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Memory and imagination: A study of dressage as a paradigm for architecture

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Rice University, 1994
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MEMORY AND IMAGINATION:
A STUDY OF DRESSAGE AS A PARADIGM FOR ARCHITECTURE

BY

STEPHANIE LAW

A THESIS SUBMITTED
IN PARTIAL FULFILLMENT OF THE
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ABSTRACT

Memory and Imagination:
A Study of Dressage as a Paradigm for Architecture

By

Stephanie Law

The drive to engage the external environment, to create, is an essential aspect of our emotional and intellectual development. The built environment should recognize and express its interdependence with the natural environment as being a holistic habitat. Because the horse can react immediately to our attempts to mold and form it, the poetics of dressage offer insight into the question of balance with concern to the issue of how much artifice we can place upon the natural state of things before we not only begin to destroy them, but endanger ourselves as well. The architect must strive to find balance and harmony between the memory and the imagination through poesis.

The design problem is a facility located in Piedmont Park, Atlanta, Georgia designed both to house the dressage events for the 1996 Olympics, and to then be transformed into a riding academy for the city of Atlanta.
ACKNOWLEDGEMENTS

To my family for their never ending support and guidance,

and

to Janet Andrews for the past 15 years of inspiration and encouragement to maintain an open mind to new thoughts and ideas.
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PREFACE

To humans, nature poses many dangers and threats to our survival. Since our bodies do not adapt to the environment as most animals' do, we have had to rely upon our intelligence to adapt the environment to us. Many have seen the act of creating shelter as making an "improvement" upon the natural environment, but unfortunately this attitude has led to buildings that are dependent upon artificial conditions, and actually inhibit the occupant from natural light, ventilation, and other processes that we are a part of and dependent upon. The built environment should never be considered a substitution for the natural creative and living environment. It should instead recognize and express its interdependence with the natural environment as being a holistic habitat. However, finding the balance between artifice and nature is a difficult exploration, and it is one with no absolute answers. As Robert Frost notes, "We dance around the circle and suppose, but the secret sits in the middle and knows."

With consideration to the range of possibilities one may take to approaching a design problem, I propose a study of an art form that deals with the problem of balance between artifice and nature in a very direct, sensitive, and perceptible manner, and that is dressage, an equestrian discipline. In examining the poetics of both
dressage and architecture it will be noted that the underlying creative drive is the same in both. However, the particular differences between the two disciplines can offer valuable insights for both the architect and the equestrian. Because the horse can react immediately to our attempts to mold and form it, the process of training the dressage horse can offer more insight into the question of balance with concern to the issue of how much artifice we can place upon the natural state of things before we not only begin to destroy them, but endanger ourselves as well. The horse can directly threaten our health and lives, and at the very least exhibit the fear and tension of having been beaten into submission so that it can no longer excel in its performance. The architectural site of the individual building or even the city cannot rebuke us in this immediate fashion. Environmental concerns have shown themselves, but the geological scale on which they occur are not as comprehensible as the sensitive and perceptible reactions of the horse.

Dressage can not only be offered as a paradigm for architecture but it can serve to benefit the city and society as well. For many years I have been involved with Dressage. It is a form of equestrianship that requires years of dedication, patience, training, and financial support. Yet thousands of people from different cultures, societies, races, and economic backgrounds dedicate their
lives to this discipline. I could not help but ask the
question, why? Why do we feel so compelled to take a
beautiful, powerful, wild creature and teach it to balance
itself around a perfect circle, and not to waiver on a
straight line down the center of a rectangular arena? In
past centuries the answer was easy; it was an invention of
necessity. The horse was a vital tool not only for
transportation and farming, but in war as well. In fact,
the arena, the tests, and the manner of judging that is
still used today was developed by the German military
around the turn of the century. Therefore, many believe
that since the necessity is no longer there, dressage and
equestrianship in general is superfluous, a luxury that is
elitist and has no place in modern society. There is no
need for it.

I cannot accept this. It has been fifty years since
the horse was last used in the battlefield, yet dressage
is now one of the fastest growing equestrian sports in the
United States and equestrianship in general is thriving
with an equine population of approximately ten million in
this country alone. The need to work with the horse goes
beyond efficiency and practicality. The drive to create
is a force that exists within us and is impossible to
escape. Engagement with our surrounding, external
environment is vital for our physical existence as well as
our intellectual development and growth. We can learn not
only a great deal about the horse and nature by establishing a cooperative relationship with it, but we learn even more about ourselves when we examine and experience what is expressed by this relationship.

In answer to the challenge that equestrianship has no place in modern society, I propose as a hypothetical design problem to reestablish the horse in the American city. Suburban development and zoning laws have pushed the horse well out of reach of many classes of people living within the city, and only those with the incomes and time to support hour to two hour long commutes out to the surrounding area stables can have the chance to experience one of the most unique relationships one can have with nature. Not only should horsemanship be more accessible it must be made clear that there are programs such as the mounted police and handicap riding organizations already in place that need stabling facilities within the city limits.

I therefore propose to design the 1996 Olympic Dressage Facilities to be located in Piedmont Park, Atlanta, Georgia. This facility will accommodate all of the necessary requirements for the Olympic events and will be designed in such a way that it will transition into a city owned and operated riding facility.
[Humans were] thus embedded in nature and dependent upon the natural forces. The growth of [one's] mental faculties proceeds from the grasping of such diffuse qualities, into more articulate experiences where the parts and the interrelationships within the totality are understood.  

Both dressage and architecture stem from the same essential drive to create. In order to understand either discipline we must first examine that drive and the process by which it is manifested. We do not make because we can, we make because we are compelled to. It is a vital aspect of our existence that we develop bodily and intellectually through physically engaging the external environment. Our biological systems have been shaped by and are dependent upon the processes of the earth, and it is because of this dependency that we are forced to interact with our surroundings. Our bodies are the instruments through which we become aware. Physical experiences with the inner biology - pain, hunger, desire, etc. - in accordance with and reacting to the external world are layered into memories which form the basis for understanding and creating.

Regardless of our origins, it is apparent that we are biologically, behaviorally, and psychologically linked to the natural processes of the earth. It is somewhat obvious if we take a look around us how the earth contains
what we need to survive. Our bodies must obtain oxygen from the air, drink water, and eat food that will supply us with the necessary nutrients for growth and everyday activity. It is also evident that the structure of our bodies permits us the ability to move around in relation to the earth's gravity, topography, pressures, and temperatures. However, our connections to the rhythms and cycles of this planet, and the effects they have on our inner being go much further.

The science, chronobiology, has just in the past few decades been studied extensively, and has revealed deeper connections between humans and the processes of the earth known as biological rhythms. In the book, The Secrets our Body Clocks Reveal, Susan Perry and Jim Dawson explain, "at first, our internal rhythms were probably triggered by the sun. But gradually, over the course of evolution and, although they have never lost touch with the sun's cycles, they can now run their courses separate from the influence of the sun."² Experiments have shown that personal biological clocks can vary from 22-hour to 26-hour days and that they are kept in sync with the solar days through external cues known as Zeitgeber, German for "time givers". The strongest of these Zeitgeber is the sun and it is vital in keeping our bodies in sync with our activities. ³

Just as there are daily rhythms there are also weekly,
monthly, and seasonal rhythms. The weekly rhythms include a seven-day pattern found in the rise and fall of the body chemical, cortisol, the hormone that helps us to cope with stress. The monthly rhythms have been found to directly coincide with the cycle of the moon. For instance, the average menstrual cycle of a woman is 29.5 days, the exact length of the lunar cycle. Perry and Dawson comment,

There is evidence, however, to support the idea of other monthly rhythms, ones deep within us that probably evolved millions of years ago in response to cyclic changes in the gravitational pull of the moon on the earth. That pull is dramatic. Not only does it cause our oceans to rise and fall, but it also causes the earth's crust to bulge and recede by as much as sixteen inches.

The seasonal rhythms are most evident in the extreme latitudes where many are affected by S.A.D., Seasonal Affective Depression. It is a state of depression that is brought on by the decrease in hours of sunlight per day in the winter months. Scientists have shown this depression to be connected to the secretion of a hormone, melatonin, from the pineal gland in the absence of sunlight.

Melatonin is not yet fully understood but it is known that it is suppressed when sunlight enters the eyes and it appears to be involved intimately in the regulation of the body's internal rhythms.

The work of Carl Jung (1875-1961) on the psychology of the human mind directly correlates with the studies of chronobiology. Although his work precedes the recent
discoveries of this science, he theorized that a "collective unconscious" exists as the deepest layer of our mind. The collective unconscious contains the inherited images of our ancestral past that are patterns or predispositions for experiencing and responding to the world. Jung believed that the mind inherits a psychic structure just as the body inherits its structure, and that it stores our primordial images, or archetypes. These archetypes are universal throughout all humans and are not actual images that we could consciously picture, but as Jung puts it, "forms without content". He states, "A primordial image is determined as to its content only when it becomes conscious and is therefore filled out with the material of conscious experience." Some of these archetypes that he identified are of birth, death, power, God, the earth mother, the sun, the moon, wind, river, and fire. In his essay entitled "The Mind and the Earth", he tells us,

We are all convinced that it is quite impossible to understand the living organism apart from its relation to its environmental conditions...the same is true of the mind. Its peculiar organization must be related to environmental conditions in the most intimate fashion. From the collective unconscious as a timeless and universal mind we should expect reactions to the most universal and constant conditions, whether psychological, physiological, or physical. From the conscious, on the other hand, we should expect reactions and adaptation-phenomena relating to the present....

Interaction with the external world provides the basis for human development. The accepted psychological
definition of perception is "awareness ensuing directly from sensory process", it is an awareness gained from the active use of the entire body.14 In Topophilia, Yi-Fu Tuan elaborates, "Perception is an activity, a reaching out to the world, Sense organs are minimally operative when they are not actively used. Our tactile sense is very delicate but to tell differences in the texture or hardness of surfaces it is not sufficient to put a finger on them; the finger has to move over them."15 If we were to continue to explore the makeup of this material we would then attempt to either pick it up, smash it, taste it, throw it, or otherwise manipulate it in order to understand it further. Harold Rugg explains in his book, Imagination, "This reaching-out and receiving-in process is the basis of percept-formation..It is in this inclusive sense that perceptual experience is the basically imprinted stuff out of which the act of knowing and of creative imagination forms itself."16

Being a passive observer is not enough, engagement requires directed action and movement. The foundation from which we gain our direction is our orientation, and in order to become oriented we must first structure the world around us. Unlike other animals, we have developed an ability to abstractly segment and order things into recognizable patterns. This leads not only to being physically oriented so that we may find our way back to
the watering hole, but it also gives us a way to structure our knowledge. Kevin Lynch explains, "Way-finding is the original function of the environmental image, and the basis on which its emotional associations may have been founded. But the image is valuable not only in this immediate sense in which it acts as a map for the direction of movement; in a broader sense it can serve as a general frame of reference within which the individual can act, or to which [one] can attach [one's] knowledge." 17 Attaching names and meaning to other forms of life, geological processes, and topological and astrological formations is the basis for structuring the external reality into something that is recognizable. Lynch continues, "The symbolic organization of the landscape may help to assuage fear, to establish an emotionally safe relationship between [humans] and their total environment...The named environment, familiar to all, furnishes material for common memories and symbols which bind the group together and allow them to communicate with one another." 18 Thus it is vital that humans interact with the surrounding physical world not only to survive, but to develop emotionally and intellectually as individuals or as societies.

As an artistic imitation, poetry may be better than the experience it represents. It may improve upon the experience as a teacher, because, born of the poet's mind, it is already impregnated with ideas. 19

The drive to engage the external environment, to
create, is an essential aspect of the way in which we exist in the world. How that drive is manifested is a very complex process that begins with physical experiences which are layered into memories and transformed by the imagination into mental constructs; images and ideas. Mortimer Adler notes in his work, The Great Ideas, "It is understood that memory and imagination depend upon sense-perception or upon previous experience...The imagination is not limited in the same way [as the memory] by prior experience, for we can imagine things we have never perceived and may never be able to...Yet even when imagination outruns perception, it draws upon experience for the materials it uses in its constructions."\textsuperscript{20} From here we are empowered with the ability to attempt to manifest the constructs of the imagination into a physical reality. As Anthony C. Antoniades puts it, "Creativity is the process by which the imagination exists in the world."\textsuperscript{21}

The act of manifesting images and ideas is what reveals the mental world to the body. The Ancient Greek word techne meant a creative revealing of truth and as Christian Norberg Schultz notes it belonged to poiesis or 'making'.\textsuperscript{22} Manifesting images and ideas can not only make them more comprehensible to one's self, but they are now of a medium that is outside of the inner-self so that they are presented to others. Social interaction is vital
to our existence, and communication through either a language of signs and symbols or through artistic imitation binds us through a common medium that exists outside of us.

Semantics is the study of the ways meaning is carried by linguistic units and assemblies. According to these studies when the meaning is denoted through arbitrarily assigned symbols it is done so by virtue of social convention, it is agreed upon and taught. When it comes to the revealing of truth through poesis, Aristotle condemns the use of symbolic representations. In the book, Aristotle's Theory of Poetry and Fine Art, S.H. Butcher explains, "A sign or symbol has no essential resemblance, no natural connexion, with the thing signified. Thus spoken words are symbols of mental states, written words are symbols of spoken words; the connexion between them is conventional. On the other hand mental impressions are not signs or symbols, but copies of external reality, likenesses of the things themselves...A work of art is a likeness or reproduction of an original, and not a symbolic representation of it; and this holds good whether the artist draws from a model in the real world or from an unrealized ideal in the mind." If the essence, or truth, of the original experience is to be expressed it must be through imitation, not symbolism. Aristotle comments,
...the instinct of imitation is implanted in [humans] from childhood, one difference between [us] and other animals being that [we are] the most imitative of living creatures, and through imitation learn [our] earliest lessons; and no less universal is the pleasure felt in things imitated...Objects which in themselves we view with pain, we delight to contemplate when reproduced with minute fidelity; such as the forms of the most ignoble animals and of dead bodies. The cause of this again is, that to learn gives the liveliest pleasure..."25

When speaking about imitation Aristotle is not referring to a literal copying of the original. It is instead a re-presenting of our sensual experiences. A complex layering occurs of images from the recollections of the memory, and the ideas formed through a complex process of ordering and abstraction by the intellect. Aristotle would argue that our intellect has the capacity to abstract the universal out of the particular, that from the individual we can acquire knowledge of the common threads that exist in the many and that reach through to all things. These concepts of the universal are important to our need for orientation, to find a unity and harmony to our existence. Aristotle notes, "The poet and the historian differ not by writing in verse or in prose...the true difference is that one relates what has happened, the other what may happen. Poetry, therefore, is a more philosophical and a higher thing than history: for poetry tends to express the universal, history the particular."26 By fusing the images of the memory with these abstracted concepts through the use of a physical medium,
we infuse ourselves into the reality of the external world. Our images and ideas are now expressed in a way in which we can comprehend them with our body, the primal manner in which we find awareness and understanding.

True poesis educates the intellect by involving the body and the emotions. Simply using a physical medium does not satisfy this condition. The imagery of the memory, the particular conditions that affected the emotions, the forces of the original experience including those that hearken back to Jung's archetypes and our biological rhythms, all should be layered with the concepts of the intellect into the process of creating a form that will educate us not only about the original experience but about our existence as well. The poetic process is a deliberate and intentional one. It is possible for us to forget, and it is all too easy to substitute the abstractions and the symbols for the poetic creation.

Plato argued that abstractions of the intellect (i.e. euclidean geometry, politics) are closer to the absolute truth of existence. He felt that nature was a crude manifestation of the ideal 'Forms' which were universal, unchanging, and perfect, and that we could only obtain knowledge of them through reason and logical discourse in a form of meditation. Mortimer Adler describes Plato's doctrine of reminiscence, "in which all learning is a kind
of remembering of knowledge already present in the soul. All teaching takes the form of helping the learner to recollect things he may not be aware he knows, by reminding him through a process of questioning which awakens the knowledge already latent in him." 27

However, this stems from a belief that humans are not essentially linked to the earth and to other forms of life, and this reverence for the abstractions of the intellect over and above our physical senses, emotions, and the natural state of the environment has pervaded western society ever since.

It is not wrong to revere the accomplishments of the human intellect. Certainly logical discourse, mathematics, and science have their place in the process of education. However, if our actions are ever to be truly in accord with the processes of the earth we must look beyond logical discourse for a deeper understanding of our surroundings. Some would argue that because we are a creature of the earth that every action we take is natural, but what they fail to realize is that extinction is also a natural phenomenon. It has become clear that we are in fact destroying the systems that sustain our lives. If we are going to survive it is going to take a conscious effort on our part to adapt and augment our way of living. In speaking about the environmental crisis in the Third World, Martin Khor Kok Peng, coordinator of the World
Rainforest Movement, explains,

It is the greed of companies that have to compete with one another in order to survive in an age of merger and acquisition. The greed is to sell their products. The greed is to capture more markets, to expand and in the process, to produce more and more things whether or not you require them...It is painful to change into a different kind of world where what is important is a redefinition of human happiness. ²⁸

However, we must change. The poets, dancers, actors, sculptors, and painters have a great freedom to continue exploring all ranges of human experience, and have the power to make us question and think about our way of life as it stands, and what the possibilities are for the future. However, the arts that deal directly with the manipulation of the natural environment cannot responsibly enjoy the freedom that these other arts have. Great attention must be paid to the original form of the animal or landscape if the expression is to be one that will allow us to have a deeper understanding of our existence on this planet. We cannot escape the compulsion to engage our surroundings, but we can reach toward a greater balance between artifice and nature. Architecture should be a poetic art.
Plate 1. Three Week Old Filly (Wind Dancer) Doing a Canter Pirouette in Play
Plate 2. Sven Rothenberger and Andiamo Demonstrating a Canter Pirouette at the F.E.I. Level 1
DRESSAGE AS A PARADIGM FOR ARCHITECTURE

With consideration to the range of possibilities one may take to approaching a design problem, I propose a study of an art form that deals with the problem of balance between artifice and nature in a very direct, sensitive, and perceptible manner, and that is dressage. The word dressage stems from the French word dresser which indicates the 'dressing' of the horse. Sylvia Loch notes, "The Oxford English Dictionary of Historical Terms informs us in a more accurate light that in the sixteenth century 'to dress' meant to place or set in position, to put into alignment, or to prepare according to certain principles."\(^29\) In layman's terms it simply means the passive training or schooling of the horse. At the beginning of this century the term was narrowed to designate a specific form of training that was created by the German military in 1914. By 1930 the first official international code concerning general principles and rules for competition was published by the Federation Equestrienne International, and the Grand Prix de Dressage based on the tests formed by the Germans was recognized from then on as an independent art and competition in the Olympics as well as separate World Cup and international meetings.\(^30\) The study of this art form must first begin with a brief discussion of the historical and cultural development of the underlying principles, and then
continue with an exploration of how one approaches the training of a dressage horse so that its premier esprits is expressed and celebrated.

While many cultures throughout history identified the horse with the power and awe of Nature, not all sought to master it through the ritual sacrifice, or through means of cruelty and punishment. It is believed that the first schooling arenas appeared as early as 1500 B.C.31 However, it would not be until the 5th century B.C. that a written text would appear on the passive training of the horse. A commander in the armies of Ancient Greece, Xenophon, recorded the oldest remaining theories in his work entitled Peri Hippike meaning 'The Art of Horsemanship'.32 It was apparent to Xenophon that the establishment of a relationship between horse and rider based on mutual trust and understanding would create the most effective pair in battle. This led to a need to study the horse's mind and body in the way that the Ancient Greeks studied sculpture, architecture, and politics. In the book, Dressage, The Art of Classical Riding, Sylvia Loch describes five essential principles outlined by Xenophon required for the successful training of the horse:

TACT: Xenophon constantly practiced this together with gentleness. "When your horse shies at an object and is unwilling to go up to it, he should be shown that there is nothing fearful in it, least of all to a courageous horse like himself. If this fails, touch the object yourself that seem so dreadful to him, and
lead him up to it with gentleness."

SELF-DISCIPLINE: Xenophon stressed that we should never deal with the horse "in a fit of passion for there is something blind in anger which makes us commit actions that will later be regretted."

BEAUTY: Xenophon abhorred the use of force reminding us that "For what the horse does under compulsion...is done without understanding; just as there would be no beauty if one should whip and spur a dancer. There would be a great deal more ungracefulness than beauty in either a horse or a man that was so treated."

FREEDOM FOR THE HORSE: Xenophon believed submission must be achieved voluntarily otherwise it would spoil the noble nature of the horse. "If you desire to handle a good warhorse so as to make his action the more magnificent and striking, you must refrain from pulling at his mouth with the bit...Most people think that is the way to make him look; but they only produce an effect exactly contrary to what they desire."

LIGHTNESS: "...Now if when his fire is thus kindled you let him (the horse) have the bit, the slackness of it makes him think that he is given his head, and in his joy thereat he will bound along with proud gait and prancing legs, imitating exactly the airs that he puts on before other horses. Everybody that sees such a horse cries out that he is free, willing, fit to ride, high-mettled, brilliant and at once beautiful and fiery in appearance."33

Horses have not always been used solely for war and transportation, the horse has been a significant medium through which the human relationship with nature has been explored and expressed. Riding academies and choreographed performances were found not only in Ancient Greece, but in the Roman Empire, Persia, and Byzantium as well.34 Aside from representations of riders found in the mosaics of the ancient buildings, no other documents have been found concerning the specific principles and
methods of training the horse in these cultures. However, through the discovery of other writings it is known that disciplined instruction and training did exist, and that it played an important role. Unfortunately an interest in establishing a cooperative relationship with the horse based on study and understanding of the nature of the horse would not appear again until the Renaissance.

The Italian Renaissance marked a reinterest in the writings of antiquity, and a movement toward humanistic advancement in the arts and sciences. As early as the thirteenth century an interest in creating a formal approach to riding was underway in Naples, but it would not be until the early sixteenth century after Naples had been annexed by the Spanish Crown and the Italian horses were bred with the lighter Spanish horses that the first civilian riding school appeared. The rediscovery of the writings of Xenophon, and a renewed interest in Italy and Spain in the study of the horse by scientists, philosophers and artists such as Leonardo de Vinci led to great changes in the relationship between horse and rider. Gianoli explains,

In substance, the brutally utilitarian equitation of the Middle Ages was transformed into a passionate, rigorous study—mathematically and physiologically supported—of the horse and rider as a dual entity at the various gaits, both natural and artificial. It was viewed in the light of a new aesthetic and rationale: the influence of the rider's seat and action on the comportment and reactions of the horse, along with the interplay of balance between horse and
rider...with the appearance of lighter, more sensitive breeds and finer gear, trainers were much more cautious in their use of "aids," possibly because of the greater delicacy of the horses or possibly because this new employment of the animal was designed to display the horseman's ability, grace, and deftness rather than his courage and valor.36

The first school was opened in Naples by Giovan Battista Pignatelli, and was subsequently taken over in 1532 by Frederico Grisone. Although it was a step in the direction of study and understanding Grisone's ideals still reflect the belief in human dominance over nature. A passage from his work, Gli Ordini di Cavalcare (The Rules of Riding), underscores this point, "But do not think that the horse, no matter how well made, well proportioned, and endowed by nature, can do things himself and go through his paces without help from a (person) and the proper discipline."37 The movements that these early instructors were striving for were very artificial, overly animated and not in tune to the way in which a horse naturally balances itself. For instance, Grisone advocated that the horse should never be allowed to flex its neck, stating that a stiff neck was better for battle, but he also demanded movements from the horse that we now know require flexibility and relaxation in the back and subsequently the neck. He did apparently achieve the desired movements from the horse through a mixture of actual knowledge and of cruel beating, but he was relying on an audience that mistook the tension and fear in the
Figure 1. 16th Century Print Demonstrating Grisone's Training Methods.
horse for excitement and wildness, all the more dramatic and entertaining.

Soon after the opening of the Neapolitan school, other schools had opened in the rest of Italy, France, Germany, and England. Some of the later masters started to go against Grisone and condemn his use of force. Salamon De La Broue of France notes, "It is such treatment, more often than not, that is behind the rage and terror of horses that fling themselves against a wall, or halt suddenly, or fall to the ground, or madly bolt, dragging their riders behind." Nevertheless the Baroque era following the Renaissance was still marked with lavishness, over animation, and dramatics which still led many famous equestrian scholars to resort to force to obtain what they wanted. Major changes in this attitude would not occur until the eighteenth century, during the period of the Enlightenment.

The Enlightenment marks the beginning of what William Fleming refers to in his book, Arts and Ideas, as the Revolutionary Period in which we are still living. He explains, "The modern age was swept in on a tidal wave of revolution--industrial, social, political, technological, scientific, and cultural. Fundamental beliefs were washed away. Ideas of society, the processes of nature, and the structure of the universe were changed. In the age of reason, scientific knowledge had been greatly expanded but
remained largely theoretical. When scientific principles were applied to practical problems, the invention of machinery revolutionized agriculture, manufacturing, communications, mining, and warfare, thus altering the entire picture of the Western world."39 The art of dressage was not impervious to these overwhelming cultural changes. It also experienced a major shift in its basic tenets. Gianoli explains that this shift to the functional "was not merely a conflict over techniques and methods, but also against tradition and caste, baroque preciosity, and complacent class pride in virtuosity...."40 More than ever, studies of the horse's conformation and the mechanics of its movement and natural balance became imperative. Aside from an ideological shift, the need for a more functional Calvary horse in the field that had the agility to deal with small arms fire caused for dressage schools to search for an effective and efficient manner of training. Loch explains, "Around this time, many important equestrian figures were becoming more aware of equine locomotion and how correct training could improve muscle tone and function. This general awareness led to the term 'scientific equitation'."41

The understanding of historical development and belief in progress through observation and scientific inquiry was best exemplified by one of the most widely studied masters, Francois Robichon de la Gueriniere. Being an
adamant opposer of the brutal techniques to dominate the horse into collection, he set out to redefine the art of Haute Ecole (High School Dressage). In doing this he studied past masters such as Xenophon, Grisone, La Broue, Pluvinen, and Lord Newcastle, yet in the spirit of a true modernist he is said to have discarded all that he felt to be worthless in these writings.42 Breaking from the aristocratic School of Versailles, he founded his own school in Paris. He completely restructured the saddle of the time encouraging the riders to seek their own equilibrium with the horse thus allowing the horse to learn the collected movements required of it in a more natural way. Obedience was not to be gained through force but rather through the rider understanding the mind and the body of the horse, and directing the movements with subtle changes of balance and tension in the rider's body. La Guerinieri states,

By grace, I understand an air of ease and freedom that must be conserved in a correct and relaxed posture, whether while maintaining one's seat and controlling the horse, as necessary, or while purposely letting go, still keeping, as much as one can, through all the horse's paces that exact balance that comes from properly applying the counterpoise of one's body. Furthermore, the rider's every move should be subtle, so that each serves that much more to complement [one's] seat and [one's] aid to the horse.43

The next major shift in the art of dressage took place during the Industrial Revolution which hit the late 19th century with a vengeance. Throughout Europe, Britain, and
the United States vast changes in the lifestyles of millions of people took place. There were movements emerging in all of the arts to redefine the world according to the truth of science, order and logic. In Vienna there was a reaction to the decadence of the bourgeois and the proliferation of historical trends and styles that were awkward at best in trying to house their modern functions. A philosophy known as logical atomism took hold and had far reaching effects in all of the arts.\(^4\) It was a belief that through scientific analysis all things could be broken down into their essential elements. In this way a language of form could be learned and used so that the meaning of the construction, whether it be a painting, sculpture, or building would have a self-evident meaning.\(^5\) Anything that did not adhere to strictly logical principles was of no value at all.

Germany was also at the forefront of this move toward a modern approach to art and the discovery of truth. The Bauhaus was a school of art and architecture founded at the beginning of this century in Weimar and was then moved by Walter Gropius to Dessau. Although it transformed and changed, its basic tenets were very close to those of the logical atomists in so far as they proclaimed that through science and analysis, elementary laws could be established for all of the arts. The Bauhaus also strove to create works of art that would be inseparable from everyday
function and utility, therefore, efficiency and consistency in production were vital. In 1923 an article was published in the periodical Material zur Elementaren Gestaltung (Material for Elemental Creativity) that encapsulates this attitude toward fundamental truths and laws that they felt would be gained through the work of science. The Article was written by Werner Graiff and was entitled "The New Engineer is Coming". He states,

Necessary consequences of this clarity and mastery are: simplicity, balance, naturalness, the shrewdest economy. The new engineer does not modify, [one] creates afresh; that is to say, [one] does not improve, but provides an absolutely elemental fulfillment of every demand. In a few years, the new elementally trained generation of engineers will easily fulfill every demand that can rationally be made upon mechanistic technology. BUT THIS IS NOT THE END. Above and beyond this, an immense, far more magnificent field, whose first outlines are already emerging in science and art, will open up to the leaders among the new creators. In a decade hypotheses will develop into theories—and finally into mastered laws. Then the capacity to treat every fresh demand in an absolutely elemental manner will lead forward only when it has become part of [people's] flesh and blood."

This German ideology also moved to the forefront in formulating a new direction for dressage. Loch explains that within the German Calvary "a new sect of bureaucrats was emerging within the military. The attitude of these...newcomers did not altogether favor the slow, steady approach to schooling and training...they concentrated on creating a system which would regiment proceedings. The previously rather loose format which had left room for a variety of interpretations (to suit horse
and rider) in the old dressage tests, would now be replaced with rigid rules and conditions." This move toward an analytical approach of testing the movement and suitability of the horse is very similar to the philosophies of the Bauhaus. After 1914 the Germans laid out the regulated compulsory tests that are still the model for the tests ridden today.

The driving force behind this modern form of dressage is a belief in the ability to break down the movement and training of a horse into basic elements. The first breakdown is in the progressive stages of a horse's training. Every country creates their own legislation for the levels preceding the international level, but they are modeled in a similar manner. In this country the United States Dressage Federation formats the preliminary levels by starting with a 'training' level and then proceeds with levels one through five. Each level has four tests (routines) numbered one through four with the first being the least difficult and the fourth being very close to the difficulty of the next level. The international level tests are written and legislated by the F.E.I., and they are listed in increasing level of difficulty as Intermedeaire, Prix St. George, Grand Prix, and the Grand Prix Special.

The test is a compulsory routine to be ridden in an arena 20 metres by 60 metres which is marked in plan by
Figure 3. Plan of Leg Yielding which Demonstrates the Geometric Pattern of Movement in the Arena.
letters that are spaced around the arena so as to break it up into equal and proportioned segments. With the possible exception of 'A' which marks the entrance to the arena and 'X' which marks the center, the letters are randomly assigned to their places so as not to create any preconceived hierarchies or allow additional meaning to be formed by riding combinations that would spell out words. Thus, the letters are reduced to abstract markers that aid in accurately riding in a purely geometric manner, and they help to define the breakdown of the test into individual movements such as "F-X-H Extended trot across the diagonal". This formats the judgment where each individual movement is given a score on the scale from one to ten. The movement scores are then added with a few collective scores and a final score is tallied.

The original point of this was that the whole was not to be considered more than the sum of the parts. The adding up of the basic elements would supposedly lead to consistency and 'objectivity' in judgment and in the production of a correct and efficient horse for the field. In fact, the breaking down of the training of the dressage horse into tests has given us a valuable guideline, and offers us a common ground for the discussion of training objectives. For instance there is a great deal of emphasis on the issue of training through understanding, and the expression of total cooperation from the horse. If a
AMERICAN HORSE SHOWS ASSOCIATION
1991 FIRST LEVEL TESTS

PURPOSE: To confirm that the horse, having demonstrated that it has achieved
the standard of the Training Level, has developed thrust (pushing power)

1991 First Level Test 1

NEW REQUIREMENTS:
15m half circles in trot, lengthened stride in trot, 15m circles in canter

INSTRUCTIONS:
All trot work is done sitting, unless otherwise specified

TEST

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<td>1 A X</td>
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<td>2 C E</td>
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<tr>
<td>3 B</td>
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<tr>
<td>4 C-A</td>
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<td>5 F-X H</td>
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<td>6 C</td>
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<td>7 M-X K X</td>
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<td>14 C</td>
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<tr>
<td>15 M-X K</td>
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<td>16 A X</td>
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Collective Marks:
Gait (freedom and regularity) 2
Impulsion (desire to move forward, elasticity of the steps, relaxation of the back) 2
Submission (attention and confidence, harmony, lightness and ease of movements, acceptance of the bit) 2
Rider's position and seat, correctness and affect of the aids 2

Maximum Possible Points: 270

Figure 4. AHSF First Level Test One, 5
1991 Fourth Level Test 1

NEW REQUIREMENTS:
Serpentine in canter with flying changes of lead

INSTRUCTIONS:
All test work is done sitting

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<td>2</td>
<td>C, MAX</td>
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<td>F-B</td>
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<td>4</td>
<td>B-G, C</td>
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<td>5</td>
<td>H-E, F</td>
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<td>6</td>
<td>R-E</td>
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<td>Q-G, C</td>
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<td>M, MAX, X</td>
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<tr>
<td>12</td>
<td>M, Between Q &amp; H</td>
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<td>13</td>
<td>Between Q &amp; H</td>
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<td>14</td>
<td>S, F</td>
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<td>15</td>
<td>F</td>
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MOVEMENTS #9, #10, AND #11

17 | A-C | Serpentine in three loops, width of arena, with flying changes of lead on crossing center line |

18 | F, M-E | Medium canter, collected canter |

19 | A, D-B | Down center line, half pass right |

20 | R | Flying change of lead |

21 | H-K, K | Extended canter, collected canter |

22 | A, D-E | Down center line, half pass left |

23 | S | Flying change of lead |

24 | B, X | Turn right, turn right, half salute |

Collective Marks:
- Gates (freedom and regularity) 2
- Impulsion (power to move forward, elasticity of the steps, suppleness of the back and engagement of the hindquarters) 2
- Submission (adherence and submission, harmony, lightness, and ease of movements; acceptance of the bit and tightness of the forehand) 2
- Rider's position and seat (correctness and effect of the aids) 2

Figures 5. AHSA Fourth Level Test One,6
Figure 6. FEI Tests Intermediate II and Grand Prix.
horse shows even the slightest signs of tension and fear such as pinning the ears, aggravately swishing the tail, or quickening of the paces it is reflected in low scores. However, the elemental and scientific format of the tests is misleading because it does not reflect the manner in which a horse is actually related to and trained. The horse is a powerful and independently minded form of life that rarely adheres to analytical models, and typically defies logic.

There are no 'mastered laws' with respect to how one should work with a horse. Consider this statement made by La Gueriniere, "Those riders who seek exactitude and absolute accuracy destroy the courage of a brave horse and ruin the gentility which nature has given him."

While an analytical breakdown of dressage into universal principles adds insight and depth to our understanding, those principles should not be mistaken for absolute rules and techniques. This would be exemplified well if one were to ride a hot headed fifteen hand Anglo-Arabian in the exact same manner that a seventeen hand Hanoverian was ridden. The most likely result would be a fun-filled ride in the ambulance. Physical interaction and experience are vital to understanding and communicating with this animal whose very being is expressed through body language. Disgusted with the lack of education of riders of his time, Federico Tesio explains,
"The horse interprets the very sound of a [person's] speech. He interprets the significance of certain tonal motifs: awakening, saddling, galloping, and so on. He interprets the punishments and the petting, as he interprets the very lightest touch of the hand that guides him, and he forms a reasonable assessment of the psyche of the [person] who masters him...[The person] on the other hand, does not study, does not interpret, and therefore, rarely knows their horse's psyche...it would have sickened me to continue over a period of months without any personal risk, to torture an animal who would look me in the eyes to try to understand why I was putting him to such torment, and attempt to interpret it and obey me."^50

Dressage is a poetic art form, and as Gaston Bachelard notes in his work, The Poetics of Space, "...poetry, rather than being a phenomenology of the mind, is a phenomenology of the soul."^51 The ideas and fantasies of the imagination are infused into the original so that the resultant expression is one that gives greater depth to our existence by allowing us to understand through becoming a part of the original. The rider must submit to the nature of the horse, and interpret every subtle change in tension or expression in order to learn the horse's language and communicate the contents of the imagination into the movement. In the end those qualities that we deem to be special and sacred to the horse will be brought out and made clear to those who participate and observe.

In recent years many international competitions have incorporated a test entitled the Freestyle that allows for more individual expression due to the fact that it is choreographed by the rider to music. While the Freestyle
is still ridden in the same arena as the compulsory tests, and is still unfortunately heavily weighed down by conventional movements, it does offer more freedom for the rider and horse to express their priemers esprits or essential spirit as noted by La Broue. The conception of the horse's priemers esprits is very closely related to what Christian Norberg Schultz terms the genius loci of a place. He explains, "Genius loci is a Roman concept. According to ancient Roman belief every "independent" being has its genius, its guardian spirit. This spirit gives life to people and places, accompanies them from birth to death, and determines their character or essence...The genius thus denotes what a thing is, or what it "wants to be", to use a word of Louis Kahn." The genius is what the dressage trainer and the architect strive to uncover and express.

"A good building is the greatest of poems when it is organic architecture. The building faces and is reality and serves while it releases life; daily life is better worth living and all the necessities are happier because of useful living in a building none the less poetry, but more truly so. Every great architect is--necessarily--a great poet."

This statement made by Frank Lloyd Wright reinforces the importance of poesis in architecture. Understanding the tensions, the forces, the character, and the basic physical language of the original site is as vital to architecture as this type of understanding is of the horse in dressage. Painstaking analysis and study from a
Plate 3. Falling Water by Frank Lloyd Wright.
rationalistic perspective should be integrated with an emotional and experiential understanding of the site so that the building may orient the users in such a way as to increase their awareness of the underlying hierarchies, rhythms, proportions, and dynamics of the original state of the site. In this way the memory is incorporated into the ideas and play of the imagination which renders a deeper and more sacred connection to the physical environment.

Commenting on architecture, Alvar Aalto notes, "Contact with nature and the variety nature always provides is a life form which gets on very uneasily with over-formalistic ideas." As magnificent as the ideas of our intellect may be, we must not forget that we exist as physical beings and that both architecture and dressage are a means of mediation between the inner world and the external forces that have shaped the very essence of who we are. Obviously the complexity of the demands placed on the architect outweigh those of the dressage trainer, yet the underlying poetics of making are the same. The drive to engage our surrounding world is innate within us. The act of domesticating and working with the horse, and the act of building are both ways in which we can explore our relationship with the natural world and in the process learn something about ourselves. The architect and the dressage trainer have to submit themselves to the nature
of the original and must strive to find balance and harmony between the memory and the imagination.

Plate 5. Mesa Verde, Anasazi Cliff Dwellings.
PROJECT STATEMENT:

AN URBAN EQUESTRIAN FACILITY FOR THE CITY OF
ATLANTA, GEORGIA

The threats to the equestrian way of life are known to all: shifting economic tides, the urbanization of America, animal rights groups, liability-insurance crises, unsympathetic local government, the casting of horses and horse sports as the exclusive domain of the privileged few, and more.56

According to the Department of the Interior approximately thirty million people ride each year in the United States today.57 Although this may seem like a large number of people, it only accounts for twelve percent of the population, and according to Sports Illustrated the interest in horseback riding has decreased three percent between 1986 and 1991.58 One of the major causes of this is the lack of accessibility. Because the horse is considered to be a farm animal, it is relegated to agricultural zones only. With the increase of suburban development around the perimeter of metropolitan areas, very little land has been left for stables within a reasonable distance to the inner city. Therefore, it is no wonder that the majority of the people living in metropolitan areas view the equestrians as a privileged few since it is only those with the transportation and time (up to four hours per trip), or those that live in the surrounding suburban neighborhoods that can ride. Of course those living in the surrounding agricultural areas that do ride are not always of the 'privileged' class.
Many people who ride for pleasure, and even some who have made it to the Olympics come from very modest backgrounds.

The ancient Greeks noted the importance of athletics in developing human health and well-being, and to this day sports play a very substantial role in western culture. In the United States it is almost impossible for a star basketball or football player to get through an interview without mentioning the fact that their athletic activities were a positive outlet for their everyday stress, and that it kept them 'off the streets' and out of trouble. With so many children having either single parents or two working parents the role of the neighborhood community centers have become increasingly important with concern to sponsoring athletics and activities that give children something positive to do with their time outside of school. People of all shapes, sizes, age, race, ethnicity, and gender can ride horses. The horse shows no bias, and it requires from the rider honesty, responsibility, patience, and above all self control. If equestrian programs were to reenter the urban environment the benefits could be far reaching.

Approximately five thousand years ago civilizations began to recognize the importance of the horse, and gave it a prominent place within their city walls. The establishment of a cooperative relationship with a creature as strong, fast, and independently minded as the
horse is a paramount accomplishment. A place was created for the horse not just for its value as a tool, but also for its value as a living spiritual monument to the human creativeness that enables communication and life with nature. Trainers like Xenophon brought horsemanship to the level of an art form from which social values could be learned, and an understanding of balance, rhythm, harmony, and proportion could be achieved. This combined with the empowerment the horse gave to people was the cause for schooling arenas and spaces for public performances and parades to hold an important role in human society and their cities. The Hippodrome in Ancient Rome, the piazza races in Sienna, the parade of the feudal lord in the Tokugawa era of Japan, and the Spanish Riding School in Vienna are just some of the examples that can be found in cities throughout history and throughout the world. The United States is no exception. The horse played a vital role in the foundation of settlements, and in the past has held a clear place in the American city.

In the work "From the Conquistadors to the Charros", Jean-Francois Ballereau quotes a royal decree dated May 23rd, 1493, "...along with the other people, who we order to leave, will be sent twenty lancers and their horses and five of them must take two horses, these two being mares".59 This was a decree given by the Spanish Crown
to Columbus for his second voyage to the New World, and it was the beginning of an equestrian history on this continent. In 1573 The Law of the Indies was proclaimed to regulate the founding and layout of new settlements, and it is through these stipulations that we know the horse played a key role in the new cities. In the book, The Making of Urban America; A History of City Planning in the United States, John Reps describes the criteria for the most important element of the town, the main plaza, "Several paragraphs of the regulations dealt with the plaza, that distinctive element in all Spanish-American towns. For coastal cities the regulations prescribed a location for the plaza near the shore; for inland cities, in the center of the town. As to shape, the regulations specified that the length should be at least one and a half times the width since 'this proportion is the best for festivals in which horses are used'...."^60

The horses brought over by the British, French, Danish, and other European Countries also had a profound affect on the form of urban America. It was as an agent of transportation that the horse had the greatest impact on the eastern cities. From the selection of pavement types to the location of large stables within the cities, the horse had a great deal to do with the form of the city streets and the proximity of trade and residential buildings in the urban structure. Travel by horse drawn
vehicles in cities with a substantial population was typically a form of public transportation. Many families owned private carriages, but they were usually reserved for pleasure drives, long trips, or hauling materials. The city of the equestrian era was therefore dense with businesses and shops of all sorts within a very close proximity to one another.

Mark Twain once noted, "Differences of opinion make horse races." Urban parks and other areas including the town square were the sites of challenges ranging from bronc busting in the West to flat racing in the East. Writing in 1857, D.C. Linsey explains; "Running horses short distances for small stakes was very common in Vermont fifty years ago. Eighty rods was very generally the length of the course, which usually commenced at a tavern or grocery and extended the distance agreed upon, up or down the public road." Great pride was taken in the abilities of one's horse, and showing that off to everyone in the community was all too common. Whether it was by simply going for a drive in the park or by engaging in a form of competition, exhibiting the product of good breeding and long hours of care and training was as important to Americans as it had been to the Spanish or even the Ancient Greeks. Many parks and commons in highly populated cities were set aside for riding and driving horses for pleasure and sport.
Central Park in New York City is still the site of equestrian gatherings. The Claremont riding academy, located approximately three blocks from Central Park in Manhattan, has been teaching riding since 1927. The present owner Paul Novograd, quoted in a recent issue of Equus magazine, describes the type of clientele they have had through the years; "We've had the whole gamut, from Fifth Avenue blue bloods to the little kids around the corner who save up their babysitting pennies." They maintain one hundred horses in a four story building, and because there is such a great demand, and business is good, Novograd is currently building a similar facility in Boston, Massachusetts.

Another example of the horse maintaining its place within the city is in the patrol units of the mounted police. These units must maintain stables near downtown areas where they are needed routinely. As an example, the Houston Mounted Patrol has forty two horses on call for use in the business district on a daily basis, and for crowd control during protests, festivals, and political rallies. Sargent Kilty of the Houston unit notes that the advantages of the horse in a situation such as the business district include a greater visibility for the officer, actually being more visible to the pedestrians, and greater effectiveness in being able to cover more ground quickly and with greater maneuverability in backed
Plate 7. Claremont Riding Academy, Manhattan.
up traffic and through city parks. With concern to crowd control he notes that the effectiveness of a mounted officer to move people is approximately ten times as great as an officer on the ground.  

Unfortunately, the examples of the accessible equestrian programs in the modern urban environment are scarce. Aside from providing the opportunity for one of the most unique relationships with nature, the potential for athletic achievement, and the groundwork for the building of self esteem, an urban equestrian program could also provide an important community service to the disabled. Riding programs for the disabled have been growing in number steadily over this century, and substantially in this country since the 1960's. Activities range from competitive sports riding, to remedial educational riding, to hippotherapy which takes advantage of the natural rhythm of the horse as a medical application. In the book, Riding for the Disabled, Vanessa Britton explains the benefits for the disadvantaged, "Almost every disabled individual involved in therapeutic riding experiences the benefits we often read about: improved general health and well-being, cardiovascular system gains, stimulation of the basic body functions, including bowel and bladder function and those of other inner organs, and a positive influence on the support and movement structure of the body. In addition,
Plate 8. A Child with Central Hypotonia at the Center for Equine Therapy of Baltimore, Maryland.
there are often improvements in head and trunk control, equilibrium reactions and body awareness."66

There are a number of national organizations such as the North American Riding for the Handicapped Association that oversee smaller organizations by establishing safety guidelines, disseminating information, and by coordinating the efforts of the movement to establish these programs. Obviously one of the vital requirements for a program of this nature to be founded for the benefit of a wide range of people is a proper facility in a location that could maximize human resources such as volunteers, and be within a reasonable distance of therapists and doctors that oversee the riding. A properly designed and maintained urban facility would satisfy those conditions.

A horse is an animal that requires a great deal of responsibility and maintenance. Thus, if it is going to be reestablished in the urban environment it should be done so in a carefully controlled and well planned manner. In order to exemplify my previously stated theories concerning the process of creating architecture, and to demonstrate the possibilities of infusing an equestrian facility into an existing urban environment, I have designed a hypothetical facility for the Dressage events of the 1996 Olympic Games to be located in Piedmont Park, Atlanta Georgia. The Olympic Games present the city of Atlanta with a unique opportunity. An optimal equestrian
facility is required for the Olympic events, and considering the financial investment required it should be imperative that the city of Atlanta place this facility where the long term benefits are the greatest.

Piedmont Park is located approximately two miles from downtown Atlanta, and only one mile from the proposed Olympic Village on the Georgia Institute of Technology campus. This location is not only a prime site for the Olympic events, but it is directly accessible to a large spectrum of Atlanta's population. The park was originally founded in 1887 by the Gentleman's Driving Club for horse racing, showing, and pleasure riding. Consequently, many large expositions and events were held in the park such as the Great Horse Show of 1900. The Atlanta Constitution reported, "...there will be held in the coliseum, on the fair grounds (Piedmont Park), the first great fashionable horse show ever given in the Southern States. The entries of blooded horses have far exceeded the expectations of the management, and great success is positively assured. The horse show is to be the great society event of the year. The coliseum has a seating capacity of 7000. There is not a seat in the building that does not command a full view of the arena." In 1904 the park was purchased by the city of Atlanta. Eventually the equestrian facilities were phased out, and the original buildings were torn down. Today the
park is used as a site for concerts by the Atlanta Symphony, and festivals such as the Piedmont Arts Festival and the annual Pot Festival put on by the National Organization for the Legalization of Marijuana. It is also used extensively on a day to day basis for recreational activities such as rollerblading, jogging, frisbee, swimming, volleyball, and sunbathing. The condition of the park is not good. Restoration of vegetation and buildings is sorely needed. An increase of participation in the park activities by the citizens the park is there for is the only thing that will bring the needed funding and attention on a long term basis.

Piedmont Park is approximately 180 acres in size and under a new proposal it could be increased to 300 acres within the next five years. The oval area on the western side of the park that was originally leveled for the race track is of adequate size to be reinhabited by the stables, training arenas, and stadium for the Dressage events of the 1996 Olympic Games. The stables and training areas would be fenced not only for security, but to keep the occasional loose horse from injuring itself or people participating in other activities around the park. After the Olympics these facilities would be transformed and used for all forms of equestrian activities ranging from Western pleasure riding to Show Jumping. Carefully constructed, fenced trails winding around the perimeter of
the park would aid in exercising horses and allow for a unique experience of the park. Along with housing the Mounted Police and the local handicap riding organization, these grounds would be optimal for summer camps, after school programs, and riding lessons in general for people with a wide range of equestrian interests.

The stadium would be used for future equestrian competitions and festivals, and would be a valuable asset for the park in terms of housing outdoor concerts and festivals in a controlled manner that would not harm the surrounding park grounds in the way that happens currently. The stadium being located in this area would also address the city streets in such a way as to formalize the existing entrance to the park, creating a visual landmark and a sense of arrival.

Maintaining a facility of this nature would require the investment of time and finances from the local government and the community at large that may not be so willing to give. However, given the initial construction investment from the Olympic events, the Mounted Police program already in place, and the real need for positive activities within the inner city, programs like this should be given serious thought and consideration. Horses are powerful, graceful creatures that can instill feelings of awe, accomplishment, and empowerment to those who take the time and care to know them.
ENDNOTES


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4 Dawson and Perry, 22.

5 Dawson and Perry, 20.

6 Dawson and Perry, 19.

7 Dawson and Perry, 93.

8 Dawson and Perry, 93.


10 Hall and Nordy, 42.

11 Hall and Nordy, 42.

12 Hall and Nordy, 41.


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18 Lynch, 127.

20 Adler, 133.


22 Schultz, 15.

23 Alan Cook, "Imagery Aesthetics and Expression in Architecture", (course notes, Auburn University, 1987), n.pag.


25 Butcher, 13.

26 Adler, 403.

27 Adler, 137.


30 Loch, 15.

31 Loch, 26.

32 Loch, 29.

33 Loch, 30.


35 Gianoli, 102.

36 Gianoli, 103.

37 Gianoli, 104.

38 Gianoli, 107.


40 Gianoli, 121.
Loch, 70.

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66 Britton, 17.


68 Garrett, 207.

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SITE ANALYSIS:

PIEDMONT PARK, ATLANTA, GEORGIA
# Temperature (°F) on 21st Day of:

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<tr>
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<th>J</th>
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<td>55.4</td>
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<td>87.1</td>
<td>87.8</td>
<td>85.1</td>
<td>81.8</td>
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## Normal Daily Solar Radiation (Monthly Avg) BTU/Sq Ft (Day)

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<td>718.</td>
<td>969.</td>
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<td>1665.</td>
<td>1854.</td>
<td>1914.</td>
<td>1812.</td>
<td>1708.</td>
<td>1422.</td>
<td>1200.</td>
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<td>So Vertical</td>
<td>1041.</td>
<td>1127.</td>
<td>1122.</td>
<td>1000.</td>
<td>983.</td>
<td>791.</td>
<td>775.</td>
<td>889.</td>
<td>1022.</td>
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## Heating Degree Days BASE 65°F

- 3126.9

## Cooling Degree Days BASE 65°F

- 1785.7

## Cooling Degree Days BASE 78°F ET*

- 397.2

## Winter Design DBT

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<td>Average</td>
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<tr>
<td>Average</td>
<td>97.5 %</td>
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## Summer Design DBT / Coincident HWT

- 1% 94.0 / 74.0
- 2.5% 92.0 / 74.0
- 5% 90.0 / 73.0

## Summer Design HWT

- 1% 77.0
- 2.5% 76.0
- 5% 75.0

## % Total Heating Hours (Less Than 68°F) I-V

- 59.3

## % Humidification Hours VI.A + VI.B

- 0.4

## % Total Confort Hours (Shading Required) VII

- 12.5

## % Dehumidification Hours VIII

- 10.7

## % Total Cooling Hours (Greater Than 78°F ET*) IX - XVII

- 17.2

## % Passive Cooling Hours IX - XIV

- 15.2

## % Ventilation Effectiveness Hours IX + X + XI

- 14.2

## % Mass Effectiveness Hours X + XI + XII + XIII

- 9.2

## % Evaporative Cooling Effectiveness Hours XI + XIII + XIV + VI.B

- 7.1

## % Hours Beyond Passive Effectiveness VIII + XV + XVI + XVII

- 12.7

### Table 1. Climate Parameters for Atlanta, Georgia.
Table 2. Temperature Frequencies for Atlanta, Georgia.
Figure 7. Temperature Mask for Atlanta; December 21 through June 21.
Figure 8. Temperature Mask for Atlanta; June 21 through December 21.
Figure 9. Average Annual Temperature Mask for Atlanta.
Figure 10. City Map of Atlanta Showing Piedmont Park in Relation to Downtown and the Proposed Olympic Village.
Figure 11. Piedmont Park; 1887 Piedmont Exposition Plan.4
Figure 12. Piedmont Park; 1895 Cotton States Exposition Plan.
Figure 13. Piedmont Park; 1912 Olmstead Brothers Plan.
Figure 14. Piedmont Park; 1989 Existing Conditions Plan.
Figure 15. Existing Proportions of Site.
Figure 16. Site with Wind Roses.
Figure 17. Twenty Meter Striations of Site with Major Axis Highlighted.
Figure 18. Layering of the Site.
Plate 9. View of the Site from the Western Staircase.
Plate 10. View of the Site from the Western Staircase.
Plate 11. View of the Site from the Western Staircase.
STALL CONFIGURATION: Typically square or rectangular, feed and hay should be accessible from front of stall so that entering the stall is not necessary to feed horse. Water must be separated from feed and hay to prevent clogging. Typical dimensions are 12' x 12'. Floor system should maximize drainage, bedding necessary. Ventilation imperative in hot weather, but drafts should be minimized in cold weather.

DELEGATION CONFIGURATION: Should consist of five stalls and area for tack and feed storage. Cross ties and grooming racks should be provided. Access to hoses is preferable. Delegations should have direct access to officials, grooms housing, training areas, parking, manure disposal, wash racks, bathrooms and dressing areas, farrier area, vet clinic, bulk storage for hay, feed, and bedding.

VET CLINIC: Should consist of a lab, office, examination area (including trotting path and lunging area) and two observation stalls. An area should be provided for at least one horse ambulance.

GROOMS HOUSING: Double rooms with shared bathrooms, telephones. A lounge with T.V., video, and stereo will be incorporated as well as a library and kitchenette. A bar and dining room will be provided serving all three meals. A service kitchen with direct vehicular access for the caterers will be necessary.

MAIN OFFICES: Offices for stable management and F.E.I. officials will be provided. Delegation check-in. A lounge and meeting rooms for the judges are necessary. This is in essence the 'command post' for all operations.

TRAINING AREAS: Eight twenty by sixty meter arenas and four twenty meter diameter lunging circles are required. A central arena 40 meters by 80 meters will be provided with training mirrors. This will be used as the initial check-in and warm-up arena during the Olympic events and will remain as is for future schooling. From this arena the competitor will proceed to the final check-in area next to the stadium. This area should be quiet and secluded from the spectators' view.

STADIUM: It will seat approximately 9000 spectators. Stereo booth needed, acoustics are an issue. The arena size will conform to F.E.I. standards.
DESIGN SOLUTION:

AN URBAN EQUESTRIAN FACILITY
FOR
ATLANTA, GEORGIA
Figure 19. Site Plan.
Figure 20. Site Plan Key.

A. Stadium       B. Final Check-in   C. Training Arenas
D. Stables       E. Grooms' Housing/Support Services
F. Grazing       G. Parking          H. Public Gathering
Figure 21. Floorplans of First and Second Levels
Figure 22. Floorplan of Third Level.
Figure 23. Floorplan Showing Layout of Two Delegations.

- Tackrooms
- Grooming/Wash Stalls
- Stalls
- Feed, Hay, and Bedding Storage
- Laundry and Restroom (Shared)
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5 Kelly and Varnell, n.pag.

6 Kelly and Varnell, n.pag.

7 Kelly and Varnell, n.pag.