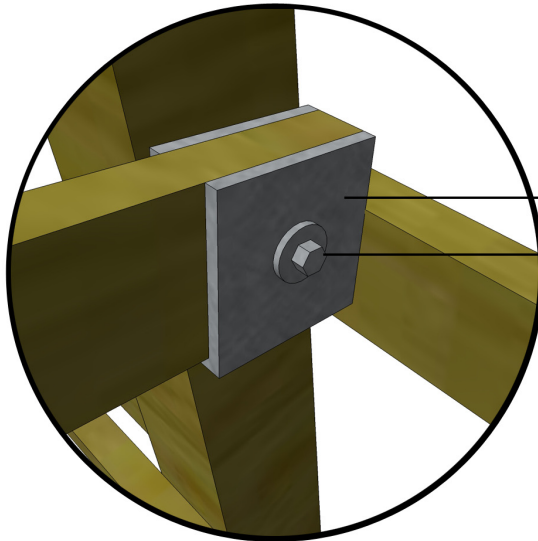


asphalt shingle roofing
on plywood sheathing

electric coil heating
mechanism

2x2 purlin

2x6 roof joist



gypsum board

steel channel

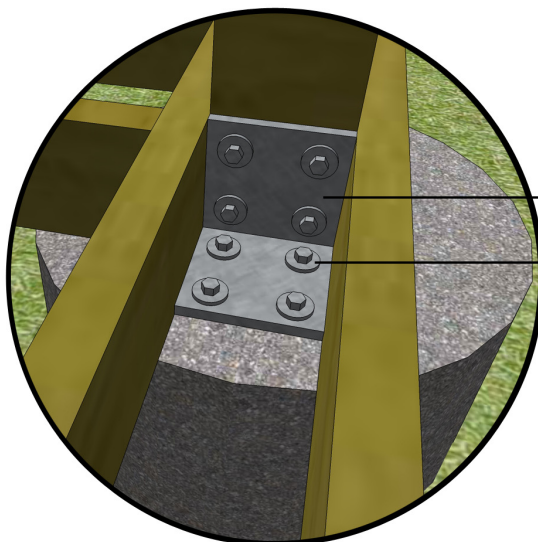
bolted connection

2x2 furring

2x6 header

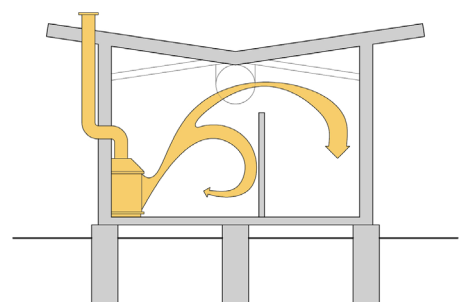
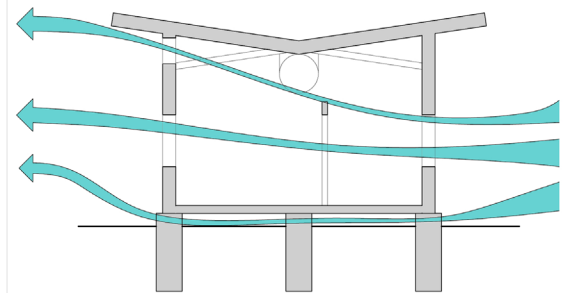
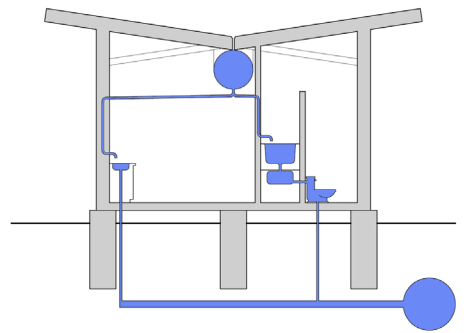
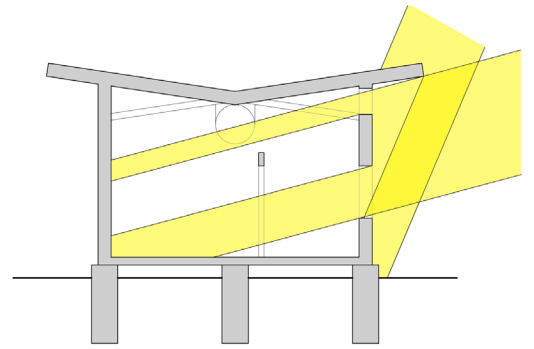
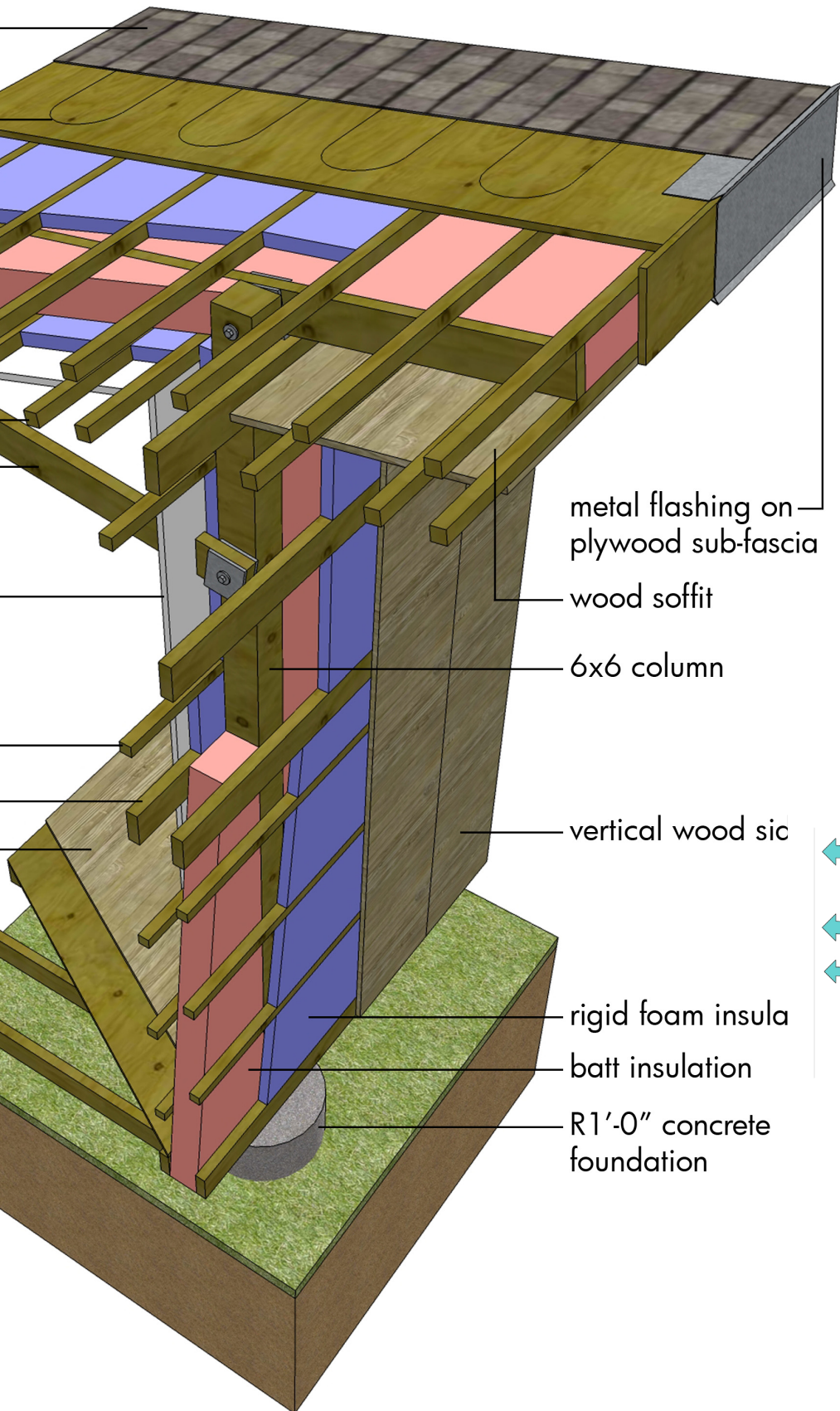
wood finish flooring
on plywood sheathing

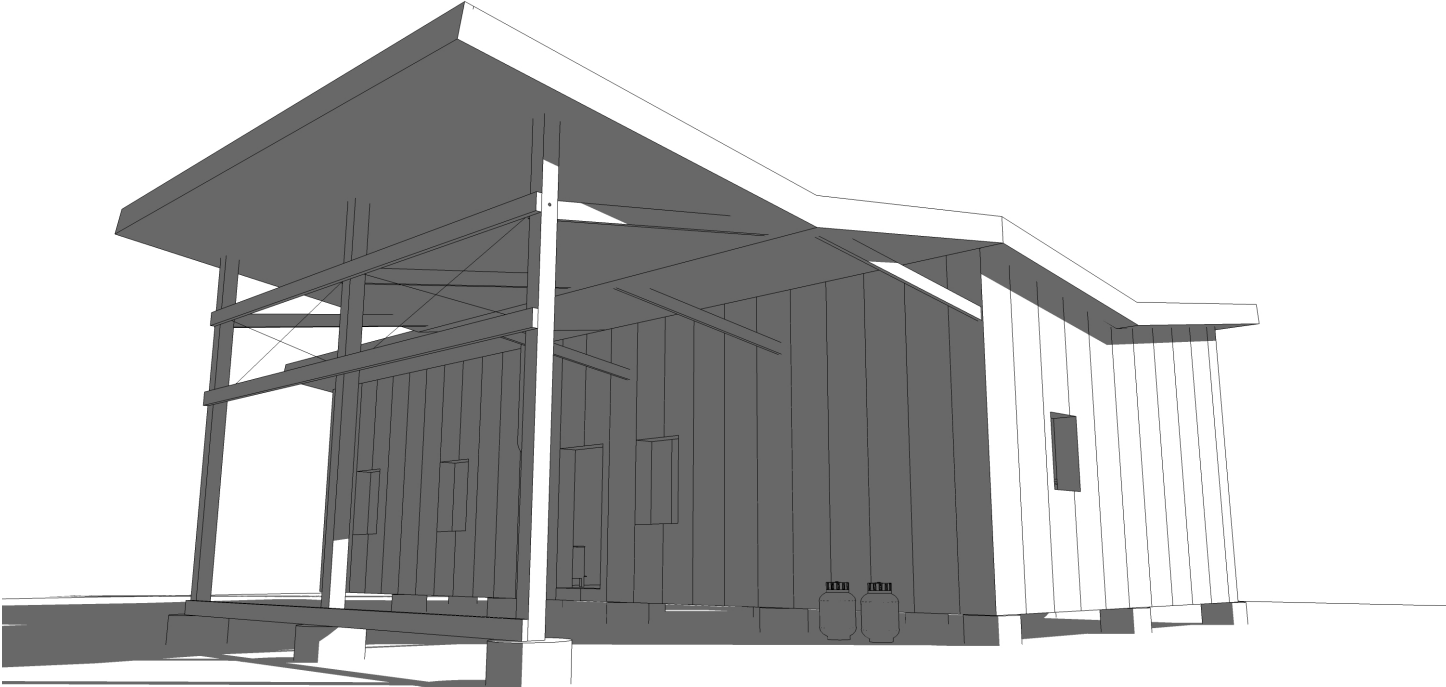
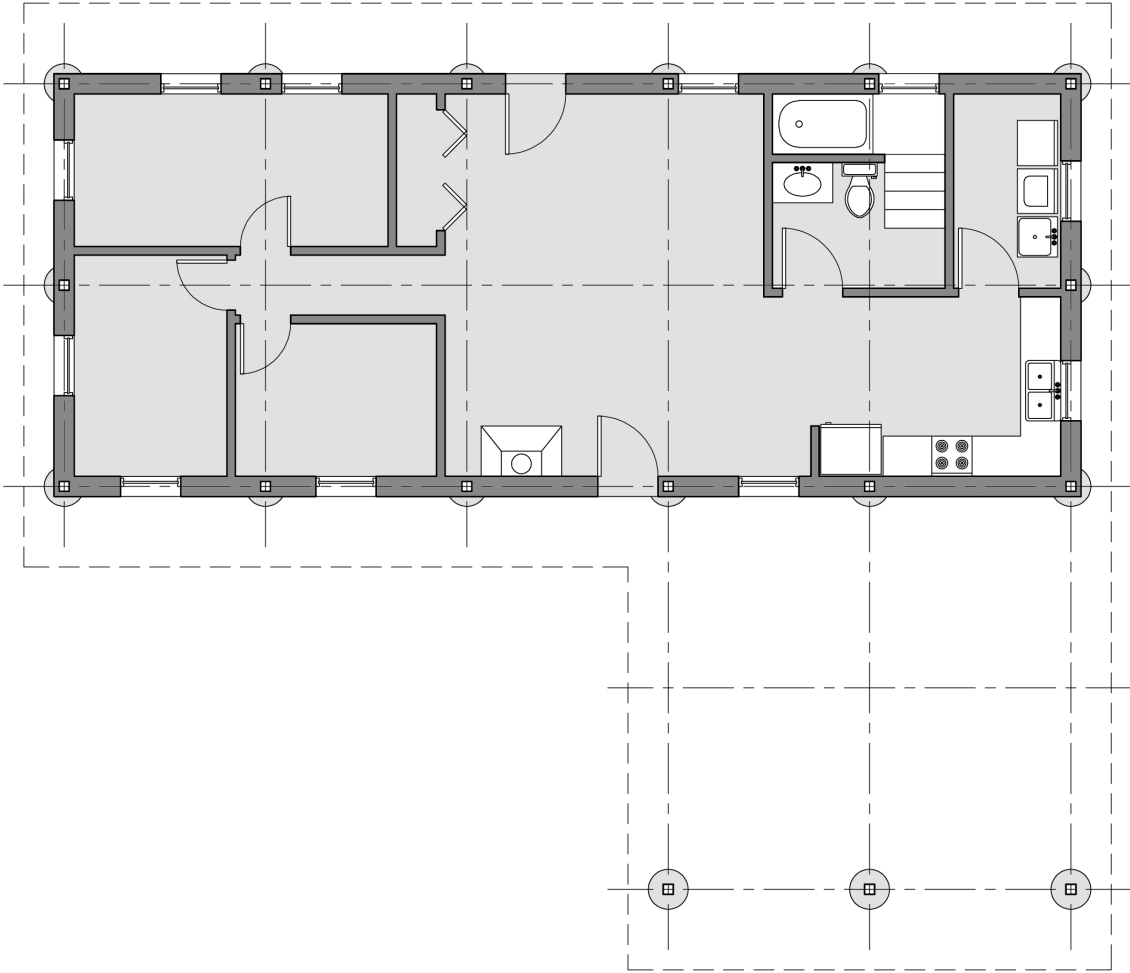
2x6 floor joist



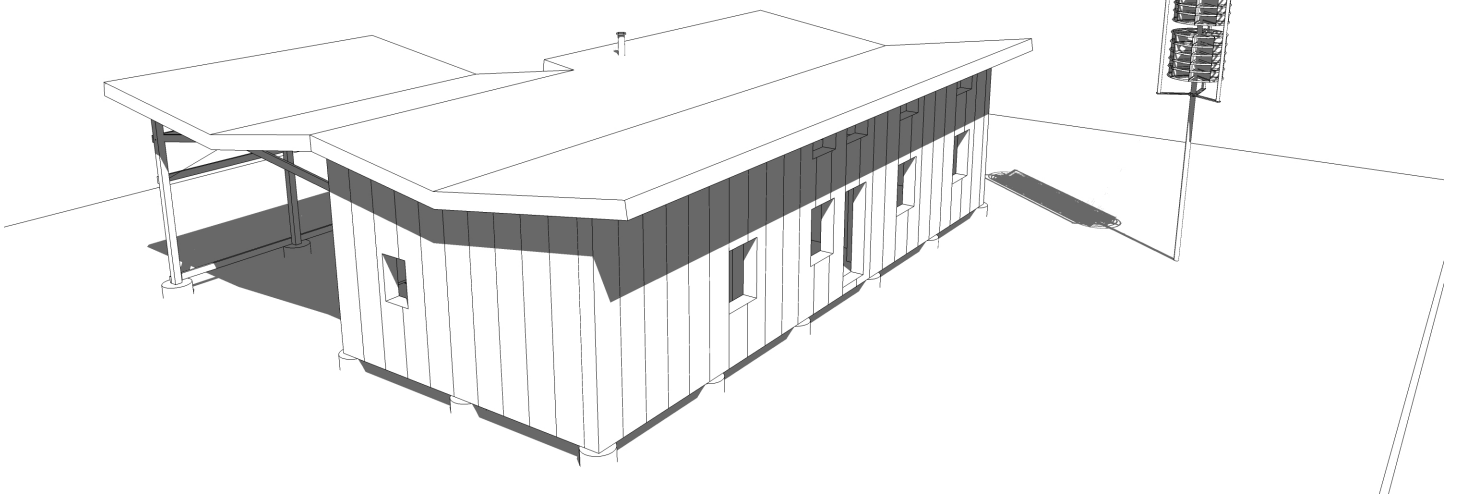
steel angle

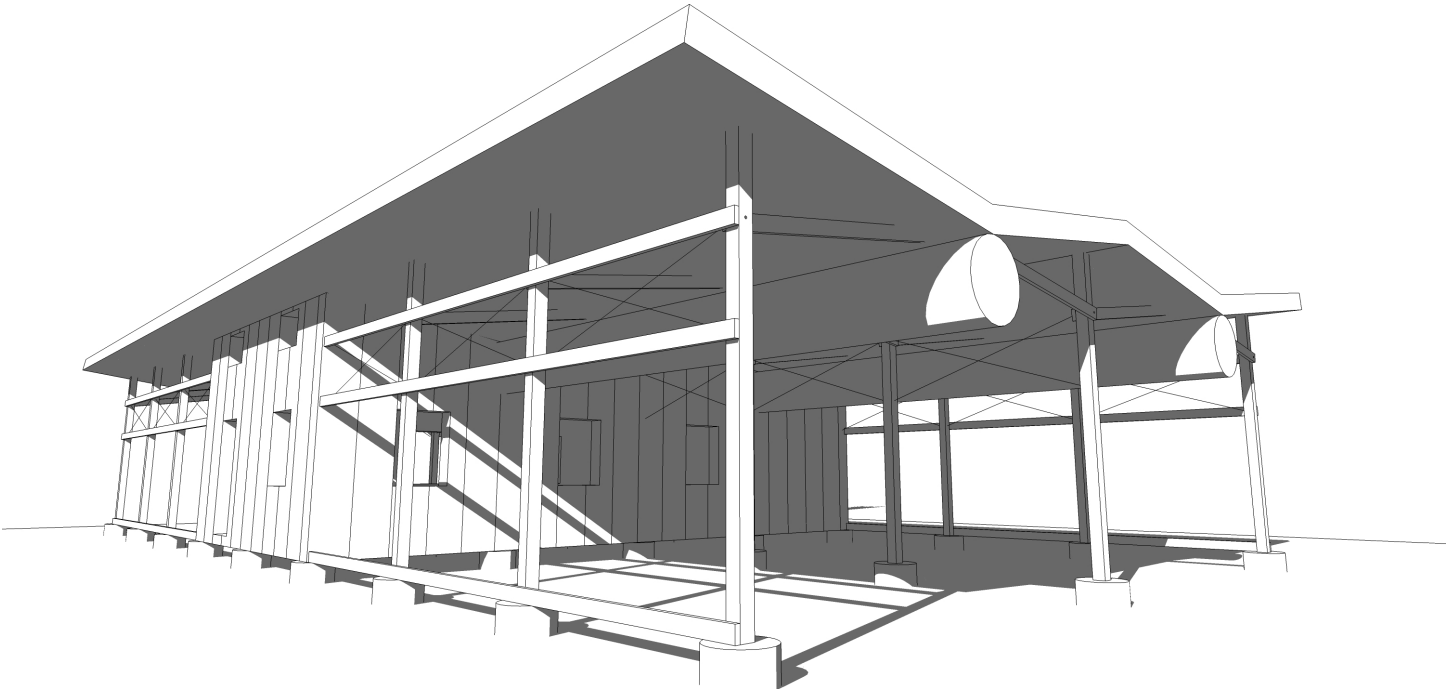
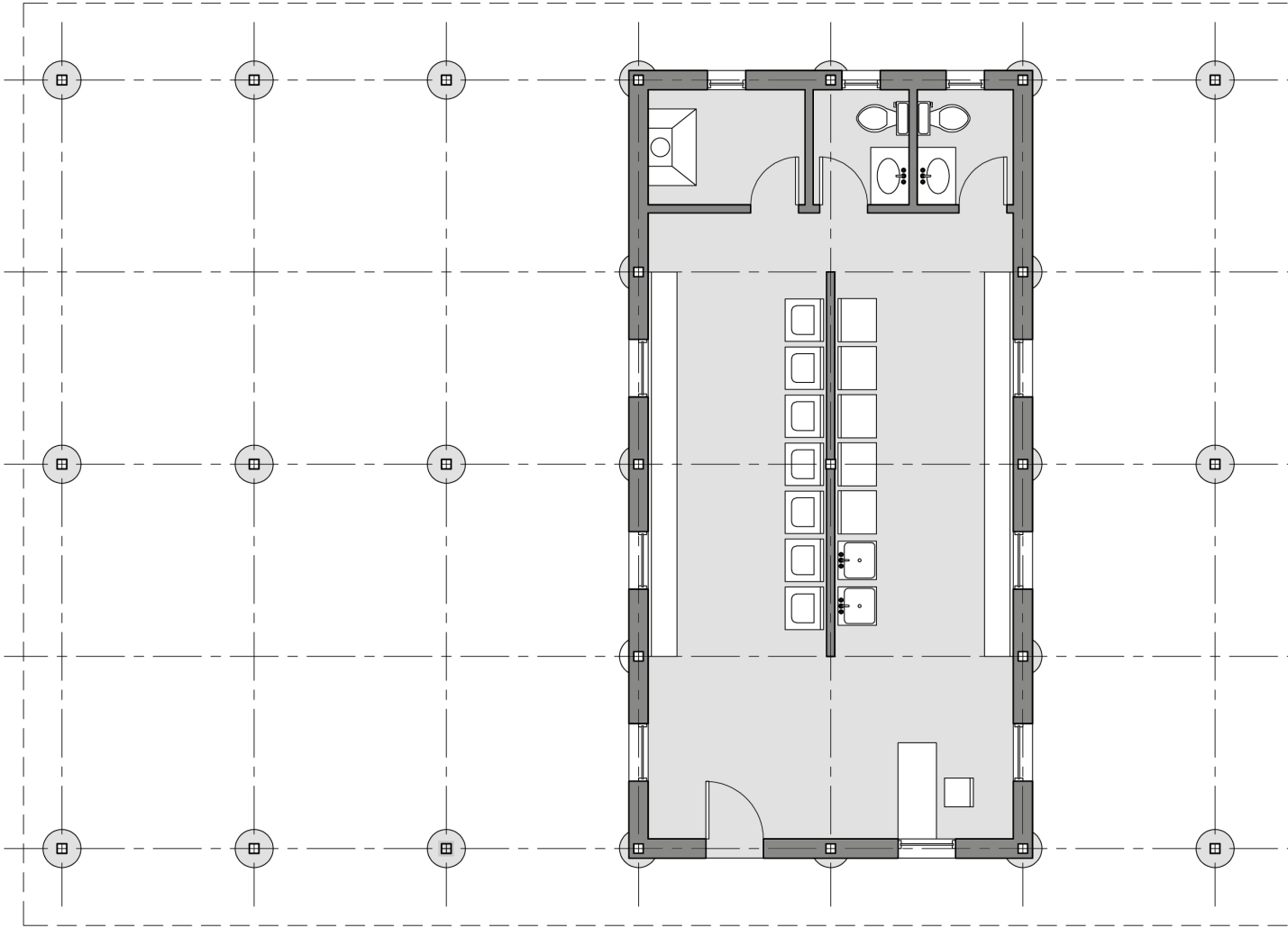
bolted connections

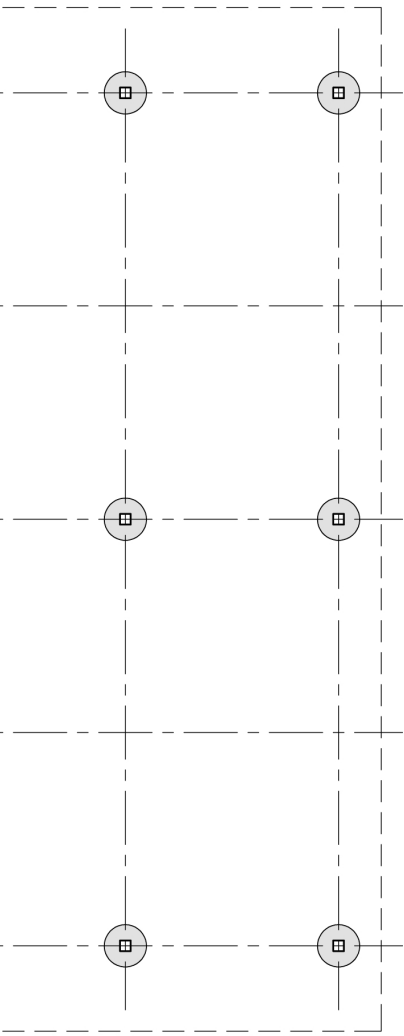




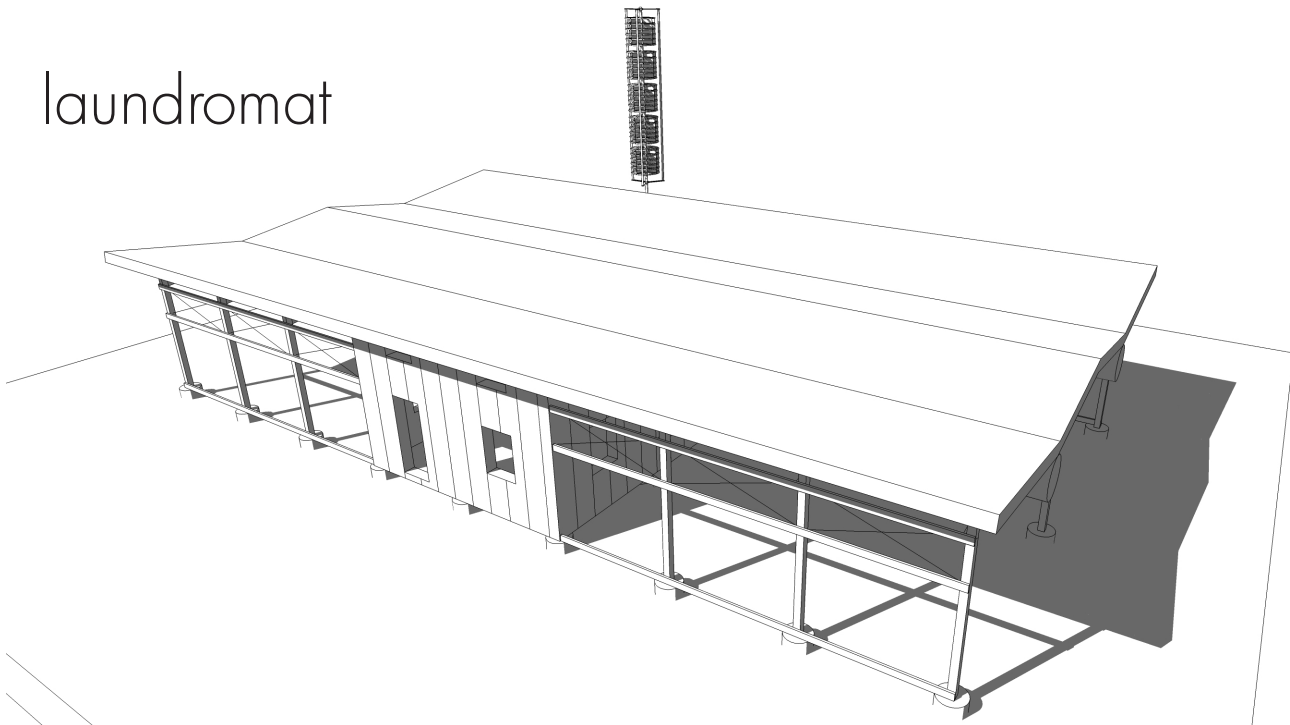
single family resident







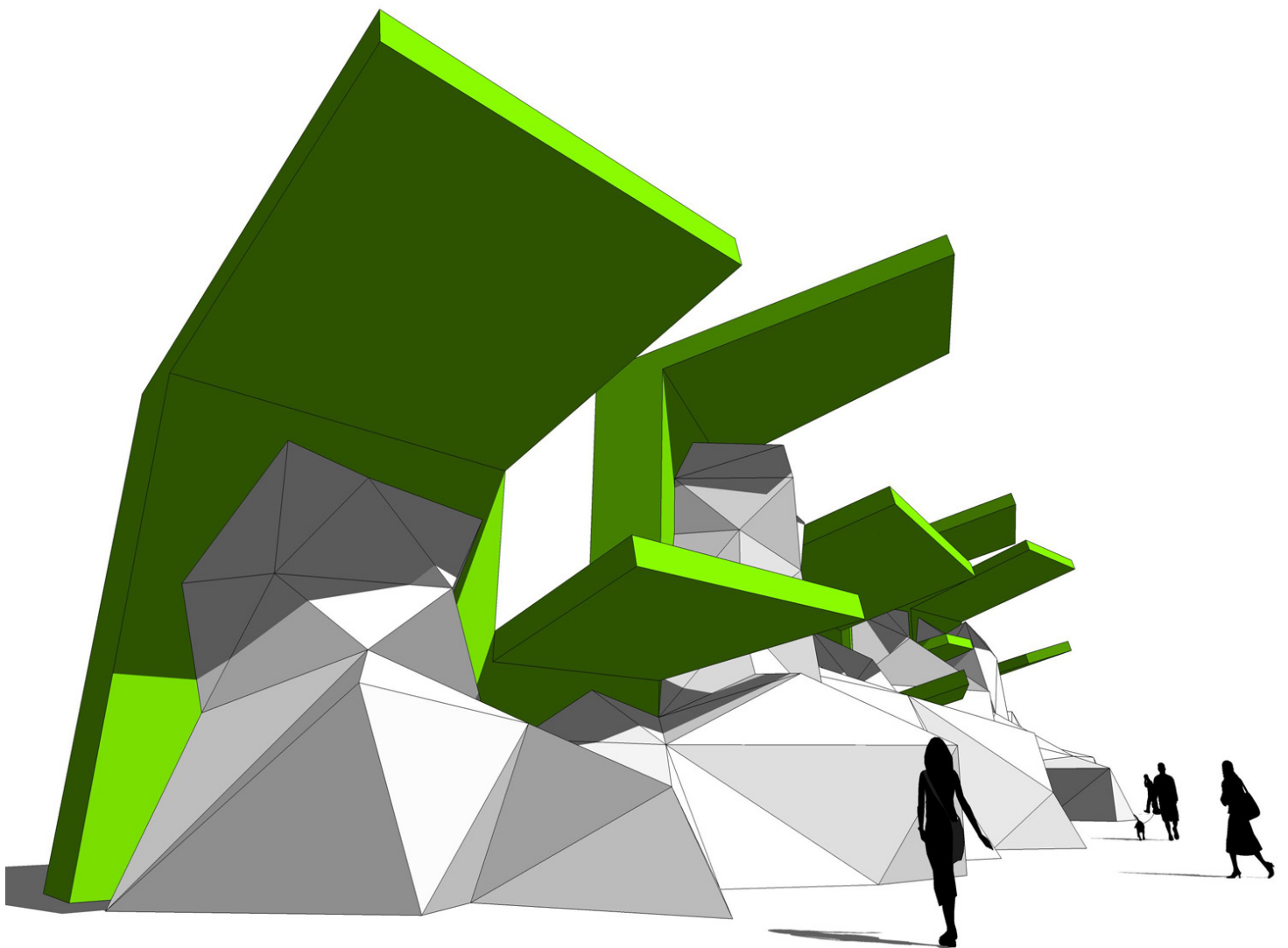
laundromat

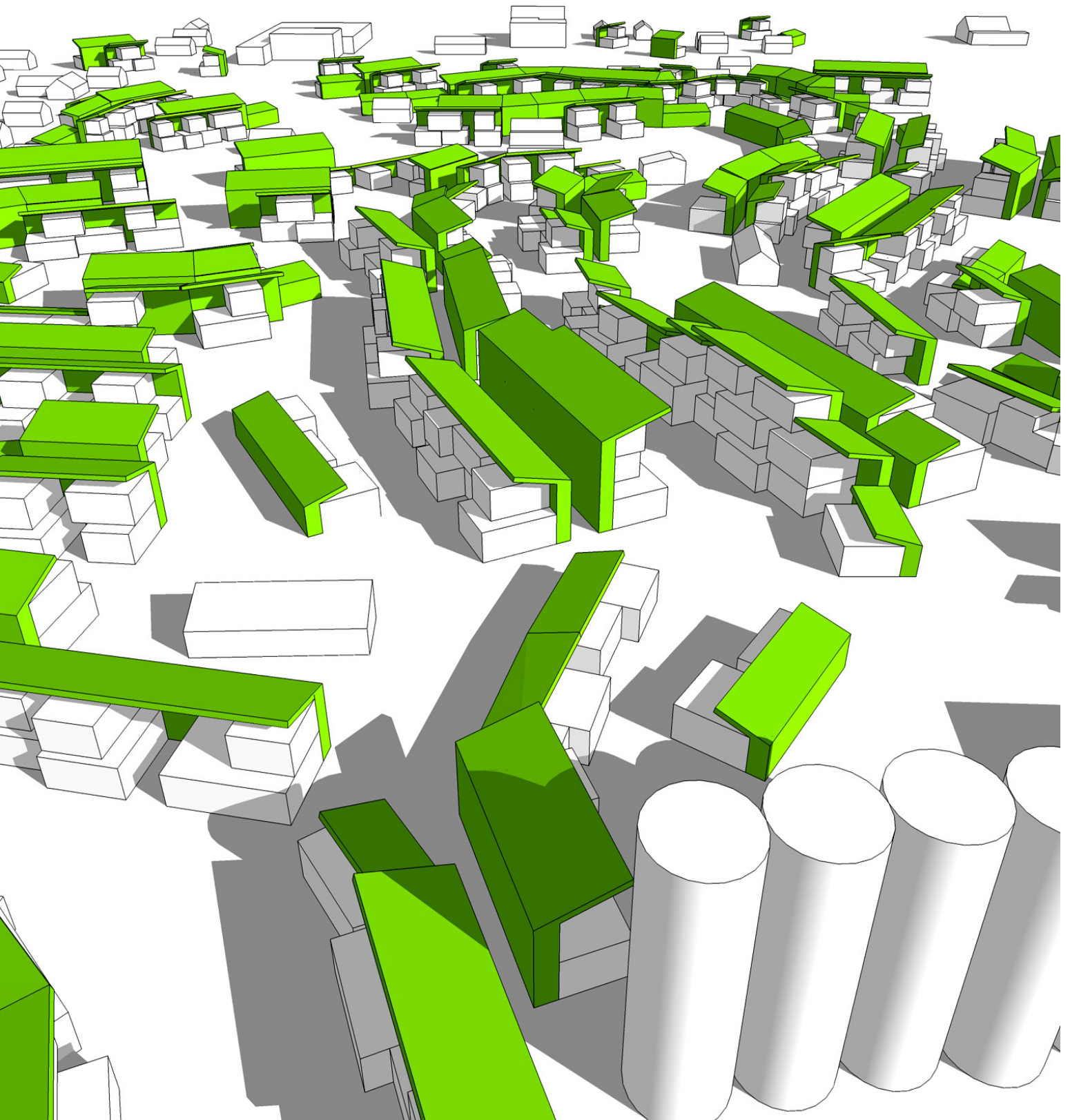


INFRASTRUCTURE FOR AUTONOMY

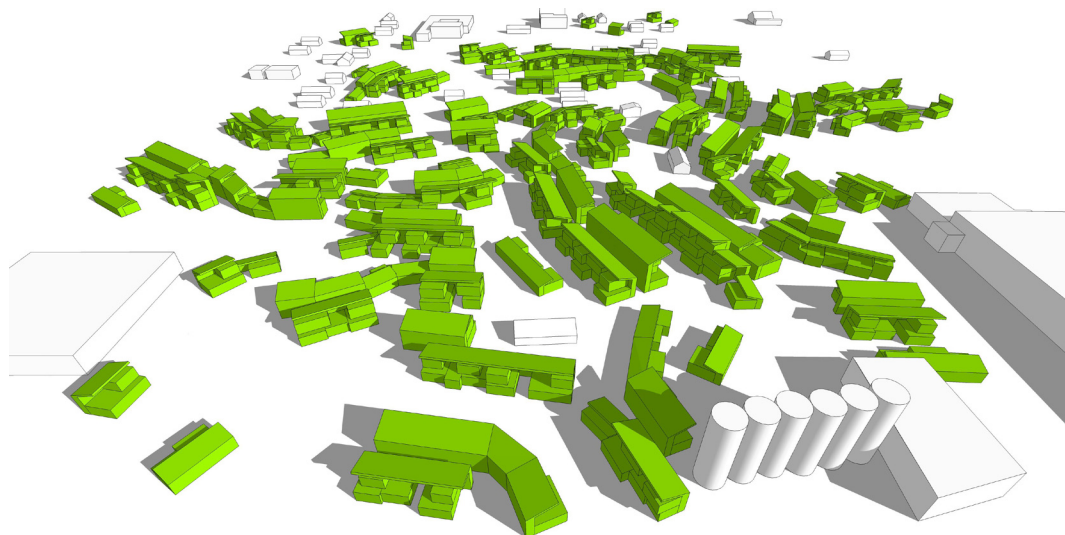
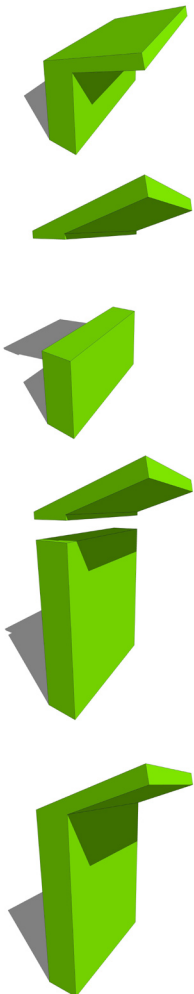
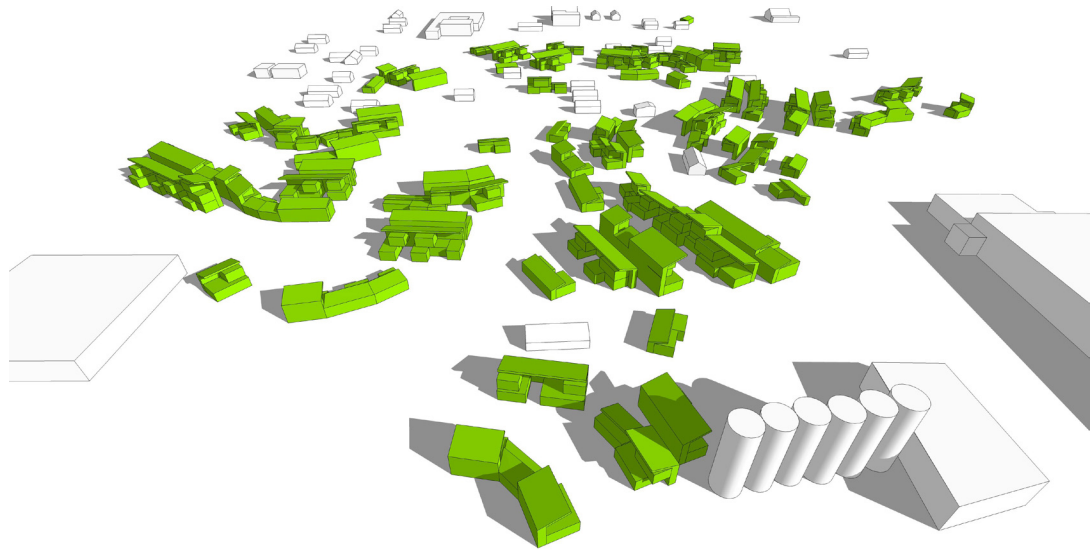
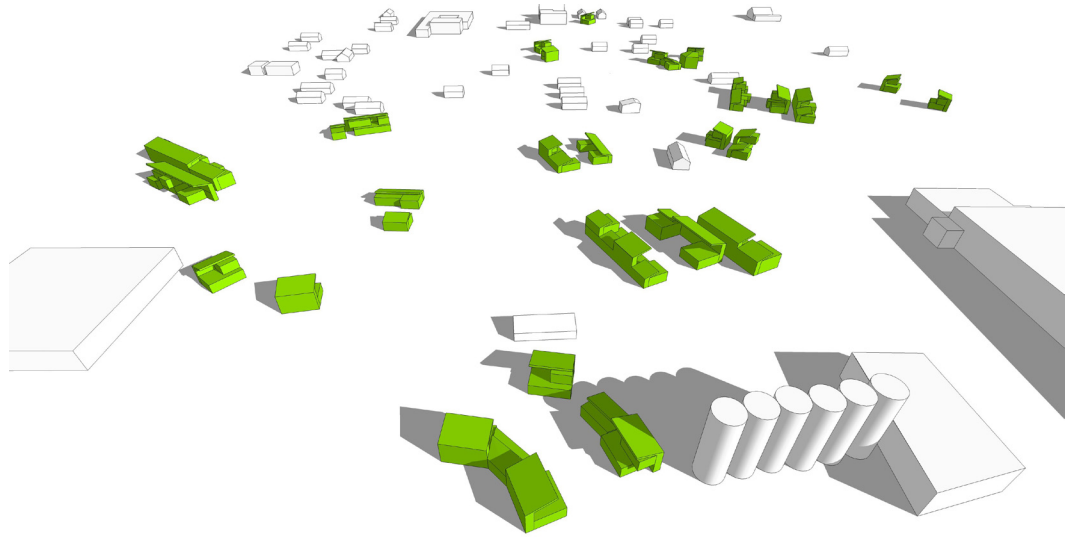
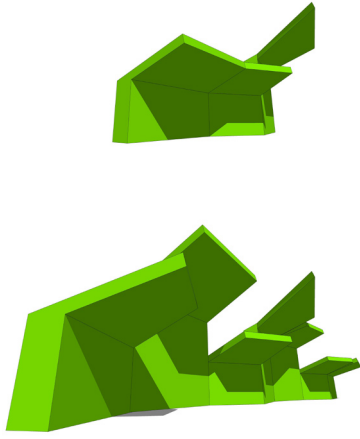
Like the Method for Self-sufficient Building, this project also concentrates on finding a level of sensitivity that the designer should have in order to allow for the potentials of self-organization while still providing quality living conditions. But instead of providing a method of construction, the Infrastructure for Autonomy takes a slightly different approach by offering an sustainable platform from which effective communities could grow. The proposal consists of a spine like structure, that provides sustainable solutions for rainwater harvesting, ventilation, heating, cooling, and waste processing that buildings would then attach themselves to. The Infrastructure for Autonomy would also be dynamic in the sense that it could expand and contract so that it would be able to grow alongside the desires of the community.

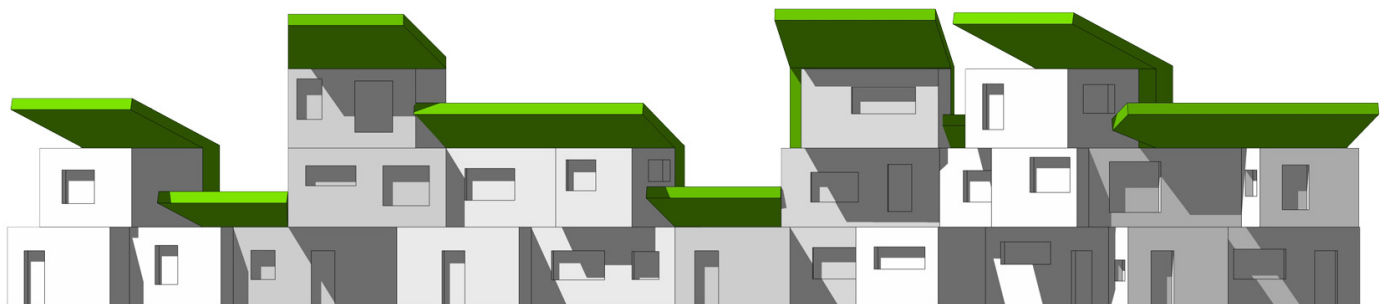
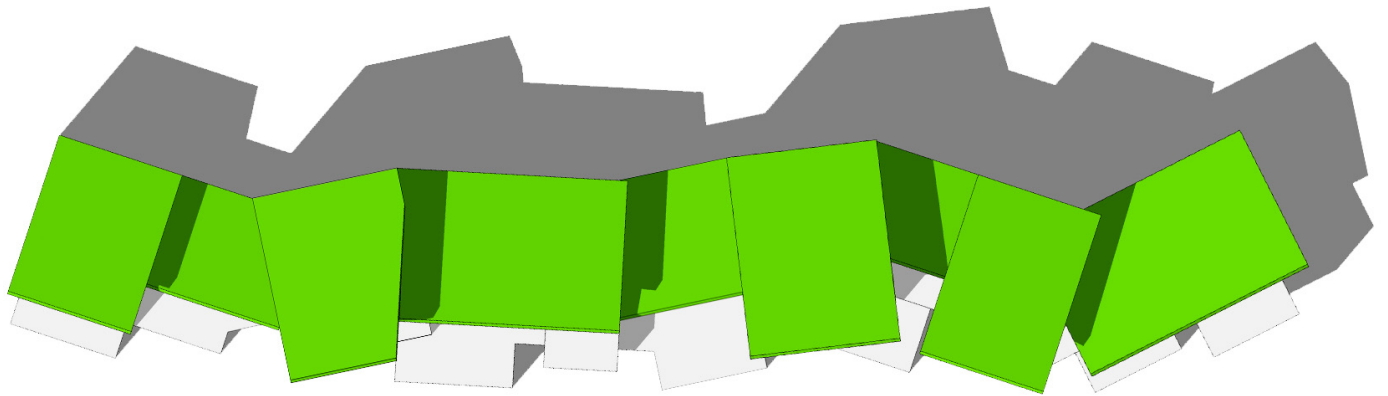
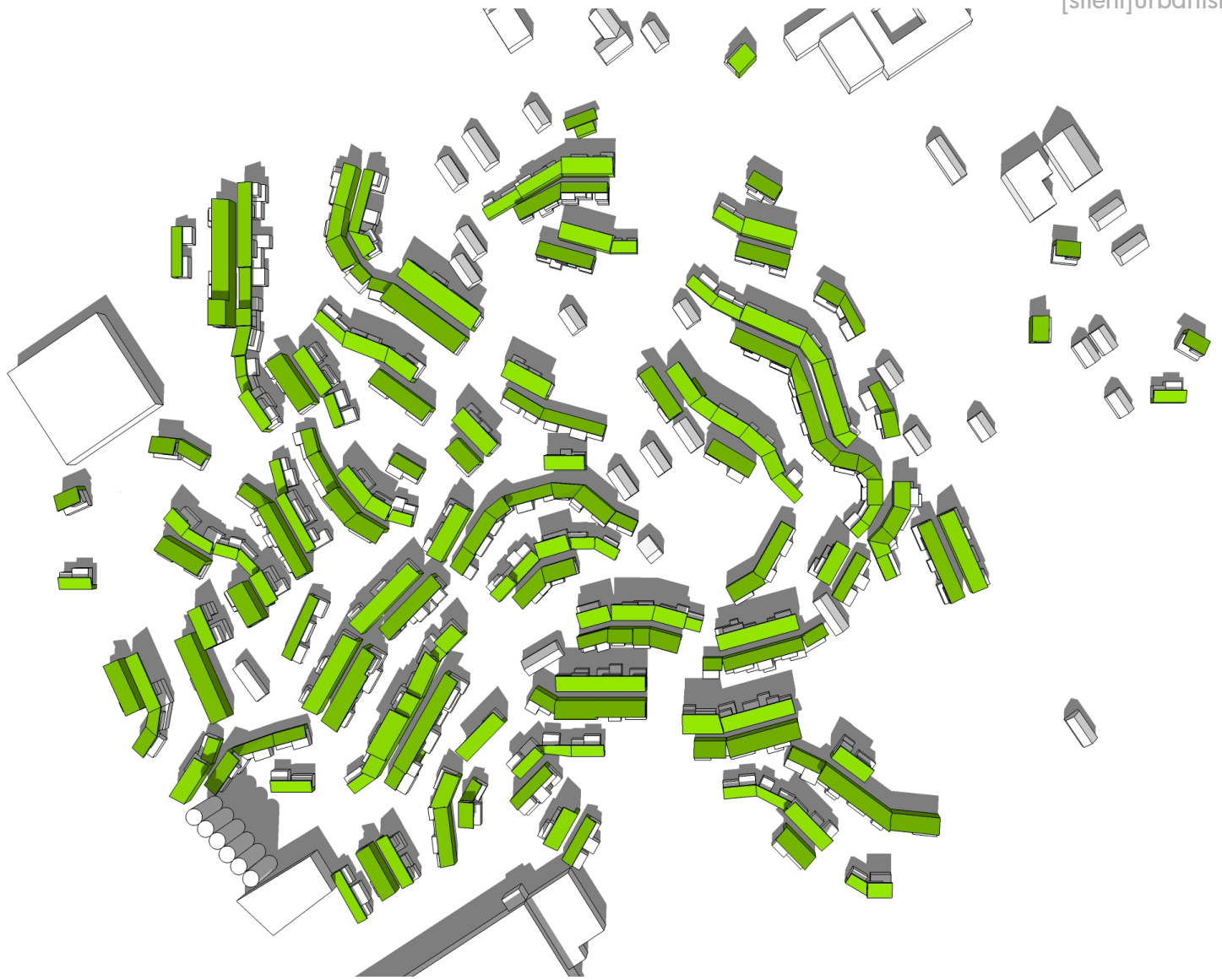
The Infrastructure for Autonomy also experiments with different aspects of self-organized communities than previously tried in the Method for Self-sufficient Building. With this project, the temporal aspects of community growth were investigated. It was predicted that with the variable of time and growth added to the equation, it would complexify the shape of the built environment and generate an organic form whose organization would challenge the structure of the street grid.

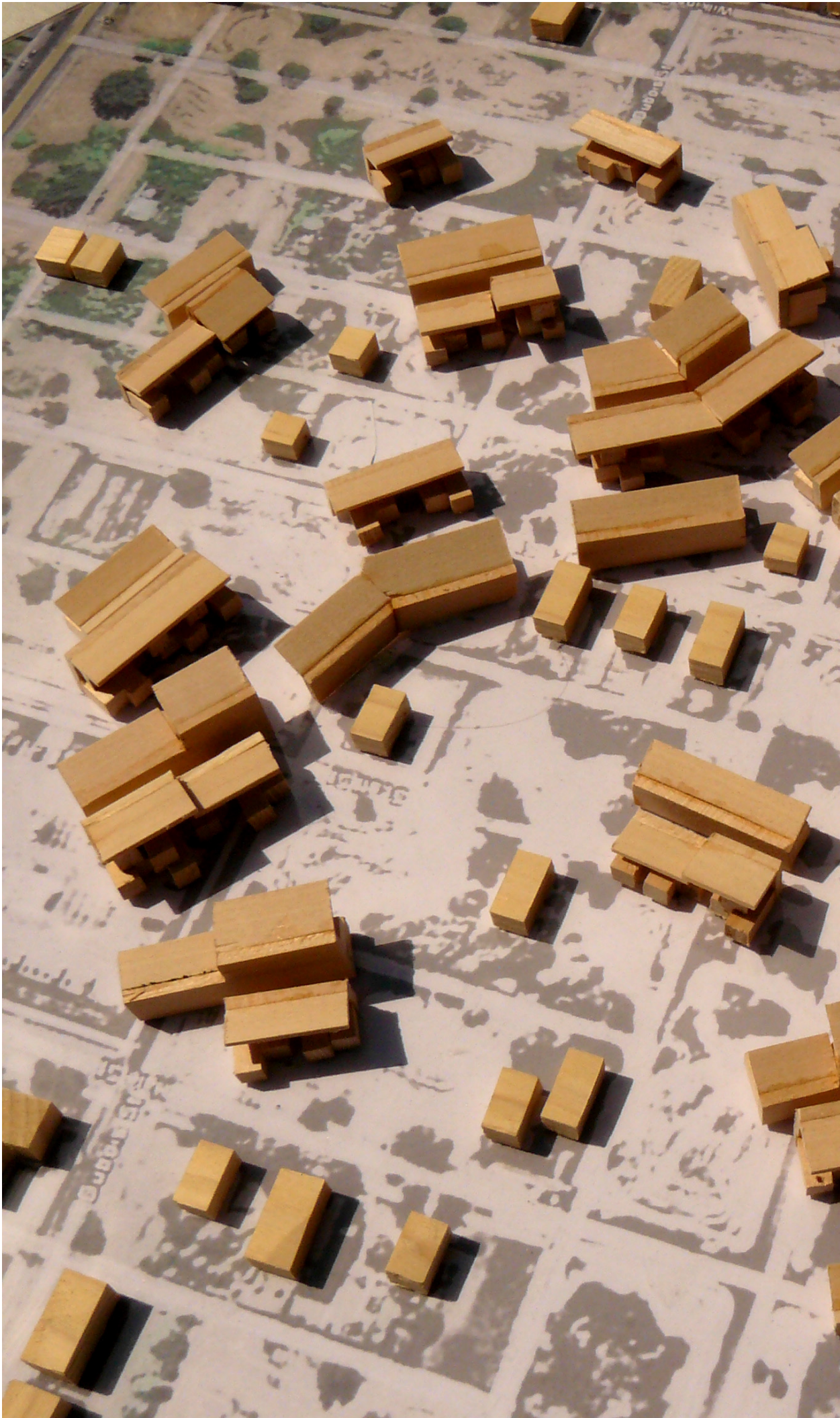




re-establishing silence

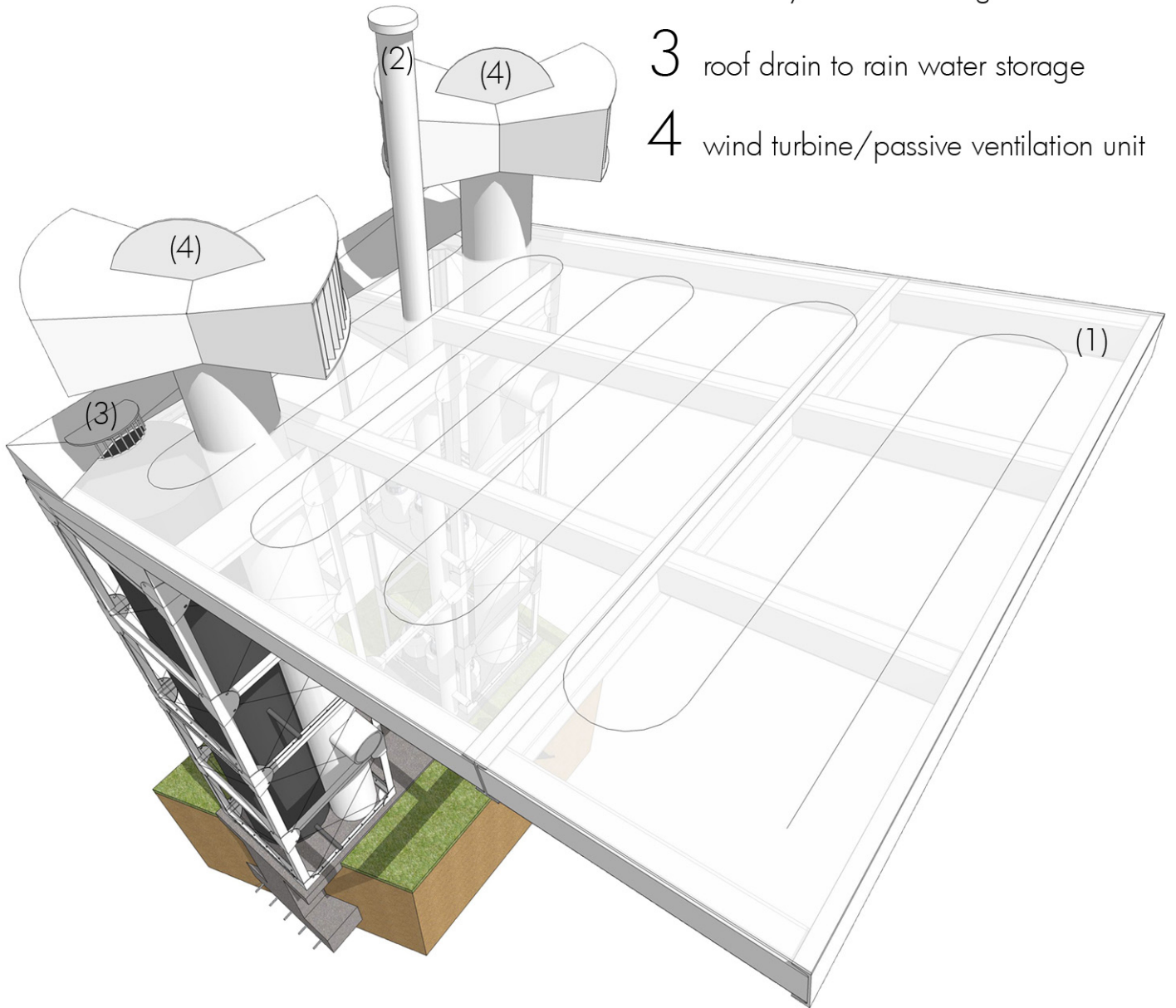


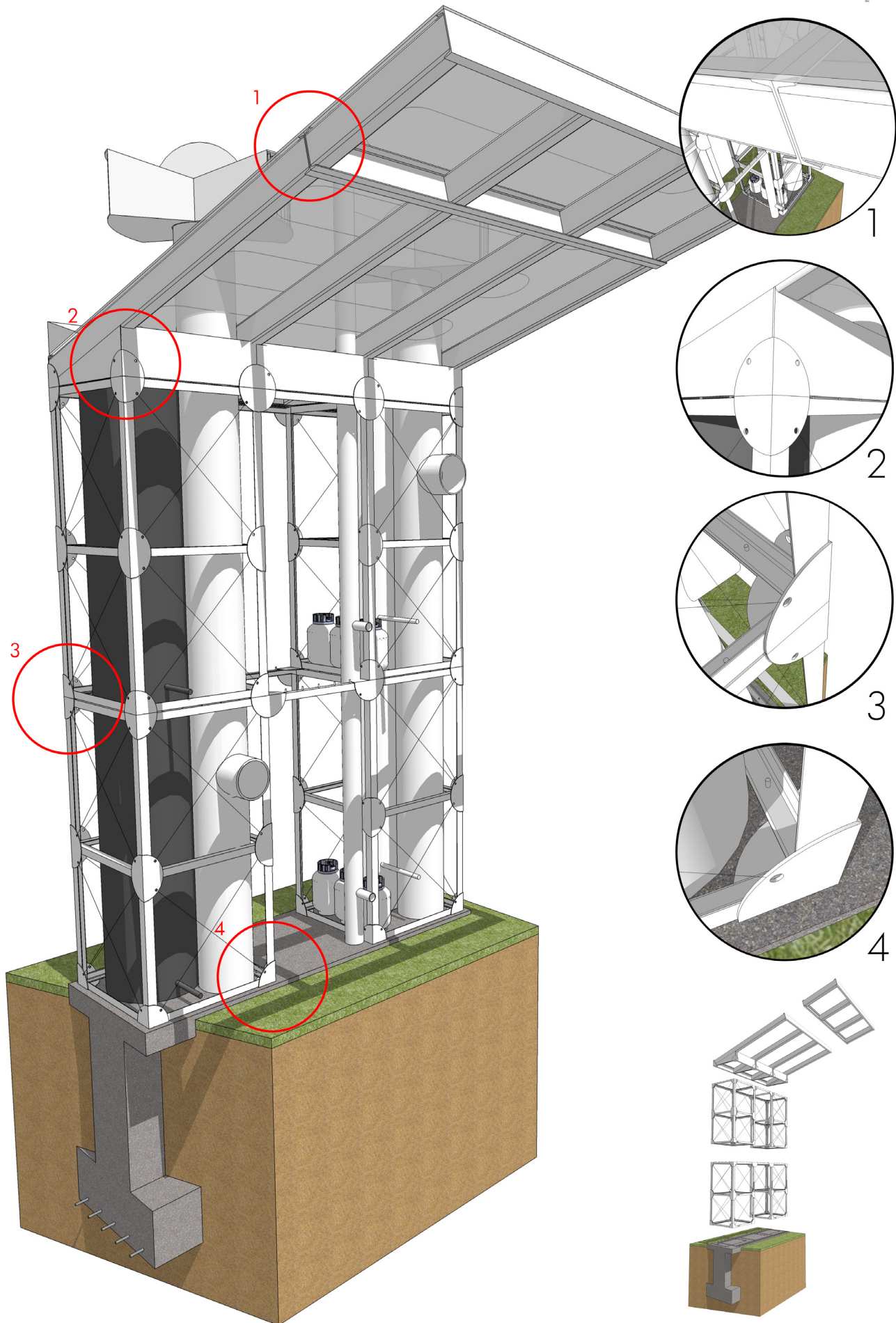


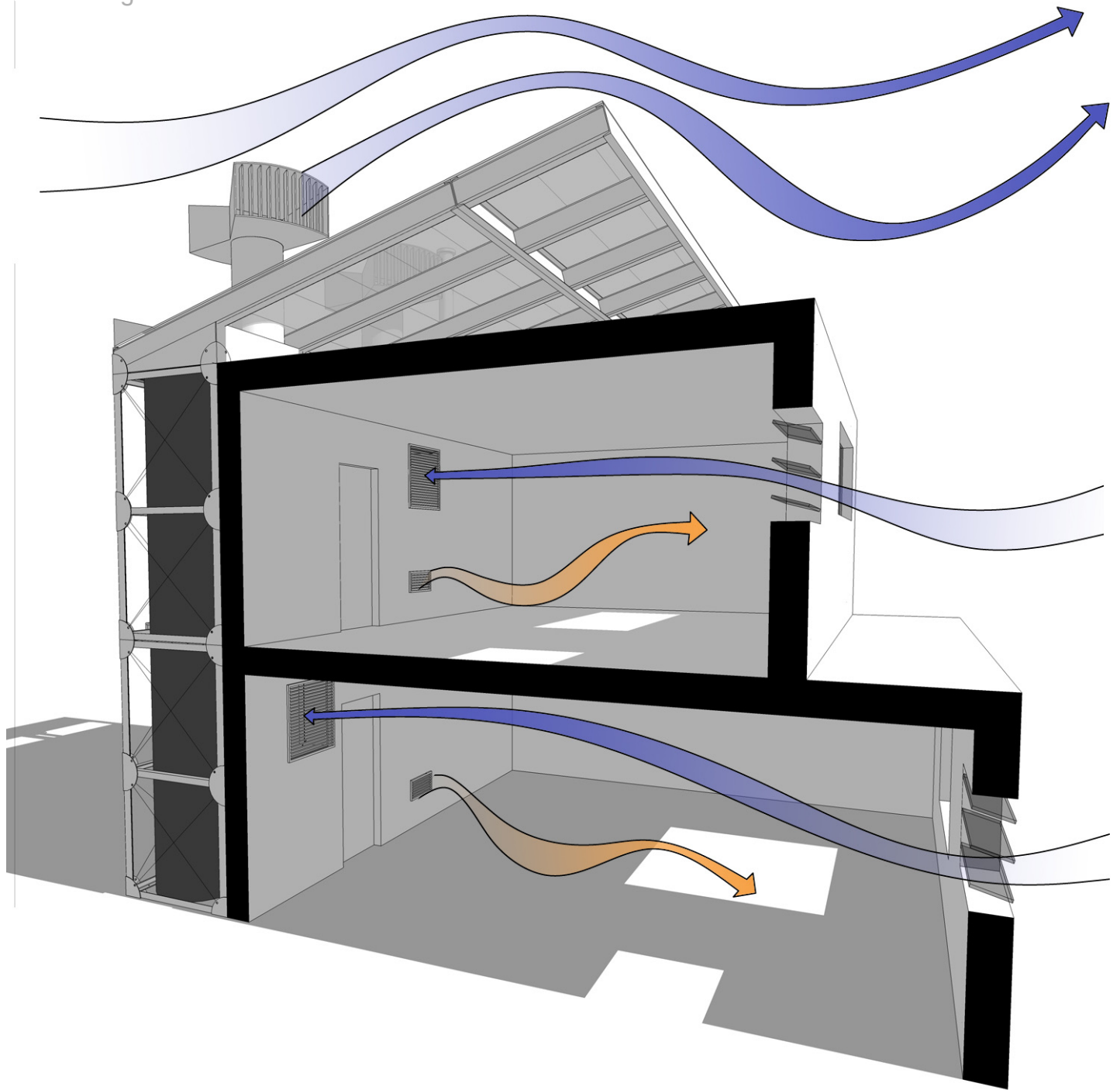




- 1 heated roof
- 2 chimney for incinerating toilet
- 3 roof drain to rain water storage
- 4 wind turbine/passive ventilation unit



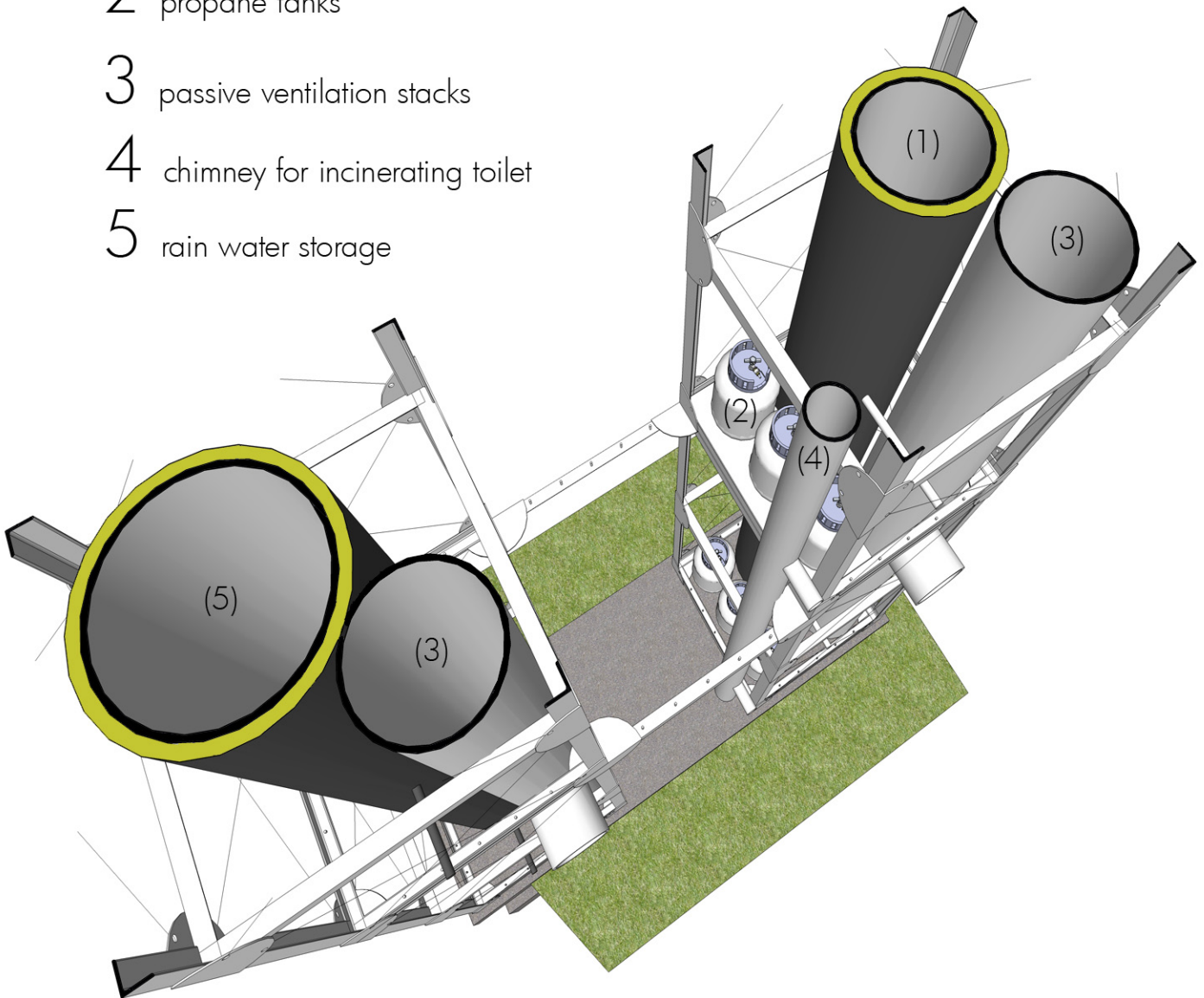




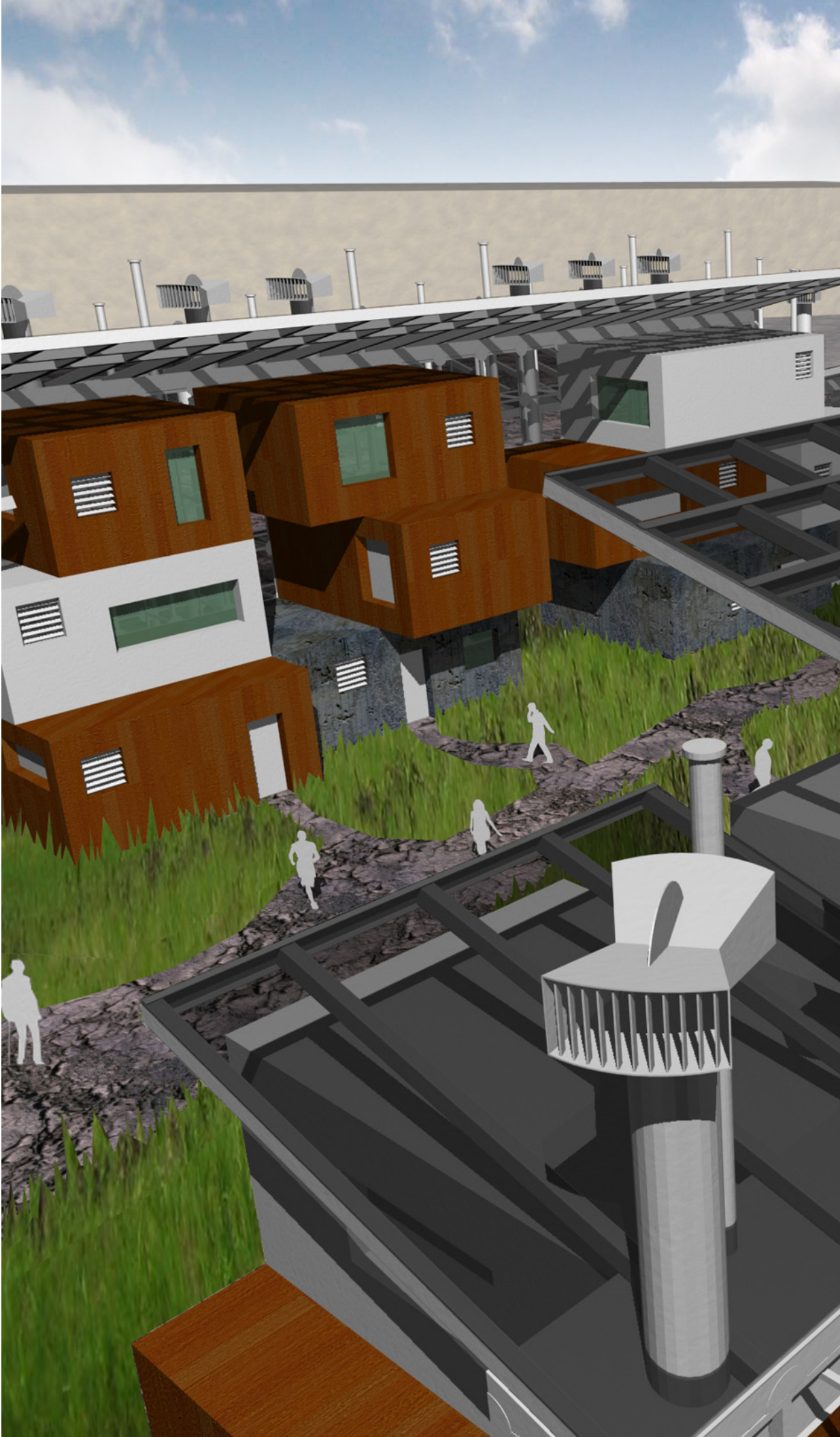
The Infrastructure for Autonomy provides architectonic solutions for an effective built environment to grow off of. The goal of this proposal was to provide a very delicate design intervention so to not disrupt the natural formation of a user defined building type. Therefore, the spine's open frame work and translucent roof allows for wind and sun to penetrate the system. Also, the spine would be able to grow in tangent with the self-organized portions of the built environment with the ability to insert or extract new sections, so that it would not interrupt the natural growth of a community.

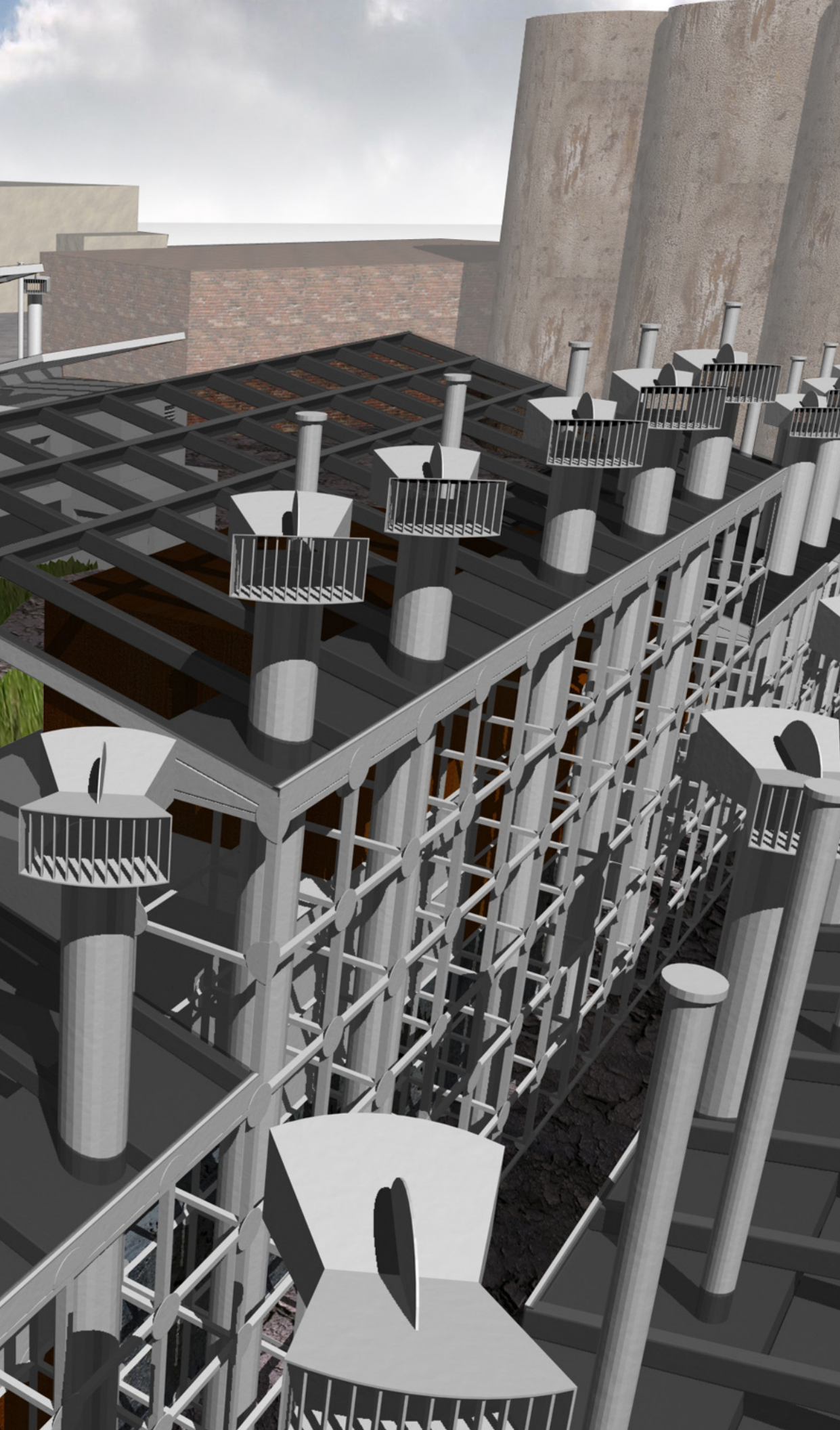
The spine also services needed amenities that ensure healthy conditions. The issue of providing clean water is addressed by using a canopy to capture rain

- 1 grey water storage
- 2 propane tanks
- 3 passive ventilation stacks
- 4 chimney for incinerating toilet
- 5 rain water storage



water that would then be stored in an insulated cistern. Gravity would then be used to create the water pressure needed to operate plumbing fixtures. Passive ventilation and electric power would be provided by a single unit where wind blowing into the turbine would also create a negative pressure on the opposite side of the unit that would pull air through the building. Propane could also be used as a supplementary energy source or could be used to heat the building. For waste processing, the spine provides a chimney for an incinerating toilet and also storage for grey water.











CONCLUSION

A community that utilizes such systems designed according to the ideals of Silent Urbanism are predicted to have similar intriguing side effects that would define its improved effectiveness. Some of the predicted outcomes may include an improved and localized economy, an increased interest in sustainability, and the over all authentic congregation of communities.

Resources that are readily available are the most valuable to the self-sufficient individual. Thus, a community based off of autonomy would automatically look to its immediate natural resources for economic opportunities. For example, with this scenario, an entrepreneur in Detroit may be more attracted to pursue a small business in pheasant farming, the production of dandelion wine, or the manufacturing of wood products out of ghetto palm. This would be considered a highly effective model because the community would grow to be more dependent on its most plentiful and easily available resources instead of relying on importing goods to fulfill their needs. Furthermore, each community would acquire its own unique identity based on its native resources.

A stably networked economy based on the specific needs of the people would be another predicted result of a community based off of Silent Urbanism. For example, with the Infrastructure for Autonomy, someone may provide a service to empty a household's grey water storage tank, who then sells the extra water to a local dandelion farm, and who all regularly do business with the local propane dealer. This type of economy would be more effective due to its simplicity when compared to a globalized economy. Also, the common individual would have a more direct relationship with the people they do trade with, which would both increase the interaction between community members and give them more influence on the products or services they utilize.

When the user becomes directly responsible for what they consume and the waste they produce, it gives them the incentive to consider a more sustainable way of life. With conventional waste processing methods, where garbage is taken away to a far off landfill or waste water goes to a distant processing facility, the user has little interest in using such things as biodegradable packaging, low flow toilets, or a laundry detergent that doesn't pollute the water or soil, because there is no immediate negative consequences. A self-sufficient life style would mean that the user becomes more connected to these services and would result in an incentive to be more responsible of what is consumed and becomes waste.

Additionally, not only is there currently little incentive to use sustainable products and methods because of the absence of an immediate effect on the user, access to these products is typically less available or more expensive. Self-sufficient life styles would also serve as a catalyst for industry and innovation concerned with these methods because of an increase in their demand.

The most significant aspect of Silent Urbanism would be that the consolidation of these side effects would result in the overall generation of authentic communities. This means that communities would be able to grow in a way that reacts to their own demands instead of being at the mercy of architects, engineers, planners, and politicians. Designs that are based on the ideals of Silent Urbanism have highly effective outcomes because they promote the self-organization of community functions, and would thus result in a genuine reflection of the desire of the users.



EPILOGUE

Silent Urbanism is largely a critique on the methods that current manifestos utilize in creating a more sustainable built environment. I believe that such strategies like New Urbanism, LEED for Neighborhoods, or other programs that utilize high levels of top-down planning as a solution for healthy communities are ultimately flawed because they have a superficial view of how communities function. Because so much of the built environment is planned in advanced by specialized designers, the community has no room to genuinely grow into its surroundings. When creating the concepts of Silent Urbanism, I was searching for a means to create authentic communities, and I believe the only way to achieve this is through bottom-up growth based on the individual choices of the masses.

In the architectural development stages of the thesis, what I learned was that Silent Urbanism is easier said than done. There was a reoccurring fundamental flaw that was encountered in these approaches that questioned the viability of their designs. In an attempt to grant more autonomy to the user, other freedoms were taken away. For example, with the Method for Self-sufficient building, although the user was able to construct their own buildings when and where they pleased, they had little options on the shape that it took. Or with the Infrastructure for Autonomy, there was the question if the spine would actually have too much influence on the buildings that grew from it.

As seen with the experimentations in the thesis, on more than one occasion strictly architectural interventions have failed to address the objectives of Silent Urbanism on a holistic scale. Architecture is just a single piece of the puzzle and the neglecting of other possible factors may have constrained other potential outcomes. Thus, I believe that investigations including a political variable are necessary to develop more viable solutions. Future experiments will include determining how architecture could be a catalyst for eliminating large scale legislative bodies that largely influence the shape of our built environment through zoning ordinances and building codes.

