Creative Participation
Rethinking Reclamation

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Abstract
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Abtract

This project investigates the development of Western Man's relationship with nature by comparing and contrasting it with the relationship that Native Cultures, particularly Native American Cultures have with nature. This reveals Western Man's reliance on the concept of objectivity and the resultant objectification of the natural world. In so doing Western Man has put himself apart from the rest of the world, somehow above it. Although I do not argue that this is wholly unjust, I do argue that it has resulted in a loss of an essential component of the human experience. Creative Participation is identified as a way to bring together some of the lessons of the Native communities with the existing knowledge of Western Society. This knowledge is then applied to the practical problem of Mine Land Reclamation in Southern West Virginia. Creative Participation, at its heart, is a way to reconnect man with the reality of his connection to the rest of the world, rather than his separation and control of it.

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Introduction

The context in which we grow plays an immense role in the way we view the world and the ways in which we determine truth, reason and that which is right. Context exists on many different levels, from the regional and national, to the local and individual. It goes beyond place, to education and upbringing, opportunity and oppression, success and failure; it molds even the most egotistical, independent, and driven among us. In its entirety it is the culture in which we live and the influence that our culture exerts on us. Oddly enough, culture often does much of this without our ever being aware of its effect, at least not early in life, simply because we know no other context as we grow. For many, age does not affect this lack of awareness, and throughout their lives a large portion of the world's population never questions the validity of their cultural context. This is a result of a multitude of factors but, as a rule, we can simply say that culture can be seen as a self-perpetuating system; it must convince those who are a part of it that it is the right way to live or else face extinction. Western culture has been particularly determined to accomplish this, even at the expense of other cultures. It does so through the cold rationalism of science and the concept of objectivity; we are encouraged to accept these as the only ways to approach and solve the world's problems. This has brought about much that is beautiful, healthy, righteous and good, but it has also brought about much that is not.

As a landscape architect, I seek to mediate the relationship between culture and the land on which it exists. Thus, of interest to me is the relationship between Man and Nature, particularly the development of that relationship in America. What becomes immediately apparent in the development of that relationship is the reliance on rational thought and objectivity. Landscape Architecture is unique in that it seeks to use the rational mind to solve problems in the landscape, but also engages what Gregory Cajete terms the metaphoric or creative mind. This type of thought, which is not bounded by the cold hard objectivity of rationalism, but rather embraces experiential learning and creative participation, is a natural component of the creative process. In Judeo-Christian culture the relationship between man and nature has developed under the watchful eye of rationalism, but has been interspersed with bursts of metaphoric or creative thought, coming primarily from the American Environmental Movement. It is my goal to consider the cultural conditioning of Native American's and compare and contrast Judeo-Christian cultural conditioning with it. The hope is that

the comparison with a culture more in touch with the metaphoric mind will reveal to this westerner more about the cultural context in which my (our) relationship with nature has evolved. The value for me as a landscape architect is to look at a society, which embraces an experiential, interactive relationship with the natural world and to consider the value of that relationship versus the cold rational relationship which Western culture currently embraces. The suggestion is that by ignoring the experiential, creative component of our relationship with nature we have lost our ability to read the language of landscape; i.e. the ability to read meaning in the world around us. Furthermore, we have, by objectifying the natural world, ignored the very real connection that exists between humans and the rest of the natural world; animals, plants, mountains, rivers, etc.

Man and Nature
A Brief History

Man's relationship with nature or the wild is fraught with conflict. As early as the third millennium B.C. the concept of the wild had begun to develop as a place apart from the human experience. The story of Gilgamesh, a Sumerian epic, speaks of the forest as an evil place of wild and dangerous beasts and suggests that it must be cut down as a sign of the advancement of human culture (Mitchell 2001). This mythic component of the wilds as dangerous continued in Judeo-Christian culture, which held that "in the deepest forests the Devil would often ride on hunts with his minions through the night (Mitchell 2001)". Vine Deloria (2003), a Native American scholar, points to the Christian creation story as further evidence for European or Western man's tumultuous relationship with nature. Deloria (2003) points out two particularly troubling aspects of the Christian doctrine. First, following Adam's fall from God's grace, the natural world is understood to go with him, therefore it is recognized as intimately connected to man, but the connection is one that causes nature to become corrupted or fall. This becomes even more disturbing when one considers the linear nature of the Christian belief, that is, Man falls from God's grace, Jesus comes to redeem man, and what follows is a slow ticking towards judgment day with no indication that nature will ever be redeemed or saved. This theological approach leaves little room for any great concern for the world, much less for untouched wilderness. The second aspect that Deloria (2003) finds troubling is that, in the Christian creation story, Man receives dominion over the rest of creation. Harvey Cox, a Protestant theologian, articulates the concept put forth in Genesis in the following manner, "Just after

his creation man is given the crucial responsibility of naming the animals. He is their master and commander. It is his task to subdue the earth."

Deloria (2003) notes how this understanding was transferred to the native peoples of the Americas through Pope Alexander VI's *Inter Caetera* bull of 1493. This bull laid down the basic Christian attitude of the time concerning the New World: "Among other works well pleasing to the Divine Majesty and cherished of our heart, this assuredly ranks highest, that in our times especially the Catholic faith and the Christian religion be exalted and everywhere increased and spread, that the health of souls be cared for and that barbarous nations be overthrown and brought the faith itself (Deloria 2003)." As if that were not enough, the pope further noted that "I do hereby give, grant and assign forever to you and your heirs and successors, the kings of Castile and Leon (Spain), all singular aforesaid countries and islands…hitherto discovered…and to be discovered…together with all their dominions, cities, camps, places, and villages, and all rights, jurisdictions, and appurtenances of the same (Deloria 2003)." This doctrine was the keystone, which allowed early New World explorers the moral liberty to abuse the native peoples in the ways that they did and, no doubt, contributed to the repressive relationship that the U.S. government has continued to practice with native communities. The accepted Christian doctrine, that the pope was given control over the entire planet by God, was the impetus for the subjugation of the native peoples (Deloria 2003). This treatment was a direct result of the understanding that the people were a part of nature; they were savages and must be subdued with the rest of nature.

As Felix Cohen states,"Native American's are the miner's canary of America," and as Native Americans suffered from the unending pressures of European influence on the Americas so did the continents' flora and fauna. American settlers saw the Americas as a virgin landscape ripe for the plundering and in need of human control. Until the early 1700's, any free male could claim ownership of a parcel of land provided he "improve" its usefulness, which was generally considered a combination of clearing land for agriculture and introducing livestock (Baldwin 1994). In fact, in many ways, our democracy itself was based on the availability of land and resources therein. Howard Zinn (2003) notes time and again that the early government of the United States was desperately poor in every way except for land. In fact, the wealth of land left from loyalists after the Revolutionary War was one of the only ways that the government was able to pay a very restless army (Zinn

2003). Another important component to this process was that early American voting rights were quite different then they are today, with only white male landowners receiving the privilege (Zinn 2003).

And yet, even in this atmosphere we, as humans and particularly as Americans, have always recognized wilderness's restorative/enlightening capability. In the Sumerian epic mentioned earlier, Gilgamesh is "revitalized by danger, and finds the undiscovered in himself" on his trip into the wild. St. John the Baptist, Jesus, Elijah, and many others have also made pilgrimages into the wilderness for this experience of self-discovery (Mitchell 2001). Thoreau, a key member of America's environmental awakening, expressed this emphatically saying, "In wildness is the preservation of the world."(Clarke 2002) It is interesting to note here that he does not say wilderness, but wildness. Gary Snyder (1990), an environmental poet, describes the difference relatively simply. He suggests that wilderness is a place, an entity and a fragile one at that, while wildness, by contrast, is more deeply rooted and is an ancient life-sustaining current. Snyder (1990) proposes that wildness can be most easily experienced in wilderness but also exists in the wilder corners of suburbia, or even in cities, and exists as potential even in some of the most barren, devastated environments. Wildness, in this sense, is the dynamic heart of the natural world, the mystery, the unidentified something that humanity has always recognized but often ignored.

Voices in America
The Metaphoric Mind at Work in Judeo Christian Culture

In the previous section I briefly explored some of the conflicts which have historically existed between man and nature, with particular emphasis on Judeo-Christian culture. However, I also made note of the persistent recognition of nature's special qualities. In America these qualities have generated particularly fierce reactions, including those of Thoreau, which are collectively known as the American Environmental Movement. Whether each member of this movement would have termed their appreciation of the natural world as recognition of the wildness that Thoreau spoke of is hard to determine. However, I would suggest that an understanding of wildness can be thought of as an underlying theme within the movement; each member has recognized something which was not quite right about our culture's relationship with the natural world. Although, each member has reacted in their own individual way to this understanding, they have all been aware of a quality in nature that

was in danger. I suggest that this awareness is a tentative embracing of our metaphoric minds, our bio-centric leanings, a vision of the interconnectedness of the world; in general an understanding of the spirit or wildness of the natural world. In a sense these individuals have begun to read the language of landscape, knowing it was there but unable to convey it as such exactly. To get a better sense of what I refer to it will be informative to review more closely some of the founding members of this movement.

From the earliest days of our nation there was recognition of the beauty of this land and, in some cases, the beauty of the relationship between this land and her native people. One of the earliest members of this group was George Caitlin, a lawyer turned painter who became intrigued by the Western United States in the early part of the 19th century (Clarke 2002). He was, not only, the first to propose a national park for the United States, but believed that a component of this park should be the preservation of the Native American way of life (Clarke 2002). While this might seem objectionable today, that a people should be subjugated to preservation, it conveys a deeper recognition of the influence of Western culture on the natural world (Clarke 2002). Caitlin believed that the influence of white's on the native population was one of corruption; that alcohol and the wasting of resources, introduced by the European culture, was destructive to their way of life (Clarke 2002). Caitlin was thus, one of the first, if not the first in America to voice the ideals of a preservationist and to suggest that maintaining some of what was found would be a good thing. Beyond that he is the only white that I know of who directly tied the beauty of the landscape to the culture, which existed in it. Perhaps this was a result of his travels within that culture early in the westward expansion of the United States prior to the corruption and destruction that he bemoaned so passionately.

The concept of the destructive nature of the white population was echoed later in the 19th century by George Perkins Marsh in his conservation classic Man and Nature. This book was the first to engage scientific thought on the interaction between the European culture and the natural world (Clarke 2002). He spoke of "nature's harmonies" and explored the concept of the interrelatedness of all things on the earth (Clarke 2002). He also was one of the first to note what he perceived to be a proportional relationship between the development of technologies and the disturbance of the natural world (Clarke 2002). Nonetheless, he tempered his harsh assessment of man's treatment of nature with an early conception of conservation saying that with proper management "higher order"

humans could ensure a balance that included not only their survival, but also the survival of many of the species and environments found on this earth (Clarke 2002). Although the direct connection between the Native American way of life and the beauty of the landscape that we find in Caitlin's writing is not present in Marsh's work; his understanding of the natural world and man's relationship with it reveals that there was some common ground.

Many of the Native American tribal leaders where aware of these losses too, but were limited, if not completely powerless, in what they could do to stop them. Chief Seattle's eloquent response to the signing of a treaty, which relegated his tribe to a reservation, is a poignant example of this understanding. What I find particularly interesting in this speech is what Seattle, a converted Christian, has to say about the Christian God,

"Your God seems to us to be partial. He came to the white man. We never saw Him; never even heard His voice; He gave the white man laws but He had no word for His red children whose teeming millions filled this vast continent as the stars fill the firmament. No, we are two distinct races and must ever remain so. There is little in common between us. The ashes of our ancestors are sacred and their final resting place is hallowed ground, while you wander away from the tombs of your fathers seemingly without regret.

Your religion was written on tables of stone by the iron finger of an angry God, lest you might forget it. The redman could never remember nor comprehend it.

Our religion is the traditions of our ancestors, the dreams of our old men, given them by the great Spirit, the visions of our sachems, and is written in the hearts of our people.

Your dead cease to love you and the homes of their nativity as soon as they pass the portals of the tomb. They wander far off beyond the stars, are soon forgotten, and never return. Our dead never forget the beautiful world that gave them being. They still love its winding rivers, its great mountains and its sequestered vales, and they ever yearn in the tenderest affection over the lonely hearted living and often return to visit and comfort them."

(Clarke 2002)

What this statement says to me is that while there were members of the American Environmental Movement who where aware at this time of the damage being inflicted upon the world, it was the leaders of the Native cultures who where most in tune with the reasons behind this damage. Chief Seattle, although he doesn't come right out and say it, seems to have some inclining as to the placelessness that existed within the white culture in America during this early period. This placelessness was driven by an understanding of ourselves as the masters of this world, able to control our natural surroundings and bend them to our will no matter what the location. Unfortunately, this placelessness persists in the modern world. Of course, Chief Seattle's was a voice and an opinion heard by very few.

On the other end of the spectrum, one of the loudest voices in the American Environmental Movement followed closely the work of these early individuals. John Muir, known to almost every member of the modern American Environmental movement as the founder of the Sierra Club and champion of Yosemite National Park, was a true preservationist. In fact, in many ways, he popularized this way of thinking about the natural world with his extensive writing. His deep love and understanding of the natural world was a result of his decision to "devote the rest of my life to the study of the inventions of God."(Clarke 2002) Muir's father, a strict Calvinist, instilled in Muir a proper Christian education, as the times dictated, and Muir employed this education in his description of nature with religious and ethical terms (Clarke 2002). He felt that through nature one came in direct contact with the divine and thus felt that those who sought to plunder it were no better than the devil (Clarke 2002). Being of the Christian tradition it is not surprising that he used the concepts of Good and Evil to describe his world, what is of interest is the fact that he assigned to nature a value which was seemingly greater than man. This was a rather drastic change of attitude for humanity. The switch being that God's creation, the natural world, was as wonderful, if not better than God's creation, man. Muir's introduction of a spiritually significant and worthy of respect component to the natural world put words to what so many people had thought they felt. By this I mean that component of the wilderness, termed the wild, what Thoreau spoke of.

Muir continues to be an influence in the modern environmental movement, as he is widely read, but also through the actions of his Sierra Club. Many would say that Muir's outlook was similar to the perspective of the Native American's and although I would agree with this to a point, I take issue with a certain aspect of that statement. As we'll see, the Native cultures do not see the world in terms of Good and Evil, but rather in terms of Balance and Imbalance, with excessive imbalance leading to evil actions. The preservationist movement has left little room for balance, suggesting our role was one of removing ourselves consciously from areas to be termed wild. In fact, in many ways the preservationist's approach embraces the perspective of man as inherently evil and without any redeeming qualities, an adaptation of the stricter religious sects, which developed in the Americas. Balance, on the other hand, suggests that there is another way, that our role in the world is not to stand back, but to understand that our relationship with the natural world is influenced by our worldview and has therefore leaned toward domination, but it can embrace something much different if we

consider a different perspective.

Aldo Leopold, considered the founder of the discipline of wildlife management, can certainly be thought of as a man whom understood the beauty of wilderness and had seen, first hand, the wildness of the earth and her creatures. Rather then paraphrasing it I think his words couldn't describe his understanding better. The following is from an essay entitled "Thinking Like a Mountain":

A deep chesty bawl echoes from rimrock to rimrock, rolls down the mountain, and fades into the far blackness of the night. It is an outburst of wild defiant sorrow, and of contempt for the adversities of the world.

Every living thing (and perhaps many a dead one as well) pays heed to that call. To the deer it is a reminder of the way of all flesh, to the pine a forecast of midnight scuffles and of blood upon the snow, to the coyote a promise of gleanings to come, to the cowman a threat of red ink at the bank, to the hunter a challenge of fang against bullet. Yet behind these obvious and immediate hopes and fears lies a deeper meaning, known only to the mountain itself. Only the mountain has lived long enough to listen objectively to the howl of a wolf.

……

In those days we had never heard of passing up a chance to kill a wolf. In a second we were pumping lead into the pack, but with more excitement than accuracy: how to aim a steep downhill shot is always confusing. When our rifles were empty, the old wolf was down, and a pup was dragging a leg into impassable slide-rocks.

We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes—something known only to her and to the mountain. I was young then, and full of trigger-itch; I thought that because fewer wolves meant more deer, that no wolves would mean hunter's paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view.

(Leopold 1966)

Leopold called for a new land ethic in America, as he had become convinced that genuine conservation principles could only be realized with a fundamental change in the nation's attitude toward land and its resources, a new paradigm. His Golden rule of Ecology was, "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong

when it tends otherwise."(Leopold 1966)

Although I argue that each of these heroes of the American environmental movement is a product of Western culture, I also seek to argue that they are each trying to understand the wildness of our world. That each has recognized, or in some cases, very literally seen and felt this wildness and have struggled to understand it within the context of Western culture. As I argued at the beginning of this section wildness can be seen as a theme, which runs through the perspectives of each of these individuals. Leopold's voice is certainly one of the strongest in this respect and has been very influential in the more progressive components of the modern day movement. Collectively this group of individuals, and many whom I haven't mentioned, have played important roles in the shaping of the current state of the environmental movement.

The American Environmental Movement
Response, Reaction, and Acceptance
The Continuum

Many American's involved in today's Environmental movement are very familiar with the work of these individuals as well as the concept of wildness. However, the differences in understanding that appeared in the writings of these early environmentalists have lead to a variety of concepts concerning man's relationship with the natural world. In "The Invented Landscape" Frederick Turner suggests that there are four main currents in Ecology, which I will equate to the American Environmental Movement, and they are, the preservationists, the conservationists, the restorationists, and the inventionists/reclamationists (Baldwin 1994). I believe that it is beneficial to view these approaches on a continuum, because it seems that the cultural components that make up each are the same or similar, but are found in different proportions in each. What I mean here is that each is a product of the view of nature in the Judeo-Christian world and whether they react against this view of domination or embrace it.

For instance, the preservationist's belief is that nature is only true in the absence of man and that the works of man only serve to muddle, at best, or destroy, at worst, the divine works of nature. Examples of this belief in action include the Wilderness Act, which establishes wilderness areas within our national lands with the main goal being the absence of the works of man, and the policy

of “Leave No Trace” hikers (Baldwin 1994). Both of these concepts promote the idea of man as an invasive presence and in many ways they are a continuation of the ideals of some of our earliest environmentalists discussed earlier, like John Muir and George Caitlin. The preservationist view is a reactionary stance, with the only goal being to completely remove what is perceived as the negative influence of man. In this way it is a reaction against the Christian concept of man’s role in nature and a drastic one at that, as it removes man from the equation altogether.

Conservationist’s, on the other hand, believe that man does have a place in nature and that is as a steward of the vast physical and spiritual resources of the natural world, so that these might continue, in perpetuity, to yield a rich harvest for humans (Baldwin 1994). As one of America’s earliest conservationist’s Gifford Pinochot put it, “The first duty of the human race is to control the earth it lives upon.”(Clarke 2002) This viewpoint therefore clearly embraces the Christian concept of man’s role in nature. Although the language with which their goals are described indicates a greater interest in the natural world, the viewpoint is still essentially anthropocentric or human centered at its heart, as all decisions eventually boil down to how humanity will benefit. At the same time Pinochot, as the first head of the U.S. Forest Service, promoted some of the earliest and most beneficial environmental policies and was a close friend and political colleague of America’s first true environmental President Teddy Roosevelt. It’s interesting to note that Pinochot and Muir were contemporaries and originally friends, but philosophical differences lead to a falling out, a falling out which, in a sense, has persisted between the two beliefs into modern times.

The third movement Turner mentions is much less established than the first two and is essentially in its infancy; nonetheless the Restorationist movement offers a new way to engage our relationship with nature (Baldwin 1994). It seeks to engage the knowledge contained in both nature and humanity and therefore finds itself in the position to bridge the previous two approaches. Restorationists seek to reconstruct classical ecosystems, based on the assumption that it is not only possible, given nature’s own easygoing and flexible standards, but it is also an important part of the human role within nature. Aldo Leopold and his colleagues at the University of Wisconsin were the first to engage in what is collectively know as ecological restoration, creating a restored pre-Columbian prairie on Wisconsin’s campus (Clarke 2002). Leopold’s work in the field of environmentalism went well beyond this application of restoration however, as we’ve seen he encouraged the development

of a new Land Ethic in the U.S., which emphasized a recognition of moral and ethical value in the natural world around us. This can be seen in some ways to echo the emotions that Muir had begun to espouse some fifty years earlier. Still Leopold's outlook was different as his participation in restoration begins to suggest a role for both man and nature.

The fourth current, mentioned by Turner, is termed the Inventionists approach. Although relatively obscure, it represents what is, considered by classical restorationists, a radical wing of ecological restorationist. Inventionists maintain what the restorationists proclaim, but in addition suggest that when occasion warrants and knowledge is sufficient it is most appropriate to create new ecosystems, new landscapes, and perhaps even new species (Baldwin 1994). This essentially emphasizes the creative and technological abilities of man to a much greater degree than classical restoration. An example of this type of approach in action is the work of reclamationists on mine and quarry sites. The original site is so disturbed that restoring, in the traditional sense, is out of the question, thus a new landscape is invented.

It is interesting then that we can see both the reactionary response of preservationists peeking through in classical restoration and the traditional Christian viewpoint peeking through in the more radical inventionist/reclamationists approach. If we return to the continuum mentioned earlier it is clear that each of these approaches recognizes a common goal, that of bettering man's relationship with the environment. However, there exists in each a different balance for the role of the two main components, Man and Nature.

Before considering the implications of this balance I want to return to the concept of wildness. I suggested that wildness was something that each of these approaches sensed and yet in the discussion above there was no specific mention of this experience. I believe that this is because the idea of wildness is counter-intuitive to western thought, meaning that it cannot necessarily be identified through the scientific process or with rational thought. Thus in the battle to alter man's relationship with the natural world it has been largely underused simply because the movement wasn't sure how to present the concept to the uninitiated. This changed in the 1970's when Arne Naess introduced the term Deep Ecology, which, I would suggest, is an intellectual movement, which seeks to understand wildness and to apply that understanding to the environmental movement. This movement is clearly a result of all the work, theory, and intellectual debate generated by the American

Environmental Movement, leading up to Naess' first use of the term Deep Ecology. In fact I would suggest that Deep Ecology is an intellectual product of the more action-oriented components of the continuum, a self-critique of environmentalism by environmentalists.

Deep Ecology is probably the most self-aware branch of environmentalism in America and has unique qualities when compared to the four currents discussed thus far. Deep Ecology, unlike the others mentioned above, makes a conscious effort to understand the influence of the Judeo-Christian worldview on the development of man's relationship with the natural world. In doing so I believe that it offers new insight into the heart of the conflict between Man and Nature. It asks what it is about the modern Judeo-Christian worldview that has prevented us from embracing the wildness and spirit of the natural world. The movement suggests that we have viewed our relationship with nature from an exclusively anthropocentric (human centered) viewpoint and that the way to engage the natural world and to better our relationship with it is through a biocentric viewpoint. It is therefore suggesting that the common bond of wildness, or biocentric thought runs through the entire movement, but has been lost because of problems being addressed exclusively from the human perspective, rather than nature's perspective.

If we were to simplify the first four approaches taken by the American Environmental Movement we are reduced to two essential thought processes, one (preservation) considers man to be essentially invasive and suggests that he must remove himself from an environment for it to be successful and the other (conservation) considers man to be the controlling agent who must wield the mighty axe and tame the natural world around him. This dichotomy of understanding is a product of the way in which the Judeo-Christian worldview and our culture have influenced the development of our relationship with the natural world, i.e. whether we choose to embrace the traditional Judeo-Christian approach of domination or to react against it. Clearly the center of the continuum mentioned earlier is undiscovered and yet we have identified an experience of the natural world, wildness, which is shared throughout the continuum.

It is through the actions and writings of people like Muir, and Leopold that popular American culture has the opportunity to learn about this experience of the natural world. We can hear in their voices, the echoes of the voices of this land; voices which have been a part of Native American culture and tradition and which are now reaching out to bridge the gap between Western and Native

cultures. I would suggest that between the four approaches discussed above there is a fifth approach that seeks to strike a balance or to find the center of the continuum mentioned above. I believe that this fifth approach will potentially share a number of components with the life-way of many Native American communities. As I mentioned early in the paper the understanding of the metaphoric or creative mind and the use of a bio-centric understanding of the world are much more prevalent in Native American cultures than in our own. This has encouraged within their culture a very unique relationship with the natural world. Because of this relationship, I believe that the Native American perspective might offer a great number of lesson to the American Environmental Movement and to the discovery and definition of that fifth balanced approach to man's relationship with nature.

The Metaphoric Mind vs. The Rational Mind

What is most promising about, restoration, invention/reclamation and Deep Ecology is the recognition of the creative power, flexibility, and willingness to embrace change which nature possess. In this way, Judeo-Christian man has begun to allow an inherent, independent value for the natural world to creep into his worldview. Gregory Cajete (1999), a Navajo, highlights how this understanding has long been a part of the Native American perspective and therefore, how that perspective has much to offer the Judeo-Christian worldview as augmented by our scientific exploration of the world. Cajete (1999) suggests that Native science, as he terms it, embraces the inherent creativity of nature as the foundation for both knowledge and action with regard to "seeking life." The idea is that creativity is at the center of all life, both human and otherwise (Cajete 1999). He goes on to discuss three principles of creativity: chaos theory, the participation mystique, and the metaphoric mind. Cajete (1999) suggests that these ideas form a conceptual bridge between Native and Western Science and that they have brought Western Science closer to an understanding of nature as Native peoples have always understood it, that is as a dynamic, ever changing flow of creation inseparable from our own perceptions and not simply a collection of objects which we must, quantify, qualify, and control.

To grasp what Cajete suggests let us consider, in greater detail, his discussion of the links between the two cultures revealed in Chaos Theory. To begin, Chaos is the ebb and flow of the

between the two cultures revealed in Chaos Theory. To begin, Chaos is the ebb and flow of the universe, the flux of all things at all times, the spirit of the natural world alive with disorder becoming order, it can be compared to wildness in a sense (Cajete 1999). The insights of this new science have called into question the modern obsession with being in control, which is the underlying philosophical premise of modern science as derived from our worldview of dominion over nature. Chaos theory, derived from the cutting edge of Western science itself, implies that systems are beyond the ability of scientists to predict and control except at the most superficial levels (Cajete 1999). It also suggests that all things are interrelated; known as "The Butterfly Effect" this component of Chaos theory suggests that the delicate beat of a butterfly's wings, under the right conditions, has the potential to drastically influence the weather, even going as far as to suggest it might start a tornado (Cajete 1999). Although hardly palatable for a traditional Western scientist, this concept comes directly from that tradition. Cajete (1999) suggests that Native science is a reflection of a creative participation, a dance with chaos and her child, the creative spirit, performed by humanity. One in which we, like the butterfly, can influence our world in many different ways without necessarily recognizing that influence. What pervades in modern society is what Cajete (1999) labels, perceptual blindness, brought on by Western man's continued denial of the spirit, intelligence and dynamic potential of nature.

Cajete (1999) suggests that this is, in part, a result of man's suppression of the metaphoric or nature mind. He contends that our metaphoric mind, vs. our rational mind, is the oldest mind in nature and develops from birth until a child begins to learn language. The rational mind, on one hand, is designed to objectify our world to help us understand it; language, a product of the rational mind, is used to differentiate meanings and to codify the world (Cajete 1999). The metaphoric mind, on the other hand, is more holistic in its understanding of the world, using linguistic metaphors, images, and intuitions to guide itself (Cajete 1999). Cajete (1999) further suggests that the metaphoric mind is detached from the cultural order, its processing is natural and instinctive, it perceives itself as part of the natural order and is inclusive and expansive in its processing of experience and knowledge. He thus suggests that it reveals itself through abstract symbols, visual/spatial reasoning, sound, kinesthetic expression, and various forms of ecological and integrative thinking. It is our natural tendency to engage in a reciprocal body of communication with the natural world. However, if we

objectify or rationalize our experience (which is the role of our rational mind) we distance ourselves from the relationship and repress the full involvement of our senses. "By linguistically defining the surrounding world as a determinate set of objects, we cut our conscious speaking selves off from the spontaneous life of our own sensing bodies and our metaphoric minds (Cajete 1999).

Robert M. Pyle terms this the "extinction of experience" and points to the lack of opportunities that children in the modern world have for interacting with the natural landscape (Johnson 2002). Rachel Carson echoes this sentiment in *The Sense of Wonder*, noting, "It is not half so important to *know* as to *feel*." I would suggest that these experiences are needed not only in childhood, but throughout our lives. However, it is clear that the foundation for understanding and experiencing the natural world are formed in childhood. The theories on how this foundation of knowledge is integrated or built in a child's mind vary widely, but Peter H. Kahn (2002) draws on a structural-developmental theory that emphasizes the idea of hierarchical integration, the concept that knowledge builds on itself, and that ideas/views aren't thrown out, but are modified or augmented to fit one's current understanding. These modifications come about, in the case of the natural environment, through value judgments that children base on, what Kahn has categorized as, either anthropocentric reasoning or biocentric reasoning. Anthropocentric reasoning refers to a reasoning, which is focused on how actions for or against the environment affect human beings specifically, i.e. "I don't want to pollute the river because people need to drink from it."(Kahn 2002) On the other hand biocentric reasoning refers to a reasoning that the natural environment has moral standing that is, at least partly, independent of its value as a human commodity, i.e. "wild animals are important because if someone created them, it is because they have some kind of role."(Kahn 2002) Kahn (2002) finds that 95 percent of the children's reasoning is anthropocentric, which is certainly what one might expect and is not a problem in and of itself, man by having higher cognition cannot avoid centering the world around himself. The problem or the issue that arises here is a result of our culture's understanding of man as the dominant force in the world. We ignore the creative ability of the natural world, preferring to believe that meaning can only be assigned through the scientific method, rather than seeing the potential of experiential meaning or metaphoric meaning. What I refer to here is the reliance on rational thought at the expense of metaphoric thought. If the suggestion that we are encouraging anthropocentric thought through our worldview is acceptable, then it is reasonable to believe that

encouraging the bio-centric worldview would only help balance our thought process, as Kahn's work suggests that even in the shadow of an anthropocentric worldview, children still sense a connection to the world around them.

In understanding the world in this anthropocentric fashion, mankind creates a situation in which it is hard to see himself as part of nature. Our technology allows us to have the perception of control over nature and these artifacts of control allow us to view ourselves as in control. This ignores the mystery or wildness that all of nature has, forever beyond the control of mankind. Cajete's work on Chaos and the Metaphoric Mind and Kahn's work on our understanding of our world, both offer insight into how Western society can, at least, begin to understand the wildness of our world. In Kahn's work we recognize that the lessons we learn as children are shaped by the demands of our culture and that that culture has focused our attention on the needs of man. Edmund Husserl, the conceptual father of phenomenology suggested that there is a kind of "associative empathy" between humans and other living beings, which he felt was grounded in the physical nature of bodies. This might help to explain the bio-centric reasoning, which persists in children within the scope of Kahn's work, even in the face of an anthropocentric worldview. As we'll see in our discussion of Native American society a more bio-centric understanding is prevalent and it seems reasonable to suggest that the metaphoric mind and its experience of the world or creative participation, as Cajete discusses them might, in a way, cultivate this empathy. This suggestion is supported when one explores the traditions, stories, and spirituality of Native American cultures. As we'll see, the Native American culture's collective knowledge, not only displays a sense of interconnectedness comparable only with ecology and chaos theory, but also displays a unique capacity to anthropomorphize the natural world. They encourage a bio-centric understanding of the world by seeing in all life, spirits, which are like our own.

Another Way of Seeing
The Native American Experience

As discussed, Christian man has always been the earth's master, as God gave all that was on the earth for the use of man. And thus he rightfully felt that it was his dominion. This was particularly true in the New World where the perception was of an unlimited cache of natural

resources. On the other hand, in many of the earth's primal or indigenous populations, the understanding of man's role in nature is rather distinctly different than the traditional Western approach. For many native cultures, the landscape is imbued with spirits and those spirits can communicate with these people the needs and desires of the natural world. Therefore many Native populations would view themselves as maintaining a dialogue with the natural world through prayer and meditation, rather then attempting to control it. As Cajete (1999) suggested, they see mystery in the world and feel that not all is within their power, as I've begun to reveal I believe this mystery can be equated with the wildness that Thoreau and Snyder spoke of.

To begin explaining the difference between the understandings of Western culture and the Native American cultures it is instructive to consider the differences between the spiritual ways of these cultures. As discussed earlier the creation story of Christianity can be linked to many of our relationships with the natural world, the same can be said for the Native cultures. It is important to understand that there are many distinct Native cultures and it would be inappropriate to generalize specific spiritual lessons, however there are a number of spiritual concepts, which are generally shared across cultures. These six concepts are:

1. A belief in or knowledge of the unseen powers, or what some people call The Great Mystery.
2. Knowledge that all things in the universe are dependent on each other.
3. Personal worship reinforces the bond between the individual, the community, and the great powers. Worship is a personal commitment to the sources of life.
4. Sacred traditions and persons knowledgeable in sacred traditions are responsible for teaching morals and ethics.
5. Most communities and tribes have trained practitioners who have been given names such as medicine men, priests, shamans, and other names. These individuals also have titles given them by The People, which differ from tribe to tribe. These individuals are responsible for specialized, perhaps secret knowledge. They help pass knowledge and sacred practices from generation to generation, storing what they know in their memories.
6. A belief that humor is a necessary part of the sacred. And a belief that human

> beings are often weak—we are not gods—and our weakness leads us to do foolish things; therefore clowns and similar figures are needed to show us how we act and why.
>
> (Beck 1996)

These concepts help us understand the basic tenets of Native American spirituality across cultures and allow us to compare our own spirituality with Native spirituality.

It is instructive at this point to consider the lessons, which Native American creation stories attempt to convey much in the same way we considered the lessons of the Christian creation story. To begin, man and woman, in most cases, are not specifically created in the image of god or the creator, in fact the creator himself, although often referred to as grandfather, is not represented in a particular form in most cases, his/her being is thought of as the Mysterious Power mentioned earlier (Deloria 2003). Nor is man, at any point, ever given dominion over the natural world and it's inhabitants (Deloria 2003). This places man in a different role than he finds himself in the Christian story, giving him a role, which is equal to all the other creator's beings, rather then being imbued with a predetermined superiority. In fact, in many of the creation stories, the weaknesses of humanity are emphasized, our pitiable nature and our need for assistance from all the other beings of the world are highlighted, rather then a sense of dominion over those beings. The Anishnabe creation story is an excellent example of this:

The story concerns the twin humans born of the Sky Women. The twins are tiny, pink, helpless, and are not doing well. Sky Women fearing for their health and survival calls a meeting of all the earth's animals. They all see that the children aren't growing well and it is decided that they must need meat to feed on. This recognition required that one of the animals must sacrifice his/herself for the survival of man. After some thought Mother Bear, who feels for Sky Women, steps forward to sacrifice herself so that the children can have the meat they need to grow.

(Dyer 2004)

The Anishnabe honor Mother Bear for her sacrifice to this day. In this way, the Native American cultures, each with their own story, come to understand that Mother Earth and her inhabitants support the survival of humanity. This theme reoccurs over and over again not only in the creation stories, but in many of the stories concerning the life-way or life-path of many Native American

cultures. This stands in stark contrast to the relationship of dominance previously described in the Judeo-Christian cultures.

In further contrast to the Christian creation story, there is no concept of a fall from grace in Native American creation stories. The contrast here results in many ways from the Judeo-Christian concept of time, as Vine Deloria (2003) puts it,

> *"Christianity has traditionally appeared to place its major emphasis on creation as a specific event while the Indian tribal religions could be said to consider creation as an ecosystem present in a definable space. In this distinction we have again the fundamental problem of whether we consider the reality of our experience as capable of being described in terms of space or time—as "what happened here" or "what happened then."*

The significance here is that the fall began a linear series of events with a defined end, while the Native view sees, what we would term today an ecosystem, in continuous cyclical motion without a defined beginning or end (Deloria 2003). The fact that there was no fall and there will be no redemption requires the Native cultures to strike a balance with the cyclical world they live in. Thus, the idea of good and evil is not as important as the problem of balance and imbalance—or harmony and disharmony, evil is essentially seen as excess or imbalance, and it can be adjusted and corrected through various means (Beck 1996). This directly ties the concept of evil to the way in which Native American's interact with the rest of the world, humans and otherwise. In contrast to this idea the concept of evil in Christian societies is tied more directly to the way in which we interact with other members of humanity and in our personal relationship with our God, both of which are perceived as separate from the natural world, as discussed.

One of the ways in which the Native American's encourage the innate bio-centric leanings or metaphoric mind that all humanity possess' within their own culture is through the anthropomorphizing of the natural world around them. Not only are Mother Earth and her inhabitants imbued with spirits, certain animals are considered in a very real sense to be a people of their own. This most often occurs with an animal of particular importance to a given Native culture. For example the relationship and stories of the Plains Tribes and the Buffalo, the Pacific Northwest Tribes and the Salmon, the Northern Tribes and the Moose, or the Appalachian Tribes and the Deer (Beck 1996). In each case, the animal, because of its significance to the tribe is recognized as a people deserving the

same respect that would be given to one's blood brother. In fact, the elder's and the oral histories of Native societies often speak of a time long ago when they could speak the language of the animals (Beck 1996). This dialogue is perceived as particularly important in hunting, for example let us consider the Deer Huntingway of the Navajo as told by Claus Chee Sonny of Tsaile, Arizona in paraphrased form (Beck 1996). Essentially the scene is a young man, the first man, waiting in a ravine to kill, with bow and arrow, the deer that Wind had told him earlier would be coming.

The first deer, a large buck, came with many antlers. The hunter got ready to shoot the buck. His arrow was already in place. But, just as he was ready to shoot, the deer had transformed himself into a mountain mahogany bush. After a while, a mature man stood up from this bush. He stood up and said, "Do not shoot! We are your neighbors. These are the things that will be in the future when human beings will have come into existence. This is the way you will eat us." And he told the hunter how to kill and to eat the deer. So the hunter let the mature Deer-man go at the price of his information. And the Deer-man left.

In each of the parts of the story following this section, another deer, a doe, a two pointer, and a fawn respectively, show themselves to the hunter before transforming first into a bush and then into a man or woman and teaching the hunter what he must do to maintain his relationship with the deer people (Beck 1996). In this way Native Americans avoid the pitfalls outlined by Kahn in his theories concerning anthropocentric reasoning vs. biocentric reasoning, by giving the members of the biotic community the qualities of humanity. It is understood by the Native cultures that these stories occur long ago, but the lessons that they teach are meant to influence the current generation and the generations that follow. The early roles of hunters were thus, in many ways, as the communicators or ambassadors between man and the animals he needed to survive. Songs and prayers were an essential component of the hunt, as it was understood that although the animals had given their consent to be killed, it was essential for the hunters to maintain a proper balance in nature by honoring them. This tradition of honoring the elements of nature that help man survive continues in Native cultures to this day.

So why concern ourselves with this perspective of our relationship with the earth, clearly the Native cultures dealt with a much different world then we deal with today. One argument is that they are still dealing with today's world in much the same way they did hundreds, even thousands

of years ago, despite our culture's best efforts to eliminate their culture. Another is learning how others view the world, brings into sharper focus how we view the world. Still another, and certainly the most convincing for someone born of the Western perspective and seeking a better way to understand my world, are the arguments and concepts presented by Cajete. The ideas begin to synthesize what I think has been felt in Western society by the environmental movement, what is being discovered by that same societies scientists, and what has been the belief and understanding of Native cultures for hundreds, even thousands, of years. In so doing he has opened a door to Western society, we have come to the door on our own, which he allows us, but we have refused or been unable to find the doorknob to open it ourselves, quite possibly because of the cultural "lenses" we are wearing (Dyer 2004). Behind this door is an understanding of wildness and the lessons of a culture that have recognized its value for centuries. I believe that this recognition offers much to our entire culture, but of particular concern here is its influence in Landscape Architecture, which can integrally tie the creative nature of man and the natural world together in a balanced and equal form.

Creative Participation and Landscape Architecture

The synthesis of our thought processes, that of the metaphoric mind and the rational mind, is itself an act of creation and therefore a natural component of the creativity of the world; dominion, oppression, and control are imbalances, as is the act of ignoring our own creative abilities and the role that we play as Mother Earth's conscience. By this I mean that the balance of Man's relationship with nature falls somewhere near the middle of the continuum mentioned earlier, with the two perspectives outlined earlier in the paper on either end, that of control of nature by man vs. man's absence from nature. The possibility of bringing the continuum together exists in the metaphoric mind, which understands, or can begin to understand, the thread of wildness that runs through all of the perspectives within the continuum. In the center of the continuum I would suggest that the proper relationship for man and nature could be described with Cajete's term, creative participation. As a people, and by people I mean of this earth, we must seek to apply this understanding and to embrace the beauty of this world and the beauty of our role in this world; we must seek to live as a "Sacred Relative."(Mann 2004)

So what does this mean for the design field, in particular Landscape Architecture? Design is a result of our culture, a manifestation of what we value as a society; as such it has tended to be anthropo-centric in its approach to the natural world and culture. We have, as a rule, attempted to inflict our will upon the landscape, leaving us with urban centers devoid of place and context, suburbs, oh suburbs, which were you to be teleported to one vs. another across the nation you might never be able to determine where you were, and to rural areas which are constantly battling natural forces. Anne Whiston Spirn would suggest that each of these is a result of the loss of the ability to read the language of landscape. Native cultures, engaging their metaphoric mind, live by this language. It is this language that begins to reveal everything that we've discussed thus far and it is this language that Landscape Architects in America must teach to the public, if we hope to accomplish what I think we are all working towards, that being a recognition of the importance of our environment, place, landscape, etc, whatever you wish to term it.

Landscape Architects have the opportunity to take on the role of the creative or metaphoric mind in man's relationship with nature, unfortunately we are faced with a world filled with people who have lost the use of the metaphoric mind, have ignored the interconnectedness of life, and sup-pressed their own bio-centric leanings. We in the techno-cratic, Judeo-Christian world have lost the ability to read the language of landscape; as such Landscape Architect's have a duty to help society relearn the essentials of this dialogue. It is clear that in each individual there exists the inherent bio-centric understanding, which has, in our culture, not been nourished. As designer's who are most concerned with how humanity and culture lies on the landscape we have the opportunity to help nourish and spread that bio-centric understanding.

Designing opportunities for creative participation is an actionable way to help nourish this understanding, particularly for those of us working in the field of Landscape Architecture. Creative Participation, at its most basic, is the opportunity to participate in the processes of the natural world, to experience the wildness that exists throughout our landscape, and most essentially, as a human, to recognize that you are a part of that. This participation will hopefully breed understanding and re-spect for the natural world and encourage the development of the metaphoric mind and thus the abil-ity to read the language of landscape. Placelessness would disappear, in large part, because people would begin to recognize and, more importantly, experience the distinct cycles and processes of their

homelands. In a time when globalization is rampant and the mixing of cultures and people is common, the landscape on which we live may well be the most identifiable component of an individual's background, particularly in the melting pot of America. Granted not everyone will react in the same fashion to opportunities for creative participation, however Landscape Architects can be confident that providing those opportunities for experience will do more than not providing them.

Creative Participation Case Studies

To gain a better understanding of what I mean by creative participation, let's consider some examples. One of simplest and most powerful examples of this idea of creative participation is the human sundial. In the human sundial the rudimentary components of a sundial are laid on the ground, i.e. everything except the shadow caster, which is left as an empty space for the participant. When the participant stands in the assigned location he or she becomes the shadow caster, thus creating, through an interaction with the sun and the earth's axis, a sense of time. J.B. Jackson (1994) suggests that it is our sense of time, which in the long run, creates our sense of place and of community." What Jackson refers to here is not mechanical time, which is dictated by the calendar, the schedule, and the clock, but organic and functional time, which is dictated by nature. Without anyone of the components, the earth, the sun, the individual, the site, the meaning of this exercise is lost, but it is the process of interaction of each component that creates. Although participating in this action only once might not be enough to generate an understanding, it is in repeating the exercise and experiencing the processes of the natural world that one learns and thus gains, as Jackson would put it, a sense of time and a sense of place. Creative participation is experiential learning and this generates not only a sense of place and an ability to read the language of landscape, but also a sense of our intimate interaction with our world. Although this is only one simple example, many examples exist of creative participation, for instance hunting, fishing and gardening are all types of creative participation, when done with respect and understanding for our world.

Coal Mining Man and Nature
Site Explorations

Coal mining is not something too many would consider to be an act of creative participation with our world and at the magnitude with which we currently assault our resources I would agree. Coal mining is the abrupt destruction of an ecosystem to obtain a power source used to separate

man from the organic and functional sense of time Jackson speaks of. Electricity is used to power many of the items in our world that lead to the perceptual blindness and the extinction of experience mentioned earlier. However, it is a process of interaction with our world and a very intimate one indeed as it delves deep into the earth to remove the stored solar energy of thousands of years. We can see that there is an imbalance in this interaction, but I would suggest that mining is not inherently evil; Native American culture's used wood for fuel in the forests of the east and buffalo chips for fuel in the plains, in both cases the intimate connection to the forest and buffalo was recognized and respected. Using the resources of our world is a natural component of the life of every human, animal, and plant on this earth. What I suggest is occurring today is a lack of recognition, on our part, of the impact that America's desire for energy has on the Appalachian region and, for that matter, other energy resource locations. By not participating in the act of obtaining fuel, an experiential component of living, the country has become perceptually blind to the impacts. Revealing this fact should indeed be a component of the process of mining and of the reclamation of that mine site, to creatively participate in the creation and regeneration of these sites is a natural aspect of our living on this planet.

As I mentioned above, the current pace at which we are removing resources is dangerous and destructive, however our resource/commodity way of thinking has not simply become a problem in recent times. The coal mining regions of Appalachia, whether it is the people of the region or the environment itself, have long suffered so that our nation might grow and gain strength. The legacy of this nation's relationship with the natural world is writ large in the hills of southern Appalachia, but as I've discussed, can be read by very few. This has been amplified in this region in large part because of the limited accessibility. Teaching the nation to read the language of *this* landscape is, I believe, particularly important for the success of the language of landscape elsewhere in our country. This is not a language of shame however, but a language of understanding and recognition, of opportunity and constraint, of balance and imbalance. The goal is not necessarily to judge our behavior, but rather to reveal it, to help individuals make the connections that they have been unable or unwilling to see.

Before we go any further, I'd like to place the destructive act of coal mining within a context. As I mentioned early in this paper, the context of a problem can be very helpful in revealing the

solution or, at the very least, promoting a more complete understanding of the problem itself. In the current discussion I fear that many of my readers will not be able to get beyond my statement that mining itself is not inherently evil and I would like to frame that statement. To do so I would like to consider the dynamic manner in which the natural world alters itself, through creative and destructive acts. The idea is to consider what lessons it has to offer the field of coal mine reclamation and thus to read the language nature's landscape has already written.

Creation and Destruction
Nature's Lesson's for the Creative Participant

Human disturbance of the landscape is commonly recognized and its effect, most often perceived as negative, is a subject of great debate among people from all walks of life. How we can stop it, how we repair the damage, and what are we going to do about the magnitude of this damage, are common questions in this debate. These questions are inherently anthropocentric, as they look to man to understand and control both the disturbance and the healing process. We see humanity ignoring the dynamic creative potential of the natural world once again. In this case that potential exists in the way which the natural system heals itself from the disturbances created by man and also from those created by its own forces. Man has been investigating this process, known as succession, for quite some time, but has only recently begun to recognize what a dynamic and chaotic process succession is. A study of succession is essentially a study of the growth and death of distinct plant and animal communities or ecosystems with time. Although nature, by no means, works at the pace that man can easily grasp in reference to his own lifetime, the work she does on her own disturbed landscapes offers a great deal to the professional interested in restoration, reclamation, or rehabilitation.

In understanding what succession can teach the diverse fields of landscape rehabilitation it is of importance to consider that succession can occur in many different forms and that our interest here is in primary succession. Primary succession is the process of ecosystem development on barren surfaces where severe disturbances have removed most vestiges of biological activity (Walker and Del Moral, 2003). This would happen on a mudslide, on volcanic material recently deposited, where an old road is abandoned or on a mine site. It is a process of colonization and is dramatically influenced by context, local climate, and site history, as it is forced to respond to each.

The type of disturbance that might initiate the process of primary succession is often

relatively short lived; it is a singular event which has an easily defined beginning, end and location (Walker and Del Moral 2003). Types of natural disturbance are grouped by the four classical elements of our world, earth, air, water, and fire (Walker & Willig, 1999). Disturbances linked to the earth result from tectonic forces, whereas those involving air, water and fire are products of the interplay of climatic, topographic and soil factors (Walker and Del Moral, 2003). The disturbances are further characterized by their frequency, extent, and magnitude and by the substrate characteristics they leave behind (stability, texture, fertility, etc.).

Disturbances can vary in scale from a volcanic eruption, which will potentially cause global impacts, to the uprooting of a tree which results in the pit and mound micro-ecosystem that anyone hiking through the Appalachian forest is familiar with (Constantz, 1994). The impact on the biological legacy, meaning the intact biological material, i.e. seed, soil, nutrients, etc., that remains after the disturbance, is also different in each of these scenarios. For instance, little if any legacy is left in newly formed volcanic soils as compared with the relatively bountiful legacy left in and around the tree pit and mound. Of course, the frequency with which these events occur differs too, with the more severe effect of the volcanic eruption occurring much less often then the storm blown tree. In comparison to these impacts one major difference appears when we consider the effect of human disturbance on the earth, the frequency, extent, and magnitude all tend to outweigh anything the natural world has done to itself. As I've said I believe that this is a result of the resource/commodity approach taken in the extraction of our resources. However, for the sake of argument, let us consider an individual mine site and the landscape it leaves; more specifically let us consider it in relation to a naturally produced substrate and what this might suggest. Walker (2003) suggests that naturally produced substrates are often mimicked by anthropogenic ones and he compares the Tolbachik Volcano (Kamchatka, Russia) cinder cone to a mine tailing pile in Yorkshire, England, in each the substrate is characterized by low fertility, drought and instability. The idea is simply that what is created by the mining process is not necessarily unnatural or inherently evil. Furthermore, Walker (2003) also notes that just as local flora may not contain colonists for extremely stressful naturally produced substrates; it is unlikely that natural dispersal will provide effective colonists for man-made substrates. This concern over natural dispersal vs. man made seeding so to speak can be seen at the Mt. St. Helens National Park in Washington; a key concern in opening the newly constructed

visitors center was what plant species should be introduced as none had, as yet, colonized the site. The fear was that if we, as humans, plant something it will be unnatural simply because we, as man and not nature, have planted it (Walker 2003). This highlights the difficulties in man's relationship with nature here in America; we are simply unable to see the processes of the natural world as part of our world. The lesson that I suggest here is simply that, as mentioned above, the process of mining itself is not necessarily evil, but that the disconnection between our everyday lives and the impact those lives have is the imbalance.

What drives this imbalance is, again, the resource/commodity way of thinking, i.e. if companies mine more coal, more quickly, with less effort they can keep their prices down, their clients happy, and themselves rich. This same attitude permeates coal mine reclamation in the Appalachians, which has traditionally been viewed as the quick and necessary re-vegetation of a highly disturbed site to prevent further site degradation, such as erosion, acid mine drainage, etc, all done to prevent the coal company from having to spend too much money on the site after the resource has played out. The regulatory system established by the state and federal government in West Virginia requires that coal companies buy into a five-year bond, which is held by the regulatory agency and only returned if, at the end of the five-year period, a series of site requirements, established at the time of permitting, are met. Although these short-term goals should not, by any means, be ignored, the study of succession suggests that the timeline for mine site reclamation might benefit from expansion.

The traditional belief among scientists who study succession is that the path of succession is one that follows a linear timeline, displaying a defined beginning and a sustained, mature, peak community at the end, but much of the modern research on succession has questioned this view (Walker 2003). Walker (2003) suggests that succession is a process of change that is not always linear and rarely reaches equilibrium. The idea or theory is instead that there are a variety of outcomes possible and that the work of succession itself is much more dynamic and unpredictable; in fact it resembles some components of the chaos theory.

This theory of succession is supported by Klotzli *et al.* (2001), who reports on the restoration of natural and semi-natural wetland systems in Central Europe. With over 40 years experience in wetlands restoration and monitoring he is quick to recognize the dynamic and unpredictable

development of both natural and restored wetlands. Using permanent research plots Klotzli *et al.* (2001), notes that only in exceptional cases are stable ecosystems recorded. Zedler *et al.* (1999) also questions the traditional approach, calling into question the five to ten year restoration approach, suggesting that its based on a false assumption that restoration follows a smooth path or trajectory to a system matching a reference natural system. Zedler *et al.* (1999) indicates that high interannual variation on his San Diego wetland study site, changes in substrate material as compared to natural reference sites, and other factors over a twelve-year period all lead to high variability in succession on site. Zedler's *et al.* (1999) emphasis is on the inadequacy of a five to ten year plan, suggesting that monitoring and management by rehabilitationists should encompass a twenty to one hundred year timeline. Vallauri *et al.* (2002) highlights the value of such an approach with his report on a particularly unique site, which has been undergoing restoration for one hundred and twenty years. Originally denuded by intensive human use, the site, in the French Alps, was revegetated by the Forest Service in the 1860's, primarily with Austrian Black Pine, *Pinus nigra,* a non-native, which has persisted to the present. Although Vallauri *et al.* (2002) reports a great deal of success in re-vegetating the site and reducing erosion runoff, he also notes succession concerns, suggesting that continued management during the process of restoration is essential. These included the appearance of disease, a rather slow infiltration of the site by native species and poor wildlife habitat. Vallauri's *et al.* (2002) ability to consider change over such a large period of time also introduces some of the important components of the natural processes of restoration vs. those introduced by man, i.e. earth-worms, seed dispersal, disease distribution, etc. Throughout these papers the great advancements in understanding the natural world are highlighted, but are balanced with the understanding that there is much about the process of succession that is unpredictable.

Recognition
Landscapes of Experience
Southern West Virginia and Coal Mine Reclamation

The lesson revealed by this work, the work of Western scientists, has many parallels to the discussion of chaos theory communicated earlier in the paper. We see that it is very difficult to start a landscape on the road to recovery and know exactly where that road will lead. Instead, we see that we must continue to interact with an ecosystem, to celebrate its own successes and to embrace our

role in promoting and participating in ecosystem success. This is, at its heart, creative participation, the recognition of our role in the world through experiential learning and participation in its processes.

Although the unpredictable nature of succession is a concern in the regulatory aspect of mine land reclamation, its integration as a component of the process could be used in a very beneficial manner. What is suggested here is that our current regulatory outlook does not always consider the dynamic nature of these rehabilitated sites, which the scientific community has clearly noted. In many cases these disturbed sites' full potential is not realized simply because the goals for rehabilitation are relatively short sighted. The natural world teaches us that this is not its approach, that it maintains a dynamic environment which adapts and modifies itself based on the different disturbance events and proceeding periods of growth that any particular ecosystem experiences over a period of time. As I mentioned earlier, I believe that there is an imbalance in the magnitude of our resource extraction. However, rather then simply bemoaning this fact I think it is essential to create sites which represent and discuss this imbalance. We must, as landscape architects create opportunities to creatively participate in these stories to experience the language of the Appalachian landscape. A major component to doing so on the mine sites of Southern Appalachia is through the consideration of a natural timeline, not simply the resource/commodity timeline currently established.

Whether we agree with coal mining or not, it is clear that the recovery of the landscape after mining has exhausted the resource it seeks is a process. In fact, the act of mining itself is a process and I believe each would benefit from being viewed through the eyes of a creative participant. As I mentioned very early in the paper, wildness is something that can be discovered in even the most devastated landscapes on the earth. Deep Ecology, the study of this wildness, suggests that the recovery of human-damaged ecosystems is not strictly a scientific matter, but would involve a combination of art, science, and most importantly, a sense of place (Devall 1985). That is, those humans involved in reinhabiting or restoring an ecosystem to health would need to be sensitive to the spiritual as well as the biological needs of that place. (Devall 1985). I.E. we have an ethical responsibility to consider all of the components that human disturbance of the landscape and the ecosystems existing there entails. The opportunity for creative participation in the restoration of such an environment seems very viable then.

In Logan County, the location of my site, the impact of coal mining on the environment and landscape is utterly pervasive, permeating the culture and the ecosystems of the area. Any attempt to understand this place must certainly take this into account, a restoration project which seeks to involve the populace with this site through creative participation must consider how tightly they are already tied to their landscape. It must seek to not only heal the landscape, but to embrace the existing culture and their role in this landscape. The very nature of the resource/commodity method of valuation has been applied not only to the environment, but to the people in southern West Virginia. Throughout the history of the community the abuse of individuals by the corporate community is overwhelming and the battles for individual rights and respect have sometimes been violent. This is a battleground between placeless corporate interests driven by greed and the individual people of a unique culture, struggling to maintain their place. As I've said throughout this paper, the world is a series of interconnected relationships and this is no different, although it is clear that a great deal of direct blame falls to the corporate interests, it is the desire of America for inexpensive electric power that is at the root of this conflict. This is a result of what John Lyle calls the "degenerative patterns in linear flows." Logan County is a source (in this case of cheap fuel) and serves as an input to the great energy sink that is America.

This is our context and it is what must inform the opportunities for creative participation on the site. Learning to respect the gifts that the natural world gives us and understanding at what costs those gifts come can be a form of the experiential learning that I seek to encourage. Recognizing and engaging the unique landscapes of surface mines while also encouraging opportunities for regeneration and regrowth on the site respects the individuals who live their and the environment which has been so drastically affected. It also offers the opportunity for others to experience first hand and creatively participate in the effects of their lifestyles. In fact, in some ways it would become a site to which any individual turning on a light powered by coal should make a pilgrimage to. Not because of anything I did to it, but rather because of what we as a culture have done to the site and for the opportunity to recognize what that means and what it feels and looks like.

New Logan City
A Graphic Exploration of Creative Participation

The following project is as discussed. Some information has been repeated to help explain the associated diagramatic, photographic, and graphic work which has been collected to explain this project. The strength of this project has been the process which was discovered through my research, the following pages are an attempt to apply that process to the difficult problem of reclaiming Mountain Top Removal sites in southern West Virginia. Certain leaps of faith were made during this process, most importantly, a certain degree of liberty was taken with what folks in this region might desire the reclamation process to accomplish. Although I did have some input from mining engineers, residents, and others, these conversations were in no way exhaustive. As such, this project serves only to scratch the surface of the possibilities within reclamation for the creative hand of the Landscape Architect.

In considering this landscape it became clear to me that there was more to this issue than simply to mine or not mine, but that this landscape represented a component of the psyche of Western culture. As a way of understanding that psyche I looked to Native American culture for another way of knowing. At its core this can be compared to looking through different lenses, Western culture has built the glasses through which I see the world and I took those off for a moment to try on another pair. This process resulted in the identification of a series of dichotomies.

Man vs. Nature
Linear vs. Cyclical
Anthropocentric vs. Biocentric
Mechanical Time vs. Organic Time
Rational Mind vs. Metaphoric Mind

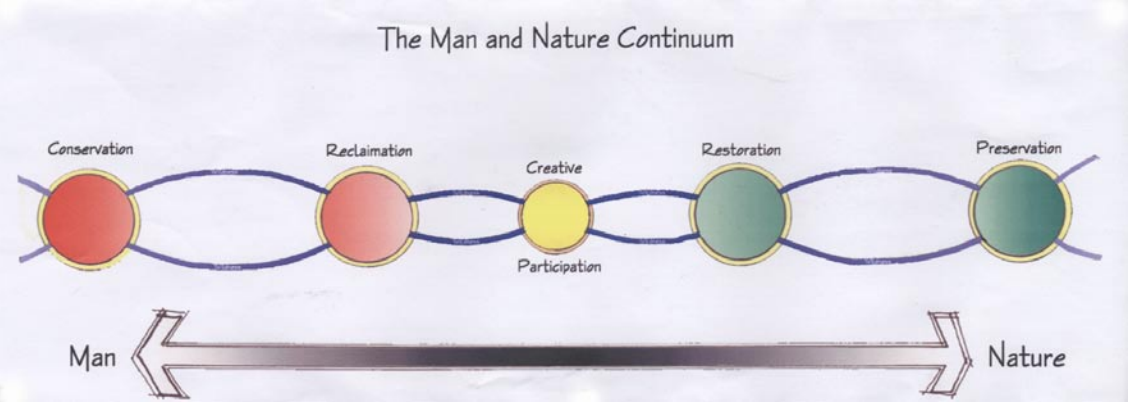


Figure 1

On the one hand you have the rational mind, which objectifies and separates the world into understandable components and therefore ignores the independent spirit of nature. On the other hand you have the metaphoric mind which is experiential by nature and tends to connect to understand and therefore embraces the independent spirit of nature. As a way of looking at the world Western culture has relied on the components listed under man and Native cultures have been more aware of those listed under nature. I propose that both at the extreme are imbalances, creative participation seeks to find a middle ground.

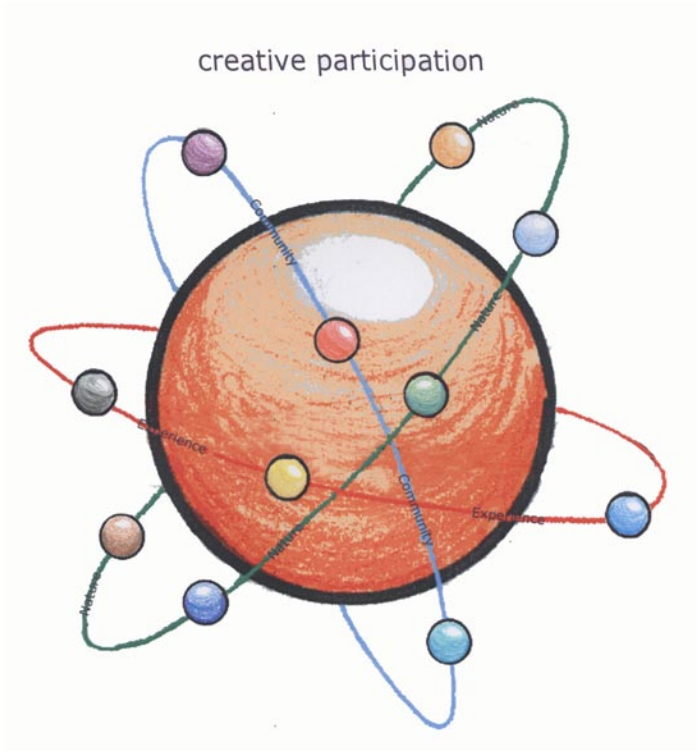


Figure 2

As I assert in the paper that Western man has been over reliant on rational thought, the process of creative participation for this project emphasizes active experience of the natural community. The diagram to the left suggests the dynamic interaction of human and natural communities through active experience. The natural community is represented by earth, air, water, sun, and life; the human community by stewardship, accessibility, and culture; finally experience is categorized as spatial, temporal, and sensory. The interaction of the natural and human communities is thus represented through a series of relationships.

To balance the rational and the metaphoric the project must combine linear thought process with the cyclical reality of nature. The diagram to the right is intended to help us understand this process. The repeated natural events have to be understood on a linear timeline to have any hope of having an effect in our culture. Fortunately I think this already occurs in some ways, particularly with people who enjoy the outdoors. Much of what Creative Participation seeks to do then is simply the identification of an individual culture's existing metaphoric knowledge. Once identified it can be used to help develop design guidelines and establish events which might serve to celebrate this unique knowledge.

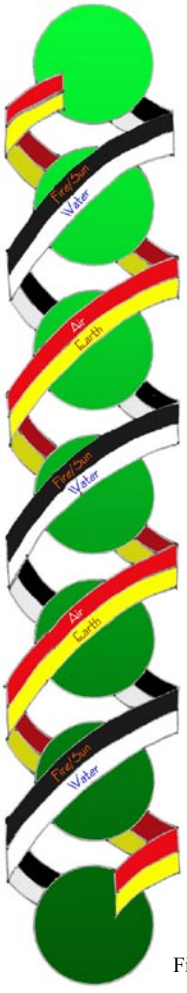


Figure 3

With this, I returned to the coal mining region, specifically Logan County. Here the relationship between coal mining, community and nature has been particularly colorful, tragic and sometimes violent.

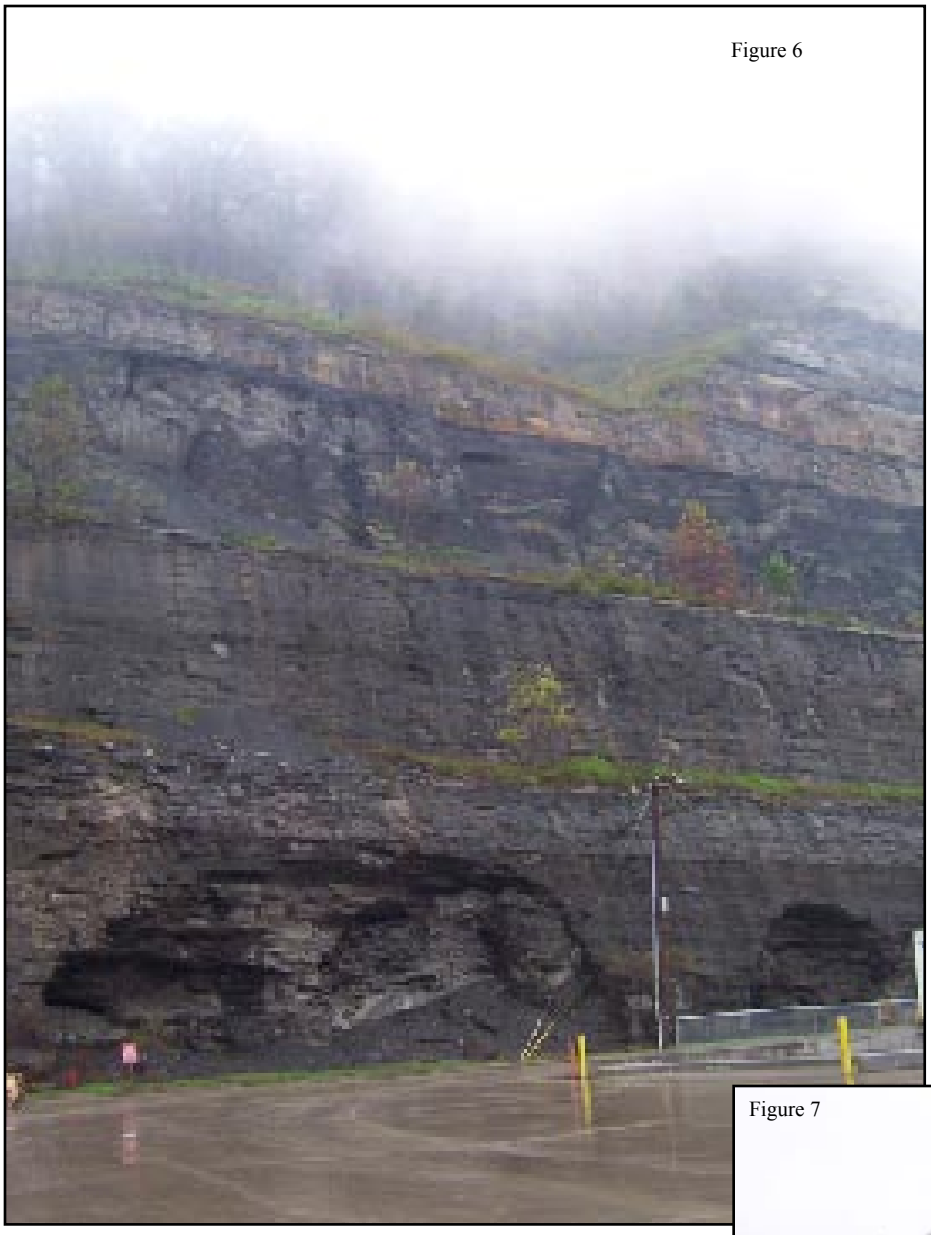
Figure 4

Severe slopes and tight valleys have limited access to the area which only furthered the ability of the coal companies to control and otherwise influence the way of life in the region. Above, the brand new four-lane highway, Rte 119, cuts through a mountain top on its way to Logan. This highway has opened up the region somewhat, but it still remains relatively isolated.

The remnants of the coal mining industry dot the valleys and pollute the waterways throughout area. Here an abandoned coal tipple stands like a sentry at the base of an inactive mine.

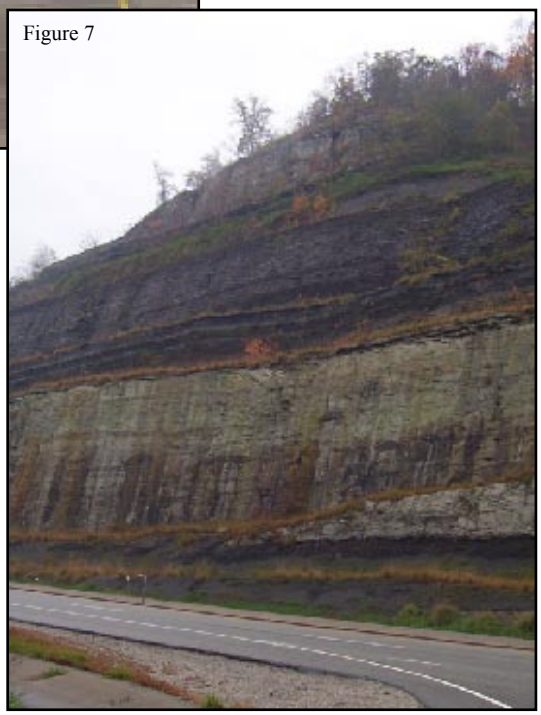
Figure 5

Figure 6



The highwall is an all too common feature in this landscape. The highwall is most commonly associated with surface mining of one type or another. However, in a landscape where level land is at a premium they can also be the result of other types of development.

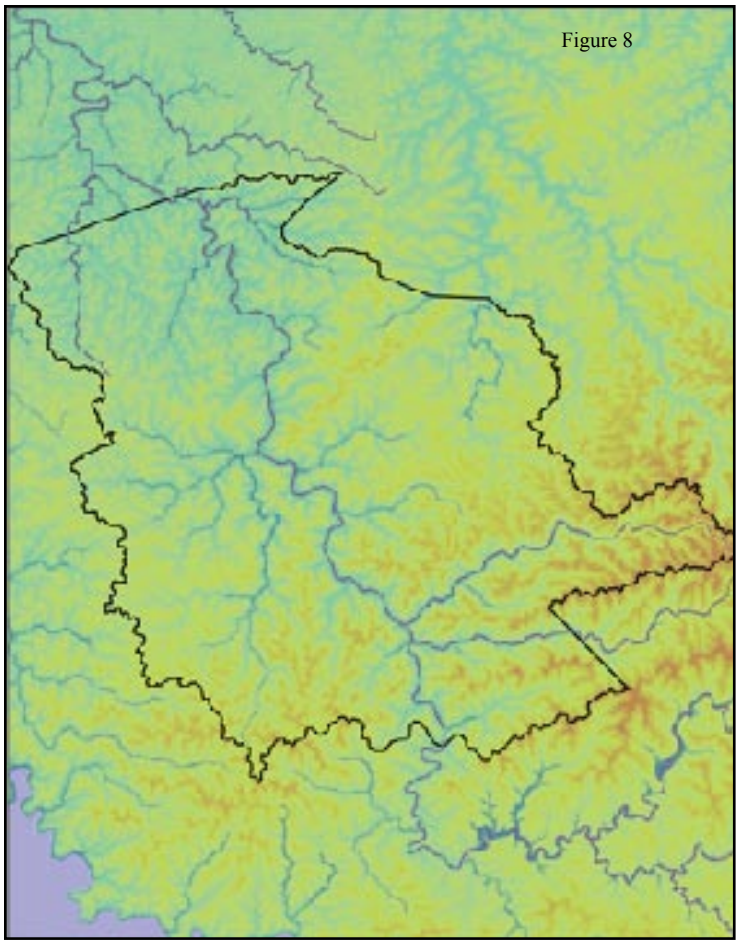
Figure 7



Here a roadway cut has created a highwall and exposed the geology of the region. Coal is so common that these roadcuts often expose smaller coal seams.

The Digital Elevation Model to the right displays the position of Logan County on the Westward tilting Allegheny plateau. The main feature of the county is the Guyandotte River and the unending spider-web of ridge tops and valley bottoms.

Figure 8



The impact of water in the region is further emphasized below. The red dots in this graphic represent housing in grave danger of flood damage. As the only level land around, the floodplains have been heavily developed and have become one of the area's most severe human and financial liabilities.

Figure 9

Mining, in earnest, first began around the time of the Civil War and has continually grown in importance to the region (Eggleston 2004). Although the nature of the removal process over time has changed, from underground mining to surface mining, with a resultant loss of employment, it remains the major economic livelihood of the area. As such it has played a powerful role in the development of this landscape, one which has not always been positive. Mountain Top Removal Abandoned Mine Lands, Valley Fills, and the social impact of this industry and the demands of our culture on this industry are writ large on the hills and in the history of Appalachia.

Photos of Mountain Top Removal

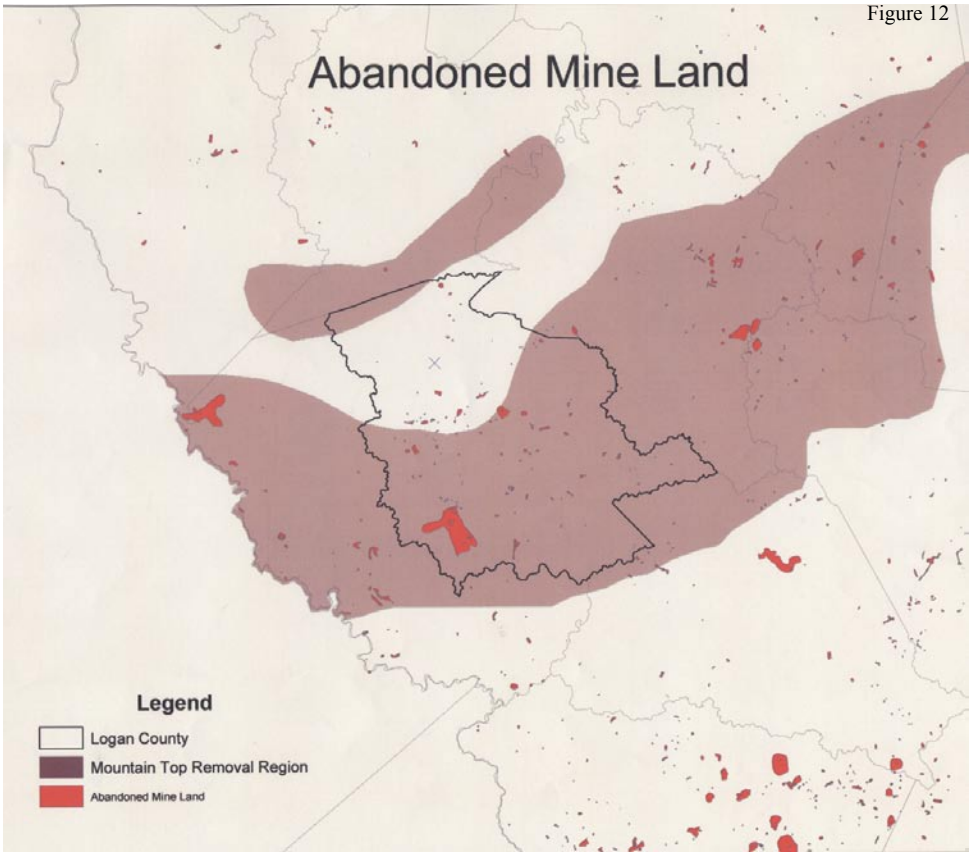
Figure 10

Mountain Top Removal is currently one of the most contentious issues in coal mining today. The process involves the removal of large amounts of overburden to expose and mine otherwise inaccessible coal seams (OVEC Fact Sheet 2005). The depth of overburden which is financially viable to remove has increased as the cost of energy has risen.

Figure 11

Probably the single most objectionable component of Mountain Top Removal is the process of overburden replacement. As it is not possible to replace it as it was prior to mining, because of expansion and other issues, the soil is often placed at the heads of valleys (OVEC Fact Sheet 2005). This destroys first order streams and has been the heart of legal battles over the right of mining companies to practice Mountain Top Removal.

Figure 12

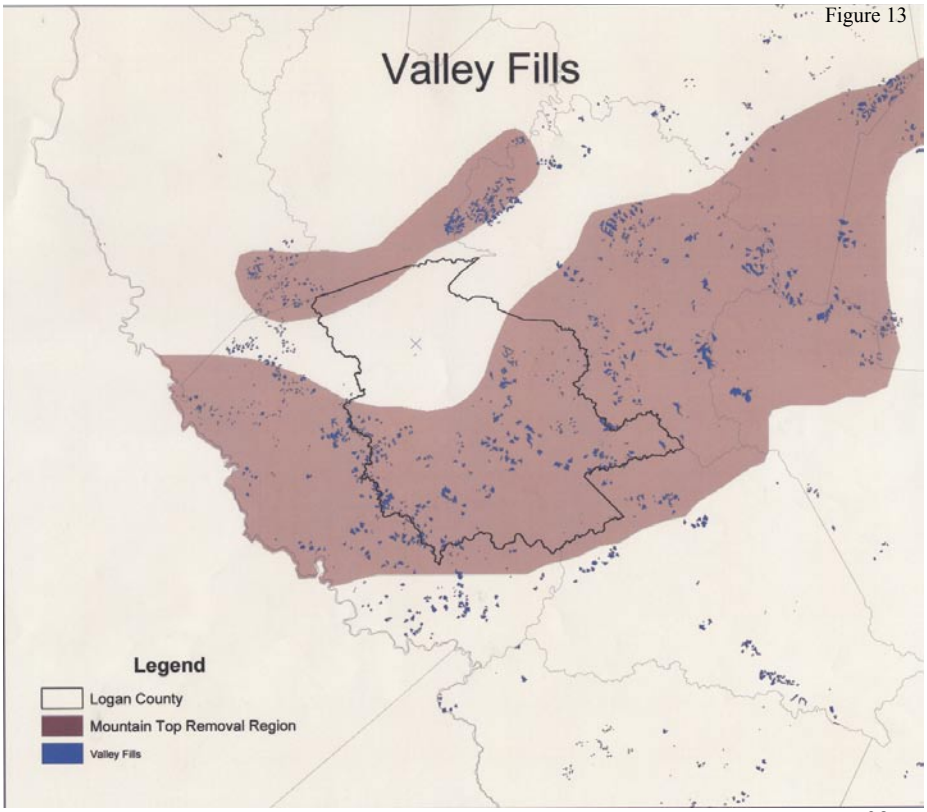


The brown area on the map to the left shows the region of southern WV in which Mountain Top Removal is commonly practiced. The red areas delineate pre-SMCRA abandoned mine lands. These areas are often prone to Acid Mine Damage and some have watersheds which have been severely affected by these phenomena.

Both of these maps display the pervasive nature of mining in the area, in fact five percent of the total acreage in Logan County is covered by Valley Fills.

Permitted Valley Fills are delineated on the map to the right. These permits are primarily controlled by the West Virginia Department of Environmental Protection, but are also reviewed and issued by the Corp. of Engineers.

Figure 13



The impact of mining does not reside only on the land, but runs deep into the hearts of the people. The social impact in Logan County has been particularly intense; the area hosted some of the most heated labor disputes in the nation and has long suffered a myriad of health issues because of different aspects of the mining industry.

Company towns dot the landscape; although sometimes magnanimous they were often places of oppression and control. Miners were paid in company script, lived in company housing, and shopped at the company store, a closed circuit system which mainly benefited the coal companies. Company towns in Logan include, Holden, Dehue, Big Island Creek and many others.

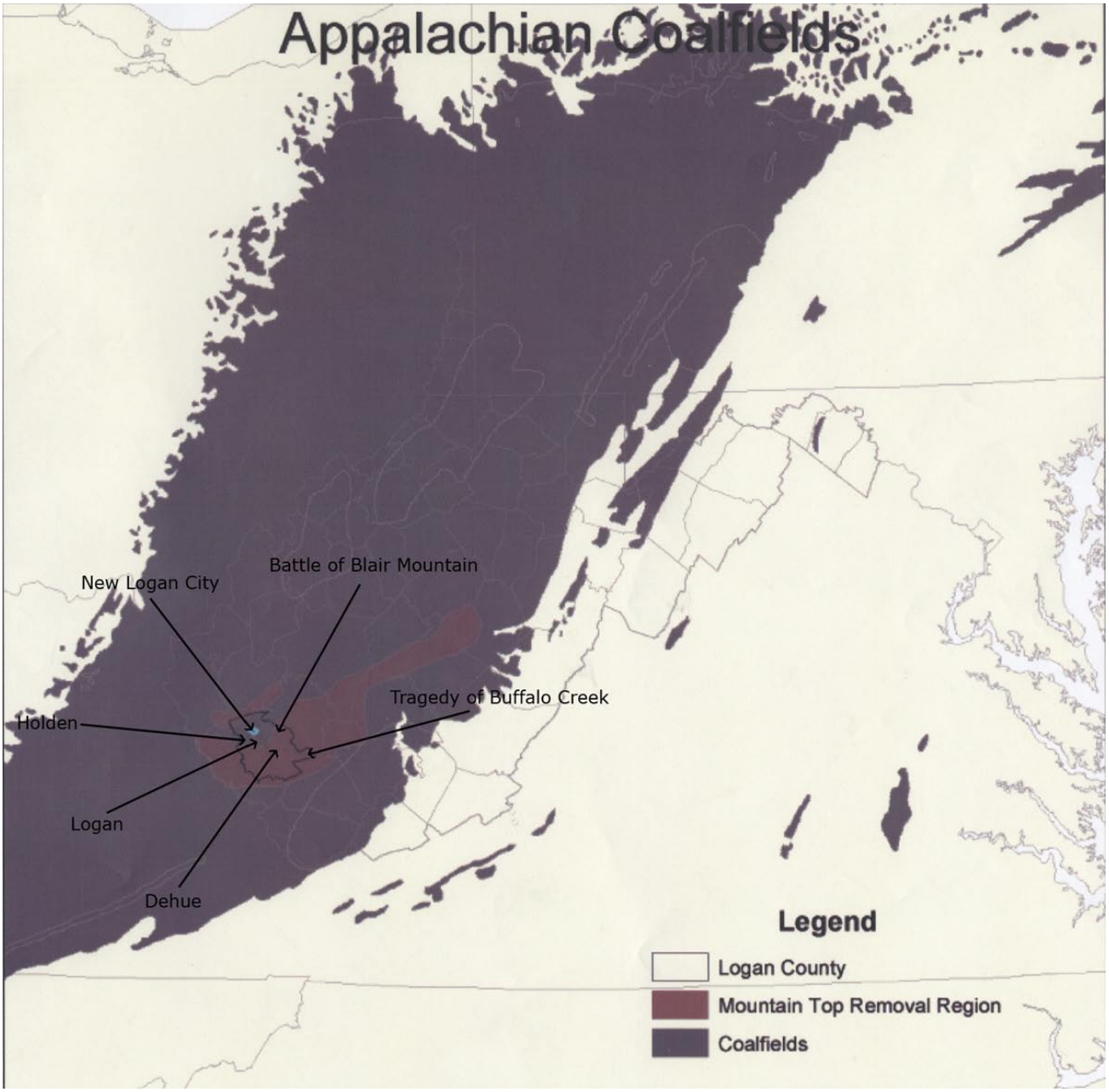
The unionization of this landscape was thus a highly contentious issue, in August of 1921 thousands of coal miners marched south from Kanawha County determined to end the non-union regime in Logan and Mingo Counties, unorganized and inefficient they were halted at the Battle of Blair Mountain in Logan County by a combination of county law enforcement, Baldwin-Felts agents, and, eventually, the U.S. Army (Eggleston 2004). When the Army did arrive the miner's immediately surrendered, laying down their arms and coming down from the hills. The UMW was unable to return to southern West Virginia until FDR's New Deal in 1933 (Eggleston 2004).

Coal mining accidents were also a common cultural occurrence, and motivated much of the interest in the union. In fact, mining companies established a rule which dictated that a mining accident could not be called a tragedy unless, at least, 5 men were killed (Davis 2005).

In Feb. of 1972 this number was passed ten fold, when a coal slurry damn at the Pittston Mine located at the head of Buffalo Creek broke (Buffalo Creek Disaster 2005). Killing 115, injuring 1100, and leaving 4,000 homeless, the 15 to 20 foot wave of black water was the impetus for the establishment of more regulation on the mining industry and lead the federal Surface Mine Control and Reclamation Act in 1977 (Buffalo Creek Disaster 2005).

The regional map below shows Logan County's location squarely in the center of the coalfields of Appalachia. It also highlights some of the major cultural components of Logan County's relationship with coal which were discussed on the previous page.

Figure 14



Mining in this region is not, however, all bad. The power of the industry also provides jobs, industry, and tax income, all of which are desperately needed by West Virginia as a whole and Southern WV in particular. In fact, many Logan County residents are proud of their association with King Coal and the power that it generates for our nation. As such there is a great opportunity to engage a balanced approach to mining in this area as the local population recognizes both the positive and negative impacts of the mining industry.

The reclamation of these mining sites in its current state is a unique result of Western man's tumultuous relationship with the natural world. Caught between claiming that he can control the landscape and at the same time wishing that he didn't have to touch it, reclamation finds itself addressing the problem from an exclusively scientific approach. This results in a relatively sterile landscape that is afraid to address the progression of the site's life and instead seeks to minimize impact, hypocrisy if it ever existed. The reclamationist's goal then becomes to create a static landscape, one which will not start leaking nasty stuff somewhere down the road. I would suggest that although these goals are important, the exclusive emphasis on this component of the reclamation process is misguided. Reclamation of human disturbed landscapes requires much more.

Creative Participation is a way to do this. To begin it would be essential to establish the existing local knowledge. To do this I designed a series of boards meant to get people thinking about the more ephemeral, organic, and cyclical components of their life experience in this area.

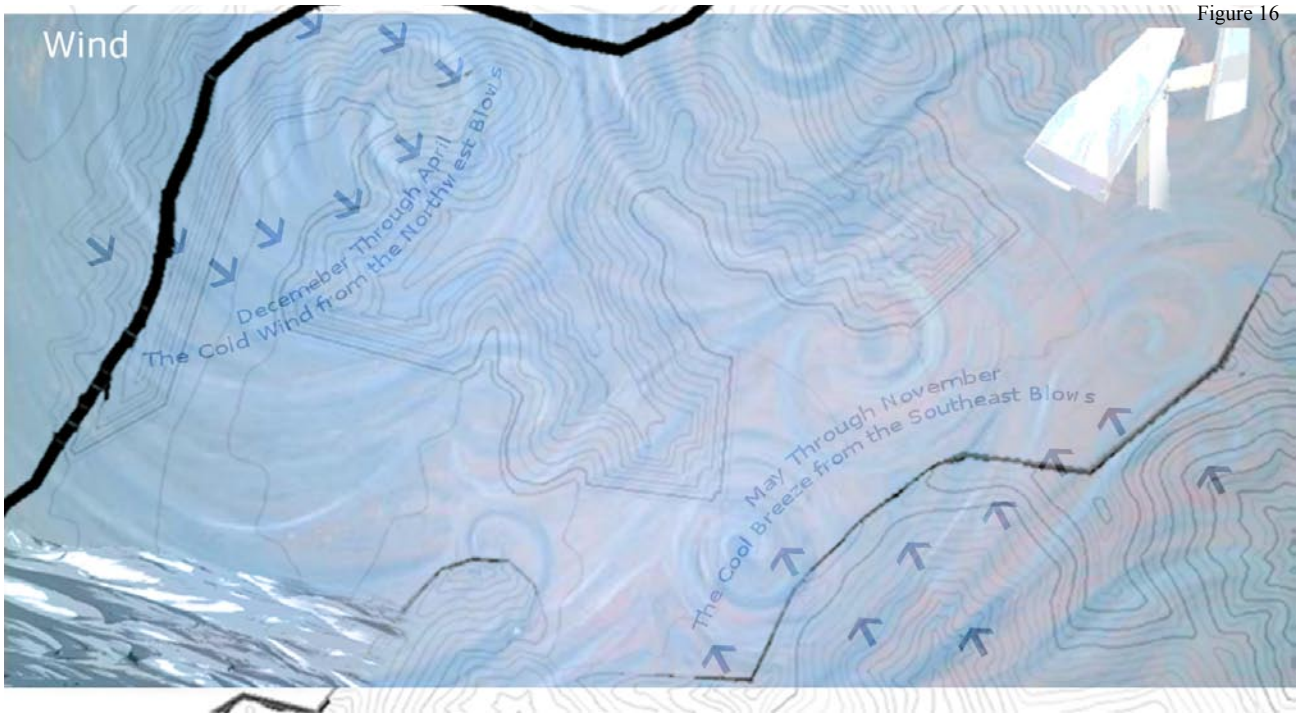
Although there are some leaps of faith in doing this, mainly because I wasn't able to actually have a conversation with these folks, I believe that this would potentially be a very fruitful endeavor. Meaning this type of knowledge already exists and taping into that could result in some excellent input for design activities that would fit this particular environment and people. For instance, "Are there common experiences of any of these processes, experiential or otherwise?" "Are there cultural events tied to these processes?"

From this group of questions and understandings a certain set of assumptions were made as to what this regions people might be most attached to. These included things like, gardening, flooding, hunting, and fishing. The following pages include the boards and short description of their goals.

Figure 15

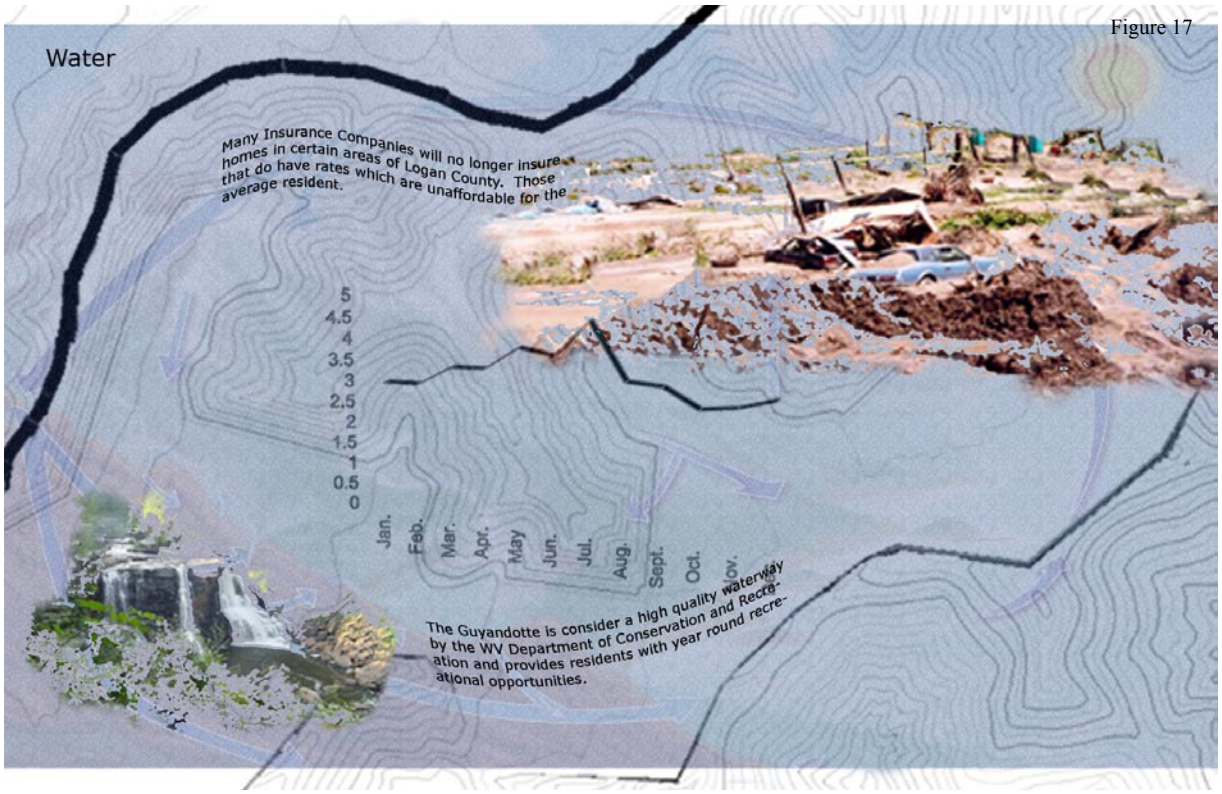
This first board is meant to generate a conversation about the earth beneath our feet. It gives particular emphasis to geologic time and the great changes that have occurred in the region over such a vast period. It also speaks to the formation of the current landscape and its most valuable resource, coal. In many ways the earth board comes first so as to immediately bring a discussion of time to the forefront. We as humans, so often forget our relative insignificance.

Figure 16



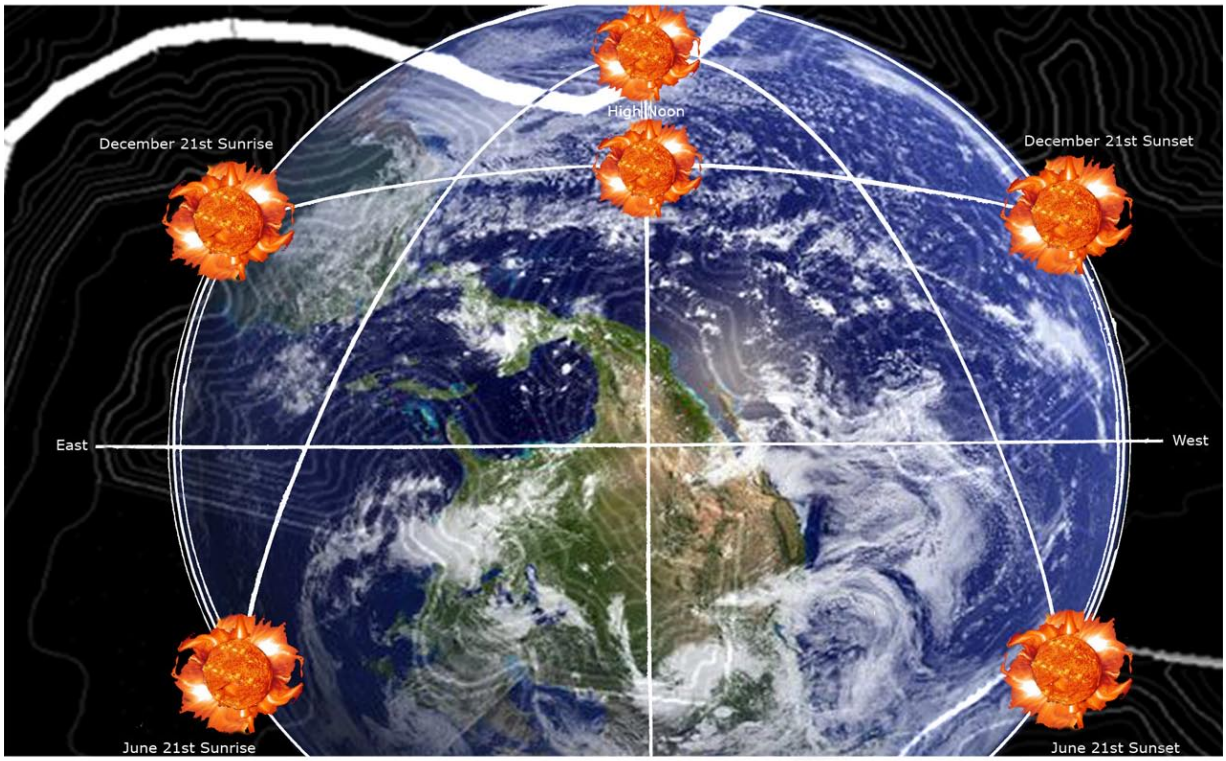
Wind was the second natural process considered. Here the main direction coincides with the seasonal change between summer and winter, with the summer breezes flowing from the southeast and the winter wind coming from the northwest.

Figure 17



Water would clearly generate a great deal of conversation, as it is an integral component of every individual's daily life and has a particularly powerful impact in this region through flooding. Acid Mine Drainage and degraded water quality might also be an issue. However, there is no doubt of the positive also, that being recreation, boating, fishing, swimming, etc.

Figure 18



The sun and its influence on the seasons and the site were the focus of this board. Meant to bring forth conversations about south facing slopes vs. north facing slopes, gardening, and generally experience more directly tied with organic time.

Figure 19

The final board in this series was simply meant to bring into the discussion the other organisms, plant and animal alike, that share this landscape with Logan County residents.

In addition to the boards which spoke to the natural processes I created a series of board which spoke to the primary cultural process in the area, coal mining. These were designed, not so much for an audience I might hold in Logan County, but for my audience here at school. These speak to how coal was created, how much is removed from West Virginia and more specifically Logan County each year, and how much an average individual might be consuming, consciously or not. These boards work to connect folks from outside of southern West Virginia with the reality of their behavior. Again the goal is not to judge, but to promote understanding.

Figure 20

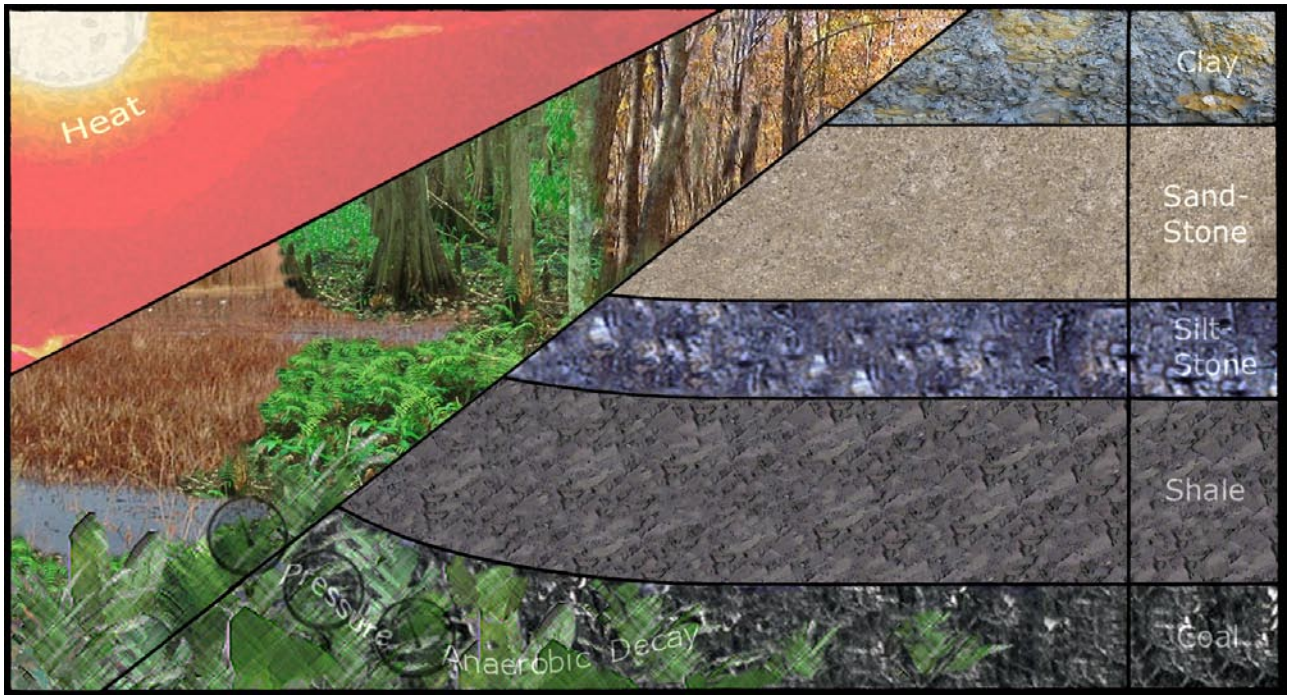


Figure 21

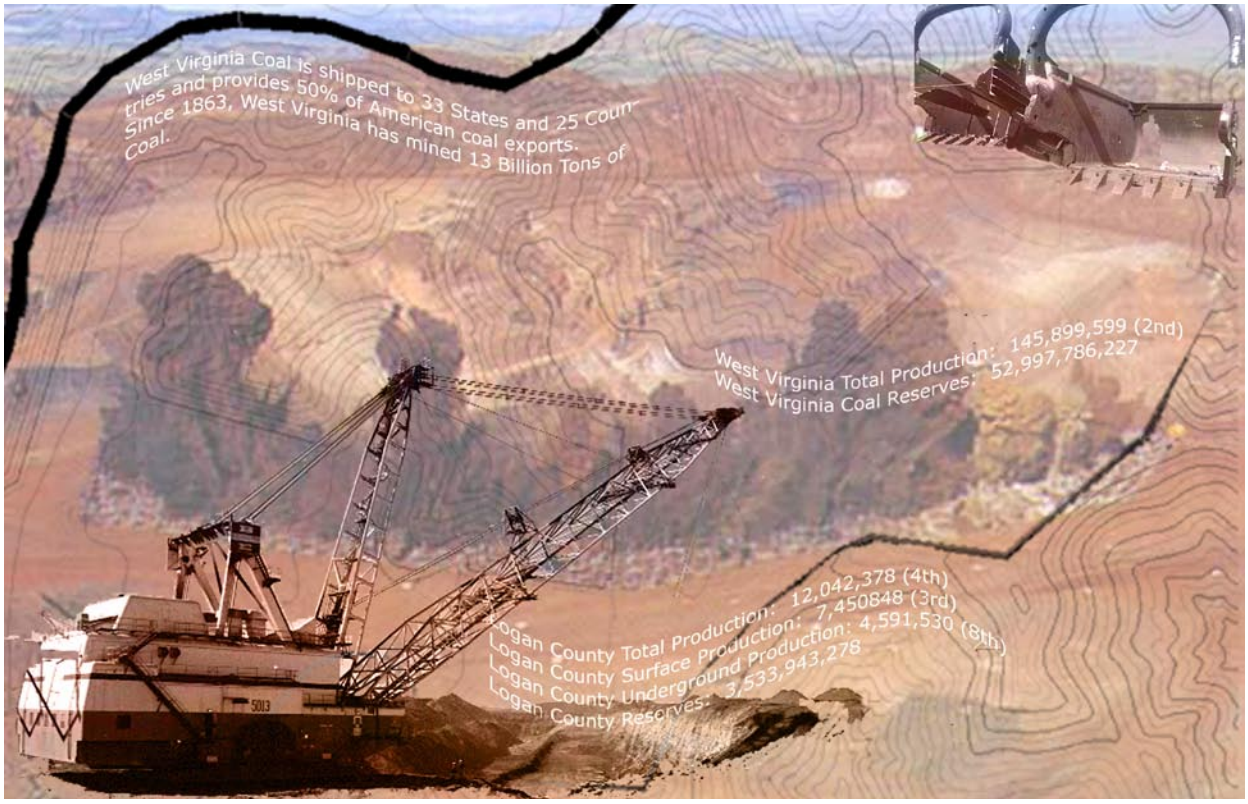
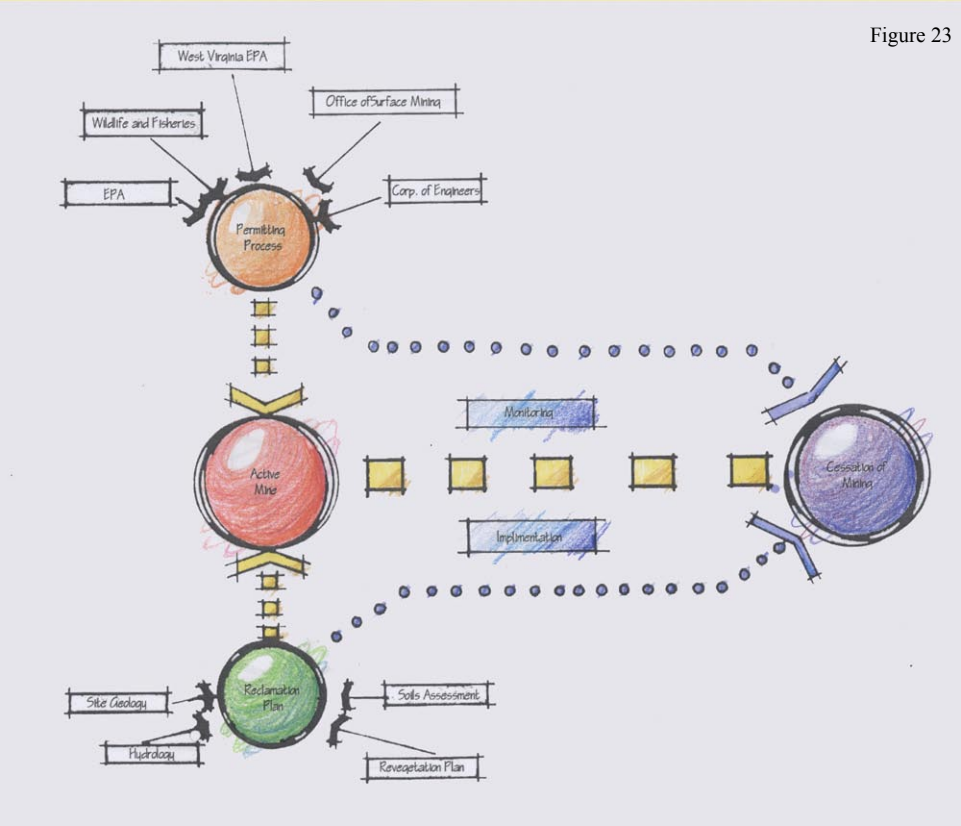


Figure 22

The current coal mine permitting process involves four environmental permits, three of which are issued by the WV DEP and one of which is issued by the Corp. of Engineers. The WV Surface Mine Control and Reclamation Act Permit requires the mine to do a series of geological tests which then inform a process which establishes a baseline hydrologic assessment and prediction, an overall engineering design of an operational and relcamation plan, and a soils assessment and revegetation plan (WVDEP Geologic Handbook 2005). The other three permits are all components of the Clean Water Act and include Section 402 National Pollutant Discharge Elimination System Permit, Section 401 Water Quality Certificate, and Section 404 (issued by the Corp.) is either a permit for generally acceptable discharges or an individual permit for discharges above the normally allowable level (WVDEP Geologic Handbook 2005). These permits are all issued prior to the beginning of mining and are implemented and monitored as the mining process moves forward (WVDEP Geologic Handbook 2005).

West Virginia Mine Permitting Process

Figure 23

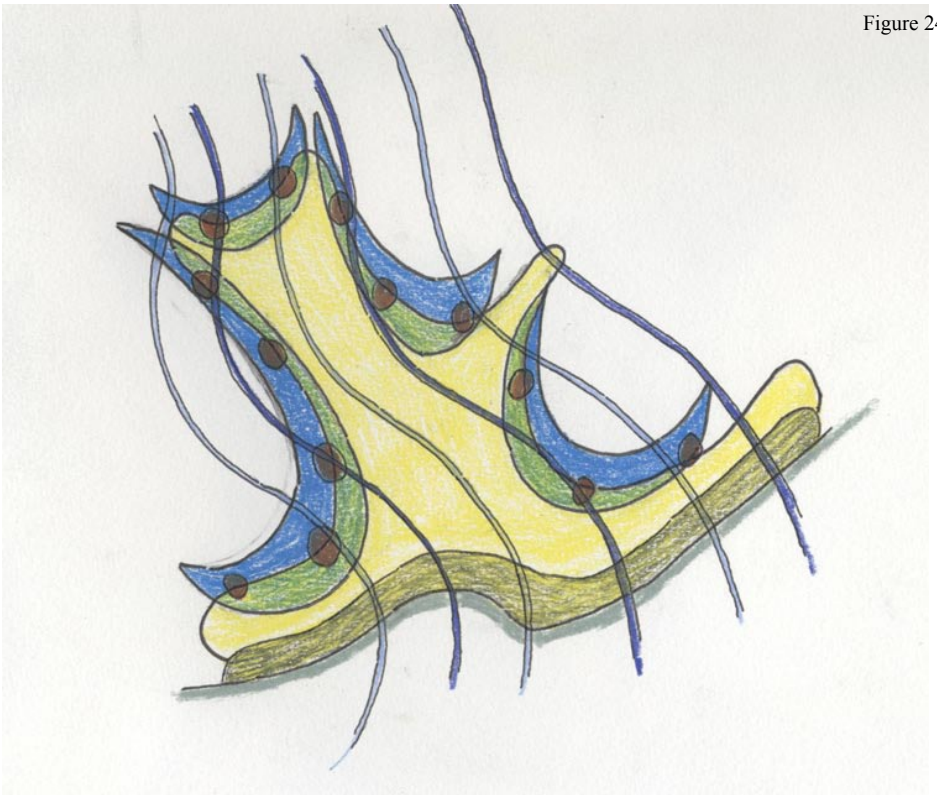


The major weakness that my approach has revealed in this process is the post-mining responsibility of the mining companies. The mining company must enter into a five-year bond period prior to the start of mining (WVDEP Geologic Handbook 2005). This bond establishes baseline vegetative needs and water quality standards that the site must meet for five years after the cessation of mining, without any active maintenance during those five years (WVDEP Geologic Handbook 2005). Although clearly established for good reason this approach does nothing to engage the surrounding ecosystem or culture in a long-term discussion of the potential value of these landscapes.

The New Logan City mining site is currently in the initial stages of permitting and development. The site is currently covered, primarily, in the 2nd growth mesophytic hardwood forest seen throughout this region, there are also a number of spots on the site which display Cove Hardwood regions, a slightly less common collection of tree species usually found in this region in ravines and along lower north facing slopes.
Although, as I mentioned earlier, there are certain components of this process of creative participation which must be taken on faith, it is in the following design work that they would be applied. As you'll see, this project sought to apply some of the most basic lessons that experiencing our world might offer while, at the same time, providing spaces which would be specifically influenced by conversations with the local culture.
To begin the natural factors of the site were examined, but of essential importance in doing so was considering how these would affect the culture of the area and they might provide opportunities on the site. The diagrams below and on the next page outline some of those discoveries.

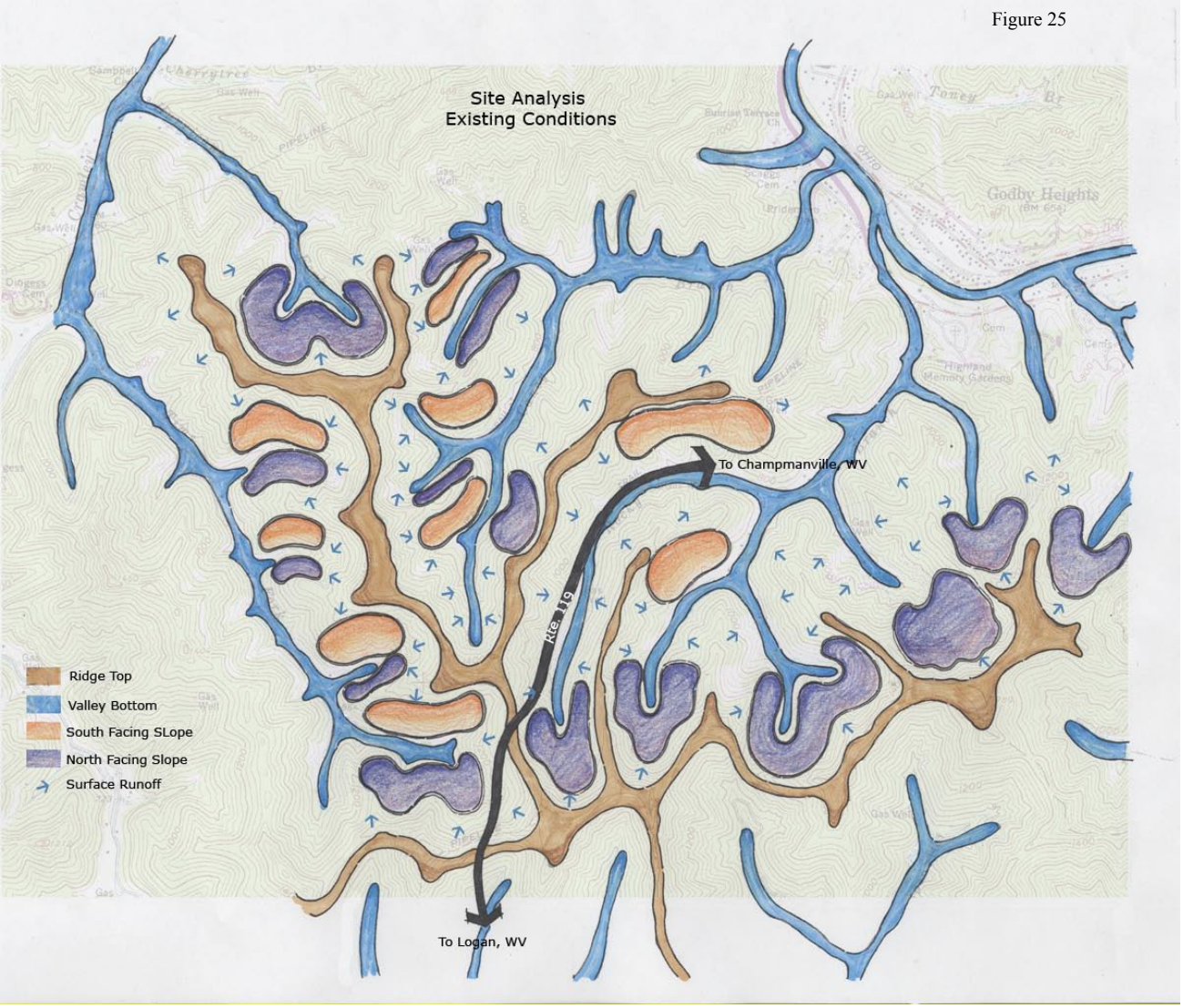
New Logan City: Natural Site Processes

Figure 24



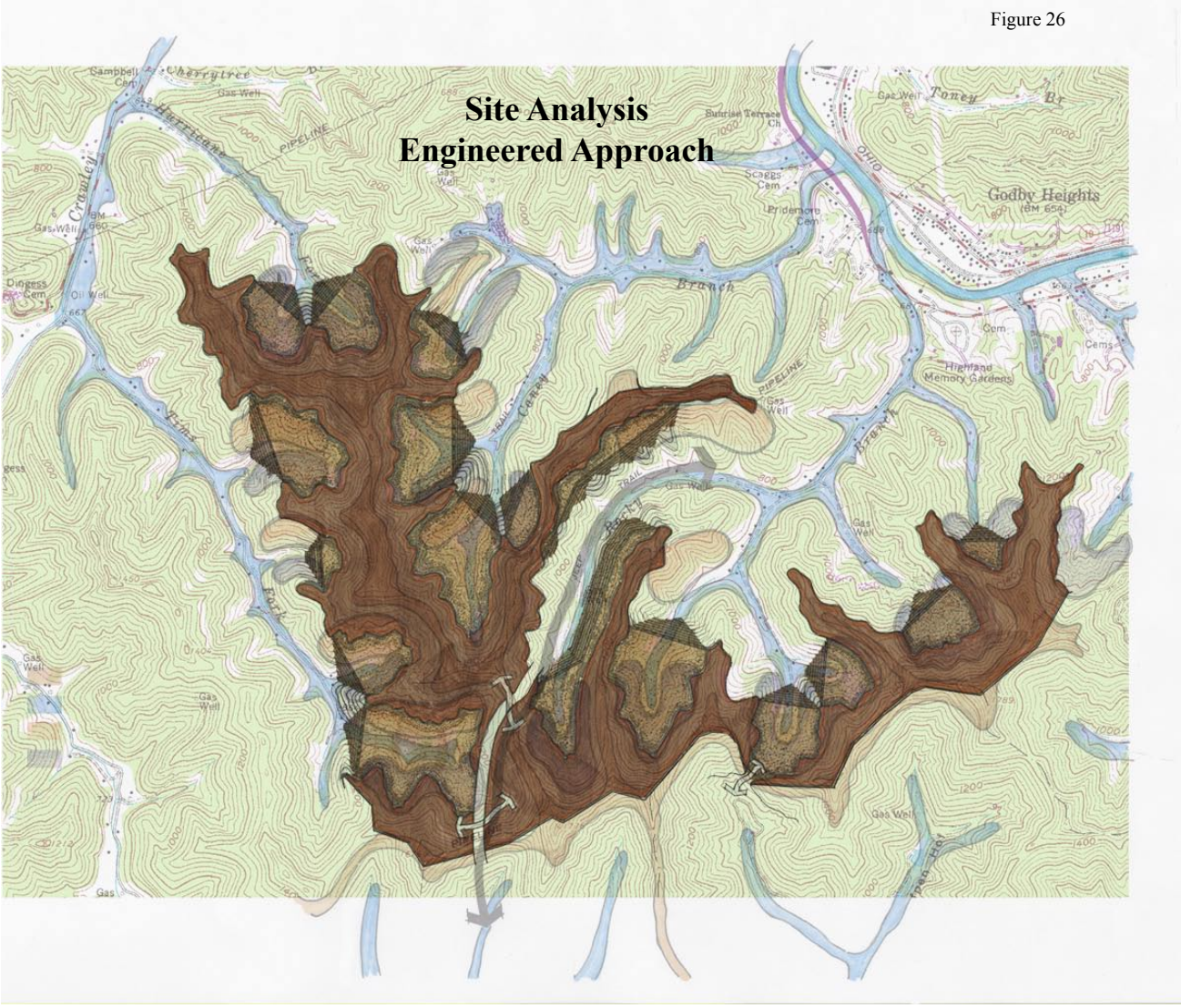
This diagram is an abstract representation of natural process. It considers the wind, the sun, watershed, and disturbed earth. It provided me a baseline for how to approach integrating my design with these issues.

Figure 25



The analysis drawing above displays the impact of a number of the natural processes discussed on the previous page. For instance, orientation of the site has resulted in a series of microclimates influenced by the amount of sunlight received year round. The cooler slopes are represented with violet and the warmer slopes with orange. Erosion is the other major factor of site formation, aside from the ridge-tops in brown and the valley bottoms in blue; the slope of the entire site exceeds 25% and sometimes reaches as high as 50%. As we can see the new Rte. 119 also bisects the site, creating a certain degree of accessibility not often found in this region.

Figure 26



This analysis drawing shows the traditional solution offered which is the end result of the current mining approach to Mountain Top Removal. Cut is shown in dark brown, while the tan color represents valley fills. As you can see the site is nearly leveled and because of the emphasis of minimizing impact, severe valley fill walls are created and many unique ecosystems are destroyed. The underlay of the existing site analysis shows this loss all too clearly.

However, it is not my goal to say that there is no value to this landscape, in fact I would promote just the opposite, that there is indeed a vast and untapped opportunity here.

In examining the result of the traditional permit process and following five-year bond period we can easily recognize that it does little to obtain a balanced approach. To do so requires that the perspective of community, nature and experience be included. Currently community is separated from the process and nature is only given a sort of lip service, its overall complexity is generally simplified. The goal then was to establish a long term commitment and interaction with this landscape through a design which benefits both community and nature, while still recognizing the value of mining to the region and country.

A model of the site was also created to help understand the nature of such a large-scale landscape alteration. Using a laser cutter I was able to create a model which could represent both the existing landscape, and the post-mining landscape. This was and would be a great way to help folks not otherwise involved in the project envision the type of landscape that would be created.

Figure 27

Figure 28

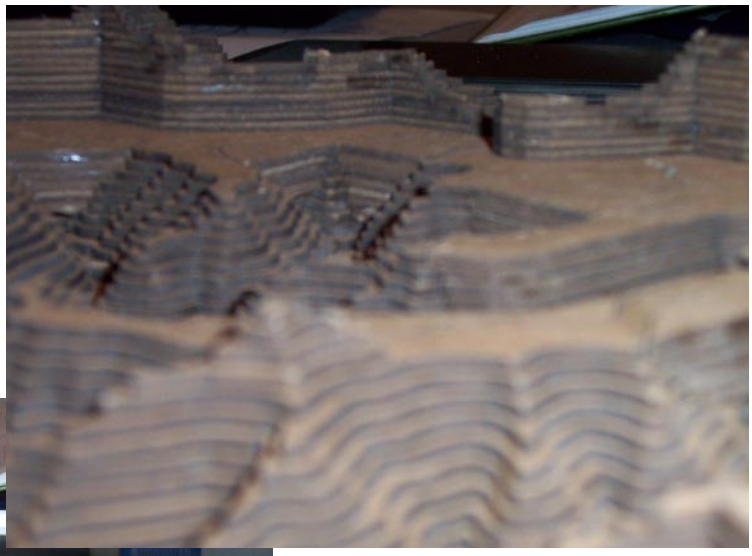
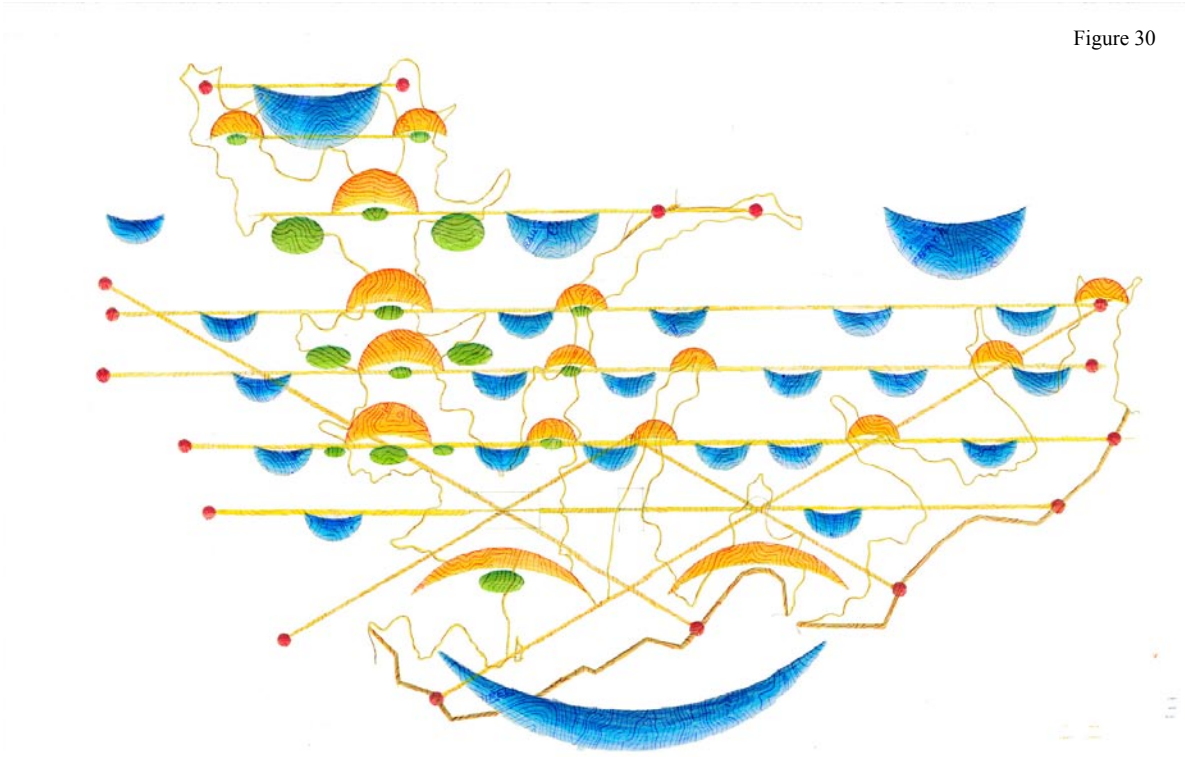


Figure 29

Before designing any of the reality of the new site I wanted to consider the more ephemeral or poetic components of this new sites life. The diagram below is a representation of that exploration. It seeks to engage the natural processes continually interacting with the site in a way that recognizes their long-term influence and benefit. Although the site immediately after mining will be little more than an open field, the long-term effects of the sun, wind, water, and earth will gradually create a new landscape. This diagram speaks to that process.

Figure 30



It was designed in concert with the conceptual grading plan below. By creating a particular typography on the site, instead of simply a flat surface, we can re-create, in the long run, some of the micro-climates that existed on the undisturbed site and also create a uniquely livable place for the existing culture.

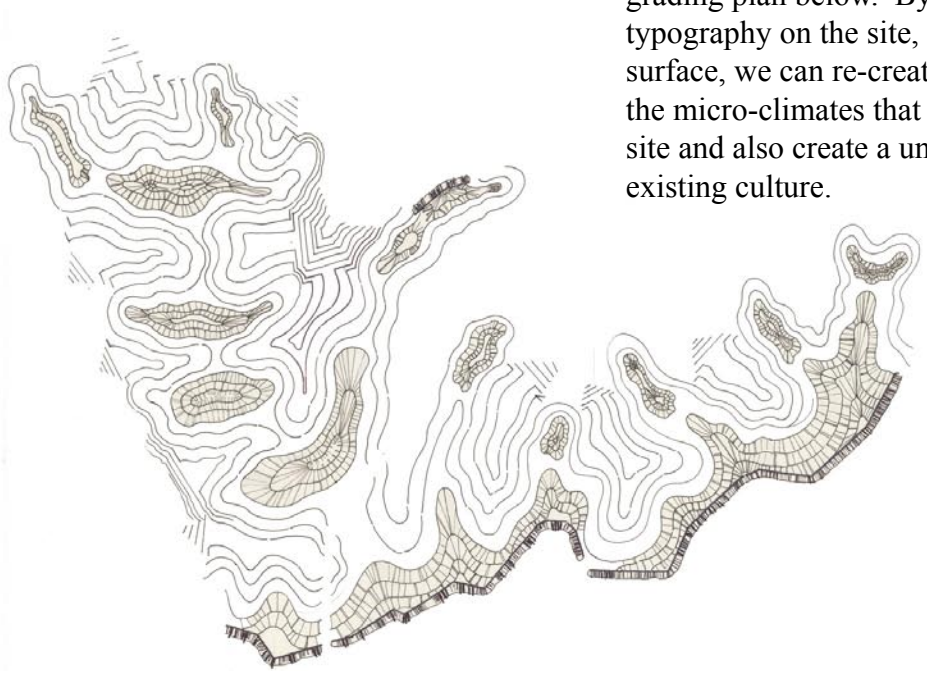
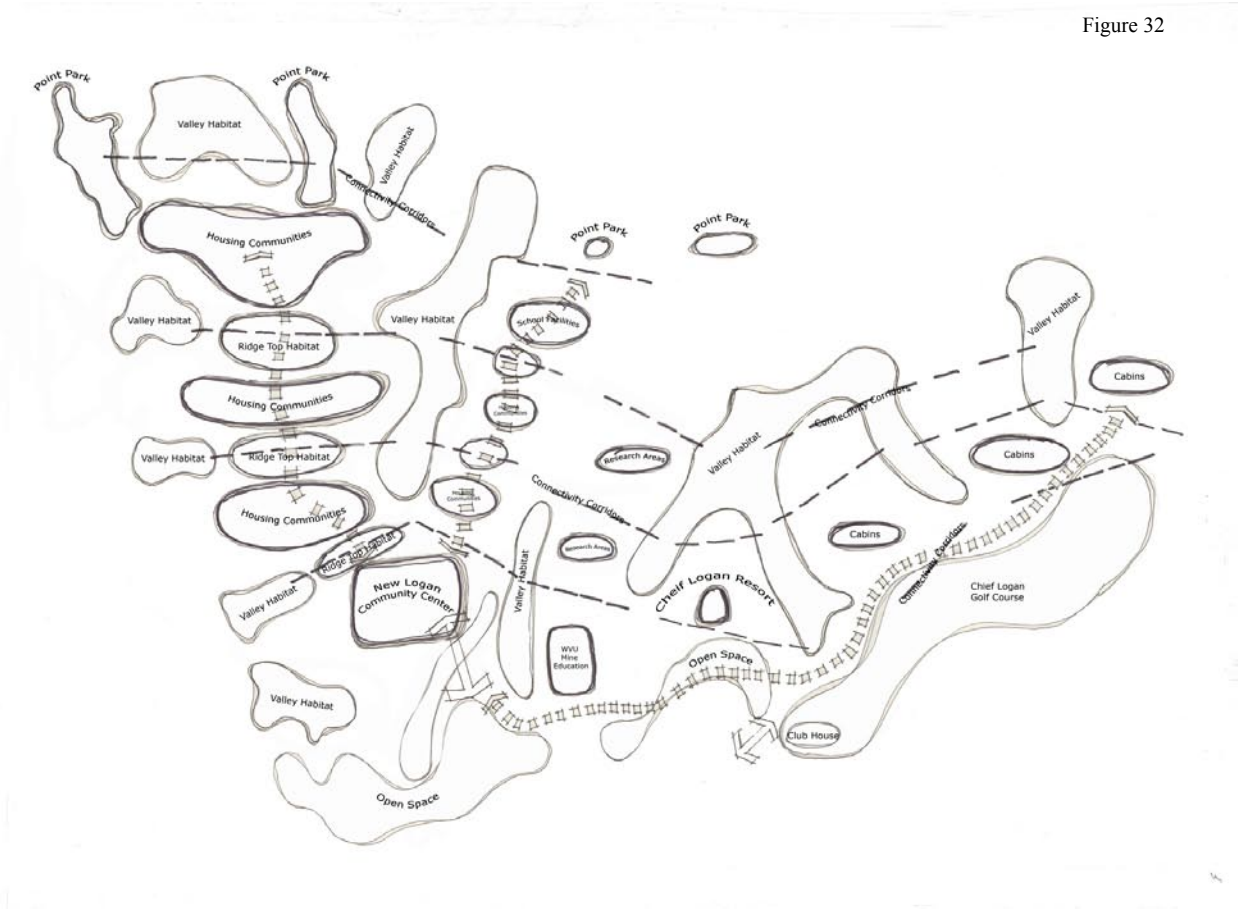


Figure 31

The more pragmatic drawing below was developed shortly after those on the previous page to give a sense of the short term reality of the place. This answer's the more immediate questions of what type of community will exist on the site and how will it interact with the natural processes already established.

Figure 32



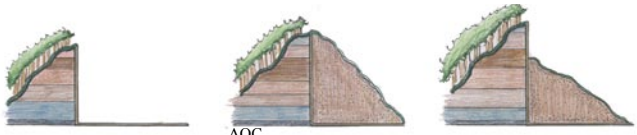
This conversation between poetic and pragmatic resulted in a design which sought to provide a place which looked both to current needs and future changes. Primary goals established in this process included housing out of the flood plain, a community district of higher density housing, education facilities (specifically an outreach of WVU's Mine Reclamation program), and a resort component associated with the existing Chief Logan State Park. The general layout of the site was most heavily influenced by the highwall and valley fill areas which are the primary legacy of the mining process, and will certainly be the longest lasting. Both the highwall and the valley fills were treated differently than current practice dictates. These differences were a result of the desire to embrace the opportunities presented by MTR, rather than simply trying to minimize the impact. This recognition was a direct result of the research seen in the earlier part of this work and the creative participation approach.

Below is an overall plan of the site, as the entire site covers over 1,100 acres this plan is understandably vague. The goal here was simply to establish an understanding of where the different site elements identified above might be placed. The pragmatic plan on the previous page identifies what exactly each area represents.

Figure 33

The work below shows both the traditional method for reclaiming highwalls and valley fills and some other potential design solutions.

Figure 34



Unaltered Higwall

AOC
Approximate Original Contour, the practice of replacing the overburden to recreate the hill that was cut.

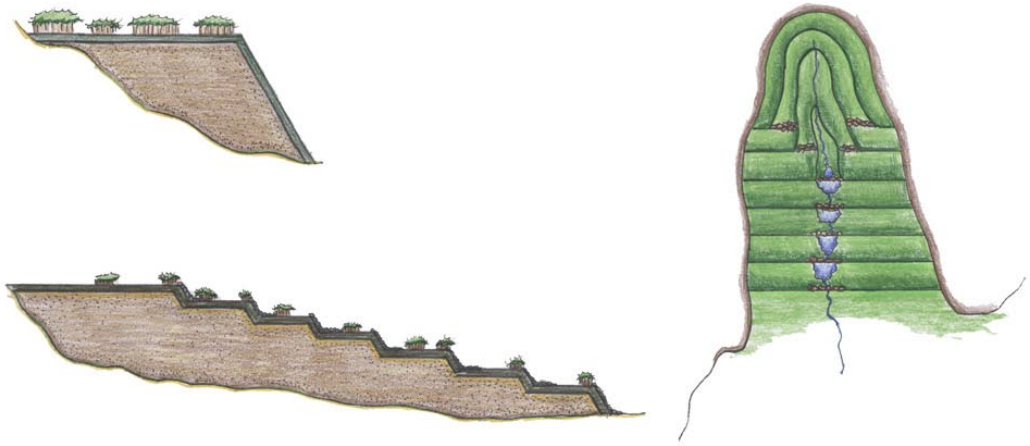
Running Higwall

Figure 35

Running Highwall

The running highwall is designed to emphasize and highlight the highwall as a site amenity. The highwall can deliver a powerful statement about what this site once looked like, what process changed, and how the site continues to develop.

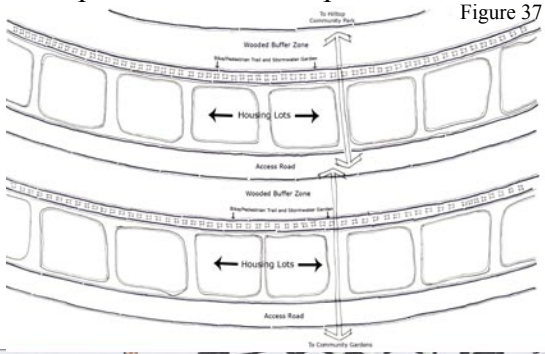
Figure 36



The main difference between the traditional approach to Valley Fills and the one shown above is that above the thought is of creating a landscape rather than destroying. By do so we can consider longer term benefits, which might even suggest that a greater amount of initial damage, might, in the long run, promote a healthier eco-system.

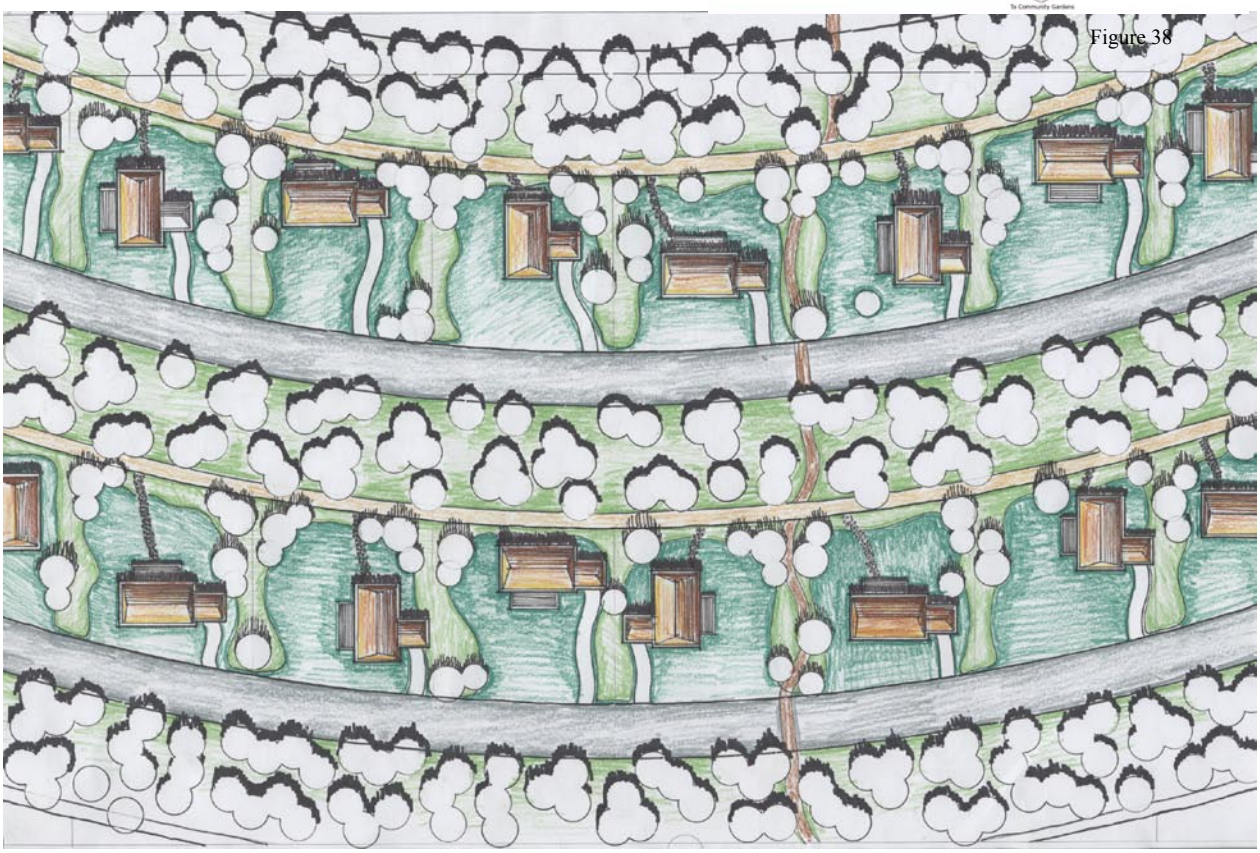
The first area that I began to develop was the housing. This component of the site had weighed on mind from the outset of the project. First and foremost, the idea that we could really create housing in this region of West Virginia in an area other than the flood plain was exciting. The hardships endured by communities in this area over the past decade have been severe. There is no zoning in Logan County and therefore no flood zone management. However, this was not all there was to placing settlements on these mined landscapes, the opportunity to create energy efficient housing sites was wide open because of the fact that we can create any topography we wish on site. The work below represents the development of the housing sites in New Logan City.

Figure 37



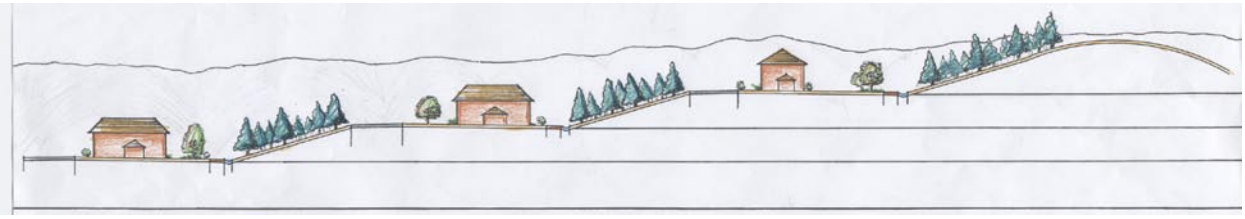
HousingPlan

Figure 38



Section

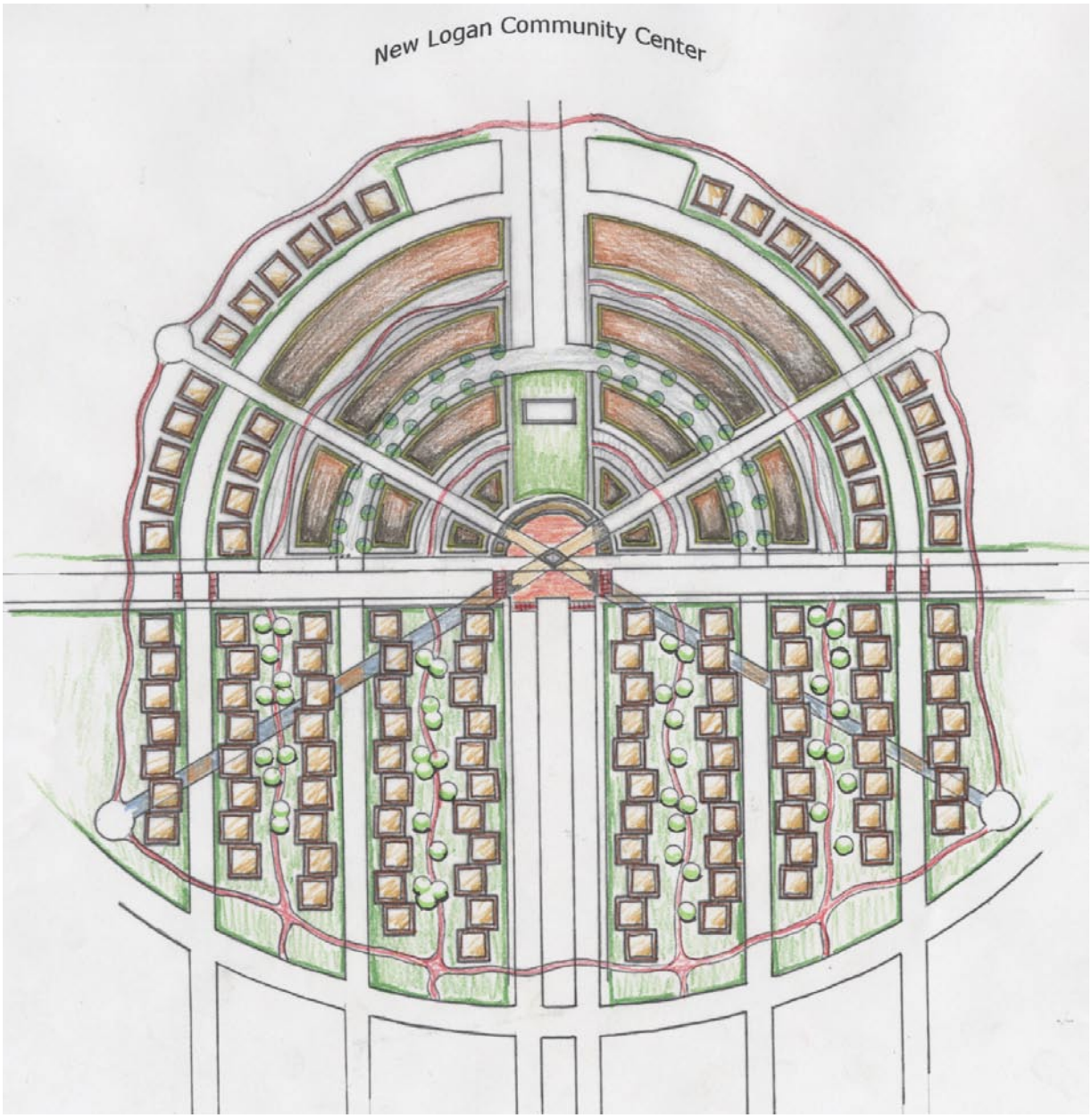
Figure 39



The Community Center was also an essential component of the project. Representing a new way of living for this region I felt it was important to include a city plan which embraced creative participation. The design takes care of things like a commercial core, court house, and high density housing, but also offers a community gathering space/farmers market and a design which engages summer and winter solstice directly.

Site Plan

Figure 40



New Logan Conceptual Diagram

Figure 41

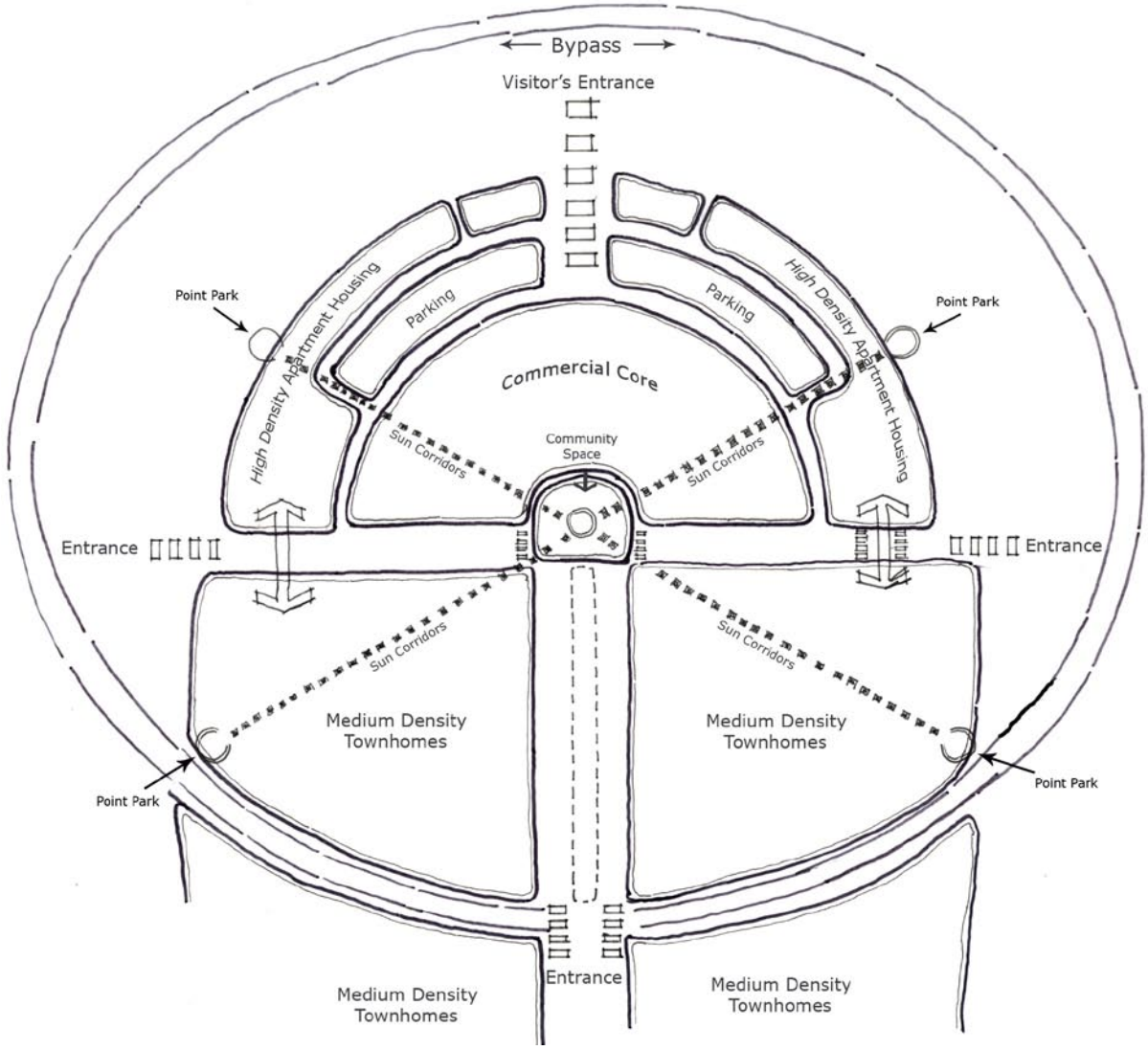


Figure 42

New Logan City Section

I also felt that it was of essential importance to include an educational component. As I've said mine reclamation is a relatively young science and has a lot of growing to do, what better site for an outreach center then on a development constructed on a reclaimed site. The facility could provide information to residents about how to deal with the different issues associated with reclamation along with monitoring site progress and health. This is a statement which says simply; we are concerned about how this landscape and the people in this area do for much longer than a five year bond period.

Figure 43

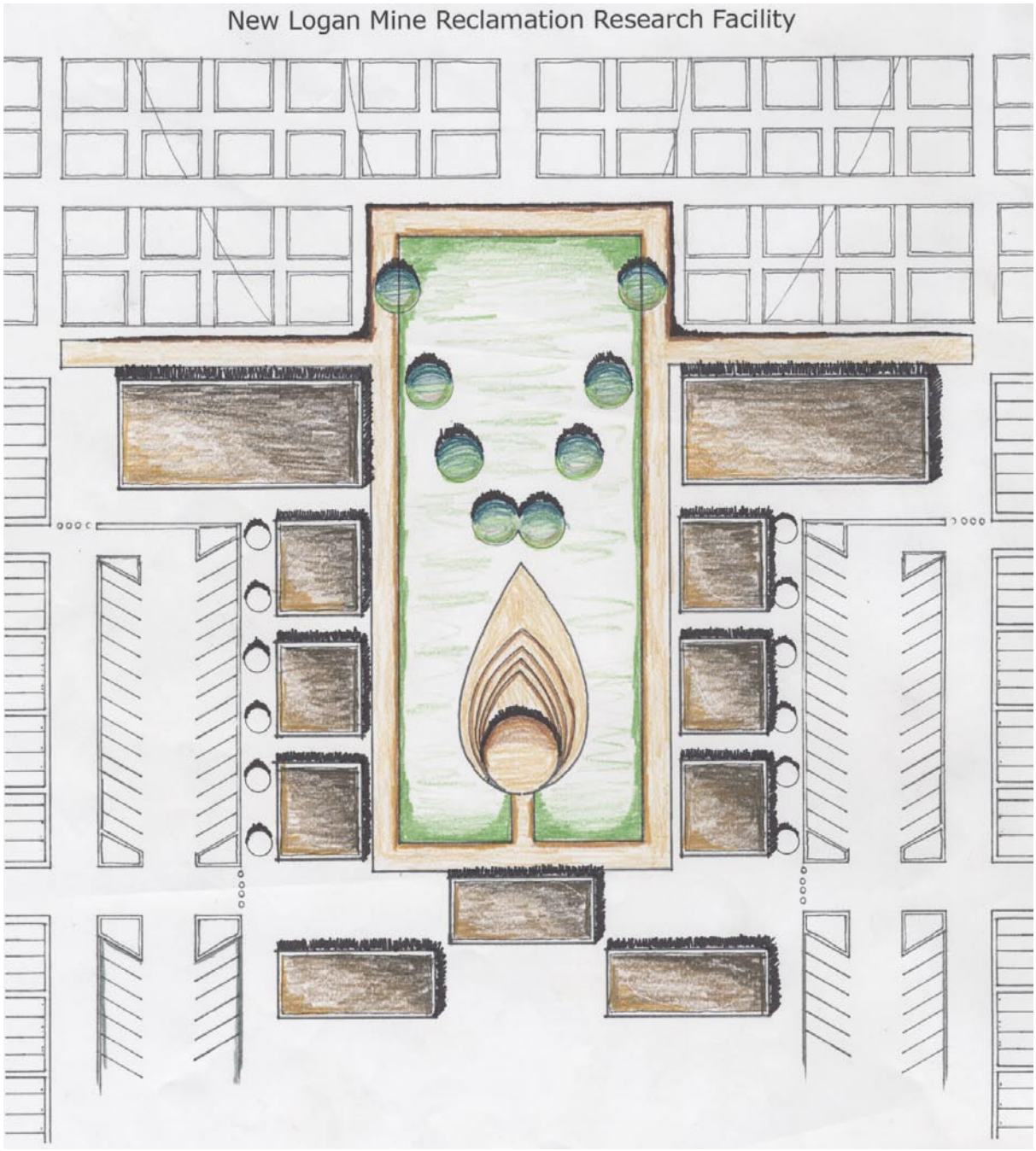


Figure 44

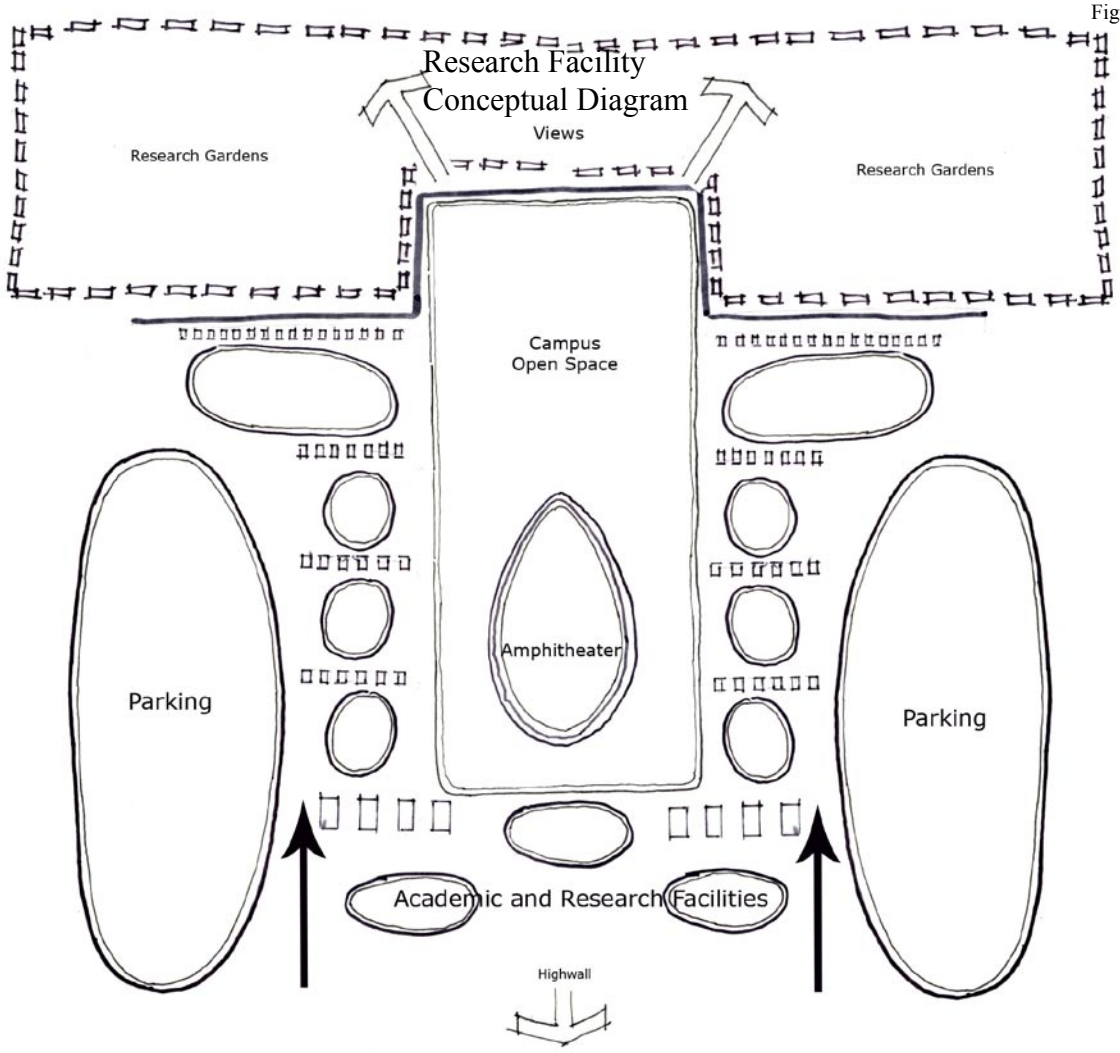


Figure 45

Sections

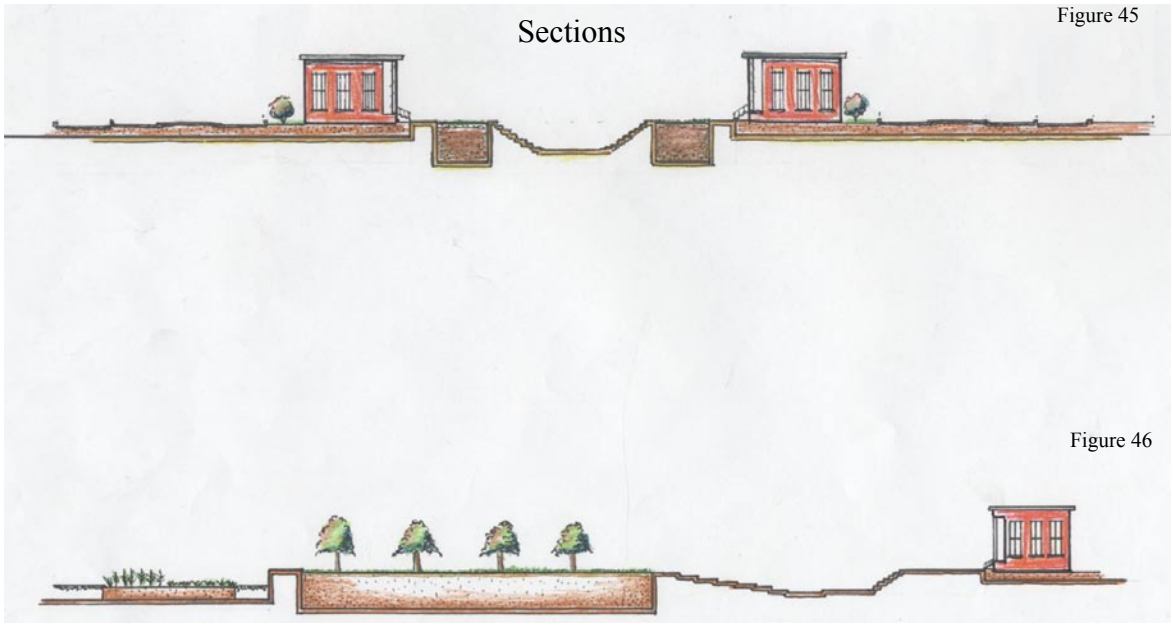


Figure 46

The final component I designed was a resort section. This is design to respect and improve the adjacent Chief Logan State Park. As the mining process will create a connection with this site, it seemed appropriate to include it in the New Logan Development. This is another example of looking forward tourism will continue to grow in importance for the state and implementing improvements when the opportunity is available is essential.

Site Plan

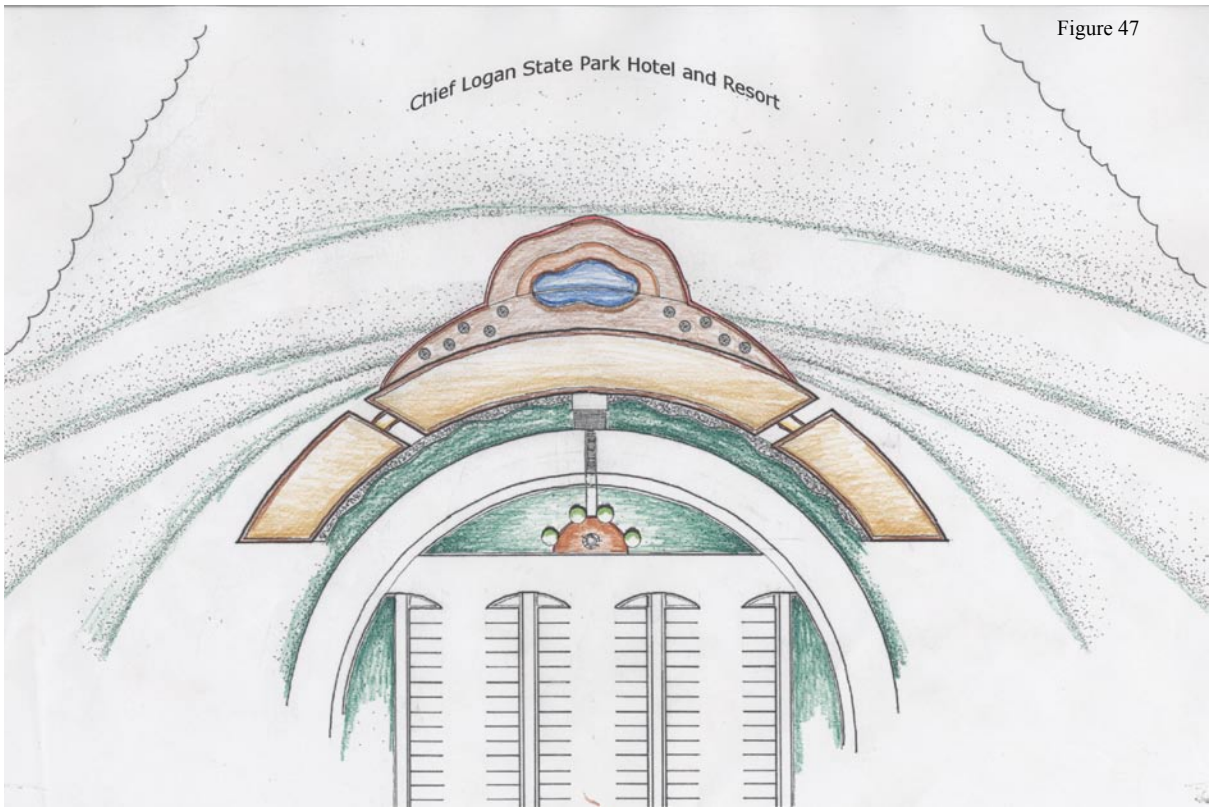


Figure 47

Section

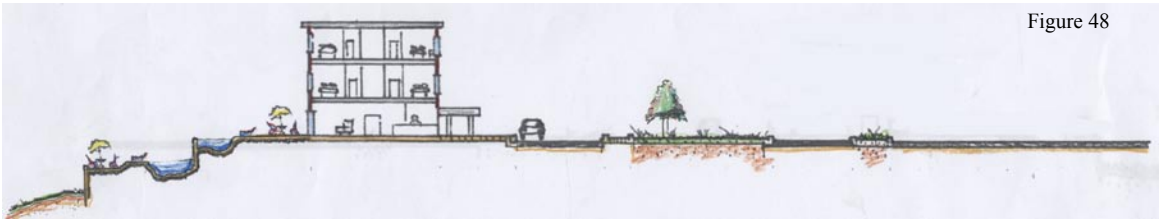


Figure 48

Reflective Component

This process has been like no other I've ever participated in. The opportunity to study a subject in such great detail rarely presents itself and the resultant knowledge gained has proven invaluable. The nature of my position paper opened doors which I did not even know existed and helped me to understand more about my field then I had previously ever hoped to know. Of course, I'm fully aware that I'll never stop learning in this profession, but the knowledge I've gained over the past eight months has placed that recognition in a form of sorts. I feel better able to understand the heart of design projects in Landscape Architecture because of the in depth understanding I know feel I have of the Western psyche and the resultant relationship with the natural world.

Of course, this is, in a way, personal knowledge, not directly applicable to the field as a whole. However, the project I engaged is. Coal mining and other types of resource extraction are at the forefront of man's destructive nature and therefore offer endless opportunities for comment on that behavior. Although I was somewhat overwhelmed at times, it seems only sensible that Landscape Architects would add their knowledge base to the reuse of these landscapes. Mining companies are beginning to realize the potential of their own sites and the positive results of engaging in a conversation about their work. Although still relatively reclusive, mining companies are beginning to open up to a wide variety suggestions. In fact, in the past ten years or so the term sustainable has begun to circulate within the mining community. Although mining itself is clearly not sustainable in a strict application of the definition, there interest in it is how they might create sustainable relationships through the process of mining. This is an opportunity and one which the field would do well to notice.

There are over 300 years worth of coal reserves in the West Virginia hills alone. Although I'd be the first to encourage our nation to seek alternative energy sources, it is clear that coal will remain an important energy source for years to come. With this in mind, the long-term thinking that a landscape architect can bring to a project is invaluable.

On another note, I'd also like to speak to the concept of creative participation that I put forward in this project. In many ways this component of the work was the most intriguing and energizing of anything I did. Mainly because I felt that I was identifying a process or a set of goals which

help guide me through my professional career. As I've explained in my paper, it is essentially man's active participation with nature. Understanding the more organic components of life and stepping out of our created reality to experience a more natural reality is, I believe, of essential importance. Creative Participation and the associated process for developing these opportunities is something I feel could be something that helps me re-connect people in a healthy way to their environments. Exploring creative ways to do this seems particularly exciting.

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